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DEVELOPMENT OF AN INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK IN HOSPITAL NURSING UNITS

By

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DECLARATION

Student number: 20814977

I, Alida H. Viljoen, declare that this thesis entitled **DEVELOPMENT OF AN INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK IN HOSPITAL NURSING UNITS** is my own work and that all the sources used or quoted in this research study have been indicated and acknowledged by means of complete references. Furthermore, I declare that this work has not been submitted for any other degree at any other institution.



Alida Viljoen

24 April 2024

Date

DEDICATION

In all the world there is none like you, Gideon Viljoen, my most loving and supportive husband. I dedicate this PhD to you. You have supported me through all my personal and professional endeavours. You are the constant in my life. I will always thank God for you.

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ABSTRACT

Introduction and background

Hospital units are dynamic, high-paced and challenging environments and effective teamwork is vital to high performance teams in hospital units. Teamwork and person-centredness are two strategies that improve patient outcomes and staff satisfaction and retention. Healthcare has become increasingly dynamic and demanding. Person-centredness as a strategy is supported by the World Health Organization (WHO) to assist the whole multi-disciplinary team with the patient and significant other, to reach the patient desired outcomes. Teamwork is recognised by the multi-disciplinary team as a way of ensuring holistic and achievable patient outcomes. The concept of person-centred teamwork has not been defined or explored in current literature. Only the measurement of either teamwork or person-centredness has been explored. There are elaborate instruments available that measure the two concepts as separate entities. The concept of person-centred teamwork has not been explored and to date there is no instrument to measure the concept. Being able to measure person-centred teamwork will enable teams and management to give tangible feedback and revise improvement strategies on person-centred teamwork.

Aim and objectives

The development of an instrument to measure person-centred teamwork in hospital nursing units.

To define person-centred teamwork and develop an instrument to measure person-centred teamwork in hospital units. In order to achieve the aim, the study wished to answer the following question: How can the concept “person-centred teamwork” be developed into an instrument to measure person-centred teamwork?

In order to achieve the aim, the study was conducted in phases with the following objectives:

- **Phase 1: Concept clarification**

Objective 1: To conduct a concept analysis of person-centred teamwork.

Objective 2: To reach consensus on the definition and attributes of person-centred teamwork.

- **Phase 2: Item development**

Objective 3: To reach consensus on items to be included in an instrument to measure person-centred teamwork in a hospital setting.

Abstract

- Sub-objective 3.1: To generate items for an instrument to measure person-centred teamwork.
- Sub-objective 3.2: To reach consensus on items to measure person-centred teamwork.

- **Phase 3 and 4: Scale development and evaluation**

Objective 4: To validate an instrument to measure healthcare workers' perceptions of person-centred teamwork in hospital units.

Research design and methodology

A multi-method multi-phased design, using both qualitative and quantitative approaches, was used to develop an instrument to measure person-centred teamwork in a hospital unit. The data collection included a concept analysis, methodological search for instrument items, two Delphi studies, pre-testing and sampling of the instrument. With the assistance of a statistician validation of the instrument was done.

Results

The concept analysis determined four attributes and a definition for person-centred teamwork. The attributes and definition was taken through a Delphi study with international experts, to obtain consensus on it. Consensus was obtained and this formed the basis of the methodological search on instrument items to measure person-centredness or teamwork. The items were analysed, refined and reduced to 43 items that were taken to a Delphi study with international experts to obtain consensus on the items to measure person-centred teamwork. Consensus was reached on 38 items, which were pre-tested and validated. The 38 items then underwent psychometric testing by 388 participants in two selected hospitals in South Africa. A statistician tested the findings of 38 items for validity and reliability and found to be valid and reliable to assess person-centred teamwork in the hospital setting.

Conclusion

This study was initiated from the need to be able to understand and measure person-centred teamwork. The instrument was found to be valid and reliable in measuring person-centred teamwork. The ability to measure person-centred teamwork will assist the implementation and ongoing improvement of person-centred teams. Person-centred teamwork will allow the outcomes set from a management perspective to be measurable and improved upon based on the results of the instrument.

Abstract

Keywords

Concept analysis, Delphi technique instrument, measurement, person-centred teamwork, psychometric testing, validation

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LIST OF ABBREVIATIONS	
CREDES	Conducting and Reporting Delphi Studies
HPCSA	Health Professions Council of South Africa
I-CVI	Item- Content Validity Index
P-PCT	Perceptions on Person-Centred Teamwork
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses.
SANC	South-African Nursing Council
SBAH	Steve Biko Academic Hospital
WHO	World Health Organization
ZAH	Zuid- Afrikaans Hospital

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION AND BACKGROUND

Today, hospital units are well known as dynamic, high-paced and challenging environments. Nurses have reported on the importance of teamwork to ensure positive outcomes for patients (Costello et al, 2021; Kendall-Gallagher et al, 2017). Effective teamwork is vital to high performance teams in hospital units (Stocker et al, 2016). Teamwork creates an environment where each individual is valued and developed. The team has a common purpose to which they work. Each team member has a specific role that contributes to the common purpose. Within a team good communication between all members ensures efficiency and effectiveness. The team collaborates by knowing each other's strengths and using them to achieve a common purpose (Reeves & Harris, 2016). Working within a team requires all members of the team to display competence, commitment, communication and autonomy (Dahlke et al, 2018; Stocker et al, 2016). Establishing teams that function within these boundaries does not occur overnight.

Good and effective teamwork creates an environment that makes otherwise overwhelming tasks more manageable. Teamwork also creates a sense of belonging among team members, has a positive effect on team relationships, and directly impacts job satisfaction, staff retention, staff productivity and quality of care delivered (Kaiser & Webster, 2018; Kendall-Gallagher et al, 2017). Good teamwork achieves the purpose of patient outcomes, which in turn improves the patient's satisfaction (Dahlke et al, 2018). High functioning teams that continuously improve the quality of care and patient outcomes take time to develop (Stocker et al, 2016). In their study in the Western Cape, South Africa, Waggie and Arends (2020) identified a need for effective teamwork among healthcare professionals to improve patient outcomes. Although there is a need for teamwork, it does not always exist, which leads to disunity among team members and decisions are made in silos. Silo decision-making leads to a lack of inter-professional collaboration or teamwork. Decisions are mostly made by the physician without the input of the rest of the healthcare team. This leads to a lack of a person-centred approach. Globally, person-centredness has been used to improve overall healthcare outcomes and recognized as a critical component of high-quality healthcare (Giusti et al, 2022; van Diepen

et al, 2020; WHO, 2018). Person-centredness is a consensual way of practising and receiving healthcare (Burton et al, 2017; Britten et al, 2016). Person-centredness establishes a way of doing and thinking within an environment, creating a culture of trust, respect and mutual goals within the working environment (McCormack & McCance, 2017). McCormack and McCance (2017) identify four central components in person-centredness, namely being in relationship with those in your direct environment, being part of a social world, being in place, and being with yourself. Having a common purpose and agreed upon cultural value system that focuses on all individuals as part of the care team is therefore what person-centred care is about. Various frameworks and models have been developed for person-centred care that build on the concept of person-centredness as a way of delivering healthcare, also in the acute care setting (Santana et al, 2018; Britten et al, 2017). One framework is the Person-centred Practice Framework developed by McCormack and McCance (2006; 2017) which has been refined for over a decade to accommodate the dynamic complexities of healthcare. The World Health Organisation (WHO) (2018) supports the person-centred framework that puts patients, significant others and communities at the centre of care delivery. The end goal is to have a positive healthcare experience for the patient, community and healthcare provider involved (McCormack & McCance, 2017). The implementation of person-centredness also has challenges, as it has to overcome established culture and mindset around hierarchical care delivery systems (Moore et al, 2017; Naldemirci et al, 2017). Implementing person-centredness within a team requires time, education and culture change. Consistent feedback and re-establishment of the framework of person-centredness is needed (Wolf et al, 2017). The measurement of person-centredness have been developed by Slater et al., (2017) and further validated by Bing-Jonsson et al., (2018). The measurement of teamwork has many dimensions and there are an assortment of surveys and tools to use to measure teamwork (Kang, 2019). The ability to measure teamwork assists with the ability to improve teamwork as it allows identifying the area that needs change or adaptation, while showing sustainability to another area within teamwork. Teamwork then becomes part of an organisation's culture or way of functioning (Kang, 2019).

Person-centred teamwork to improve care given has not been explored in depth. Teamwork is essential to the success of person-centredness as teamwork creates an environment that allows the multi-disciplinary team, patient and community to share in the care process (Li et al, 2018). Person-centredness within a team has the potential for improved job satisfaction and retention of staff, where retention of staff is imperative to ensure continuity of care and continuity of care leads to improved patient outcomes and patient experience of care delivery (Nowaskie et al, 2018). Teamwork within the unit where person-centredness is implemented

is essential. Person-centredness cannot be practised by one individual of the inter-professional team.

The ability to evaluate practice accurately leads to best practice and improved quality of practice delivered to patients. Evaluation of practice and measurement of practice or best practice implementation is needed to support current practice (Moule et al, 2017). Measurement gives an indication of the efficacy of a specific implemented strategy. For measurement to take place, a tool needs to be developed that has the ability to accurately portray the effect of a given implemented task. Previous research has focused on the implementation of teamwork and person-centred care as separate concepts (WHO, 2018; Dietz et al, 2018; Slater et al, 2015). The measurement of person-centredness within teamwork has not been explored. Teamwork will always be required within a person-centred practice. The researcher found no measurement of person-centred teamwork in the literature review.

1.2 PROBLEM STATEMENT

Teamwork should exist in every hospital unit among the nurses, inter-professional team members, the patients and their significant others (WHO, 2018; Dietz et al, 2018). Teamwork positively influences healthcare workers' job satisfaction, which, in turn, improves patient outcomes and the overall working environment (Dahlke et al, 2018; Dietz et al, 2018; Donovan et al, 2018). Similarly, to teamwork, incorporating person-centred care has been proved to significantly improve the patient and staff experience of healthcare (Slater et al., 2015).

McCance, Gribben, McCormack and Laird (2013) state that person-centred care is about a way of practising through careful consideration of the view and approach to caring of all the individuals involved, which could lead to improved outcomes for all. The WHO (2018:54) indicates that person-centred care is a focus for all health providers because it leads to collaborative planning of care and shared decision-making for all involved in the patient's care.

Both teamwork and person-centred care have been implemented and accepted as strategies to improve outcomes within the healthcare setting (WHO, 2018; Naldemirci et al, 2018). Teamwork and person-centred care have many attributes and focal areas (McCormack & McCance, 2017). The implementation strategies of both teamwork and person-centred care involve related input costs. The inability to measure person-centred teamwork leads to the inability to identify the return on investment made toward practice improvement (Moore et al, 2017). This, in turn, creates uncertainty as to its efficacy as a long-term strategy to improve

healthcare (Santana et al, 2018). In a study with Dutch nurses, Hagedoorn et al (2018) described psychometric properties in great detail through advanced measurements and practice adaptation to better assist the population. The advanced measurement was done by means of a tool that was found reliable and validated. The inability to measure person-centred teamwork will create the inability to identify which area needs improvement or change. The ability to pinpoint the exact area of need for improvement is required.

Current instruments to measure teamwork elaborate on specific measurable aspects of teamwork (Rosen et al, 2018; Kang, 2019). Teamwork strategies are implemented and need to continuously be measured to ensure they remain effective. Training tools to evaluate teamwork and organizational design are essential to ensure effective and expanding teamwork (Buljac-Samardzic et al, 2020). Slater et al (2017) developed an instrument to measure person-centred care, but did not focus on person-centred teamwork. The Western Cape Department of Health's (2014) healthcare 2030 policy indicates that teamwork among the healthcare team is essential for the implementation of person-centredness and improved healthcare outcomes of care.

Person-centred teamwork as a concept has not been defined or explained in measurable terms. The lack of measurement ability contributes to the lack of implementing person-centred teamwork as a strategy to improve healthcare for all. This motivated the researcher to conduct the study in order to define person-centred teamwork and develop an instrument to measure person-centred teamwork.

1.3 AIM AND OBJECTIVES

To define person-centred teamwork and develop an instrument to measure person-centred teamwork in hospital units. In order to achieve the aim, the study wished to answer the following question: How can the concept "person-centred teamwork" be developed into an instrument to measure person-centred teamwork?

In order to achieve the aim, the study was conducted in phases with the following objectives:

- **Phase 1: Concept clarification**

Objective 1: To conduct a concept analysis of person-centred teamwork.

Objective 2: To reach consensus on the definition and attributes of person-centred teamwork.

- **Phase 2: Item development**

Objective 3: To reach consensus on items to be included in an instrument to measure person-centred teamwork in a hospital setting.

- Sub-objective 3.1: To generate items for an instrument to measure person-centred teamwork.
- Sub-objective 3.2: To reach consensus on items to measure person-centred teamwork.

- **Phase 3 and 4: Scale development and evaluation**

Objective 4: To validate an instrument to measure healthcare workers' perceptions of person-centred teamwork in hospital units.

1.4 SIGNIFICANCE

The study has contributed by defining and reaching consensus on the concept “person-centred teamwork” (Chapter 3). The concept analysis assisted in defining the concept and therefore in reducing any vagueness of the concept so as to avoid inaccurate use of the concept in theory and research (Liu et al, 2020; Podsakoff et al, 2016). The addition of the concept analysis, with the purpose of defining the concept, prior to instrument development added methodological significance (Chapter 7). By adding a concept analysis, an operational definition of person-centred teamwork was established. Consensus on the operational definition and attributes by an international panel of experts ensured clarity (Chapter 4), generalization and formed the basis of the development of measurable items.

The study further developed (Chapter 5) and validated an instrument to measure healthcare workers' perceptions of person-centred teamwork in clinical practice working in hospital units (Chapter 6). The utilization of such an instrument by hospital management would enable the end user to further develop and improve person-centred teamwork in hospital facilities. Ultimately, by being able to measure person-centred teamwork, the health care team would be able to improve patient outcomes. The health care workers working in person-centred teams may experience increased job satisfaction, improved communication within the team, feel included and respected, and remain in the employment of the institution (Huang et al, 2020; McCormack & McCance, 2017).

1.5 CONTEXT

The study had different contexts for each phase. Phases 1 and 2 had an international context with the panel of experts from various countries engaged in an online platform (see Chapters 4 and 5). The researcher gained access via email to the participants. In phase 3, the context was health care teams in hospital units in South Africa. The healthcare system in South Africa is divided into two main sections, public healthcare and private healthcare. The public sector is funded by the National Treasury and Government. The private sector is compensated by the medical schemes (medical insurance), which are funded by their members or persons who pay out of pocket for services rendered. One public and one private hospital were selected for the study. The health care workers worked in medical, surgical, emergency, theatre and intensive care units (see Chapter 6). Permission to gain access to the participants was also obtained (see section 1.11, Permission). In the public hospital the clinical facilitator was contacted and she ensured introduction to the various departments. In the private hospital, the nursing service manager was contacted and permission to access staff was given as well as access to the various WhatsApp groups. The researcher was the primary contact during data collection.

1.6 DELINEATION

The study focused on the development of an instrument to measure the person-centred teamwork within the hospital setting. Health care teams were the focus of the study, including healthcare workers, physiotherapists, dieticians, nurses, and medical doctors. Patients and their significant others were not included as participants in the study. The instrument developed focused on the health care workers in this study. Further development and research are needed to obtain the perceptions of the patient and significant others.

1.7 PARADIGM AND PHILOSOPHICAL ASSUMPTIONS

For the purpose of the study, the researcher adopted pragmatism as a paradigm. The pragmatist view aims to identify a gap or weakness and then address it by using multiple methods. Pragmatism as a paradigm is founded upon the basis of applying the best methods to study real-world problems, permitting for the use of several sources of data and knowledge to answer research questions (Allemang et al, 2022). Pragmatism is focused on the action to create change or impact. Pragmatism provides a framework focused on action for research, which allows the researcher to address practical issues arising directly from populations using the most suitable methods for answering the research question (Allemang et al, 2022;

Goldkuhl, 2012). The researcher focused on the problem and how to overcome it. The methodology is not specifically affiliated to a set philosophy. This allows for the use of both qualitative and quantitative approaches (Rahi, 2017; Kaushik & Walsh, 2019). The use of a multi-method approach allows the researcher to use the strengths of the one method to support another method. Multi-method approaches also allow for triangulation to strengthen the evidence found (Maarouf, 2019). The assumptions are discussed next.

1.7.1 Ontological

Ontological assumptions are concerned with the researcher's belief that something makes sense or is real. Researchers' and participants' belief systems are examined (Kivunja & Kuyini, 2017). Pragmatic researchers view and use multiple ontological positions. Pragmatism flows from an ontological stance that is located in the middle of the objectivity-subjectivity continuum. The researcher conceptualizes this ontological stance as the reality cycle. The reality cycle allows for movement between two stances to create an improved view of the object studied (Sulaeman & Harsono, 2021; Maarouf, 2019). In this study, the researcher examined current literature and from it created the concepts related to the problem. The consensus by experts on appropriate items was required. They were asked to review and rank/score each item, according to their perception of the relevance of the items to the construct under study. The end users (health care teams) were encouraged to share their views and make their own decisions based on how they perceived the reality of using the tool in assessing person-centred teamwork. This allowed further statistical analysis to assist with the validation of the instrument.

1.7.2 Epistemological

Epistemological assumptions are concerned with what constitutes acceptable knowledge (Kivunja & Kuyini, 2017). Pragmatic research can use any kind of research method to ensure that the research objectives are reached (Sulaeman & Harsono, 2021; Maarouf, 2019). It is further concerned about what makes it possible for persons to obtain knowledge of the world. The pragmatic approach is that of taking action to effect change. In this study, knowledge was obtained through various qualitative and quantitative approaches (Erciyas, 2020; Kivunja & Kuyini, 2017; Goldkuhl, 2012). The focus was on practical applied research which integrates different perspectives to help interpret the data.

The study was guided by the underpinning of the pragmatic philosophy. The researcher adopted mixed approaches for gaining knowledge about the research problem to guide the

needed solution (Rahi, 2017; Kaushik & Walsh, 2018). The researcher, supervisors and participants were involved in various phases to address the research questions. The researcher and the participants were involved and provided information that assisted in the development of the instrument to measure person-centred teamwork.

1.7.3 Methodological

Methodological assumptions refer to how to carry out the research (Kivunja & Kuyini, 2017). The researcher was not restricted to a single methodology but addressed the research problem using multiple methods to answer the research question. Methodological inferences based on the underlying assumptions reveal the potential strength of combining qualitative and quantitative methods. The assumption of this multi-methods study was that the arrangement of qualitative and quantitative methods was needed for a more complete understanding of the research problem (Erciyas, 2020; Kivunja & Kuyini, 2017).

In this study, multiple methods were applied to address the research questions. There was a concept analysis of the term person-centred teamwork. A methodological search was done to identify and generate needed test items. The Delphi technique allowed for qualitative methods to reach consensus on the definition and items of the instrument and the rubric. Scale steps graded on a rating scale were constructed for each item. The methodology followed allowed for validation of the instrument.

1.8 RESEARCH DESIGN

A multi-method multi-phased design, using both qualitative and quantitative approaches was used to develop the instrument to measure person-centred teamwork in a hospital unit. Figure 1.1 depicts the research design. The phases used as well as the designs and methods implemented during each of the three phases are discussed next.

1.9 PHASES

The research phases were based Walker and Avant's (1994) model for concept analysis (Phase 1; Chapter 3) and Boateng et al's (2018) framework (Phases 2, 3 and 4; Chapter 4-6). The concept analysis was added to Boateng et al's (2018) model, as there was no clear definition of the concept person-centred teamwork. In order to define a concept, all the aspects should be known. Therefore, the researcher added a concept analysis (see Chapter 3) before

embarking on the consensus strategy to develop an instrument. The four phases were concept clarification, item development, scale development, and scale evaluation (see figure 1.1).

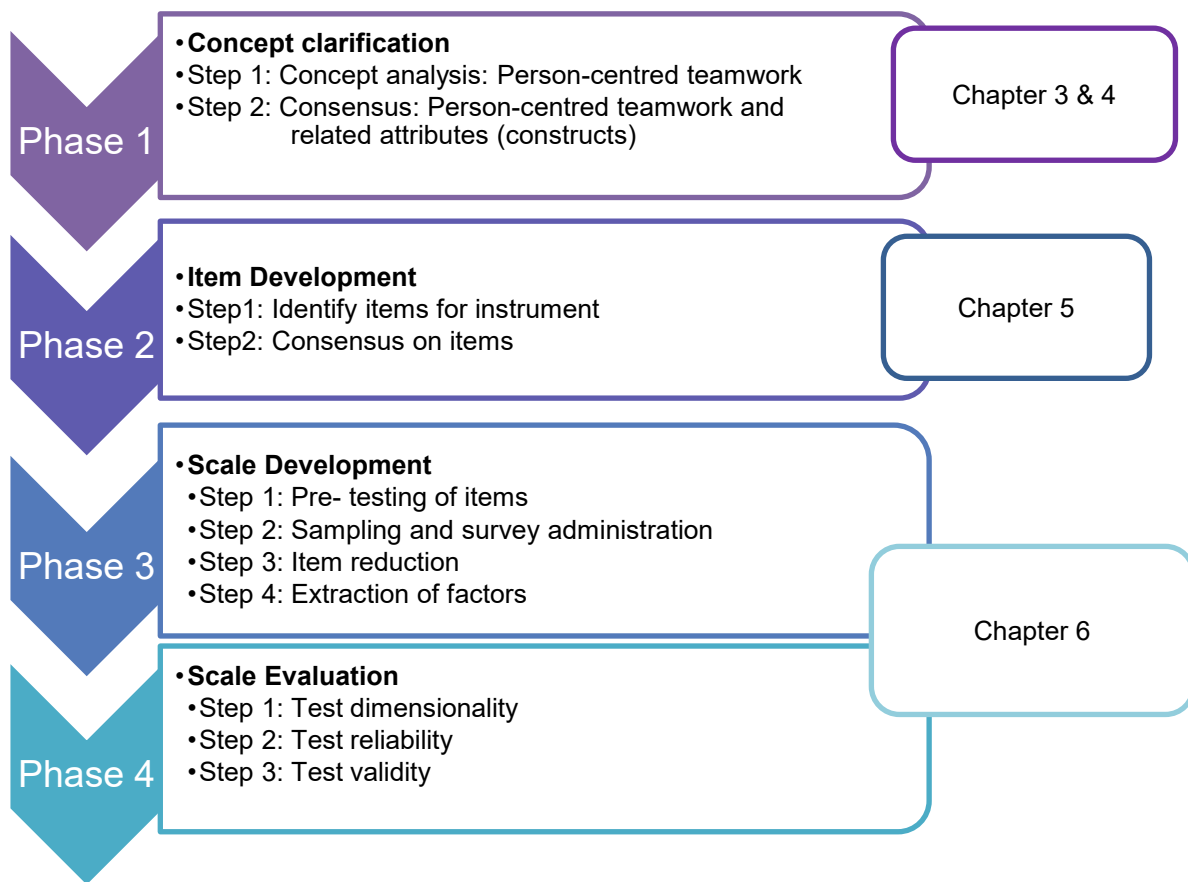


Figure 1.1 Summary of the research phases and realisation

A summary of the research methodology implemented throughout the different phases is discussed made in Table 1.1

Table 1.1 Summary of the research methodology

Phase 1: Concept development					
Objective 1: To analyse the concept person-centred teamwork					
Design	Methods				
	Population	Sampling	Data collection	Data analysis	Rigour
Concept analysis (Chapter 3)	Articles on person-centredness, teamwork and inter-professional collaboration	Published and unpublished articles between 2000 and 2021	Electronic database searches	PRISMA Flow Diagram used as guidance (Annexure B.1) Data was analysed following the Walker and Avant (2019) model for concept analysis	- PRISMA extension for <i>scoping reviews</i> guided the selection of relevant articles for evaluation and reporting of the findings (Annexure B.1) Consulted an information specialist
Objective 2: To reach consensus on the definition and attributes of person-centred teamwork					
Design	Methods				
	Population	Sampling	Data collection	Data analysis	Rigour
Consensus (Chapter 4)	International panel of experts	Purposive sampling & Snowball sampling	Online platform and email (Annexures C.6)	Content analysis Descriptive statistics	CREDES guidelines (Annexure C.5) (Jünger et al., 2017)
Phase 2: Item development					
Objective 3: To establish consensus on items to be included in an instrument to measure person-centred teamwork in a hospital setting					
Design	Methods				
	Population	Sampling	Data collection	Data analysis	Rigour
Methodological search (Chapter 5)	Literature	Instruments/ tools on person-centredness and/or teamwork	EBSCOHOST / Scopus/ Google scholar	Thematic using 4 attributes of person-centred teamwork	Consulted an information specialist. Use of Rayyan
Consensus (Chapter 5)	International panel of experts	Purposive sampling & Snowball sampling	Online platform and email (Annexures D.6)	Content analysis Descriptive statistics	CREDES guidelines (Annexure D.5) (Jünger et al., 2017)
Phase 3 & 4: Scale development and Scale evaluation					
Objective 4: To validate an instrument to measure healthcare workers perceptions of person-centred teamwork in hospital units					
Design	Methods				
	Population	Sampling	Data collection	Data analysis	Rigour
Quantitative cross-sectional exploratory descriptive (Chapter 6)	Healthcare workers working in the hospital units	Purposive hospital sampling Total sampling	Self-administered instrument (paper based) using a Likert scale Online self-administered instrument (electronic link) using a Likert scale (Annexure E.3)	Descriptive statistics Testing dimensionality, validity and reliability	Statistician used Statistical reporting used

1.10 DEFINITIONS OF KEY TERMS

For the purposes of the study, the following key terms were used as defined below.

- **Health care worker:** A health care worker is any person involved with the care rendered to the person receiving care. It is not limited to professionals with formal training in the care of patients (Bartoszko et al., 2020).
- **Hospital unit:** A hospital unit is an area within a hospital that functions to deliver specific care to patients in accordance with the specialty of the unit. The unit delivers the care in a multi-disciplinary team approach, involving each patient admitted (Washington State Department of Health, 2020).
- **Person-centredness:** According to McCormack and McCance (2017:4) person-centredness is “an approach to practice established through the formation and fostering of healthful relationships between all care providers, service users and others significant to them in their lives. It is underpinned by values of respect for persons (personhood), individual right to self-determination, mutual respect and understanding. It is enabled by cultures of empowerment that foster continuous approaches to practice development”. This definition was adopted in this study.
- **Person-centred teamwork:** Person-centred teamwork is the daily practice by a team to implement and honour the consented beliefs and values of the team. It acknowledges that each member is an individual within the context of the team. It involves the integration of trust, respect, active listening and allowance for self-determination in the relationships with each other (McCormack & McCance, 2017; Sangaleti et al, 2017). This definition was adopted as a preliminary definition for the study and was refined throughout the study.
- **Teamwork:** Sangaleti, Schweitzer, Peduzzi et al (2017:5) define teamwork as “a daily practice triggered by users’ needs and involves integration, trust, respect, openness to collaboration, a feeling of belonging, humility, and time for listening and talking. It requires communication and sharing of work spaces to ensure frequent contact and frequent the appreciation and knowledge of different practices and professional roles, especially in complex cases, and shared leadership to deal with conflicts and tensions.” This definition was adopted for the purposes of this study.

- **Team:** A team is a group of health care workers of various categories that work together in the same unit. Their primary health goal is focused on the patient's outcome (ASQ, 2020). In this study, a team consisted of any health care worker that formed part of the team that worked in a hospital unit.

1.11 ETHICAL CONSIDERATIONS

Ethics deals with matters of right and wrong. Ethical nursing research is vital in gathering empirical evidence for improving practice (Grove, Gray & Burns 2015:94). When humans are used as study participants, care must be taken in ensuring that their rights are protected (Polit & Beck, 2021). Accordingly, the researcher obtained ethical approval and permission to conduct the study, obtained informed consent from the participants, and upheld the ethical principles of respect for human dignity, beneficence, and justice.

- **Permission**

The researcher obtained ethical approval and permission to conduct the study from the Faculty of Health Sciences Research Ethics Committee of the University of Pretoria (11/2021) (see Annexure A.1). Permission was also obtained from the Gauteng Department of Health and Steve Biko Academic Hospital (GP – 202209-052) (see Annexure A.2) and the Zuid-Afrikaans Hospital (see Annexure A.3).

- **Informed consent**

Informed consent holds that participants' participation in research is based on their full understanding of the study before it begins (Nieswiadomy & Bailey 2018:47). Participants must have adequate knowledge about the study to enable them to decide and freely choose to participate without the use of fraud, force, deceit, coercion and constraint (Gray et al 2017:187). The researcher distributed a participant information leaflet (see Annexure C.3 & D.3) to all participants. The leaflet informed the participants of the specifics of the study and what was expected of them. Participants signed consent forms and returned them to the researcher in phase 1 and 2 step 2. In phase 3, responding to the survey implied consent to participate. Participants were able to withdraw from the study at any time before the submission of their participation.

- **Beneficence**

The principle of beneficence maintains that researchers ensure minimal harm and ensure benefits to participants (Grove et al, 2015). The ethical focus of research should be to ensure benefit to individuals and groups involved (Polit & Beck, 2021). The principle of beneficence includes the freedom from harm and discomfort and the right to protection from exploitation. In this study there were no physical, social, emotional or psychological risks. A research benefit provides the potential of health-related, psychosocial or other value to participants or adds to the achievement of evidence-based knowledge (Gray et al, 2017). The researcher protected the participants' personal information throughout the study.

- **Respect for human dignity**

The principle of respect for human dignity holds that participants must be autonomous and have the ability to choose what will happen to them during the study (Nieswiadomy & Bailey, 2018). The researcher ensured the participants' autonomy by providing detailed information about the study prior to participation and allowing the participants to ask questions to enable them to decide (Polit & Beck, 2021). The participants were informed that participation was voluntary and that they could withdraw from the study at any stage should they wish to do so. The researcher treated all the participants with respect throughout the study.

- **Justice**

The principle of justice includes the right to fair treatment and the right to privacy (Gray et al, 2017). This principle requires that each person should be treated fairly. The participants' selection was fair as they were selected for reasons directly related to the problem being studied (Polit & Beck, 2021). The prevention of harm, maintaining confidentiality, ensuring informed consent, honesty and integrity and the right to withdraw from the study were all part of the ethical considerations included (Gray et al., 2017).

In this study during phase 1 step 1 and phase 2 step 1, there were no ethical considerations to be considered. The researcher ensured rigour of the method (see Chapter 2). In phase 1 and 2 step 2 and phase 3 step 1 and 2, the researcher upheld the principles of anonymity, autonomy, privacy and confidentiality.

The participants' anonymity and autonomy were assured in the Delphi studies through online participation (see Chapter 4 and 5). There was no coercion and their input was authentic. The participants had the choice of participating via electronic or paper-based format. The Delphi study was conducted electronically. Each participant received an e-mail with the relevant information to participate in the study.

The participants could then complete in their own time thus ensuring autonomy, confidentiality and privacy (see Chapter 2, 3, 4). During phase 3 (Chapter 6), the participants were given the instrument to complete. There were no identifying indicators of any of the participants. Each instrument had an information leaflet that explained the nature of the study and what was required of them during the study. The leaflet also informed participants that they could withdraw from the study at any time should they wish to do so. Participants had the option decide if they wanted to participate.

- **Privacy**

The participants' privacy was ensured as most participation was done via a digital platform. The participants in all the phases were able to participate once they felt comfortable in their own environment. In phase 3, the participants could complete the instrument either via electronic format or paper-based format.

- **Confidentiality**

The participants' confidentiality was assured as no personal details were provided. A participant's identity was not made known to the other participants during any of the phases of the study. To ensure anonymity of the data, only the researcher would know the identity of participants. This also addresses confidentiality of participants (Chapter 2). In phases 1 and 2 during the Delphi method, participants were given the option to reveal their identity for the purpose of recognition as being part of the study.

The researcher upheld the ethical principles and all the research procedures adhered to the professional, social and legal protection of the participants in each phase of the study (Brink, van der Walt & van Rensburg 2018:28). The application of confidentiality is discussed after each objective in Chapter 2.

1.12 CONCLUSION

This chapter described the background, purpose, and research design and methodology of the study, including the four phases with the various steps. The overall purpose of the study was to develop an instrument that measures person-centred teamwork. Chapter 2 discusses the research methodology of the study.

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CHAPTER 2

RESEARCH DESIGN AND METHODOLOGY

2.1 INTRODUCTION

Chapter 1 provided an overview of the study. This chapter discusses the research design and methods implemented to achieve the objectives of the study. The study was conducted in four phases, using a multi-method multi-design. Each objective is discussed in terms of the research design and methods used.

2.2 RESEARCH DESIGN

A research design is the framework that guides the researcher to achieve the planned objectives in a precise and controlled manner (Polit & Beck 2021:59; Burns, Grove & Gray 2013:195). The research design assists in preventing bias and promoting scientific implementation (Polit & Beck, 2021). In this study, the researcher utilized a multi-method multi-phased design.

A multi-method, multi-phased design is used when two or more research studies are implemented, each independent in relation to the others, to address the research objectives, using both qualitative and quantitative approaches (Mik-Meyer, 2020; Morse, 2010). Hunter and Brewer (2015:187) define multimethod research as “the practice of employing two or more different methods or styles of research within the same study or research program rather than confining the research to the use of a single method”. Multi-method research is based on triangulation that tries to find the integration of results under diverse approaches (Kasirye, 2021). Furthermore, the use of multiple phases allows for a systematic and scientific approach to reach the objective of the study (Kasirye, 2021; Mik-Meyer, 2020). The researcher used a multi-method multi-phased design to develop an instrument to measure healthcare providers’ perceptions of person-centred teamwork in a hospital unit.

2.3 AIM AND OBJECTIVES

To develop an instrument to measure person-centred teamwork in hospital units.

In order to achieve the aim, the objectives were aligned with the phases of the study:

- **Phase 1: Concept clarification**

Objective 1: To perform a concept analysis of person-centred teamwork.

Objective 2: To reach consensus on the definition and attributes of person-centred teamwork.

- **Phase 2: Item development**

Objective 3: To establish consensus on items to be included in an instrument to measure person-centred teamwork in a hospital setting.

- Sub-objective 3.1: To generate items for an instrument to measure person-centred teamwork.
- Sub-objective 3.2: To obtain consensus on items to measure person-centred teamwork.

- **Phases 3 and 4: Scale development and evaluation**

Objective 4: To validate an instrument to measure healthcare workers' perceptions of person-centred teamwork in hospital units.

The objectives of the study were aligned with the research phases, which were based on Boateng et al's (2018) framework as well as Walker and Avant's (1994) model of concept analysis. The concept analysis was added (Phase 1, Objective 1) to Boateng et al's (2018) model as the researcher was not aware of any clear consensus definition of the concept "person-centred teamwork". In order to define a concept, all the aspects of the concept should be known. Therefore, the researcher opted to add a concept analysis before embarking on the consensus strategy to develop an instrument. By inserting the concept analysis before embarking on the consensus strategy according to Boateng et al (2018), the researcher added methodological

depth to the study. The four phases were concept clarification; item development; scale development, and scale evaluation (see Figure 2.1).

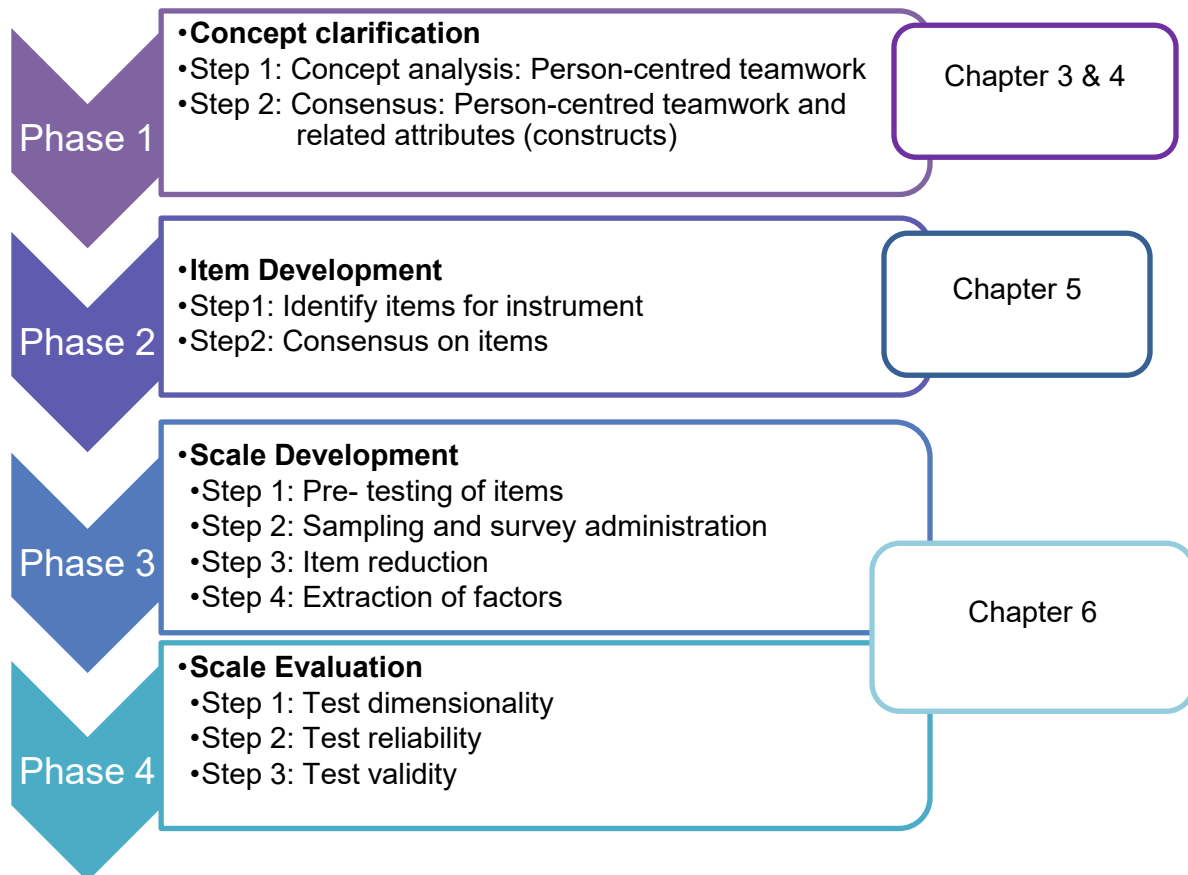


Figure 2.1 Summary of the research phases

PHASE 1: CONCEPT CLARIFICATION

2.4 OBJECTIVE 1: CONCEPT ANALYSIS

Objective 1: To perform a concept analysis of person-centred teamwork

Concepts are building blocks for theory development. Concepts are dynamic and have the ability to change over time, with different groups and in different contexts (Walker & Avant 2019:168).

The use of a concept analysis allows for accurate study and defining of a concept. Understanding and defining a concept improves the theory constructed. The formal, linguistic exercise of the concept analysis is used to determine the defining attributes (constructs) of a concept, thus enhancing understanding thereof (Walker & Avant 2019:168).

Defining a concept and understanding the constructs it consists of helps to reduce any vagueness of the concept so as to avoid the inaccurate use of the concept in theory and research (Liu et al, 2020; Podsakoff et al, 2016). The examination of a concept's basic elements allows for the breakdown of the concept into its different parts and each one can be studied and measured (Liu et al, 2020; Podsakoff et al, 2016) for a specific context (Walker & Avant 2019:169), which in this case was hospital units.

2.4.1 Research methods

The researcher used Walker and Avant's (1994) model of concept analysis, which includes eight steps: (1) selecting a concept; (2) determining the aim of analysis; (3) identifying all possible uses of the concept in nursing; (4) determining concept defining attributes; (5) identifying a model case; (6) identifying a borderline and a negative case; (7) identifying antecedents and consequences of the concept, and (8) defining empirical referents of the concept (see Chapter 3).

Walker and Avant's model is a modified version of Wilson's (1970) model. Wilson (1970) had eleven steps, which Walker and Avant (1994) condensed to eight. The eight steps are indicated as following on each other, when in reality there is an iterative process of adapting a prior step due to a current discovery in another step (Walker & Avant 2019:170). Using this process allowed the deconstruction of concepts that overlapped. Deconstructing the concepts 'person-centredness' and 'teamwork' enabled the researcher to clearly understand the single operational definition (Walker & Avant 2019:170) of person-centred teamwork (see Chapter 3).

2.4.1.1 Data sources

An extensive literature search was conducted in consultation with an academic information specialist. The following keywords were included: “person-centred care”, “patient-centred care” “holistic care”, “relationship-centred care or individualised care”, “teamwork” and “hospital or acute setting or inpatient or ward”. The Boolean operators ‘AND’ and ‘OR’ were used to combine search keywords. The information specialist searched two databases EbscoHost and Scopus and Google Scholar, a Web Search engine. Peer reviewed full text articles published between 2001 and 2021 in English were included. The time limiter was set at 2001 as that was when person-centredness evolution originated (Nolte et al, 2020). The researcher excluded non-primary research, grey literature, reviews, editorials, commentaries, letters to editors and conference proceedings. The reference lists of retrieved articles were scanned for additional resources. The records were exported to EndNote 20 Reference Management software and then imported to Rayyan Systematic Reviews software (N = 1210). A review team consisting of the researcher and her supervisor, co-supervisor and a consultant.

On Rayyan, the researcher removed 173 duplicates prior to screening. The researcher and her supervisor independently scanned the remaining titles and abstracts and removed irrelevant titles and reasons such as wrong outcomes for suitability and relevance, guided by the inclusion and exclusion criteria. Only articles that mentioned person-centred care/person-centredness and/or teamwork in the title and abstract were selected. After unblinding the individual decisions, consensus was reached to include 62 articles. Full text articles were then screened in a similar way. The review team reached consensus on including 40 articles in the concept analysis. Figure 3.1 in chapter 3 is a diagrammatic representation of the PRIMSA flow chart (Page et al, 2020) (see Annexure C.1), which shows the identification and selection of the relevant articles.

2.4.2 Data analysis

Data was extracted by means of a data spreadsheet, comprising person-centredness and teamwork. Using content analysis, the researcher scrutinized the data, coded the attributes, antecedents and consequences of the two concepts ‘person-centredness’ and ‘teamwork’, and then combined similar items with the same meaning. The spreadsheet was shared with the

supervisors and discrepancies were discussed, refined and consensus reached on the final attributes, antecedents and consequences of the concept 'person-centred teamwork' during four online sessions. An iterative process was followed. During a fifth online discussion, the research team concluded the final definition of person-centred teamwork and related attributes, antecedents and consequences.

2.4.2.1 Rigour

The researcher followed Walker and Avant's (1994) eight-step model of concept analysis rigorously, as it provides a clear and systematic method (Al-Monteri, 2020). The researcher accurately recorded every step and the consequent findings, which is the first step towards creating data credibility and enhancing the trustworthiness of the data. Collaborating with an academic information specialist to assist with the search for relevant research records further enhanced the trustworthiness. The PRISMA checklist (see Annexure C.1) was used as guideline for accurate reporting of the literature during the concept analysis.

The newly generated operational definition and related constructs (attributes) were the foundation for Objective 2, where international consensus was reached. The concept analysis, although foundational to the rest of the study, was complimented by the e-Delphi study done. The use of international panel of experts ensure that the definition and attributes were not oversimplified by the process of Walker and Avant's (1994) concept analysis method.

2.4.3 Limitations

The articles referred to in this study were conducted in healthcare settings. Person-centred teamwork may present differently in other industries and settings. The analyses of the concept did not address the measurement of person-centred teamwork. Only articles that were written and published in English were used and may have led to loss of information written in other languages.

2.5 OBJECTIVE 2: CONSENSUS ON PERSON-CENTRED TEAMWORK

Objective 2: To reach consensus on the definition and attributes of person-centred teamwork

2.5.1 Research design

A consensus design allowed the researcher to collaborate with experts who shared their experience and wisdom to refine and reach consensus on the concept (Nasa et al, 2021; Fink-Hafner et al, 2019; Ogbeifun et al, 2016). These ideas are privately formed and suggested anonymously to the group as a whole (Nienamber& Spranger, 2020; Waggoner et al, 2016), which in this case was expert consensus on the concept 'person-centred teamwork'. A consensus design was utilized as it allows a group of diverse opinion and experience to be presented as a single representable opinion (Shinners et al, 2021). The iterative process in consensus design allows for a well- thought through concept to be developed. The expertise of the experts consulted made diverse and rich data available to the researcher (Shinners et al, 2021; Fink-Hafner et al, 2019).

2.5.2 Research methods

Research methods refers to organized approaches, procedures or tools used for gathering and analysing data used in a specific research application (Martinez-Vargas et al, 2021; Polit & Beck, 2021; MacKenzie & Knipe, 2006). Figure 2.2 summarizes the e-Delphi process.

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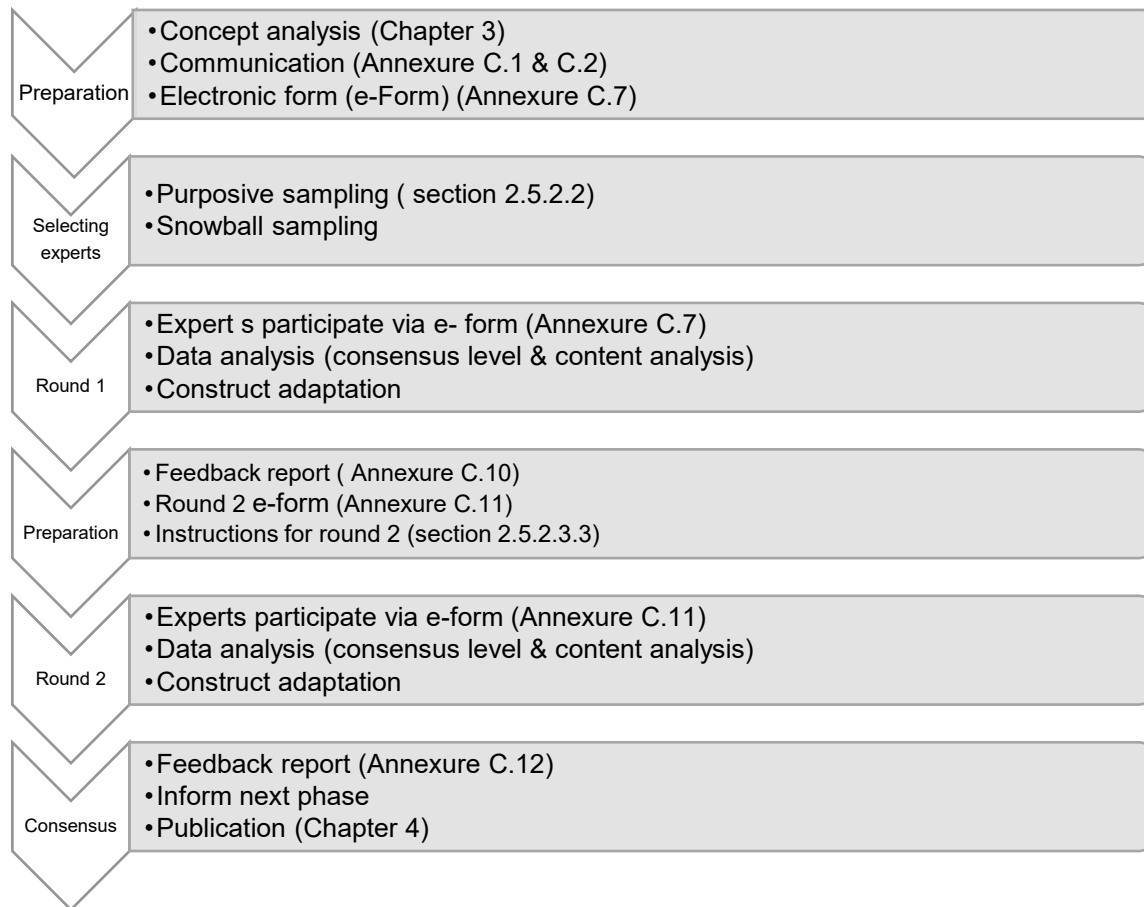


Figure 2.2 Summary of e-Delphi process

The research methods for Objective 2 are discussed in terms of population, sampling, data collection and data analysis.

2.5.2.1 Population

A population is the group of interest that meets the inclusion criteria to take part in the research (Polit & Beck, 2021). The population included experts on person-centredness and/or teamwork.

The use of the term ‘expert’ has been controversial as it is difficult to quantify the level of expertise the expert has (Nasa et al, 2021; Waggoner et al, 2016; Trevelyan & Robinson, 2015). An expert

can be defined as someone with knowledge and experience on specific subject matter; however, it is practically difficult to quantify the measure of 'experience' (Nasa et al, 2021; Niederberger & Spranger, 2020). Despite the controversy, the term 'expert' is used in research (Nasa et al, 2021; Fink-Hafner et al, 2019; McPherson et al, 2018; Waggoner et al, 2016; Trevelyan & Robinson, 2015). The term 'expert' requires preset, clear and precise criteria to be used for the selection of the expert panel (Nasa et al, 2021; Niederberger & Spranger, 2020; Fink-Hafner et al, 2019).

In this study, the inclusion criteria for the expert panel were English-speaking national (South Africa) and international experts with a specific interest in person-centredness and/or teamwork, as evidenced by

- recognised authority through evidence of publications in peer-reviewed journals on person-centredness and/or teamwork, or
- clinical and/or academic expertise in the field of person-centredness and/or teamwork.

2.5.2.2 Sampling

Purposive and snowball sampling were used. Purposive sampling is a form of non-probability sampling where the sample is relatively small and specialized (Polit & Beck, 2021), based on a group of individuals with a specific knowledge set willing to participate (Polit & Beck, 2021). Purposive sampling, also referred to as criterion sampling (Polit and Beck, 2021), was used to identify experts that met the inclusion criteria (see Section 2.5.2.1).

The researcher identified 13 potential experts who met the inclusion criteria from peer reviewed articles. Once identified, a formal invitation letter (see Annexure C.2) was e-mailed to the experts (see Annexure C.1) to ask if they were interested and willing to participate. Once the experts indicated their willingness to participate, their willingness to share their practice wisdom was appreciated and a participant information leaflet and informed consent document (see Annexure C.3) and a demographic information questionnaire (see Annexure C.4) were e-mailed. The experts were also asked if they could assist in identifying additional experts who met the inclusion criteria (snowball sampling) that could be valuable contributors to the expert panel. Snowball sampling is popular in qualitative studies where there is a need for specific participants (Parker et al, 2019; Etikan et al, 2016). Snowball sampling allowed the experts to use their social contacts to identify additional experts to participate, which allowed the researcher to access a larger

sample that would otherwise have been 'hidden' (Polit & Beck, 2021; Etikan et al, 2016). Through snowball sampling an additional six (n=6) experts were identified and invited to participate.

One expert indicated that she was retired and not currently involved in research and therefore opted not to participate. The other six (n=5) experts did not indicate a reason for choosing not to participate. A total sample of 12 experts volunteered to participate. In Round 1, 12 experts participated and in Round 2, 11 participated. The rationale for attrition was unknown. In the Delphi technique there is no suggested minimum number for sample size, but eight or more participants are preferred (Belton et al, 2019; Humphrey-Murto et al, 2016). The researcher therefore regarded the sample size (12) as sufficient.

2.5.2.3 Data collection

Various data-collection techniques can be used to obtain consensus in research (Spranger et al, 2022; Ogbeifun et al, 2016; Trevelyan & Robinson, 2015). The Delphi technique is one of the methods (Fink-Hafner et al, 2019; McPherson et al, 2018; Jünger et al, 2017). The Delphi technique is an iterative process used to engage experts on a topic and allow them to give input and reach consensus in a controlled manner (Nienamber & Spranger, 2020; Jünger et al, 2017) and often used in healthcare (Spranger et al, 2022; Nienamber & Spranger, 2020; Fink-Hafner et al, 2019; Jünger et al, 2017), where the experts are from different countries and thus allows for more enriched and diverse input (Nasa et al, 2021; Fink-Hafner et al, 2019). In this study, an electronic-Delphi (e-Delphi) technique was used to collect data.

2.5.2.3.1 Advantages of e-Delphi

The rationale for selecting an e-Delphi was based on its advantages. The researcher considered the advantages of using an e-Delphi when selecting an appropriate data- collection technique. The use of an e-Delphi allowed for the selection of an international panel of experts from different geographical areas to participate (Niederberger & Spranger, 2020; McPherson et al, 2018). The e-Delphi reduced direct confrontation between participating experts that might intimidate some participants. The experts were not in close proximity to each other and were thus able to

participate from their own environment. Due to the anonymity established by the technique, the experts were able to take part without the pressure of having to conform to the most dominant opinion (Nasa et al, 2021; Fink-Hafner et al, 2019; Trevelyan & Robinson, 2015). The experts were not aware of who the other participating experts were and could participate without hesitancy or intimidation. This allowed each expert to be creative, honest and give input based on their expertise relating to person-centred teamwork (Fink-Hafner et al, 2019; Waggoner et al, 2016). In addition, the e-Delphi is a cost- and time-saving strategy (Fink-Hafner et al, 2019; Waggoner et al, 2016). Time is further saved as the experts are given a timeline of two weeks per round to give their feedback (Nienamber & Spranger, 2020; Jünger et al, 2017), which suits their own convenience schedule (Nasa et al, 2021; Fink-Hafner et al, 2019). The e-Delphi also created the ability to enrich the individual experts' knowledge related to the concept 'person-centred teamwork' and related constructs. Moreover, the experts were able to view their own contribution in view of the whole group, which allowed for expansion and growth of their knowledge and views of the constructs as well as to change or adapt their response with each round (Nienamber & Spranger, 2020; Fink-Hafner et al, 2019; Jünger et al, 2017; Ogbeifun et al, 2016). The adaptation or change allowed for consensus by the participant group experts (Fink-Hafner et al, 2019; Ogbeifun et al, 2016) on the concept 'person-centred teamwork' and related constructs. The individual consensus on the contributions made by the group, in turn, assisted in the acceptance of the contribution made by the group as a whole (Ogbeifun et al, 2016). Each expert responded individually, with no group interference or noise that led to distractions (Nasa et al, 2021; Fink-Hafner et al, 2019). The use of the e-Delphi afforded the researcher control over the responses to collate and incorporate the suggested changes swiftly in order to initiate the next round.

2.5.2.3.2 Disadvantages of e-Delphi

The researcher found disadvantages in using an e-Delphi described in the literature reviewed. The researcher took the disadvantages into consideration and addressed each one to increase the rigour of the study. Table 2.1 summarises the disadvantages and how they were overcome.

Table 2.1 Disadvantages of an e-Delphi and interventions implemented to overcome them

Disadvantages	Interventions implemented
Lack of guidance and agreed standards	CREDES was used to guide conducting and reporting on the e- Delphi (see Annexure C.5) (Nienamber & Spranger, 2020; Fink-Hafner et al., 2019)
Anonymity challenges	An e-Delphi eliminates the anonymity challenges as it allows anonymous participation on line (see Section 3.5.4) (Nienamber & Spranger, 2020; Fink-Hafner et al., 2019)
Difficulty of generalizing	The expert panel was selected from seven countries, four different professions within the multi-disciplinary team, and a vast level of expertise on the concept, which should enhance generalisability.
Attrition rate between rounds	<p>Selecting experts that have an interest in person-centredness and/or teamwork (see Section 2.5.2.1); experts received detailed information on expectations and timelines (see Chapter 4; Annexure C.6); follow-up reminders were sent weekly to encourage participation (see Chapter 4)</p> <p><i>Outcome:</i> The attrition rate was 8% (see Chapter 4), which is acceptable, as some studies reported attrition rates as high as 44% (Tyler et al., 2023; Stokes-Parish et al., 2019; Ogbeifun et al., 2016).</p>

Sources: Nasa et al, 2021; Nienamber & Spranger, 2020; Fink-Hafner et al, 2019; McPherson et al, 2018.

2.5.2.3.3 Conducting the e-Delphi rounds

The e-Delphi technique consisted of three rounds, during which the researcher made use of an online platform (Google Forms) to engage with the participants during data collection. The timeframe for data collection was between 27 April 2022 and 7 June 2022. Google Forms is a free online platform that allowed the researcher to construct a participation form with relevant questions and/or information (Person-centred teamwork, Google Form, 27 April 2022- 26 May 2022). Participants who consented to participate in the study received an e-mail (see Annexure C.6) that elaborated on the process to be followed.

In Round 1, the operational definition of the concept 'person-centred teamwork' and related attributes derived from the concept analysis (see Chapter 3; Section 2.4) were used as baseline and populated into a Google Form (see Annexure C.7). The operational definition of 'person-centred teamwork' was:

Person-centred teamwork is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes.

The four attributes were:

Recognizing the uniqueness of the individual, relationship orientated, inclusivity, synergy

An e-mail (see Annexure C.6) was sent to each expert individually, which included a literature summary of the findings from the concept analysis (see Annexure C.8) as well as the link to the Google Form. The instructions to the experts were:

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Read through the background literature on the attributes and definition of 'person centred teamwork' to understand how the attributes were identified and the concept defined.

Click on link to access Google Forms and follow the instructions.

The timeframe for participating in round one is two weeks (27 April 2022- 16 May 2022).

A reminder e-mail will be sent once a week as well as two days before the deadline.

Once the experts clicked on the link, they were taken to an online platform. The platform listed the four attributes individually. The experts had to indicate their level of agreement with the attribute on the Likert scale provided. Below the Likert score, the experts had to explain their rating of the attribute (see Annexure C.7). This was done with each of the four attributes and the definition.

Responses were exported to Excel® for data analysis. Once the data analysis was completed for Round one (see Chapter 4), the results from Round one, informed Round two. As consensus had been reached on the attributes of person-centred teamwork during Round one, only consensus on the definition was required. The adapted definition was:

Person-centred teamwork is a dynamic approach where the team, including the healthcare professionals, patients and their significant others, develop trust and connectedness to meet the healthcare needs of the patient. Embedded in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes through reflexivity in practice.

An e-mail (see Annexure C.9) was sent to each individual expert, which included a feedback document (see Annexure C.10), which provided the verbatim responses to the attributes and definition, including the level of consensus for each item. The new adapted definition of 'person-centred teamwork' was included. The experts were informed that consensus was reached for the attributes, thus requiring them to now focus on the definition only. An e-mail (see Annexure C.9), including the link to an adapted Google Form (Person-centred teamwork, Google Form, 26 May 2022- 13 June 2022) (see Annexure C.11) as well as clear instructions, was sent to each expert individually:

Read through the feedback document

Click on link to access Google Forms and follow the instructions

The timeframe for feedback is two weeks (26 May 2022- 7 June 2022)

A reminder e-mail will be sent once a week as well as two days before the deadline

The Likert scale used remained unchanged, which was a five-point Likert scale. The scoring ranged from fully disagree to fully agree. Round two of the Delphi technique was conducted after the data analysis of round one was completed and the adjustments made. Once the data analysis was done, the researcher prepared a feedback document on Round one (see Annexure C.10). The document indicated the verbatim responses of the experts, the level of agreement in the group per attribute and the definition. The researcher's adjustments based on the responses were also reflected.

The researcher then created a new Google Form for Round two (see Annexure C.11). Then the Feedback document and the instructions for Round two were emailed to the experts (see Annexure C.9). The researcher followed the same timeline process as with Round one. The experts had two weeks to complete Round two. A reminder was sent at seven days and again two days before the due date. There were two rounds of data collection during the Delphi technique. Consensus was reached after round two. The researcher compiled a feedback document (see Annexure C.12) and sent a final email (see Annexure C.13) with the feedback to the panel of experts. The definition and attributes on which consensus was reached, assisted the next phase in the study, namely item development and then the second Delphi for consensus on the items.

2.5.2.3.4 Data analysis

Data analysis of an e-Delphi occurs simultaneously with data collection (Heuzenroeder et al, 2022). As the data was collected during the iterations (rounds), it was analyzed and therefore fed the next round of data collection. The researcher then combined the responses into a summary, adapted the construct according to the content analysis, and gave feedback to the group (Belton et al, 2019; Fink-Hafner et al, 2019; Ogbeifun et al, 2016). Most of the changes or adaptations to the constructs took place during Round one. In the second round, there was minor sentence

construction and wording adaptation (Niederberger & Spranger, 2020; Fink-Hafner et al, 2019; McPherson et al, 2018; Ogbeifun et al, 2016). The e-Delphi had quantitative and qualitative data for analysis.

2.5.2.3.4.1 Quantitative analysis

Descriptive statistics were used for the quantitative data analysis. Each participant's demographic information was analysed to confirm suitability to participate and assist with the rigour needed. The item-content validity index (I-CVI) was used to calculate the consensus on each attribute and the definition. The level of consensus can be set at a minimum of 70% (I-CVI > 0.7) or more (Belton et al, 2019; Heuzenroeder et al, 2022; Hong et al, 2019). We agreed that the level of consensus should be $\geq 75\%$ (I-CVI > 0.75) (Niederberger et al, 2021). We calculated the level of consensus by summing the Likert scores for 'disagree' and 'fully disagree' and 'agree' and 'fully agree' (Veugelers et al, 2020).

These statistics informed the level of consensus reached in the process (Trevelyan & Robinson, 2015). The participants completed a 5-point Likert scale to indicate their level of agreement with the four attributes and the definition of person-centred teamwork. Each attribute and the definition were verified by the participants and their level of agreement indicated. Agreement was determined by adding 'fully disagree' and 'disagree' together and 'fully agree' and 'agree'. The neutral option was seen as disagreement (Veugelers et al, 2020). The results were then used to indicate the level of agreement. The percentage of the level of agreement was then indicated on the feedback document to the participants (see Annexure C.12).

2.5.2.3.4.2 Qualitative data analysis

Content analysis was used. The participants were given the opportunity after each question and completion of the Likert scale to contribute to the attributes and definition by elaborating on their level of agreement. The elaboration allowed the experts to give their input related to their level of

experience on the attributes and definition. The experts could rephrase or restructure the constructs. The data was then collated and content analysis done on each response and cross-referenced to other responses and the initial literature findings (Veugelers et al, 2020). Qualitative content analysis was done. An inductive approach was used on the free text to identify similarities between the comments made by the experts. This was done in the first and second round. We then discussed and adapted the definition, before feedback was given to the expert panel. The data analysis for the three rounds was as follows:

Round 1: During the data analysis of Round 1, the first analysis was to calculate the level of agreement. The level of agreement was determined by adding the scores of 'fully disagree' and 'disagree' together and then adding the 'fully agree' and 'agree' scores together. The neutral option was added to the negative agreement (Veugelers et al, 2020). The level of agreement was displayed in the feedback document in a table (see Annexure C10). This was done for the four attributes and the definition. After the percentage analysis, we did content analysis. The content analysis for the attributes was done with no direct input, as there was consensus on all four attributes. We analysed for any major negative concerns in the content. The content analysis of the definition was done by analysing the data for specific themes that were suggested. The researcher also analysed the data in relation to the literature and definition at hand. Based on the analysis, the researcher adapted the definition. The adapted definition was then given to the supervisor for evaluation and input on the changes made. Once we agreed on the changes to the definition, the second round was initiated.

Round 2: The data analysis of Round 2 was only on the definition. The same data analysis method was followed as in Round 1. The percentage level of agreement was determined. Content analysis was done. Frequency of themes or suggested changes was analysed. Suggested changes were evaluated within the context of the literature and adapted definition. Based on the analysis, the researcher adapted the definition. The adapted definition was then given to researcher's supervisor for evaluation and input on the changes made. Once we agreed on the changes to the definition, the second round was initiated.

Round 3: No additional inputs were received from the experts; thus, no data was analysed as consensus had been reached.

2.5.3 Rigour

The researcher ensured rigour in the e-Delphi study by following the recommendations for conducting and reporting Delphi studies (CREDES), the only guidelines available (Jünger et al, 2017). The use of the CREDES guidelines thus promoted rigour in implementing the e-Delphi (see Annexure C 5).

2.5.3.1 Justification

The researcher used the Delphi technique to obtain consensus on the concept person-centred teamwork. The Delphi technique allowed the researcher to consult experts in the field of person-centredness and/or teamwork, to give input and determine consensus on the concept of person-centred teamwork (Jünger et al, 2017). Consulting the experts in an iterative manner over a six-week period enabled them to reach consensus on the concept of person-centred teamwork (Veugelers et al, 2020; Jünger et al, 2017). The Delphi technique values the expertise of experts in the field therefore the researcher utilized the twelve selected experts to add value to the content obtained (Jünger et al, 2017). The concept of person-centred teamwork has not been well explored or developed and the e-Delphi technique made use of international expert consultation to obtain consensus on the concept (Veugelers et al, 2020; Jünger et al, 2017). Making use of international experts added to the transferability of the data since it was not limited to one country or experience from one setting.

2.5.3.2 Planning and design

The Delphi technique was selected as a methodology during the early planning of the study due to the access it gave to international experts. Consensus on a definition of person-centred teamwork was sought and the e-Delphi assisted the researcher to have the input of international experts (Fink-Hafner et al, 2019). The e-Delphi was the most timely and cost-effective way to obtain the consensus needed (Nasa et al, 2021; Jünger et al, 2017). The e-Delphi allowed for international experts to participate and give valuable input on the definition of person-centred

teamwork, without having to undergo the cost and time of acquiring the presence of the experts in a single venue (Veugelers et al, 2020; Fink-Hafner et al, 2019). The researcher acquired the definition and attributes through a concept analysis of the term 'person-centred teamwork' (see Section 2.4). Once the attributes and definition had been determined, the researcher developed the documentation that presented the concept to the panel of experts. The researcher prepared a summary of the literature (see Annexure C.8) and developed the participant information letter, including the written consent form for the expert panel (see Annexure C.3). The researcher obtained consultation into the use of the electronic format, Google Forms. The consultation assisted the researcher to set up the e-Delphi in a logical and consistent way. The e-Delphi was designed by the researcher and then tested with the assistance of the other researchers. The other researchers commented on the accessibility, functionality and layout of the content in the Google Forms format. Once the necessary modifications were made, the researcher drafted the communication email to the experts to participate (see Annexure C.1). The experts were also informed what consensus was within the study. Consensus was accepted as 75% agreement on the construct or definition. Several studies accept consensus at 70% (Veugelers et al, 2020; Jünger et al, 2017). In this study, the conformability of the data was found in the consensus that exceeded the researcher's pre-set 75%. The level of consensus indicated that the results were not influenced by researcher bias.

2.5.3.3 Study conduct

All the information received by the panel of experts was carefully drafted and reviewed by the researchers. In order to maintain anonymity, the experts received an email with all the information (see Annexure C.1) individually. The experts participated without awareness of who the other panel members were. This was done to ensure anonymity and prevent intimidation or conflict between the panel members (Nasa et al, 2021; Fink-Hafner et al, 2019). The responses were collated, analysed and constructs adapted before being sent back to the panel. The anonymity of the participants contributed to the credibility of the study (Varkey, 2021; Polit & Beck, 2020). The research team had no bias towards the panel, as most of the members were unknown and there was limited interaction between the researcher and the panel (Jünger et al, 2017). The researcher removed all identifying indicators before analysing and interpreting the experts' responses. The researcher was aware that consensus agreement did not indicate a level of correctness of the

constructs, but rather an interpretive agreement. At the same time, the researcher saw disagreements as insights that were informative to the construct. Disagreements allowed the researcher to further develop the construct in the light of the experts' insights (Jünger et al, 2017).

2.5.3.4 Reporting

Sections 3.5.1 and 3.5.2 of chapter 3 indicate the methodological decisions taken throughout the e-Delphi process. The reporting on the e-Delphi process was done in a clear and concise manner and included the description of the expert panel, the selection of the panel and attrition rate of the panel (see Chapter 4). The relevant annexures contain and indicate all communication with the expert panel, the achievement of consensus, and feedback after each round. See section 2.5.5 for the limitations of the study and chapter 7 for the conclusion. The results are presented in two phases. First, the results of Round 1 of the e-Delphi guided the items developed for Round 2. Secondly, the results will be published as an article in a reputable journal.

2.5.4 Limitations

The e-Delphi has various limitations that were overcome as discussed in Section 2.5.2.3, Table 2.1. The limitation identified during the e-Delphi was that the researcher did not have an opportunity to clarify misunderstandings with the participants regarding concepts, although she did send an e-mail to all to state that they could contact her if there was any misunderstanding.

2.5.5 Ethical considerations

Ethical nursing research is vital in gathering empirical evidence for improving practice (Grove, Gray & Burns 2015:94). Ethical principles are considerations that guide the conduct of the research (Varkey, 2021). Accordingly, the researcher obtained informed consent from the participants, and upheld the ethical principles of respect for human dignity (autonomy), anonymity, and confidentiality.

- **Autonomy**

The principle of respect for human dignity holds that participants must be autonomous, and have knowledge and understanding of the research study and its consequences. Informed consent forms part of participants' autonomy and choice to participate (Clark-Gordon et al, 2019; Kamanzi & Romania, 2019). The participants received a participant information letter, which included an introduction to the researcher, explained the purpose of the study, and the requirements for participation and informed consent (see Annexure C.3). The participants emailed the signed informed consent form to the researcher and the researcher co-signed it. The participants' informed consent was obtained and their autonomy upheld.

- **Anonymity**

The researcher assured the participants of confidentiality and anonymity by keeping their identity unknown to all involved in the study (Varkey, 2021; Clark-Gordon et al, 2019). On-line anonymity has two points of consideration, namely social anonymity and web/online anonymity (Clark-Gordon et al, 2019). Social anonymity refers to keeping the individual participants unknown in direct social interactions with the others. Web/ online anonymity, which refers to the actual IP address, was not relevant to the study (Clark-Gordon et al, 2019). The participants received communication via individual emails. This ensured that they did not know the other participants. Once participants had participated, their responses to the questions were anonymized by having all personal details removed before being sent back to the participants (Nasa et al, 2021; Fink-Hafner et al, 2019). The participants were asked to consent to their names being published as contributors to the development of the definition. All the participants consented to being acknowledged as contributors to the development of the definition.

- **Confidentiality**

Confidentiality refers to keeping information hidden or contributors' unknown (Kamanzi & Romania, 2019). Confidentiality in the study was self-assured by the participants and the method

of data collection. Before consenting to participate, the participants were informed that the information provided would be used to develop and obtain consensus on the concepts (see Annexure C.2). Due to anonymity, participant contributions remained confidential (Clark-Gordon et al, 2019). The e-Delphi allowed the participants to participate from the comfort of their own environment. There was no face-to-face contact and this eliminated the potential of conflict, intimidation or bias towards other participants (Fink-Hafner et al, 2019).

PHASE 2: ITEM DEVELOPMENT

2.6 OBJECTIVE 3: ITEM DEVELOPMENT

Objective 3: To establish consensus on items to be included in an instrument to measure person-centred teamwork in a hospital setting.

Objective 3 was sub-divided into two sub-objectives:

Sub-objective 3.1: To identify the construct(s) and generate items for an instrument to measure person-centred teamwork.

Sub-objective 3.2: To obtain consensus on the constructs, items and rubric to measure person-centred teamwork.

2.6.1 Sub-objective 3.1: Generating items

A methodological literature review was conducted to plan and implement findings from studies to achieve the objective of generating items (Polit & Beck 2021:268). The methodological literature review assisted the researcher to obtain items that measured person-centred teamwork as a concept. Methodological literature research is powerful in delivering sound evidence for a rigorous instrument (Jordaan, 2020; Polit & Beck 2021: 223; LoBiondo-Wood & Haber, 2010:207). The

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researcher started with a clear construct to measure, leading to systematic development and evaluation. The concept 'person-centred teamwork' was defined through concept analysis (see Section 2.4.1) and consensus on the definition and attributes through an e-Delphi study (see Section 2.5) before other steps followed. The definition of 'person-centred teamwork' provided a working theory of the study phenomenon, easing the process of item generation and content validation. The methodological literature search enabled the researcher to generate the items for the instrument to measure person-centred teamwork. In a methodological literature search, specific content is searched and examined to reach a set objective. In this study, the objective was to obtain items to measure person-centred teamwork.

The literature search was done in collaboration with an information specialist, who searched all databases available with a time limiter set at 2011.

The information specialist searched for instruments or tools used to measure person-centredness and/or teamwork, using the following search terms:

- Person-centredness
- Teamwork
- Inter-professional collaboration

Related to:

- Tool/ instrument/guideline/survey or questionnaire

The search criteria included

- Data from the last 10 years (2011 to 2021)
- Journal articles, comparative studies, evaluation studies, practice guidelines and reviews, and systematic reviews.

The reports identified were uploaded to Rayyan®, a web-tool designed to help researchers working on systematic reviews, scoping reviews and other knowledge synthesis projects, by speeding up the process of screening and selecting studies. The researcher and one of the supervisors reviewed the titles and abstracts of the reports to decide whether to include a report or not. The title needed to be related to person-centredness and/or teamwork or inter-professional

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collaboration and needed to indicate the presence or use or refer to a tool/ instrument/ guideline/ survey or questionnaire. The researcher and supervisor then individually read the titles and indicated in the web-based tool whether they agreed/disagreed with the inclusion of the article. Once they had completed their individual analysis, they then viewed their level of agreement and conflicts. The conflicts were discussed and a decision made on whether to include the article or not. Once agreement had been reached on article inclusion, the primary researcher read through the abstracts of each article.

Based on the abstract analysis, the articles were further reduced with the following reasons given:

- Being irrelevant to the construct person-centred teamwork
- Not having or referring to a tool/ instrument/ guideline/survey or questionnaire
- Wrong outcome
- Absence of an abstract.

Articles were also screened for referral to other articles that indicated the presence of a tool/instrument/guideline/survey or questionnaire to measure the constructs. The primary researcher then obtained and read articles that remained. The tool/instrument/ guideline/survey or questionnaire items were then collated into a document. The items were analysed and all doubles removed. Then the items were analysed by the both researchers for items that were similar in nature. This was done by means of an online discussion between the researcher and her supervisor. Once all the doubles and items with similarities were sorted, the items were sorted again under the four attributes of person-centred teamwork. The items were then further reduced by indicating the sub-constructs under each attribute. This revealed further similarities between items. This process of eliminating doubles and similar items was done five times. Once the item reduction was considered complete, the items were then rephrased and sentence construction adapted to fit the new instrument question. The rephrasing and sentence construction was repeated three times.

Once the items were deemed sorted by the researcher and her supervisor, an online discussion was conducted between the research team. The four members agreed that the items were to be used in the Delphi study to obtain consensus on the items (see Section 2.5.1).

2.6.1.1 Rigour

The use of Rayyan to identify the relevant instruments which could assist in item generation enhanced rigour. Rayyan uses a blinded method in which initially the two researchers could not view the other's decision on the relevancy of an article. This ensured that the researcher and supervisor were not biased and could function autonomously. Rayyan indicated the articles agreed upon and disagreed. The reports on which there was disagreement were discussed online again which ensured that the final articles with items were thoroughly scanned and agreed upon. Once all the items were identified and obtained, all doubles irrelevant to context were removed and the number of items reduced. Finally, the researcher adapted and refined the sentence structure of the items.

2.6.1.2 Limitation

The limitation in this step was that only instruments published in English were used, which may have excluded instruments and related items published in other languages.

2.6.2 Sub-objective 3.2: Consensus on items

The research design and methods used to reach consensus on the items are discussed next.

2.6.2.1 Research design

A consensus design similar to that in Section 2.5 was used.

2.6.2.2 Research methods

The research methods are discussed in terms of population, sampling, data collection and data analysis.

2.6.2.2.1 Population

The population consisted of experts with a specific interest in person-centredness and/or teamwork. The inclusion criteria were (1) English-speaking national (South Africa) and international experts with a specific interest in person-centredness and/or teamwork, as evidenced by (2) recognised authority through evidence of publications in peer-reviewed journals on person-centredness and/or teamwork, or (3) clinical and/or academic expertise in the field of person-centredness and/or teamwork, and (4) experience in instrument development, and/or (5) have published in peer reviewed journals on instrument development.

2.6.2.2.2 Sampling

Purposive and snowball sampling were used (see Section 2.5.2). The researcher invited seven of the participants who were involved in the e-Delphi study to reach consensus on the definition of person-centred teamwork and related constructs (see Section 2.5). Three participants volunteered to participate. A further nine participants, identified through snowball sampling as potential experts who met the inclusion criteria, were invited, of which six accepted the invitation. Once identified, the experts were e-mailed a formal invitation letter (see Annexures D.3 and D.4) and formally asked to sign the informed consent document (see Annexure D.5) if they were interested and willing to participate and complete the demographic information questionnaire (see Annexure D.6).

2.6.2.2.3 Data collection

Data was collected by means of an e-Delphi technique, using an online platform (Google Forms) to engage with the participants during data collection (see Annexure D.7). The timeframe for data collection was between 25 October 2022 and 10 December 2022. The participants were e-mailed the consensus definition and related constructs of person-centred teamwork (see Section 2.5) as well as instructions (see Annexure D.8).

The form was then populated with the 43 items indicated in Section 2.6 to be validated and consensus obtained on each item. Each item was listed under the criterion (attribute) to be measured. The item had to be rated on a 4-point Likert scale, after which the expert had an opportunity to challenge or rephrase the item.

An individual e-mail was sent to each expert, which included a formal invitation to participate (see Annexures D.3 and D.4), the participant information letter with consent form (see Annexure D.5) and the demographic information letter (see Annexure D.6). Once the researcher received the consent form and demographic information letter, an email was sent to the experts outlining the timeline and including the link to the Google Form. The instructions to the experts were

- Click on link to access Google Forms and follow the instructions.
- The timeframe for participating in round one is two weeks (25 October 2022 - 4 November 2022).
- A reminder e-mail will be sent once a week as well as two days before the deadline.

Once the experts clicked on the link they were taken to an online platform. The platform had specific instructions to the experts:

- Refine the specific items to measure the constructs of person-centred teamwork.
- The definition of person-centred teamwork and the 4 main constructs are provided
- The criterion to measure the construct is provided.
- Indicate whether you agree or disagree that the specific item measures the construct.
- You are not completing the instrument, but indicating whether you agree or disagree that the item measures the constructs of the definition.
- You will also be afforded the opportunity to challenge or re-phrase the wording of the items.

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Each item was listed individually with the Likert scale to indicate the level of agreement (see Annexure D.7). A space (area) was provided below each item for the expert to challenge or rephrase the item. Responses were exported to Excel® for data analysis. Once the data analysis was completed for Round 1 (see Section 2.6.2.3), the results from Round 1 informed Round 2. An e-mail (see Annexure D.9) was sent to each expert, which included a feedback document (see Annexure D.10) which provided the level of consensus per attribute of the construct. It included a table with the original item, adapted item, level of consensus for the specific item and an indication whether the item would be removed. The experts were informed that the items that obtained consensus would be used as indicated. The items without consensus would be part of Round 2. An e-mail (see Annexure D.9), including the link to an adapted Google Form (Person-centred teamwork, Google Form, 12 November 2022 and 25 November 2022) (see Annexure D.11) as well as clear instructions were e-mailed to each expert:

- Refine the specific items to measure the constructs of person-centred teamwork.
- The definition of person-centred teamwork and the 4 main constructs are provided.
- The criterion to measure the construct is provided.
- Indicate whether you agree or disagree that the specific item measures the construct.
- You are not completing the instrument, but indicating whether you agree or disagree that the item measures the constructs of the definition.
- You will also be afforded the opportunity to challenge or re-phrase the wording of the items.

The Likert scale used remained unchanged, namely a 4-point Likert scale. The scoring ranged from 'fully disagree' to 'fully agree'. Round 2 of the Delphi technique was conducted after the data collection of round 1 was completed, the data was exported for analysis. The data was analysed and adjustments made. Once the data analysis was done, a feedback document (see Annexure D.14) on Round 2 was prepared. The document indicated all the items and how each item was adjusted. The document also indicated the level of agreement and whether the item was kept or removed. New items generated were also indicated. Round 2 of the item consensus took place between 12 November 2022 and 25 November 2022.

2.6.2.2.4 Data analysis

Data analysis of an e-Delphi occurs simultaneously with data collection (Heuzenroeder et al, 2022). As the data was collected during the iterations (rounds), it was analyzed and therefore fed the next round of data collection. The researcher then combined the responses into a summary, adapted the items based on the feedback from the group (Belton et al, 2019; Fink-Hafner et al, 2019; Ogbeifun et al, 2016). The e-Delphi included quantitative and qualitative data for analysis.

2.6.2.2.4.1 Quantitative analysis

Descriptive statistics were used for the data analysis. These statistics informed the level of consensus reached in the process (Trevelyan & Robinson, 2015). The participants completed a 4-point Likert scale to indicate their level of agreement with the item to measure person-centred teamwork. Each item was verified by the participants and their level of agreement indicated. Agreement was determined by adding 'fully disagree' and 'disagree' together and 'fully agree' and 'agree'. The neutral option was seen as disagreement (Veugeliers et al, 2020). The results were then used to indicate the level of agreement. The percentage of level of agreement was then indicated on the feedback document to the participants (see Annexure D.11).

2.6.2.2.4.2 Qualitative data analysis

Content analysis was used as described in Section 2.5.

2.6.2.2.5 Rigour

The researcher ensured rigour in the e-Delphi study by following the recommendations for conducting and reporting Delphi studies (CREDES), the only guidelines available (Jünger et al, 2017). The use of the CREDES guidelines assisted the researcher to ensure rigour in the study by using a similar process to implement the e-Delphi (see Annexure D.1). To enhance the

trustworthiness of the qualitative data, the researcher ensured credibility, transferability, dependability and confirmability (Mandal 2018:480). Credibility refers to assurance in the truth of the findings. Transferability indicates that the findings are also applicable in other contexts, while dependability shows that the findings are reliable and could be replicated. Confirmability describes the degree of neutrality or the point to which the findings of a study mirror the respondents' views and experiences rather than the researcher's bias (Polit & Beck, 2020; Mandal, 2018).

2.6.2.2.6 Justification

The researcher made use of the Delphi technique to obtain consensus on the items to measure the concept person-centred teamwork. The Delphi technique allowed the researcher to consult experts in the field of person-centredness and / or teamwork, to give input and determine consensus on the concept of person-centred teamwork (Jünger et al, 2017). The experts were consulted in an iterative manner over a five- week period which enabled them to create consensus on the items to measure the concept of person-centred teamwork (Veugelers et al, 2020; Jünger et al, 2017). The Delphi technique values the expertise of experts in the field; therefore, the researcher utilized the twelve selected experts to add value to the content obtained (Jünger et al, 2017). The e-Delphi technique made use of international expert consultation to obtain consensus on the items to measure person-centred teamwork (Veugelers et al, 2020; Jünger et al, 2017). Making use of the international experts added to the transferability of the data. The data was not limited to one country or experience from one setting.

2.6.2.2.7 Planning and design

The Delphi technique was sought as a methodology during the early planning of the research due to the access it gave to international experts. The researcher pursued consensus on the items to measure person-centred teamwork and the e-Delphi assisted having the input of international experts (Fink-Hafner et al, 2019). The e-Delphi was the most timely and cost-effective way to obtain consensus (Nasa et al, 2021; Jünger et al, 2017). The e-Delphi allowed for international experts to participate and give valuable input into the items to measure person-centred teamwork,

without having to undergo the cost and time of acquiring the presence of the experts in a single venue (Veugelers et al, 2020; Fink-Hafner et al, 2019). The researcher acquired the items through a methodological literature search of instruments measuring person-centredness and teamwork (see Section 2.6). Once the items were identified and refined, the researcher developed the documentation that presented the items to the panel of experts. A summary of the literature was made (see Annexure C.6). The participant information letter was developed that included written consent by the expert panel (see Annexure D.5). The researcher obtained consultation into the use of the electronic format, Google Forms. The consultation assisted the researcher to set up the e-Delphi in a logical and consistent way. The e-Delphi was designed by the researcher and then tested with the assistance of the research team, who commented on the accessibility, functionality and layout of the content in the Google Form format. Once the necessary modifications were made the communication was emailed to the experts to participate (see Annexure D.3). The experts were also informed on what constituted consensus within the study, 75% agreement on the construct or definition. Literature accepts consensus at 70% (Veugelers et al, 2020; Jünger et al, 2017). The conformability of the data was found in the consensus that exceeded the researcher's pre-set I-CVI of 75%. The level of consensus indicated that the results were not influenced by researcher bias.

2.6.2.2.8 Conducting the study

All the information received by the panel of experts had been carefully drafted and reviewed. The experts received individual emails with all the required information (see Annexure D.3) in order to maintain their anonymity. The experts participated without knowing who the other panel members were in order to ensure anonymity and prevent intimidation or conflict between the members (Nasa et al, 2021; Fink-Hafner et al, 2019). The responses were collated, analyzed and constructs adapted before being sent back to the panel. The anonymity of the participants contributed to the credibility of the study (Varkey, 2021; Polit & Beck, 2020). The research team had no bias towards the panel, as most of the members were unknown and limited interaction took place between the research team and the panel (Jünger et al, 2017). The experts' responses were analysed and interpreted by the researcher being anonymized. The researcher was aware that consensus agreement did not indicate a level of correctness of the constructs, but rather an interpretive agreement. At the same time, the researcher regarded disagreement as insights that were

informative to the construct. Disagreements allowed the researcher to further develop the construct based on the experts' insights (Jünger et al, 2017).

2.6.2.2.9 Reporting

Methodological decisions were taken throughout the e-Delphi process (see Sections 2.5.1 and 2.5.2). The e-Delphi process was reported in a clear and concise manner (see Section 2.5.3.4). The reporting included the description of the expert panel, the selection of the panel and attrition rate of the panel; forms of communication with the expert panel (see Annexures D11); achieving consensus, and feedback after each round. Section 2.5.3.4 described the limitation of the study. The results were published in two phases. First the results of the e-Delphi guided the items developed for the second e-Delphi that took place. The results are to be published as an article in a reputable journal (see Chapter 5).

2.6.2.2.10 Limitations

The e-Delphi has various limitations that were overcome (see Section 2.5.4). The use of electronic Delphi (e-Delphi) method had particular limitations with regard to the ability to clarify misunderstandings regarding concepts with the participants. Unlike personal or live contact, the electronic Delphi method hinders the ability to clarify things immediately. The researcher offered participants the opportunity to email her should they require any clarification. The sample size was a further limitation. The sample was within the limit of suggested studies, but larger samples would support a richer and broader supply of data.

2.6.2.2.11 Ethical considerations

Ethical principles are considerations that guide the conduct of research (Varkey, 2021). The researcher upheld the ethical principles of respect for human dignity (autonomy and informed consent), anonymity and confidentiality throughout the e-Delphi study.

- **Autonomy:** The principle of respect for human dignity holds that participants must be autonomous, and have knowledge and understanding of the research study and its consequences. Informed consent forms part of participants' autonomy and choice to participate (Clark-Gordon et al, 2019; Kamanzi & Romania, 2019). The participants received a participant information letter, which included an introduction to the researcher, explained the purpose of the study, and the requirements for participation and informed consent (see Annexure D.5). The participants emailed the signed informed consent forms to the researcher who then co-signed them. The participants' informed consent was obtained and their autonomy upheld.
- **Anonymity.** The researcher assured the participants of anonymity by keeping their identity unknown to all involved in the study (Varkey, 2021; Clark-Gordon et al, 2019). On-line anonymity has two points of consideration, namely social anonymity and web/online anonymity (Clark-Gordon et al, 2019). Social anonymity refers to keeping the individual participants unknown in direct social interactions with the others. Web/ online anonymity, which refers to the actual IP address, was not relevant to the study (Clark-Gordon et al, 2019). The participants received communication via individual emails. This ensured that they did not know the other participants. Once participants had participated, their responses to the questions were anonymized by having all personal details removed before being sent back to the participants (Nasa et al, 2021; Fink-Hafner et al, 2019). The participants were asked to consent to their name being published as a contributor to the development the items to measure person-centred teamwork and of the definition of the concept. All participants consented to being acknowledged as a contributor to the development of the items to measure person-centred teamwork and of the definition of the concept.
- **Confidentiality** refers to keeping information hidden or of participants as unknown contributors (Kamanzi & Romania, 2019). In this study, confidentiality was self-assured by the participants and the nature of the data collection. Before consenting to the study, the participants were informed that the information provided would be used to develop and obtain consensus on the items to measure person-centred teamwork (see Annexure D.5). Due to the anonymity provided to the participants, their contributions would also be confidential (Clark-Gordon et al, 2019). The e-Delphi allowed the participants to

participate from the comfort of their own environment. There was no face-to-face meeting and this eliminated the potential of conflict, intimidation or bias towards the participants (Fink-Hafner et al, 2019).

PHASES 3 AND 4: SCALE DEVELOPMENT AND EVALUATION

2.7 OBJECTIVE 4: INSTRUMENT VALIDATION

Objective 4: To validate an instrument to measure healthcare workers' perceptions of person-centred teamwork in hospital units

2.7.1 Pre-testing

The instrument was developed from phase 2, step 2. In phase 2, the instrument was given to an international panel of experts to obtain consensus on the items to measure person-centred teamwork. The experts gave feedback regarding the functionality and structure of the instrument questions. This data was collected and analysed. Once this was done, the researcher made the changes according to the participant's information provided. This then yielded an instrument that needed to be tested for validity and reliability in the next step. The instrument was pre-tested to ensure the items are meaningful in that it measures the concepts and are clear.

2.7.2 Population

The population for the pre-testing of the instrument consisted of hospital-based healthcare providers working in two selected hospitals in Gauteng province, South Africa.

To be included in the study, the participants had to:

- Be registered with the South-African Nursing Council (SANC) or Health Professions Council of South Africa (HPCSA)
- Work in a hospital unit in a public and/or private setting in Gauteng province, South Africa

- Be proficient in English - reading, writing and speaking
- Work in either of the selected public or private hospital facilities in Gauteng

2.7.3 Sampling and sample

Purposive sampling was used. The researcher purposively selected participants that meet the inclusion criteria. The researcher selected participants that would be representative of the healthcare population. Selected participants were e-mailed (see Annexure E.1) to volunteer to participate in the study. The study and expectations were included in the email. Participants needed to read the participation information letter (see Annexure E.2) and sign consent and email it back to the researcher. The sample size was 12 participants and representative of the demographics of a hospital nursing unit. Seven participants responded to the invitation.

2.7.4 Pilot study for data collection

The participants were invited to be part of the pre-testing for validation of the data instrument. An email was sent to the participants inviting them to participate in the validation of the instrument (see Annexure E.1). The email explained what was expected of the participants, included the definition of 'person-centred teamwork'. The email also included a participant information letter (see Annexure E.2) and a link to the Google Form of the instrument (see Annexure E.4). The email had a link that the participant should click on that took them to the electronic platform where they could complete the instrument. The electronic version of the instrument was based on an electronic form, using Google Forms ®. Google Forms is a free online platform that allow the researcher to construct a participation form with relevant questions and/or information. The instructions to the participants were:

- Provide feedback on the instructions and clarity of the items in the instrument.
- Rate each item as a member of the healthcare team.
- Give feedback on the structure, layout and wording of the instrument.

The instrument had a section for comments below each item, where the participants could elaborate on their rating of each item and provide feedback on the clarity and wording. This allowed the researcher to have an improved understanding of the participants' view. Data collection took place from 12 December 2022 to 1 January 2023. The data collection period was extended as the period fell over the festive season.

2.7.5 Data analysis

Data analysis occurred after the data was exported. Qualitative data analysis of the content was done. The qualitative data analysis was based on content analysis. The participants were given the opportunity after each item and completion of the Likert scale to indicate whether the wording of the item was clearly understood. The elaboration allowed for the participants to give their input related to item clarity and wording. The participants were afforded an opportunity rephrase or indicate how to clarify the item. The data was then collated and the researcher was able to do content analysis on each response and cross-reference it to other responses and the initial literature findings (Veugeliers et al, 2020). The researcher performed qualitative content analysis. An inductive approach was used on the free text to identify similarities between the comments made by the participants. Suggestions on any item or the instrument as a whole were considered. The suggested changes were made before the instrument was utilized in the next phase.

2.7.6 Ethical considerations

Ethical principles are considerations that guide the conduct of the research (Varkey, 2021). Accordingly, the researcher obtained informed consent from the participants, and upheld the ethical principles of respect for human dignity (autonomy), anonymity, and confidentiality during the pre-testing.

- **Autonomy**

The principle of respect for human dignity holds that participants must be autonomous, and have knowledge and understanding of the research study and its consequences. Informed consent forms part of participants' autonomy and choice to participate (Clark-Gordon et al, 2019; Kamanzi & Romania, 2019). Informed consent was required from each participant before commencing the study. The participants received a participant information letter (see Annexure E.2). The participant information letter included an introduction to the researcher, the requirements of participation and informed consent. The participants had to email the consent back to the researcher and the researcher co-signed. The online platform had a statement regarding consent: The implication of completing the instrument is that informed consent has been obtained from you. Thus, any information derived from your input may be used by the researchers.

This is an acceptable phrase used to obtain consent from participants on an online platform (Nayak & Nayaran, 2019). The participants were given information regarding participation and had the option to decide to participate or decline. Therefore, the participants' autonomy was upheld by the researcher.

- **Anonymity**

The researcher assured the participants of confidentiality and anonymity by keeping their identity unknown to all involved in the study (Varkey, 2021; Clark-Gordon et al, 2019). On-line anonymity has two points of consideration. The one is social anonymity and the other web/online anonymity (Clark-Gordon et al, 2019). On-line anonymity has two points of consideration, namely social anonymity and web/online anonymity (Clark-Gordon et al, 2019). Social anonymity refers to keeping the individual participants unknown in direct social interactions with the others. Web/online anonymity refers to the actual IP address and was not relevant to the study (Clark-Gordon et al, 2019). The identity of the participants were only known to the researcher. The researcher only had the email addresses of the participants and not their names. The participants received communication via individual emails. This ensured that they did not know the other participants.

- **Confidentiality**

Confidentiality refers to keeping information hidden or contributors' unknown (Kamanzi & Romania, 2019). Confidentiality in the study was self-assured by the participants and the method of data collection. The participants were informed (see Annexure C.24) before consenting to the study that the information provided would be used to validate the items of the instrument developed. Accordingly, the anonymity provided to the participants ensured that their contributions would also be confidential (Clark-Gordon et al, 2019). The online platform allowed the participants to participate from the comfort of their own environment. There was no face-to-face meeting and this eliminated the potential of conflict, intimidation or bias towards other participants (Fink-Hafner et al, 2019).

2.7.7 Instrument administration and sample size

In this phase, the researcher collected quantitative data. The instrument was administered to the participants for the purpose of ensuring content and construct validity. Instrument administration entailed selecting participants and then administering the instrument for the participants to complete. The instrument was administered via electronic and hard copy format. The reason for the dual approach was the availability of access to electronic computing of some of the population in South Africa.

2.7.7.1 Population and sample

A population is the group of interest that meets the inclusion criteria to take part in the research (Polit & Beck, 2021). The population for this phase of the study had to be representative of the target population.

The following selection criteria were used:

- Hospital-based healthcare workers of all categories, in South Africa.

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- Including (not limited to) all nursing categories, dieticians, medical doctors, physiotherapists
- Health care workers (HCW) who form part of the team related to the patient and significant others
- Working at a public and/or private hospital in a nursing unit
- Registered with the South African Nursing Council (SANC) and/or Health Professionals Council of South Africa (HPCSA)

The target population for the study consisted of all health care workers, who worked in the acute care sections of the two selected hospitals. The public hospital had a total healthcare population of 987, and the private hospital had a total of 343. The health care workers included all categories of nurses, medical doctors, dieticians, and physiotherapists.

A sample is a representative portion of the population selected for the study (Polit & Beck, 2021). In this study, the researcher used purposive sampling. Purposive sampling is a form of non-probability sampling where the sample is relatively small and specialized, based on a group of individuals with a specific knowledge set and/ or specific environment of work, willing to participate (Campbell et al, 2020; Polit & Beck, 2021). The sample consisted of healthcare workers, directly involved with patient outcomes, in a public and a private hospital based in Gauteng, South Africa.

Boateng et al (2018) suggest a sample of 10 participants per item. Clark and Watson (2019) suggest a sample of 300, independent of the number of items, while MacCullum et al (1999) suggest a combination, stating that a sample of 100 is poor, 200 is fair, 300 is good, 500 is very good, and 1000 is excellent. The researcher aimed to obtain 380 participants as the instrument had 38 items, excluding the demographic profile details This would be seen as a good sample according to MacCullum et al (1999) and recommended for the item number by Boateng et al (2018).

2.7.7.2 Data collection

Data collection was done after obtaining consent from the two institutions (see Annexures F.1 and F.2). Data was collected by means of a paper-based questionnaire and by an online questionnaire. The instrument consisted of four pages (see Annexures F.3 and F.4). The first

page introduced the study and the researcher. The second page consisted of participants' demographic information. The third and fourth pages contained the 38 items. Two versions were made to available, a paper based and an electronic version. (See Annexures F.3 and F.4). The second data collection option was an electronic link that was sent to participants via e-mail or WhatsApp (see Annexure F.5). The link took the participants to a landing page with the same information as the paper-based questionnaire. The link then continued to the demographic information and the 38 items. Once the participant clicked 'submit' the data was captured and stored.

The researcher collected data from the two hospital sites. Data collection commenced after obtaining approval from all the relevant authorities. At the first hospital, the researcher made an appointment with the training department and was introduced to all the relevant unit managers and heads of department. The researcher introduced herself to the managers and provided information regarding the study and data collection process. The relevant managers were given a sealed box, clearly labelled with the study name, for participants to deposit completed instruments/questionnaires. The researcher also gave questionnaires to the relevant managers to be handed to the participants when the researcher was not on site and the shift change. The researcher then addressed the available participants on duty and handed them the paper-based questionnaires. The option to participate via the electronic format was also made available This was done in all the nursing units in the respective hospital. The researcher also contacted the heads of departments via voice call to set up appointments to introduce the study and make the instruments and collection boxes available. The electronic link was made available to the physicians by sending it to their head of department, who then distributed it to the specialist physician group via WhatsApp. The researcher made bi-weekly visits to the hospital for data collection purposes, namely collecting the completed questionnaires and obtaining more participants. Data collection took place from 30 January 2023 to 31 March 2023. Once the paper-based questionnaires were collected, the researcher captured the data electronically by using the electronic link (see Annexure F.5).

The researcher conducted data collection at the second hospital in the same way as the first hospital. The researcher had an appointment and spoke to the nursing unit managers. This hospital made use of WhatsApp groups for communication with all the units. The respective unit managers sent the link to all the units by WhatsApp (see Annexure F.5). The researcher also visited each nursing unit and made the paper- based option available. Each unit was provided with a concealed box. The researcher collected the completed questionnaires twice a week. The

researcher made appointments with the non-nursing staff, namely physiotherapists, dieticians and doctors, and explained the study. Then the researcher sent the link via WhatsApp. The link was forwarded to all relevant staff in the respective practices by the practice head. Data collection was conducted from 25 January 2023 to 31 March 2023.

2.7.7.3 Data analysis

A statistician assisted the researcher with data analysis. The data was analysed using the IBM SPSS Statistics version 28 and the Rstudio 2023.06.0 software. Descriptive statistical analysis was done to describe the participants' biographical data. Exploratory factor analysis was not done due to the extensive preparation in concluding the items. The concept analysis, Delphi for consensus on the definition and attributes, item search in literature and Delphi for consensus on the items was done before validation of the instrument. The validity of the instrument was done by means of confirmatory factor analysis using the Chi-square test of exact fit (1-5 acceptable), Comparative Fit Index (>0.90 acceptable), Tucker Lewis Index (>0.90 acceptable), Root Mean Square Error of Approximation (< 0.07 indicate good fit) and Standardized Root Mean Square Residual (between 0-1 good fit), to measure item fit to construct (Boateng et al, 2018). Factor loading was determined and Heterotrait-monotrait ratio was used to determine discriminant validity (discriminant validity is confirmed when the HTMT is < 0.90). Bi-factor analysis was used to determine general factor loading through Chi-square, Comparative Fit Index, Tucker Lewis Index, Root Mean Square Error of Approximation and Standardized Root Mean Square Residual. Bi-factor indices were determined. To assess internal consistency, inter-item correlation was examined and calculated the reliability coefficient by using Cronbach's α .

2.7.7.4 Ethical considerations

In this phase, the researcher upheld the ethical principles of autonomy and informed consent, anonymity, and confidentiality to ensure the integrity of the study.

- **Autonomy and informed consent:** Informed consent forms part of participants' autonomy and choice to participate (Clark-Gordon et al, 2019; Kamanzi & Romania,

2019). Informed consent was assumed if the participant took part in the study. The participants received participant information regarding the study in the electronic and paper-based format (see Annexures F.3 and F.4). The participant information included an introduction to the researcher, requirements for participation and informed consent to be assumed once participation took place. The researcher thus upheld the participants' autonomy. Participation was voluntary and there was no coercion or pressure on the participants to participate.

- **Anonymity:** The researcher assured the participants of confidentiality and anonymity by keeping their identity unknown to all involved in the study (Varkey, 2021; Clark-Gordon et al, 2019). Providing two methods of data collection upheld participants' anonymity. Participants could participate via an online link or paper-based instrument to be completed. On-line anonymity has two points of consideration. The one is social anonymity and the other web/online anonymity (Clark-Gordon et al, 2019). Social anonymity ensures that individuals are kept unknown in direct social interactions. Web/online anonymity refers to the actual IP address, and was not relevant in the study (Clark-Gordon et al, 2019). The participants received a link via WhatsApp or email (see Annexure F.5). Participants had to click on the link to be taken to an on-line platform to participate. Participation was not mandatory and could be done in the participants' own time and environment of choice. Only the researcher had access to the data-collection platform. The participants could not enter any personal details that would indicate their identification. Similarly, the paper-based format (questionnaire) was handed to the participants during working hours (see Annexure F.3 and F.4). The paper-based instrument had no identifying areas for the participants to complete. After completion, the participants placed the completed instrument in a concealed box in a designated area in the unit of work. The researcher then collected the instruments twice a week. Both formats of the instrument did not require any identifying criteria from the participants.
- **Confidentiality:** Confidentiality refers to keeping information hidden or contributors unknown (Kamanzi & Romania, 2019). Confidentiality in the study was self-assured by the participants and the nature of the data-collection format. The participants were informed before consenting to the study that the information provided would be used to

determine the validity and reliability of the instrument (see Annexures F.3, F.4 and F.5). Due to the anonymity provided to the participants in both formats of data collection, their contributions were also confidential (Clark-Gordon et al, 2019). The electronic format allowed the participants to participate from the comfort of their own environment of choice. The paper-based format allowed the participants to participate at a time of choice and with no time limit placed on them. The participants' information was kept strictly confidential as it could not be identified and linked to any specific participant. The researcher was the only person who had access to the information once it was placed in the concealed box.

2.7.8 Reduction of instrument items

Item response theory is normally utilized to reduce items that do not measure the item information or standard error functions of the item pool. As part of the item reduction procedure, the statistician used Cronbach's alpha to examine inter-item and item-total correlations, and all values were greater than the recommended cut of 0.70. The values ranged from 0.811 to 0.922. This eliminated the need to examine the inter-item and item-total correlations. The statistician's analysis of the data enabled the researcher to determine which items consistently and accurately measured the desired determinant.

2.7.8.1 Extraction of factors

Factor analysis was used to understand the internal structure and relationship between items. Extractions of factors view the variances among the responses of multiple items. This step was done as part of testing dimensionality (Boateng et al, 2018; Nuopponen, 2010).

2.7.8.2 Testing of dimensionality

Step 1 in this phase is done to determine if the measurement of the items, their factors and functions are the same across different samples (Boateng et al, 2018). This includes confirmatory factor analysis, bi-factor modelling and measurement of invariance. The testing of dimensionality

of the instrument was done by means of confirmatory factor analysis using the Chi-square test of exact fit (1-5 acceptable), Comparative Fit Index (>0.90 acceptable), Tucker Lewis Index (>0.90 acceptable), Root Mean Square Error of Approximation (< 0.07 indicate good fit) and Standardized Root Mean Square Residual (between 0-1 good fit) and other techniques to measure item fit to construct (Boateng et al, 2018). Factor loading was determined and Heterotrait-monotrait ratio was used to determine discriminant validity. Discriminant validity is confirmed when the HTMT is < 0.90. Bi-factor analysis was used to determine general factor loading through Chi-square, Comparative Fit Index, Tucker Lewis Index, Root Mean Square Error of Approximation and Standardized Root Mean Square Residual. Bi-factor indices were determined.

2.7.8.3 Testing reliability

To assess internal consistency, inter-item correlations were examined and calculated the reliability coefficient by using Cronbach's α . The researcher and statistician used the Cronbach's alpha. A Cronbach's alpha of 0.70 is regarded as an accepted reliability threshold. This was the minimum accepted by the researcher (Boateng et al, 2018).

2.7.8.4 Testing validity

Validity was addressed from phase 2 onward. Content and face validity were addressed during phase 2. During step 3, criterion and construct validity were evaluated. Criterion validity measures the relationship between criteria and is also predictive of future behaviour. The statistician tested and confirmed the validity of the instrument by means of confirmatory factor analysis, using the Chi-square test of exact fit (1-5 acceptable), Comparative Fit Index (>0.90 acceptable), Tucker Lewis Index (>0.90 acceptable), Root Mean Square Error of Approximation (< 0.07 indicate good fit) and Standardized Root Mean Square Residual (between 0-1 good fit), to measure item fit to construct (Boateng et al, 2018). Factor loading was determined and Heterotrait-monotrait ratio was used to determine discriminant validity. Discriminant validity is confirmed when the HTMT is < 0.90. Bi-factor analysis was used to determine general factor loading through Chi-square, Comparative Fit Index, Tucker Lewis Index, Root Mean Square Error of Approximation and

Standardized Root Mean Square Residual. Bi-factor indices were determined. Once this was completed, the instrument for the measurement of person-centred teamwork was complete (Boateng et al, 2018; Nuopponen, 2010).

2.8 SUMMARY

This chapter discussed the methodology used during the study, based on Boateng et al's (2018) model. The researcher described the research design and the research methods used in the four phases of the study. In Phase 1, a concept analysis was done that generated the four attributes and preliminary definition. Then a Delphi study was conducted to obtain consensus on the definition by a panel of international experts. In Phase 2, items were identified in a methodological search. An e-Delphi study was conducted with an internal panel of experts to obtain consensus on the items. In Phase 3, the items underwent psychometric testing and in Phase 4, the validity and reliability of the items were determination. Chapters 3 to 6 discuss the findings of the data collected during the phases.

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CHAPTER 3

PHASE 1: OBJECTIVE 1 CONCEPT ANALYSIS

3.1 INTRODUCTION

Chapter 2 provided an in-depth overview of the research methodology. This chapter addresses the first objective of Phase 1:

To perform a concept analysis of person-centred teamwork

The researcher conducted a concept analysis following Walker and Avant's (2019) steps. Chapter 2, Section 2.4 described and described the research methodology in detail.

3.2 OUTCOMES

The concept "person-centred teamwork" and related attributes were developed. The operational definition was:

Person-centred teamwork is a dynamic approach where healthcare professionals, patients and their significant others collaborate to meet the healthcare needs of the patient. Embedded in synergy, inclusivity and healthful relationships, the members recognise the uniqueness of each individual, allowing each team member to flourish and strive to attain optimal outcomes for all.

Four attributes were identified, namely (1) Healthful relations, (2) Recognising the uniqueness of the individual, (3) Inclusivity, and (4) Synergy.

The report was submitted to *Nursing Forum*, a peer reviewed journal:

Viljoen, A, Leech, R, Slater, P & Heyns, T. 2023. Person-centred teamwork: A concept analysis. *Nursing Forum*, **Submitted for review** (Annexure B.2).

The report followed the author guidelines of the journal selected and is presented following Section 3.4. The report was guided by the Preferred Reporting Items for Systematic Reviews and Meta-analysis for Scoping Reviews (PRISMA-ScR) (Page, et al, 2020) (Annexure B.1).

3.3 SUMMARY

Chapter 3 provided a definition for person-centred teamwork. The operational definition derived was presented to an international panel of experts to reach consensus on the definition and attributes (Chapter 4).

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Article



PERSON-CENTRED TEAMWORK: A CONCEPT ANALYSIS TOWARDS A DEFINITION

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Conflict of interest

None

Authorship statement

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ABSTRACT

Background

The concepts of person-centredness and teamwork are two concepts that are embedded in healthcare and are both associated with improved patient outcomes. Person-centredness involves thinking about people within an environment and creating a culture of trust, respect and mutual goals. Effective teamwork creates an environment where the workload is shared and normally overwhelming tasks become more manageable. Person-centred teamwork is relevant to modern healthcare environments. The concept of person-centred teamwork has not been clearly defined. A clear definition is needed to develop the concept further and will allow us to implement and assess the efficacy of interventions aimed at improving person-centred teamwork.

Objective

A concept analysis was used, to examine the basic elements of “person-centred teamwork” and provide a clear definition of the meaning and context of person-centred teamwork. To perform a concept analysis of person-centred teamwork.

Method

The concept analysis model described by Walker and Avant, was used to define the concept person-centred teamwork. Various bibliographic databases including EbscoHost, Scopus and Google Scholar was used to search in literature for the concept. Peer reviewed articles published between 2001 and 2021 was used. The attributes, antecedents, consequences and uses of the concept were identified.

Results

A total of 40 studies were included. Four attributes were identified. The four attributes are recognising the uniqueness of the individual, relationship orientated, inclusivity and synergy. A working definition was developed.

Conclusion

A definition of person-centred teamwork was developed. The definition and constructs will assist in further research the development of an instrument to measure person-centred teamwork.

Keywords

Person-centred care, teamwork, person-centred teamwork, hospital or acute setting.

INTRODUCTION

Person-centredness and teamwork are two concepts that are embedded in healthcare and are both associated with improved patient outcomes (2,3,4). Person-centeredness as a strategy has been supported by the WHO to assist the multi-disciplinary team, including the patient and significant others, to reach a patient's desired outcomes (3). In healthcare, person-centredness encapsulates all people involved in the healthcare process including patients, members of the healthcare team, significant others and community members (5). Person-centredness involves thinking about people within an environment and creating a culture of trust, respect and mutual goals (5). Person-centred care cannot be practiced by one individual of the inter-professional team, but requires all team members to collaborate.

Effective teams have a clear purpose, communication well, co-ordinate their activities, have effective protocols and procedures, provide psychological security, have effective leadership, and even non-technical skills such as situational awareness (6). Effective teamwork creates an environment where the workload is shared and normally overwhelming tasks become more manageable. When teamwork is effective, team members share a sense of belonging, interact positively and experience job satisfaction, staff productivity, staff retention and deliver high quality care (7,8,3). Effective teamwork is associated with improved job satisfaction and staff retention, which leads to better continuity of care and also contributes to improved patient satisfaction and patient outcomes (9,10). Teamwork is essential for successful person-centredness as it allows the multi-disciplinary team members, patients and community members to share in the care process (11). Person-centred teamwork is thus relevant to modern healthcare environments. Effective teams may also be inherently more inclined towards person-centred teamwork. Working in a person-centred way, multi-disciplinary teams can deliver quality integrated care and accomplish improved patient outcomes (12).

Although the concepts of person-centredness and teamwork have been dealt with individually (13,14,15), the concept of person-centred teamwork has not been explored in-depth. A clear definition is needed to develop the concept further. A concept analysis will allow us in the long-term to use the constructs to develop an instrument and provide healthcare organisations to guide the development of person-centred teamwork (1). In this concept analysis, the authors examine the basic elements of "person-centred teamwork" and provide a clear definition of the meaning and context of person-centred teamwork. This concept analysis may guide interventions to improve person-centred teamwork in nursing practice as well as allow to research the value of

person-centred teamwork in healthcare. In this paper, the concept of 'person-centred teamwork' was defined, as well as key attributes, cases, antecedents and consequences identified and defined.

AIM

This paper explores the concept person-centred teamwork and provide an operational definition to be used in clinical practice.

METHODS

Various concept analysis methods have been tested and established (1, 14). We used the concept analysis model described by Walker and Avant (1), as the model is extensively used in nursing research and is well described (15). The Walker and Avant (1), concept analysis process was derived from Wilson's model (16) and comprises eight steps: (1) selecting a concept; (2) determining the aims or purpose of the analysis; (3) identifying all discoverable uses of the concept; (4) determining the defining attributes; (5) identifying a model case; (6) identifying a contrary case; (7) identifying antecedents and consequences; and (8) defining empirical referents. The use of this process allowed the deconstruction of the concepts that are overlapping. By deconstructing the concepts, person-centredness and teamwork could be clearly understood and a single term defined, person-centred teamwork (1).

Data collection

An extensive literature search was conducted in collaboration with an experienced librarian. Three major bibliographic databases EbscoHost, Scopus and Google scholar were utilised. The following keywords were included in our searches "*person centred care*", "*patient centred care*" "*holistic care*", "*relationship centred care or individualised care*", "*teamwork*" or "*collaboration*" or "*cooperation and hospital or acute setting or inpatient or ward*" and "*define*" or "*definition*" or "*meaning*". The Boolean operators 'AND' and 'OR' were used to combine search keywords. "

Included in the search was peer reviewed full text articles published between 2001 and 2021 in English. The reference lists of retrieved articles were scanned for additional resources. The researchers excluded non-primary research and grey literature.

The searches on the various platforms produced 1210 potential articles. The article distribution were 519 articles from EbscoHost, 220 from Scopus and 471 from Google scholar were identified.

Articles were submitted to Rayyan, a web-based programme that assist researchers to sort through articles. Duplicate articles were removed, 173 articles. Articles removed due to irrelevant titles 564 and due to other reasons 189. The researcher scanned the remaining titles and abstracts for suitability and relevance. A further 43 articles were excluded as these were irrelevant or did not contain one of the two main concepts 'person-centredness' and 'teamwork'. Finally, the included articles (n = 62) were uploaded to a reference manager and the full articles were reviewed. Two articles were inaccessible (n=60). The researchers then continued the review of articles until consensus was reached that 40 articles were relevant and could be used.

View Figure 1 for a diagrammatic representation of the PRIMSA which shows the identification and selection of the relevant articles (56).

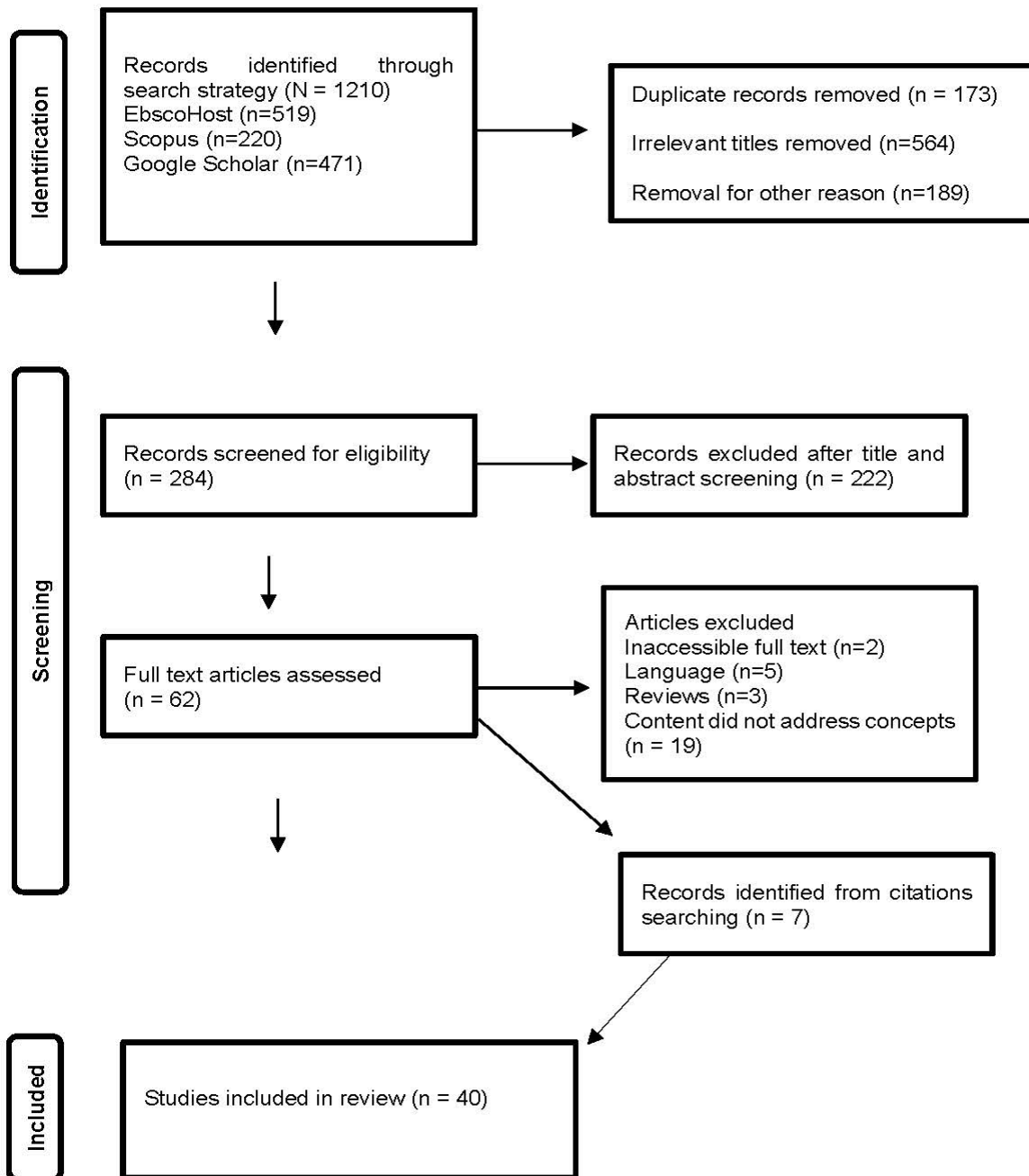


Figure 1: Prisma flow diagram for identifying and selecting articles on person-centred teamwork in healthcare (56).

RESULTS

Use of the Concept

The concept of person-centred teamwork has not been referring to in the existing literature. Most studies have focused on person-centred care and teamwork as separate entities.

Defining the concept

Dictionary definitions

Concept analysis usually starts with dictionary definitions of the concept being analysed. Segen's Medical Dictionary defines person centred as 'mutually beneficial partnerships between patients, their families and those delivering health care services, which respect individual needs and values and which demonstrate compassion, continuity, clear communication and shared decision making' (17). Teamwork is defined as 'work done by several associates with each doing a part but all subordinating personal prominence to the efficiency of the whole' (18). From the literature done the concept 'person-centred teamwork' has not been defined in a dictionary.

Other definitions and related concepts

Person-centredness has been defined in various other ways. The World Health Organization (WHO) defines 'people-centred' as '...an approach to care that consciously adopts the perspectives of individuals, families and communities, and sees them as participants as well as beneficiaries of trusted health systems that respond to their needs and preferences in humane and holistic ways' (4). Similarly, McCormack and McCance (3), define person-centredness as 'an approach to practice established through the formation and fostering of healthful relationships between all care providers, service users and others significant to them in their lives. It is underpinned by values of respect for persons (personhood), individual right to self-determination, mutual respect and understanding. It is enabled by cultures of empowerment that foster continuous approaches to practice development'. However, no single definition has been formalised and agreed upon.

Teamwork has also been well defined across multiple sectors. According to Salas and Cannon-Bowers (19), teamwork is described a group of people with a common goal. Rydenfält et al (20), define a team as 'a group of people who are set to work together on a task' and teamwork as 'what this group does in relation to work together on a task'. In their concept analysis of teamwork, Xyrichis and Ream (21), define teamwork as 'a dynamic process involving two or more health professionals with complementary backgrounds and skills, sharing common health goals and

exercising concerted physical and mental effort in assessing, planning, or evaluating patient care. Teamwork is accomplished through interdependent collaboration, open communication and shared decision-making. Teamwork in turn generates value-added patient, organisational and staff outcomes. To our knowledge, no definition of person-centred teamwork has been documented.

Determining the defining attributes

Defining attributes include the 'characteristics' or 'trademarks' that distinguish a concept (1). The concept of person-centred teamwork has not been previously clarified.

Person-Centred Teamwork attributes

The four main attributes for person-centred teamwork were 1) recognising uniqueness of individuals, 2) being relationship orientated, 3) synergy and 4) inclusivity (Table 1).

Recognising the uniqueness of individuals acknowledges that each person is a unique human being with their own ideas and needs (22). People should acknowledge that participants are experts in their own lives (23,24) . When practice is person-centred, people have an opportunity to participate and make choices (25). Shared decision making occurs when all stakeholders participate in decision making (26), where the healthcare team involves patients and their significant others and all participants work together, share information and then agree on the best treatment and care options. Participants value each other's desire and freedom to make their own choices that support their needs, wishes and preferences (26). Self-determination allows people to choose and control their own path and also enables the team to share decision making responsibilities (25,27,28). When people are recognised as unique individuals, engagement is encouraged, shared decision making is fostered, and people are allowed to practice choice and self-determination. Person-centred healthcare recognises that patients and their families also have a role to play in deciding what is best for them and their circumstances.

Being relationship orientated refers to the relationships between the healthcare team, patients and significant others. Person-centred team interactions aim to maintain healthful relationships. People who are in healthful relationships are sympathetically present, show human kindness and compassion towards each other, try to understand each other's viewpoint and value each other (22,25,27). Healthful relationships also aim to ensure that all participants are socially included. Social inclusion ensures that people feel supported and that their strengths are recognised, which

then creates a sense of community in the group (24). Being relationship orientated also allows participants to recognise individual differences, which is important when making decisions together or accepting different values. Ultimately, people in a group or community need to be able to agree on an idea, even if they do not fully believe in it (25, 27)

In a person-centred teamwork context, synergy refers to the combined efforts of a team that lead to improved patient outcomes (29). Synergy describes how collaboration, conflict management and cohesiveness attribute to teamwork. In the multidisciplinary healthcare team, collaboration refers to the daily practices that are used to meet the needs of patients. Multidisciplinary healthcare teams have to collaborate inter-professionally, which requires that team members show a combination of trust, respect, directness to collaboration, a feeling of belonging, humility, and time to listen and talk (20). The synergy of a person-centred team is also closely related to how conflict is managed. Conflict management should be focussed on obtaining consensus towards a common goal and should be underpinned by the principles of respect for others, autonomy and protecting the relationship (30,31). Once collaboration and conflict management is established, the team will become cohesive. Cohesiveness is combining parts to make a whole, which in teamwork refers to the combination of individuals and their contribution towards a collective goal (30,31).

Effective person-centred teamwork also depends on inclusivity of each member of the team (32,33,20). Inclusivity encompasses communication, task interdependency, sharing information and shared responsibility. Successful relationships are often defined by excellent communication which is essential for optimal functionality and efficacy. Effective communication is multi-dimensional and includes all team members (33,20,34,35). In any team, there is a certain level of task interdependence, necessitating excellent communication and interaction (32,29,20). Effective communication and information sharing establishes continuity, holistic care and inclusivity (30,31). When all team members are included in the team, there is also shared responsibility which helps each team member not to feel overwhelmed by the magnitude of a task. When responsibility is shared, the most suitable team member to perform a task is selected, for the best possible outcome.

Table 1: Defining attributes of person-centred teamwork

Concept	Defining attributes	Sources of attributes
Person-centred teamwork	Recognise uniqueness of individual -Ensure share decision-making -Facilitate participation -Self-determination (choice) -Engagement	(22,23,24,25,27,35)
	Relationship orientated -Show human kindness -Share knowledge -Strengths / capacity focussed -Being sympathetically present -Feeling of belonging -Social inclusion / citizenship	(22,27,36)
	Synergy -Collaborate -Cooperate -Cohesiveness -Manage conflict	(20,29,30,31)
	Inclusivity -Effective communication -Task interdependency -Share information -Shared responsibility	(20,30,31,33,34,35)

Identifying a model case

The model case combines all the attributes of the concept. The model case represents an ideal situation to illustrate the attributes.

A 62-year-old female patient was admitted to the ICU for respiratory failure. She became critical and was intubated and ventilated. She started showing clinical signs of multi-organ failure and sepsis. The healthcare team discussed the patient during morning rounds in the ICU. The healthcare team comprised nurses, the physician, dietician and physiotherapist. The primary nurse discussed her concerns regarding the patient's clinical picture. The physician confirmed the

nurse's concerns. The dietician suggested adjusting the patient's nutrition to optimise care, contributing to synergy in the team. The physician agreed with the dietician. The physician further discussed the desired clinical outcomes and the physiotherapist suggested treatment. The team discussed the physiotherapist's treatment suggestions and agreed that they were suitable. The physiotherapist felt valued and heard. The physiotherapist loves working in this ICU because he or she is recognised as a unique individual. The physician further mentioned contacting a specialist to assist with surgical intervention, contributing to synergy in the team. The healthcare team contacted the significant others of the patient, who did not wish for the patient to be on life support. The family wanted to discuss end-of-life care. This upset the primary nurse, who told the team how she felt. The nurse wanted to continue to fully support the patient. The physician agreed with her. The dietician acknowledged the nurses' feelings and mentioned that the patient's values and beliefs should also be considered. The healthcare team arranged a meeting to discuss the prognosis with the family, signifying being relationship orientated. During the meeting, every person had an opportunity to discuss their views of the patient's care and were able to relate it to the care required, desired outcomes and patient wishes, representing inclusivity. At the end of the meeting, the family expressed their gratitude for being allowed to participate the decision-making process regarding the patient's care. The health care team and the patient's family were able to agree on the way forward, which left all the stakeholders feeling grateful and satisfied. Healthcare workers felt valued and empowered to do their best.

Identifying a contrary case

The contrary case has none of the attributes identified in the concept.

A 62-year-old female patient was admitted to the ICU for respiratory failure. She became critical and was intubated and ventilated. She started showing clinical signs of multi-organ failure and sepsis. The healthcare team comprised nurses, a physician, a dietician and physiotherapist. During rounds, the primary nurse discussed her concerns regarding the patient's clinical picture. The physician showed little to no interest in the concerns of the primary nurse and continued to write notes on patient. The dietician wrote suggestions regarding the patient's nutrition to optimise care without discussing the suggestions with the healthcare team. The dietician then left the unit. The physician and nursing staff are irritated with the dietician because she did not include them in her decisions. The physiotherapist goes into the patient room and starts treatment. Conflict arises between the physiotherapist and the nurse because the physiotherapist did not discuss the patient's condition with the nurse. The patient may not have been able to tolerate the therapy.

Both parties walked away as there was no agreement. The physician asked to discuss end-of-life care with the significant others of the patient. The nurse was shocked by this sudden decision. The physician and the nurse met with the significant others of the patient, who were informed that there was nothing more to be done. Various options were not discussed with the family. The distraught family were left with unanswered questions. The primary nurse felt very upset and she verbalised her feelings to the team. The team did not discuss the situation and every person went on with their day.

IDENTIFYING THE ANTECEDENTS AND CONSEQUENCES

Antecedents are described by Walker and Avant (1) as the determinants that should be present before the concept can be implemented or exist. Consequences include the outcomes of implementing or practicing the concept (37). People may be attracted or motivated to practice a concept if the consequences or outcomes are favourable. The antecedents and consequences of person-centredness and teamwork are discussed individually.

Person-centred teamwork antecedents

The antecedents of person-centred teamwork include supportive organisational systems, professional competence, interpersonal skills, commitment to the job, shared values, respect and self-awareness.

Establishing a team is the first antecedent to person-centred teamwork. The team members need to know who all form part of the team. In healthcare, the size and composition of multidisciplinary teams is dynamic and will depend on the needs of the patient who is being treated (21). Supportive organisational systems promote initiative, creativity and safety of people in the organisation. Person-centeredness is reinforced by a governance framework that promotes culture, values, communication, professional autonomy and accountability (25). Support systems include administrative, professional practice and professional development systems (21). Administrative support allows for flexible working, supportive management, adequate staffing and using specialised, qualified and prepared executives. Professional practice includes implementing practice models, focussing on autonomy and responsibility, and ensuring teaching. Professional development includes continued education of staff, adequate orientation and professional development to implement care. Staff and teams that feel supported show greater job satisfaction and loyalty towards the organisation and its patients (25). Effective organisational support systems indicate well thought through, evidence based practices that benefit the whole

organisation (38,35). Inadequate organisational support systems prevent teams from implementing person-centred care. Organisational barriers include poor staffing ratios, workload and lack of training related to specific care (27). Professional competencies an important antecedent of person-centredness. All members of the multidisciplinary team need to be competent in their respective specialities, which requires continuous development and training (27, 38). Teams also require skills such as interpersonal skills, communication, conflict management and leadership (25, 27, 38). If some team members lack professional competencies or resources, competent team members are often required to take up the slack, which may lead to feelings of overwhelmedness.

Interpersonal skills refer to the ability of team members to communicate with each other and the patient. Team members need to be able to communicate with kindness and truth while staying true to the values of the team. Interpersonal skills include skills such as conflict management and ability to collaborate. Interpersonal skills are an important antecedent of person-centredness, which is impossible if we cannot form relationships. Interpersonal skills can be developed by team members through positive interactions that promote collegiality (25,27). Teams cannot function as units if team members lack interpersonal skills (27).

To have person-centred teamwork, healthcare workers need to be committed to the job and focused on caring for their patients. Being committed to the job allows team members and teams to be resilient towards the process and the vision. Committed healthcare workers often show endurance (38). Person-centred teamwork confirms commitment refers to the commitment of the team. If team members are not committed, the functionality of the team will deteriorate and team will not be able to work towards a shared vision (25,26, 27).

Shared values are fundamental to person-centred practice. Team members should have shared values which dictate how they practice (25). Before person-centred practice can be implemented, teams must have clarity on their values and beliefs (39). Having shared values, allows teams to stay focused and aligned if circumstances get difficult. Person-centred teams with shared values also have a stronger connection and good relations (25,40). A lack of shared values leads to conflict and isolation of team members, which may breakdown the team's functionality (25,39).

Person-centred practice requires respect for people, including patients and fellow team members. People need to respect each other's worth, their choices, their dignity and values. We should

respect other people, even if they are different. Respect is a fundamental principle that needs to be practiced and re-practiced (22,23,25). A team cannot function effectively unless all the team members respect each other. A lack of respect could lead to a breakdown in communication, reliance on each other and sharing of practices, which will hinder the achievement of anticipated outcomes (22).

Successful relationships, and hence person-centeredness, requires self-awareness. Self-awareness relates to people knowing their strengths and weaknesses. People also need to be aware of how their own values and beliefs influences their ability to function in a team (25, 27). People who are self-aware know how and where they fit into the team. Self-awareness can be developed and improved by creating a reflective environment. Without self-awareness, team members will not be able to develop their roles within the team which will lead to less cohesion (25,27).

Effective person-centred teamwork also depends on mutual respect between team members. Team members need to acknowledge and respect each other's values, beliefs, and professional contributions. Mutual respect will stabilize the team and help to resolve differences. Respecting that team members contribute in diverse ways also helps to strengthen the team (30, 35, 41). A lack of mutual respect will lead to a breakdown in team performance (12, 30). Effective teamwork requires unified commitment to a goal. Team members should be able to communicate and agree on a common goal, as well as agree on a strategy to reach that goal. Teams who share a common goal and are unified in their commitment will be more efficient (30, 31, 41).

A shared vision is an important antecedent for effective person-centred teamwork. Teams with a shared vision have direction and stability especially during challenging times. Teams with a shared vision are more open to exploring diversity and therefore more creative when seeking solutions (29, 30, 31). Successful teams require strong leaders. Team leaders are responsible for directing team members' contributions towards the shared vision (20, 30). Leadership in the team may be dynamic and determined by the task at hand. Teams without leaders may struggle to reach the goal of the team (20).

Person-centred teamwork consequences

The consequences of person-centred teamwork include high quality care (23,41,5), job satisfaction (22,43), a hopeful work culture (41), ultimately human flourishing (26), engaged healthcare teams and functional organisations (29, 30, 31).

Quality care refers broadly to ideal patient care. Quality care can be measured using various metrics including length of stay, 30 day mortality rate, patient clinical outcomes amongst others (44,45). In the person-centred context, quality care refers to holistic care, which is determined by both the patient and the healthcare provider (46). Person-centred care refers to care where people are at the centre of the care. These people refer to both patients and healthcare workers, who all contribute to the quality of care. The quality of care also depends on the relationship between the perception and measurement of quality care by both the receiver and provider (23, 3). Effective person-centred teamwork results in quality care, which results in improved health outcomes (29, 35). Patients who experience improved health outcomes may be more willing to return to the same organisation for care, which leads to increased continuity and improved coordination of care (34). Effective teams share responsibility for care and each member contributes in their speciality, which ensures holistic care (29, 34).

Person-centred care is associated with job satisfaction which benefits all stakeholders. Although person-centred care benefits patients in obvious ways, healthcare workers also benefit by experiencing greater job satisfaction. Healthcare providers feel heard, valued and are able to provide quality care. Increased job satisfaction leads to less attrition of staff and more stable teams (22, 47).

Person-centredness also contributes to a hopeful work culture, because person-centred relationships recognise the uniqueness of each person (22,38). Human flourishing is a spiritual concept that allows the person to have deeper and more meaningful connections, feelings of happiness and being alive (26). Human flourishing is also associated with giving and receiving human kindness (48). Ultimately, workplaces should foster human flourishing (49) by creating conditions that allow people to have deep, meaningful connections and relations within the workplace (50).

Person-centred teamwork also results in engaged healthcare teams. In effective teams, each team member is empowered to confidently do their part in improving patient outcomes (30,31).

All team members are encouraged and allowed to share in making decisions(21,51). Engaged healthcare teams are better at communicating with their patients (34,35). Team members also experience an increased sense of belonging if they are involved in making decisions and share unified goals (30). Engaged person-centred teams are more likely to make a concerted effort toward achieving positive outcomes (21).

Effective person-centred teamwork leads to improved organisational functionality, with less job stress, fewer medical errors, fewer unanticipated admissions, and reduced hospitalisation time and cost (7,35,52). The improved functionality associated with effective teamwork results in improved staff retention, reducing the need to recruit new staff, which is time consuming and costly for any organisation. Improved staff retention leads to improved relationships in multidisciplinary healthcare teams (30,35). Person-centred teams that have good relationships also tend to be more efficient, which saves time and resources (30).

3.1 DEFINING EMPIRICAL REFERENT

Empirical referents help to identify and measure the concept. Empirical referents also demonstrate that the concept is tangible (1). Empirical referents do not offer an exact measurement of the concept, but rather indicate measurability (28). Many empirical referents exist for person-centeredness and teamwork as individual concepts. Slater et al. (53), developed the person-centred practice inventory. Teamwork can be measured using various instruments, including the Team Climate Inventory (43) and the TeamSTEPPS teamwork attitudes questionnaire (54).Dietz et al. (31) evaluated an instrument to measure team performance in ICU. Marsicano et al. (55) developed an instrument to assess the antecedents of teamwork process quality. These instruments and inventories all measure a specific aspect of either person-centredness or teamwork. We could not find any empirical referents for person-centred teamwork in the literature. Although the two concepts are similar, a new instrument to measure person-centred teamwork in healthcare settings is needed.

Operational definition

Based on the analysis and defining attributes of person-centredness and teamwork, we propose the following operational definition of person-centred teamwork:

Person-centred teamwork is a dynamic approach where healthcare professionals, patients and their significant others collaborate to meet the healthcare needs of the patient. Embedded in

synergy, inclusivity and healthful relationships, the members recognise the uniqueness of each individual, allowing each team member to flourish and strive to attain optimal outcomes for all.

DISCUSSION

In this concept analysis of person-centred teamwork, the researcher recognised that person-centredness and teamwork share similar antecedents, attributes and consequences. The analysis also highlighted differences between the two concepts. The differences compliment the concept of person-centred teamwork. A discussion of the attributes, antecedents and consequences that support the concept of person-centred teamwork was done by the authors.

The attributes of person-centred teamwork (see Figure 2) recognising the uniqueness of individual as well as being inclusive, are both important to the process of shared decision making (25,27). Effective person-centred teamwork will require good communication and task interdependency, which relies on including all team members and recognising that each team member is unique and should be involved in the decision-making process (20,29,32). Person-centred teamwork also requires being relationship orientated and having synergy, two closely related concepts. Being relationship orientated preserves and strengthens the relationship between individuals, and results in synergies such as collaboration, cohesiveness and the ability to manage conflict (20,29).

The antecedents for person-centred teamwork (see Figure 2). Person-centred teamwork can only occur if the stakeholders respect each other and share a unified commitment towards a goal. The unique antecedents for person-centred teamwork include that it relies on the presence of a competent team and a leader. Additional antecedents of person-centred teamwork include professional competence, interpersonal skills and self-awareness (27,42).

The consequences of person-centred teamwork (see Figure 2), include quality care, increased job satisfaction, a hopeful culture, engaged team members and improved organisational functionality. These consequences can be encapsulated in one term, namely human flourishing (26). Human flourishing describes benefits to the person as a whole, and includes physical, mental, emotional and spiritual wellbeing (3, 26). Person-centred teamwork, if implemented and developed, will lead to the flourishing of the whole team.

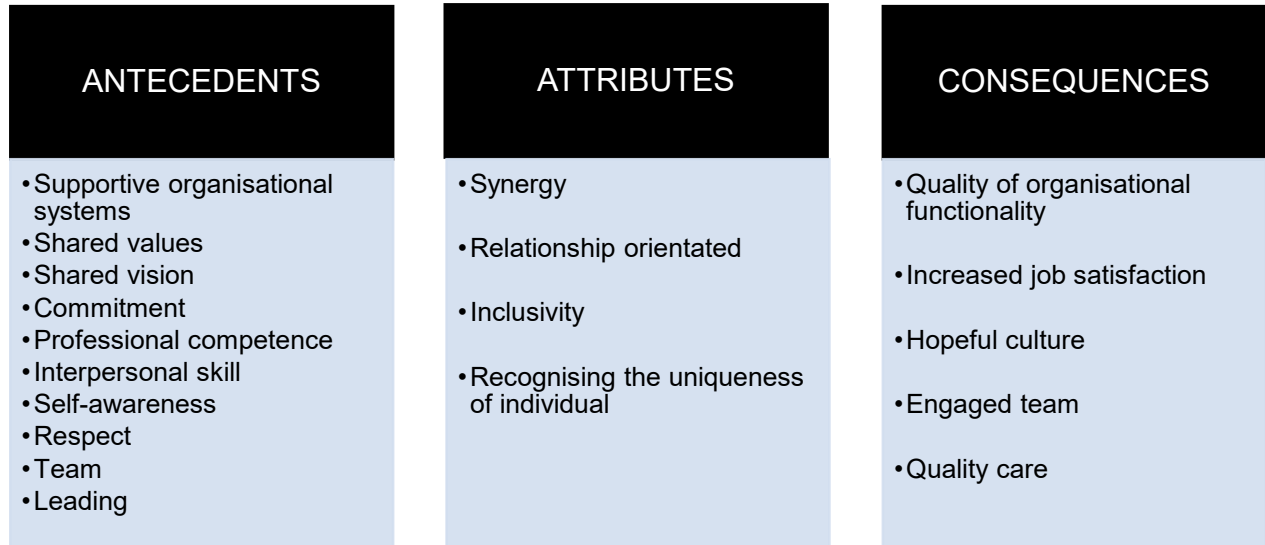


Figure 2: Summary of the antecedents, attributes and consequences of person-centred teamwork

Limitations of the study

Most of the articles referred to in this study were conducted in healthcare settings. Person-centred teamwork may present differently in other industries. A definition of person-centred teamwork was developed, that specifically refers to healthcare practice. The analyses of the concept did not address the measurement of person-centred teamwork. Only articles that were written and published in English were used and may have led to loss of information written in other languages.

CONCLUSION

The concept analysis was conducted on person-centred teamwork to clarify and gain a better understanding of the concept. The identification of the antecedents, attributes and consequences of person-centred teamwork resulted in an operational definition of person-centred teamwork which allows for further development and research of the concept. The definition can be further refined through consensus and the constructs identified can be used to guide the development of a measurement instrument. This concept analysis will promote improved practice and flourishing healthcare teams.

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CHAPTER 4

PHASE 1: OBJECTIVE 2 CONSENSUS ON PERSON-CENTRED TEAMWORK

4.1 INTRODUCTION

Chapter 3 discussed the development of an operational definition and related attributes for person-centred teamwork. This chapter addresses the second objective of Phase 1:

To reach consensus on the definition and attributes of person-centred teamwork

A modified e-Delphi was used to engage international experts to reach consensus on the definition and attributes of person-centred teamwork. Chapter 2, Section 2.5 discussed the design and methods used to address the objective.

4.2 OUTCOMES

Consensus was reached with an international panel of experts (N=12) on the definition and attributes of person-centred teamwork. The adopted definition on which consensus was reached was:

Person-centred teamwork is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust, and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes.

Consensus was reached on the four attributes, namely (1) Healthful relations, (2) Recognising the uniqueness of individuals, (3) Inclusivity, and (4) Synergy, which remained unchanged.

The report was submitted to the *World View*, a peer reviewed journal:

Viljoen, A, Leech, R, Slater, P & Heyns, T. 2023. Consensus on the definition and attributes of person-centred teamwork: An e-Delphi study. *World View*, **Submitted for review**. (Annexure C.14).

Chapter 4: Phase 1: Objective 2 Consensus on person centred teamwork

The report followed the author guidelines for the selected journal and is presented following Section 4.4. The report is in line with the Guidance on Conducting and Reporting Delphi Studies (CREDES) (Jünger, et al., 2017) (Annexure C.5).

4.3 SUMMARY

This chapter provided a consensus definition of the concept “person-centred teamwork” and related attributes. The definition and attributes (constructs) informed the generation of relevant items to measure the perceptions of healthcare providers regarding person-centred teamwork in hospital units (see Chapter 5).

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Consensus on the definition and attributes of person-centered teamwork: An e-Delphi study

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Abstract

Background: Effective health care relies on person-centeredness and teamwork, which are known to improve outcomes. These two concepts have been defined individually, but we could not find a definition of the combined concept. A preliminary definition was developed through a concept analysis; however, consensus on the concept has not been reached.

Aim: The aim of this study was to reach consensus on the definition and attributes of person-centered teamwork.

Methods: A consensus design allowed experts to collaborate and share their experience and wisdom to refine and reach consensus on the definition and attributes of person-centered teamwork. An e-Delphi was used to engage the experts.

Results: Three rounds of online engagement with 12 experts were needed to reach consensus on the definition and attributes of person-centered teamwork. The attributes reached consensus of 82% after the first round. The definition had 82% consensus after the three rounds. The definition had been adjusted and refined according to the expert input. The newly adjusted definition was established.

Linking Evidence to Action: We successfully used the e-Delphi method to obtain consensus on the attributes and definition of person-centered teamwork. The definition of person-centered teamwork can be further developed and included in clinical practice to guide improved clinical outcomes. The consensus definition of person-centered teamwork provides a clear understanding of the meaning thereof, which may in turn enrich the usability thereof in clinical practice. Person-centered teams improve outcomes for persons receiving care in hospitals. Building person-centered teams are now better understood and the foundation of building these teams defined. We engaged with 12 experts in the academic and clinical field of person-centeredness and teamwork. The use and value of the Delphi method to obtain consensus is now better understood and can assist future research development.

KEYWORDS

defining, e-Delphi, person-centered teamwork, person-centeredness, teamwork

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INTRODUCTION

“You cannot control what you cannot measure, and you cannot measure what you cannot define” (Fenton & Pfleeger, 1997, p. 14). Person-centeredness and teamwork have been well defined as individual concepts (Kalisch & Begeny, 2005; McCormack & McCance, 2017; Rosen et al., 2018; Rydenfält et al., 2018; Salas & Cannon-Bowers, 2001; Xyrichis & Ream, 2008). However, to our knowledge, the concept *person-centered teamwork* has not been defined. Defining the concept of person-centered teamwork will facilitate future research as well as enable the implementation and assessment of the realization thereof in clinical practice. Following a concept analysis (Viljoen, 2023), we conducted a Delphi study to obtain consensus on the attributes and definition of person-centered teamwork.

BACKGROUND

Person-centered teamwork represents the combination of two connected concepts often used in health care (Dellenborg, 2020) that are known to improve outcomes in healthcare settings (Donovan et al., 2018; Naldemirci et al., 2017; World Health Organization [WHO], 2018). Person-centeredness is an established way of doing and thinking that creates a culture of trust, respect, and mutual goals in the working environment (McCormack & McCance, 2017). McCormack and McCance (2017) proposed four core components of person-centeredness: (1) being in a relationship with those in your direct environment, (2) being part of a social world, (3) being in place, and (4) being with yourself. Thus, person-centered care is about all individuals in the care team having a common purpose and cultural value system. The WHO (2018) defined person-centered as “...an approach to care that consciously adopts the perspectives of individuals, families, and communities, and sees them as participants as well as beneficiaries of trusted health systems that respond to their needs and preferences in humane and holistic ways.” The WHO definition of person-centeredness is supported by McCormack et al. (2006), who defined person-centeredness in 2006 and then refined the concept in 2010 (McCormack et al., 2010), 2015 (McCormack et al., 2015), and 2017 (McCormack & McCance, 2017). Person-centeredness is enabled through a culture of empowerment that fosters continuous practice development (McCormack & McCance, 2017).

Teamwork is a clearly defined concept, often described as a cohesive group of people striving toward common goals (Rydenfält et al., 2018; Salas & Cannon-Bowers, 2001). Effective teamwork creates an environment where the workload is shared and made more manageable (Kaiser & Websters, 2018; Kendall-Gallagher et al., 2017). Teamwork creates a sense of belonging among team members and promotes positive relationships and job satisfaction, which increases staff retention, staff productivity, and quality of care (Kaiser & Websters, 2018; Kendall-Gallagher et al., 2017). Good teamwork improves patient outcomes, subsequently improving

patient satisfaction (Dahlke et al., 2018). High functioning teams that continuously improve the quality of care and patient outcomes take time to develop (Stocker et al., 2016). The concept of teamwork in healthcare settings has been comprehensively defined by Xyrichis and Ream (2008; 238) as “a dynamic process involving two or more health professionals with complementary backgrounds and skills, sharing common health goals and exercising concerted physical and mental effort in assessing, planning, or evaluating patient care.”

Person-centered care and teamwork share similar attributes and focus areas (McCormack & McCance, 2017). Effective health care relies on person-centeredness and teamwork, which are known to improve outcomes. Teamwork is essential to the success of person-centeredness, as teamwork creates an environment that allows the multi-disciplinary team, patient, and community to share in the care process (Li et al., 2018). Person-centeredness within a team has the potential to improve job satisfaction and staff retention, where retention of staff is imperative to ensure continuity of care and continuity of care leads to improved patient outcomes and experiences of care delivery (Nowaskie et al., 2018). Should either person-centeredness or teamwork break down, the outcomes of both aspects grow weaker (Dellenborg, 2020). Person-centered teamwork as a concept is not defined, nor is it explained as a measurable concept. To understand, develop, and improve any concept, it needs to be defined to measure it. We conducted a concept analysis to develop a preliminary definition of person-centered teamwork (Viljoen, 2023), but consensus has not been reached.

The study

Reaching consensus is an inclusive process where experienced and knowledgeable participants must agree on a concept (Zhang et al., 2019). Reaching consensus on the definition of person-centered teamwork is important for conceptual clarity, integration into the healthcare continuum, and outcome assessment. Consensus methodology requires the consideration of all participants, which in turn creates a sense of inclusivity and belonging. In this article, we report on a Delphi study that was conducted to reach agreement on the attributes and definition of person-centered teamwork.

METHODS

Study design

We used a consensus design to allow experts to collaborate and share their experience and wisdom to refine and reach consensus on the definition (Fink-Hafner et al., 2019; Nasa et al., 2021; Ogbeifun et al., 2016) and attributes of person-centered teamwork. We used electronic-Delphi (e-Delphi) to engage the experts. The data underwent content analysis with a focus on word frequency and thematic suggestion. Quantitative analysis was used to determine consensus.

Preparation for data collection

Data collection of the e-Delphi was preceded by a concept analysis using the Walker and Avant model for concept analysis (Walker & Avant, 2019). The Walker and Avant model uses eight steps to analyze a concept. The Walker and Avant model was used to determine the four attributes and definition of person-centered teamwork (Viljoen, 2023; Walker & Avant, 2019). The attributes were relationship reliant, recognizing the uniqueness of the individual, inclusivity, and synergy. The definition of person-centered teamwork was:

Person-centered teamwork is a dynamic approach where healthcare professionals, patients and their significant others collaborate to meet the healthcare needs of the patient. Embedded in synergy, inclusivity and healthful relationships, the members recognize the uniqueness of each individual, allowing each team member to flourish and strive to attain optimal outcomes for all.

(Viljoen, 2023; 72)

The Delphi panel

Experts were invited to participate in an e-Delphi panel. We defined an expert as someone with knowledge and experience of a specific subject (Nasa et al., 2021; Niederberger & Spranger, 2020). The experts were selected using pre-set, clear, and precise criteria (Fink-Hafner et al., 2019; Nasa et al., 2021; Niederberger & Spranger, 2020). The inclusion criteria were (1) English speaking, (2) a specific interest in person-centeredness=or teamwork, (3) a recognized authority on person-centeredness or teamwork as evidenced by publications in peer-reviewed journals, and (4) clinical or academic expertise in the field of person-centeredness or teamwork.

Using purposive sampling, we identified 13 experts who met the inclusion criteria. The experts were e-mailed a formal invitation letter, stating the aim and value of the study, and were asked whether they were interested and willing to participate. Once the experts

agreed to participate in the e-Delphi panel, a participant information, informed consent document, and demographic information questionnaire were e-mailed to them. Additionally, the experts were asked whether they knew other experts who met the inclusion criteria (snowball sampling) and who could contribute to the e-Delphi panel. Snowball sampling allowed experts to identify six additional potential participants, which provided access to a larger sample who would have otherwise been hidden (Etikan et al., 2016; Naderifar et al., 2017; Polit & Beck, 2020). In total, 19 experts were invited and 12 accepted the invitation (Table 1). The 19 experts consisted of 12 experts in person-centeredness and seven in teamwork. Once the signed consent forms and demographic questionnaires were received, round one of the e-Delphi was initiated.

Data collection

The e-Delphi survey was uploaded on Google Forms. During each round, experts were asked to indicate (1) do you agree that the attributes are relevant and (2) do you agree with the proposed definition of person-centered teamwork. Experts indicated their agreement on a 5-point Likert scale: 1=*strongly disagree*, 2=*disagree*, 3=*neutral*, 4=*agree*, and 5=*strongly agree*. Additionally, experts were asked to justify their ratings, and space was provided for additional comments. Before data collection, the e-Delphi survey was piloted. Two experts, who did not participate in the study, were asked to provide feedback on language, layout, clarity, and utility of the survey (Mallah et al., 2021).

Data were collected during three rounds. Each of the first two rounds was completed within 14 days and the third in 5 days to ensure that experts did not lose interest (Niederberger et al., 2021). Experts were reminded weekly to complete the e-Delphi, as recommended by Fink-Hafner et al. (2019). Data were collected anonymously.

During the first round of the e-Delphi, the experts were e-mailed a summary of the concept analysis, detailed instructions on what was expected during the survey, and a link to the Google Forms. During the second round, the experts received a summary

TABLE 1 Demographic information of the experts (N=12).

Number of participants	Count (%)	Profession	Area of speciality
Developed countries			
Australia	1 (8)	Academic: Social work	Person-centeredness
England	2 (16)	Academic: Nursing (1) Academic: Radiography (1)	Teamwork Person-centeredness
Ireland	2 (16)	Academic: Nursing	Person-centeredness
Netherlands	1 (8)	Academic: Nursing	Person-centeredness
Scotland	1 (8)	Academic: Nursing	Person-centeredness
Sweden	1 (8)	Academic: Nursing	Person-centeredness
Developing countries			
South Africa	4 (33)	Academic: Nursing (3) Clinical practice: Nursing (1)	Person-centeredness Teamwork

of results from round one, instructions on what was expected during round two, and a link to the adapted Google Forms. The summary of the round two results was e-mailed to the experts for final feedback.

Data analysis

The e-Delphi data were quantitatively and qualitatively analyzed, which occurred concomitantly during data collection (Heuzenroeder et al., 2022). The qualitative data were analyzed using content analysis. Content analysis entailed the viewing of the written comments of each participant. The comments were analyzed by searching for similarities in content feedback. Suggested changes were evaluated for relevance against what was found in literature and discussed by the authors. If found relevant, the changes were made (Fink-Hafner et al., 2019; Ogbeifun et al., 2016). The quantitative data were analyzed using count data and proportions. Consensus was established at 75% agreement in alignment with previous studies (Belton et al., 2019; Heuzenroeder et al., 2022; Hong et al., 2019; Humphrey-Murto et al., 2016). The scores of strongly disagree, disagree, and neutral were combined into the disagree category, while strongly agree and agree were combined into an agree category.

Rigor

The Conducting and REporting DELphi Studies (CREDES) checklist (Jünger et al., 2017) was used to increase the quality of this study (Supplementary material). We selected a panel of international experts from different geographical settings (Table 1), which allowed for a rich data source (McPherson et al., 2018; Niederberger & Spranger, 2020). The e-Delphi reduced the opportunity for direct confrontation between experts, reducing any potential intimidation. Experts were able to participate from their own environment. The experts remained anonymous to each other and were able to participate without having to conform to the most dominant opinion (Fink-Hafner et al., 2019; Nasa et al., 2021; Trevelyan & Robinson, 2015). Experts could be creative, honest, and give input based on their expertise. Additionally, e-Delphis are cost-effective and time-saving (Fink-Hafner et al., 2019; Waggoner et al., 2016). Time was saved as experts had 2 weeks to complete each round (Jünger et al., 2017; Niederberger & Spranger, 2020) at their own convenience (Fink-Hafner et al., 2019; Nasa et al., 2021). Keeping to a specified timeline improved the attrition rate, and only one expert withdrew after round one, representing an attrition rate of 8%, which is acceptable considering that some studies have reported attrition rates of up to 44% (Ogbeifun et al., 2016; Stokes-Parish et al., 2019; Tyler et al., 2023). Participating in the e-Delphi was also an enriching experience for experts and they were able to view their own contribution in the context of the whole group, which allowed them to expand and grow their knowledge and views of the concept as well as adapt their response (Fink-Hafner et al., 2019; Jünger et al., 2017;

Niederberger & Spranger, 2020; Ogbeifun et al., 2016). The e-Delphi process gave the researcher an opportunity to check responses and collate and incorporate the suggested changes swiftly before initiating the next round. Figure 1 indicates the process followed during the e-Delphi study, which is in line with the CREDES guidelines.

Ethical approval

This study was approved by the Faculty of Health Sciences, Research Ethics Committee (University of Pretoria; 11/2021). The expert participants were informed about the study and signed informed consent forms before data collection. Experts were contacted via e-mail and asked to give permission for their names to be used in the acknowledgment section of the report.

RESULTS

Between May and June 2022, 12 experts participated in the three rounds of the e-Delphi. During round one, 100% of participants responded, of whom the majority were academics (92%) and experts in person-centeredness (84%). During rounds two and three, 91% of participants responded.

Round 1: Consensus regarding attributes and definition

Among the participants, the level of consensus was 83% on the four attributes of person-centered teamwork (Table 2).

Participants did not reach consensus on the definition after round one, at only 66% (Table 3).

Experts agreed on the attributes of person-centered teamwork as shown in the following statements: "Recognising the uniqueness of an individual is the fundamental underpinning of a person-centered approach," and "If uniqueness of an individual is not recognized. S/he will not feel that they are understood and will not enter in a meaningful relationships," and "Without this you have teams that expect everyone to act the same and have a rule based rather than value-based way of working that does not enable persons to flourish."

Being relationship orientated elicited a similar response. The experts made the following statements in support of being relationship orientated: "As persons we exist in relationships and being in relation is a key component of personhood. This is again fundamental for effective team working" and "In relationship orientation the health professional who will begin the relationship must be fully aware of the role it plays in person-centeredness and links with the above attribute of uniqueness."

Synergy was supported by 10 of the 12 experts. The statements in support were "I really support this notion of synergy and it is well articulated in the concept analysis" and "Optimal outcomes depend

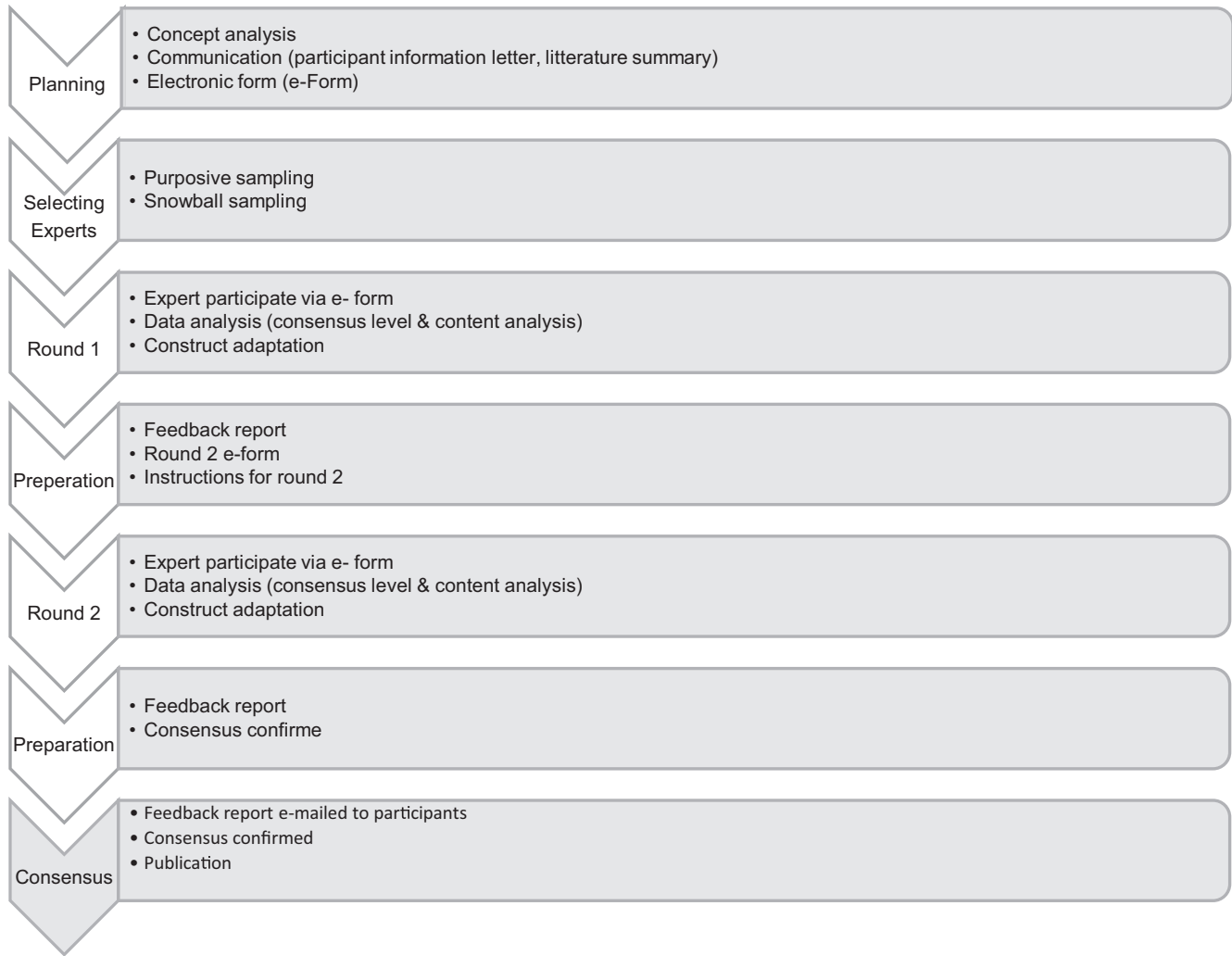


FIGURE 1 Summary of e-Delphi process.

TABLE 2 Level of agreement on the attribute of person-centered teamwork (N = 12).

Attributes	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Consensus (%)
	Count (%)	Count (%)	Count (%)	Count (%)	Count (%)	
Recognize uniqueness of individuals	9 (75%)	2 (16.7%)	1 (8.3%)	0 (0%)	0 (0%)	91
Relationship orientated	10 (83.3%)	2 (16.7%)	0 (0%)	0 (0%)	0 (0%)	100
Synergy	7 (58.3%)	3 (25%)	1 (8.3%)	1 (8.3%)	0 (0%)	83
Inclusivity	6 (50%)	4 (33.3%)	1 (8.3%)	1 (8.3%)	0 (0%)	83

TABLE 3 Level of agreement regarding the definition of person-centered teamwork (n = 12).

Definition	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Consensus (%)
	Count (%)	Count (%)	Count (%)	Count (%)	Count (%)	
Definition	3 (25%)	5 (41%)	3 (25%)	1 (9%)	0	66

on synergy.” Two experts indicated that synergy overlapped with being relationship orientated. The statements were “I wonder how this differentiate with previous attribute” and “Not sure synergy means the same as combined effort.”

Inclusivity was supported by 10 experts, who stated that inclusivity played an important and foundational role in person-centered teamwork. The statement was “Relationships cannot occur without communication and therefore deems inclusivity essential.” Two

experts indicated that inclusivity should be combined with synergy as they were synonymous. The statement was "...Overlaps my concern with Synergy."

The high level of agreement (82%) on the attributes meant that we did not include attributes in the second round.

Three experts agreed that our proposed definition was adequate. Three experts asked who was being referred to by *all* in the definition. Six further comments were considered when adapting the definition. The statements were "I think the definition is good, but trust should be added," "... strive to attain optimal outcomes for all - who is all? ...I do like the dynamic approach part and the collaboration part that prioritises the patient though," and "...Who is the all at the end of the definition?"

The definition attained a 66% level of agreement and was the focus of round two. The definition was adapted in accordance with experts' responses. The adapted definition was emailed to the experts with a link to the electronic response platform for further deliberation in round two.

Round 2: Consensus on definition

Eleven experts responded and consensus was reached on the definition (81.8%) (Table 4).

The adapted definition for person-centered teamwork was strongly supported. Seven experts agreed with the new adapted definition; for example, "Based on the information provided during Round 1 and Round 2 the definition has been well described and now the constructs are well incorporated and understood." One expert strongly disagreed but did not suggest changes: "I wonder what your definition is of a person-centered practice. It is different, but to what degree?" Three of the experts suggested rephrasing words and improving sentence construction, such as "...The second sentence reads better, except the 'optimal outcomes' bit which is not the same thing as needs."

The definition was adapted with minor wording changes as suggested by the participants. The final definition was formalized and sent to the experts in round three. No further comments were received on the final definition.

Round 3: E-mail communication

In the final e-Delphi round, the attributes and adapted definition of person-centered teamwork were distributed to the expert panel members for feedback. No further amendments were suggested, and consensus was achieved.

DISCUSSION

Here, we describe the findings of an e-Delphi study that aimed to obtain consensus on the four attributes and definition of person-centered teamwork, as developed during a prior concept analysis (Viljoen, 2023). The experts who participated in the e-Delphi agreed on the four proposed attributes of person-centered teamwork. Being person-centered means recognizing the uniqueness of people as human beings with their own ideas and needs (Byrne et al., 2020). Being person-centered also means acknowledging individuals as experts in their own lives (Louw et al., 2017; Waters & Buchanan, 2017) and giving them an opportunity to participate and make choices (McCance & McCormack, 2016).

Being relationship orientated is an important attribute of person-centered teamwork and refers to the relationships between healthcare teams, patients, and patients' significant others. All individuals involved in healthcare relationships should focus on maintaining healthful relationships. Healthful relationships involve being sympathetically present and showing human kindness, showing compassion, trying to understand alternative viewpoints, and valuing both caregivers and receivers of care (Byrne et al., 2020; McCance & McCormack, 2020; Wilkinson & Reed, 2008).

Person-centered teamwork also requires synergy, which represents the combined efforts of teams to improve patient outcomes (Franklin et al., 2015). The level of synergy determines how collaboration, conflict management, and cohesiveness attribute to teamwork. Effective teamwork also requires that all the team members are included (Fong et al., 2018; Mayo, 2020; Rydenfält et al., 2018). Inclusivity encompasses communication, task interdependency, information sharing, and shared responsibility.

In our study, one expert mentioned that synergy and inclusivity were overlapping attributes. The literature and concept analysis, however, supports these two attributes as separate constructs. Synergy describes how collaboration, conflict management, and cohesiveness attribute to person-centered teamwork. Inclusivity encompasses communication, task interdependency, sharing information, and shared responsibility (Dietz et al., 2018; Mayo, 2020; Rydenfält et al., 2018; Sangaleti et al., 2017; Tremblay et al., 2017; Viljoen, 2023; WHO, 2011). Inclusivity is related to communication, interdependency, shared information, and responsibility (Dietz et al., 2018; Franklin et al., 2015; Rydenfält et al., 2018; Sangaleti et al., 2017), while synergy is a combination of collaboration, conflict management, cohesiveness, trust, respect, and autonomy (Dietz et al., 2018; Mayo, 2020; Rydenfält et al., 2018; Sangaleti et al., 2017; Tremblay et al., 2017). As consensus of 83% was reached, we accepted these attributes as separate attributes.

TABLE 4 Definition: distribution of level of agreement responses (n = 11).

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
	Count (%)	Count (%)	Count (%)	Count (%)	Count (%)	Consensus (%)
Definition	6 (54.5%)	3 (27.3%)	0 (0%)	1 (9.1%)	1 (9.1%)	81.8

During round one, a 66% consensus was reached regarding the definition of person-centered teamwork. The experts' comments were carefully considered, and we adapted the definition to reflect that the team included the healthcare team, family, and patient. The adapted definition was then sent to the experts for round two. The adapted definition was:

Person-centered teamwork is a dynamic approach where the team, including the healthcare professionals, patients, and their significant others, develop trust and connectedness to meet the healthcare needs of the patient. Embedded in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes through reflexivity in practice.

In round two, the definition obtained an 81% consensus. Although there was consensus, we still considered the comments and changes suggested by the experts, especially any dissenting views. We agreed that the dissenting comments would change the essence of the definition, and we could not find any evidence supporting these dissenting views. We made a few conclusive changes; for example, we changed *team*, which included the healthcare team, family, and patient to *person(s) giving and person(s) receiving care*. This change increased the applicability of the definition across various sectors. The word *embedded* was replaced by *underpinned*, and *reflection* was removed as it suggested an add on to the definition that did not add value. The final definition was sent back to the experts, who did not make any further comments. The final definition for person-centered teamwork is:

Person-centered teamwork is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust, and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes.

Relevance to practice

This definition of person-centered teamwork establishes a basis for measuring person-centered teamwork, which is an important step to improve clinical practice. The definition and attributes provide clarity as to the development of measurable items for implementing person-centered teamwork in clinical practice.

The consensus definition of person-centered teamwork provides a clear understanding of the meaning thereof, which may in turn enrich the usability thereof in clinical practice. Person-centered teams improve outcomes for persons receiving care in hospitals. Building

person-centered teams are now better understood and the foundation of building these teams defined.

We engaged with 12 experts in the academic and clinical field of person-centeredness and teamwork. The use and value of the Delphi method to obtain consensus in the definition can assist future research development.

What does this contribute to larger global community

- Establishes a basis for measuring person-centered teamwork.
- Provides clarity on the development of items to measure person-centered teamwork.
- Person-centered teamwork will guide practice to improve patient outcomes.

Limitations

The e-Delphi as a technique is limited in that there is no formal guidance in the process of conducting an e-Delphi. This lack of guidance was overcome by following the CREDES guidelines (Fink-Hafner et al., 2019; McPherson et al., 2018; Nasa et al., 2021; Nienamber & Spranger, 2020). An e-Delphi does not allow opportunities for clarifying misunderstandings with the experts. Experts that accepted to participate in the study were predominant within the nursing profession. Experts identified did include the United States of America and Canadians, but the invitation was declined, or no response was received. Experts from Asia and South America were not included due to language barriers, that is, English was the communication language. The identification of Asian and South American participants was hampered due to our inability to communicate in the native languages of these continents. We only provided experts with a summary of the literature, which may have limited their understanding of the content and process. Notably, the teamwork experts did not have a full view of person-centeredness as a practice concept. The sample size was small, although we included experts from different nationalities. A bigger sample may have provided more reliable data.

Linking evidence to action

- The definition provides a clear understanding of the usability of person-centered teamwork.
- The definition establishes a basis for measuring person-centered teamwork.
- The results provide clarity on the development of items to measure person-centered teamwork.
- Person-centered teamwork will guide practice to improve patient outcomes.
- The use and value of the Delphi method to obtain consensus in the definition can assist future research development.

CONCLUSION

We successfully used the e-Delphi method to obtain consensus on the attributes and definition of person-centered teamwork. Experts engaged in three rounds, allowing for clarification and refinement of the definition. The inclusion of experts helped to reduce bias and clarify the definition. The newly established definition of person-centered teamwork can be further developed and included in clinical practice to improve clinical outcomes through the development of an instrument to measure person-centered teamwork.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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CHAPTER 5

PHASE 2: OBJECTIVE 3 CONSENSUS ON ITEMS TO MEASURE PERSON-CENTRED TEAMWORK

5.1 INTRODUCTION

In Chapter 4 consensus was obtained for the definition and related attributes (constructs) of person-centred teamwork. This chapter addresses Objective 3:

To establish consensus on items to be included in an instrument to measure person-centred teamwork in a hospital setting

The objective was achieved by two sub-objectives:

- Sub-objective 3.1: to generate items for an instrument to measure person-centred teamwork
- Sub-objective 3.2: to obtain consensus on items to measure person-centred teamwork

First items (N=43) were generated to measure each of the four constructs: 1) healthful relations (n=8), recognising the uniqueness of the individual (n=13), inclusivity (n=9) and synergy (n=13) (see Annexure E.3). A modified e-Delphi was used to obtain consensus from international experts on the items for an instrument that measures the perceptions of healthcare workers on person-centred teamwork in hospital units. See Chapter 2, Section 2.6 for discussion of the design and methods used to address the objective.

5.2 OUTCOMES

Forty-three items were generated and distributed for consensus by an international panel of experts (N=9). Consensus was achieved on 38 items for an instrument that measures the perceptions of healthcare workers on person-centred teamwork in hospital units. The items related to the four attributes (constructs) were (1) healthful

Chapter 5: Phase 2: Objective 3 Consensus on items to measure person-centred teamwork

relations (n=9), recognising the uniqueness of the individual (n=9), inclusivity (n=6), and synergy (n=14)

The report was submitted to the Journal of Clinical Nursing, a peer reviewed journal: Viljoen, A, Leech, R& Heyns, T. 2023. Consensus on the content of an instrument to measure person-centred teamwork: An e-Delphi study. Journal of Clinical Nursing, **Published** (Annexure D.2).

The report included generating the items through a methodological search (Phase 2, Step 1) as well as obtaining consensus on the items by an e-Delphi. The report followed the author guidelines for the selected journal and is presented after Section 5.4. The report is in line with the guidance on Conducting and Reporting Delphi Studies (CREDES) (Jünger et al, 2017) (see Annexure D.1).

5.3 SUMMARY

This chapter presented the results following an e-Delphi on 38 items to measure the perceptions of healthcare workers regarding person-centred teamwork in hospital units. Chapter 6 discusses the validation of the items.



5.4 REFERENCE

Jünger, S, Payne, SA, Brine, J, Radbruch, L & Brearley, SG. 2017. Guidance on Conducting and Reporting Delphi Studies (CREDES) in palliative care: Recommendations based on a methodological systematic review. *Palliative Medicine*, 31:684-706.

Article



Consensus on the content of an instrument to measure person-centred teamwork: An e-Delphi study

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Abstract

Aims and Objectives: To establish consensus on items to be included in an instrument to measure person-centred teamwork in a hospital setting. The objective was to identify the items through a methodological literature review. Refine the items and obtain consensus on the items.

Background: A definition and related attributes of person-centred teamwork have been agreed upon. An instrument is needed to measure and monitor person-centred teamwork in hospital settings.

Design: Consensus, electronic Delphi design.

Methods: Items were identified through a methodological literature review. These items were included in three electronic Delphi rounds. Using purposive and snowball sampling, 16 international experts on person-centred care, teamwork and/or instrument development were invited to participate in three electronic Delphi rounds via Google Forms. Descriptive statistics were used to demonstrate their agreement on the relevance and clarity of each item. Items were included if consensus was 0.75. Content analysis was used to analyse written feedback from experts.

Results: The response rate was 56% ($n=9/16$). Nine experts participated over an 8-week period to reach consensus on the items to be included in an instrument to measure person-centred teamwork in hospital settings. The experts' responses and suggestions for rephrasing, removing and adding items were incorporated into each round.

Conclusion: A Delphi consensus exercise was completed, and experts reached agreement on 38 items to be included in an instrument that can be used to evaluate person-centred teamwork in hospital settings.

Relevance to clinical practice: We engaged with nine international experts in the academic and clinical field of person-centeredness, teamwork and/or instrument development. An online platform was used to allow the experts to give input into the study. The experts engaged from their own environment with full autonomy and anonymity. Person-centred teamwork, aimed at improving practice is now measurable.

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Person-centred teams improve outcomes of patients. Person-centred teamwork was specifically developed to assist low compliance areas in hospitals.

KEYWORDS

consensus, electronic Delphi, instrument development, person-centred teamwork

1 | INTRODUCTION

Research has focused on implementing person-centeredness and teamwork as separate strategies (Dietz et al., 2018; Slater et al., 2015; WHO, 2018). Both strategies have shown benefits for practice. Person-centeredness creates a culture of trust, respect and mutual goals in the working environment (Byrne et al., 2020; Huang et al., 2020; McCormack & McCance, 2017; Sangaletti et al., 2017). For healthcare providers, person-centeredness increases job satisfaction (Nocon et al., 2019; van der Meer et al., 2018; van Diepen et al., 2020; Vassbø et al., 2019), creates a positive psychosocial work environment (Jessup et al., 2020) and increases intent to stay (van Diepen et al., 2020; Willemsse et al., 2015). Teamwork creates a sense of belonging among team members, and improves team relationships, job satisfaction, staff retention, staff productivity and quality of care delivered (Kaiser & Westers, 2018; Kendall-Gallagher, 2017; Kim et al., 2022). With good teamwork, patient outcomes are prioritised, which in turn will improve patient satisfaction (Dahlke et al., 2018). Ideally, healthcare providers should strive to practice person-centred teamwork.

Researchers have suggested that there is a need to define 'person-centred teamwork' and identify its measurable elements (DeVellis, 2016). Subsequently, a definition for person-centred teamwork has been suggested and consensus has been reached on its related attributes (Viljoen, 2023). Current practice should be continuously evaluated to ensure the implementation of best practices (Moule et al., 2017). Measurement provides insight into the efficacy of specific strategies. To the best of our knowledge, literature addressing the measurement of person-centred teamwork is lacking.

1.1 | Background

Person-centred teamwork is still a novel area of research. Teamwork is essential for successful person-centeredness as teamwork creates an environment where multidisciplinary teams, patients and communities share in the care process (Li et al., 2018). Measuring and evaluating person-centred teamwork in hospital settings will allow for data-driven best practices and improved quality of care (Atashzadeh-Shoorideh et al., 2022; Moule et al., 2017).

Measurement provides insights into the efficacy of implemented strategies. Accurate instruments are needed for accurate measurement of implemented strategies. A fundamental prerequisite of accurate instruments lies in a clear understanding of the concept. Therefore, the first step in developing an instrument (Hair

What does this paper contribute to the wider global community?

- Person-centred teams improve outcomes for persons receiving care in hospitals.
- Person-centred teamwork, aimed at improving practice, is now measurable.
- Improvement plans can specifically assist settings with low compliance.
- The instrument was developed for use by healthcare workers in hospital settings.

et al., 2019; Siedlecki, 2020) to measure person-centred teamwork was to define the concept and reach consensus on the attributes. The concept and attributes of person-centred teamwork were proposed to be 'person-centred teamwork is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust, and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes' (Viljoen, 2023).

While existing instruments measure teamwork, such as those developed by Rosen et al. (2018) and Kang (2019) and person-centred care (Slater et al., 2017), they do not assess the promotion of person-centred teamwork in clinical practice. This study aims to present a consensus on the items developed for measuring the attributes of person-centred teamwork.

2 | METHODS

2.1 | Study design

A consensus design was employed to collaborate with experts, facilitating the sharing of their insights to enhance and to identify elements for inclusion in an instrument to measure person-centred teamwork, as suggested by Nasa et al. (2021) and Fink-Hafner et al. (2019). The Delphi technique is a well-established method to obtain consensus (Heuzenroeder et al., 2022; Niederberger et al., 2021; Shinnars et al., 2021). An electronic Delphi (e-Delphi), utilising online platforms to engage with a panel of experts (Berg et al., 2022), was chosen to obtain consensus on the items to be included in a self-report

instrument to measure person-centred teamwork in hospital settings. An international panel of experts was selected to reduce direct confrontation, mitigating potential intimidation. Experts remained blinded to each other's identities, enabling participation without the pressure to conform to dominant opinions (Fink-Hafner et al., 2019; Nasa et al., 2021; Trevelyan & Robinson, 2015). Experts were able to voice their opinions freely, creatively and honestly (Fink-Hafner et al., 2019; Waggoner et al., 2016).

Additionally, e-Delphi proved to be a cost-effective and time-saving strategy (Fink-Hafner et al., 2019; Waggoner et al., 2016). Experts had 2 weeks per round to give feedback (Jünger et al., 2017; Niederberger & Spranger, 2020) and were able to give feedback at their own convenience (Fink-Hafner et al., 2019; Nasa et al., 2021). The e-Delphi process promotes the evolution of ideas as experts learn and adapt their feedback in the context of the group based on feedback and changes made in subsequent rounds (Fink-Hafner et al., 2019; Jünger et al., 2017; Niederberger & Spranger, 2020; Ogbeifun et al., 2016). Each expert responded individually, with no distractions (Fink-Hafner et al., 2019; Nasa et al., 2021). The e-Delphi gave the researchers control over responses, allowing them to collate and swiftly incorporate suggestions to initiate the next round. The e-Delphi method facilitates the process of achieving consensus to assess concepts (Shinners et al., 2021; Taylor, 2020) and has been increasingly used in healthcare research. The use of the

CREDES Guidelines to guide and ensure rigour of the method was done see the supporting document (CREDES guideline).

2.2 | Preparing for e-Delphi

A methodological literature review was conducted to identify the pool of items to be included in the e-Delphi rounds. In June 2022, a librarian assisted in developing a Boolean search string, encompassing variations and combinations of the keywords 'person-centeredness', 'teamwork' and 'interprofessional' and 'instruments'. We chose a 10-year time frame to account for the evolving nature of healthcare practice, person-centeredness and teamwork research, making newer studies more relevant to the study's aim. The search was conducted on EBSCO-host, Web of Science and Scopus. In total, 89 records from peer-reviewed journals were identified and exported to Rayyan, a web tool designed to expedite screening and study identification (McKeown & Mir, 2021; Ngo et al., 2020). Following automatic deduplication ($n=4$), the remaining records ($n=85$) were independently reviewed by two researchers (AV and TH). First, the titles and abstracts were reviewed for inclusion. We included articles that focused on person-centeredness and/or teamwork or interprofessional collaboration and referred to a tool, instrument, survey or questionnaire. Following review, the

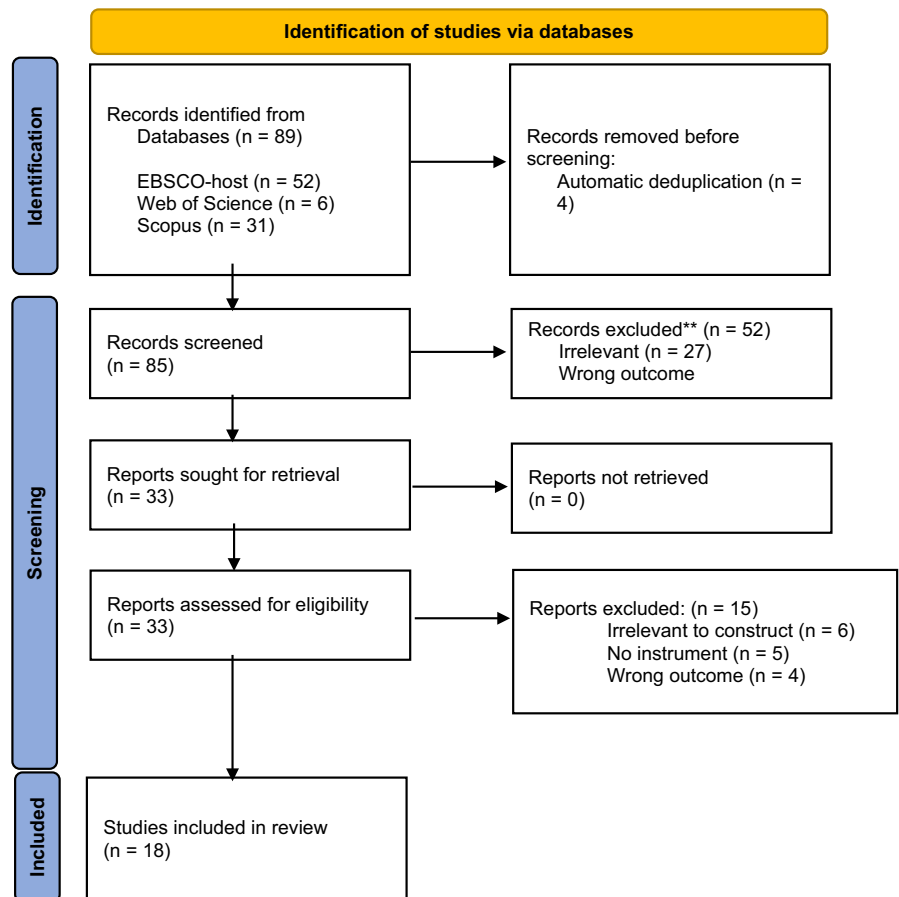


FIGURE 1 Process of literature selection to identify items to be included in the e-Delphi study.

researchers discussed conflicts and decided on whether to include the article or not. A total of 33 records were included (Figure 1), and full texts were retrieved. The two researchers (AV and TH) screened the full text articles. A total of 18 studies were included for review.

The articles were screened for references to other potentially useful articles, but none were identified. Nine instruments were identified, and their items were compiled, resulting in a pool of 129 items. Similar items were removed, and during online discussions, the remaining items were mapped to the four constructs of person-centred teamwork. This item review and alignment process was repeated five times during online discussions involving all authors. Once the item reduction was deemed complete, some items were rephrased, and sentences were constructed to align with the new instrument during three online discussions (AV and TH). A final online discussion focused on the 58 items selected, and consensus was reached to include a pool of 43 items, which informed Round 1 of the e-Delphi (Figure 2).

2.3 | Participants

Consensus on the ideal number of participants for an expert panel has not been established (Beiderbeck et al., 2021). An expert was defined as an individual with knowledge and expertise in the specific area (Nasa et al., 2021), which, in this case, was person-centeredness, teamwork or instrument development. The lead author identified experts using purposive and snowball sampling. The inclusion criteria were as follows: (1) English speaking, with a specific interest in (2) person-centeredness and/or teamwork and/or instrument development; (3) evidenced by publications on person-centeredness and/or teamwork in peer-reviewed journals; and/or (4) clinical and/or academic expertise in the field of person-centeredness and/or teamwork. An international panel was sought, aiming to collect diverse knowledge from experts with experience in various settings,

thus enhancing applicability. While some studies suggest that expert panels should comprise more than eight participants (Avella, 2016; Nasa et al., 2021), other studies recommend panels of 10–18 participants (Santana et al., 2018). Nine experts participated in this study (Table 1).

2.4 | Ethical considerations

The study was approved by the Faculty of Health Sciences Research Ethics Committee, University of Pretoria (11/2022). All the experts were emailed written information about the study, the benefits of the study and their right to withdraw. Written consent to participate was obtained from each expert before data collection.

TABLE 1 Demographic information of the experts (n=9).

Items	Count (%)
High income countries	
Australia	
Social worker	1 (11)
Nurse	1 (11)
England	
Nurse	1 (11)
Ireland	
Nurse	3 (33)
Psychologist	1 (11)
Sweden	
Nurse	1 (11)
Upper-middle income countries	
South Africa	
Nurse	1 (11)

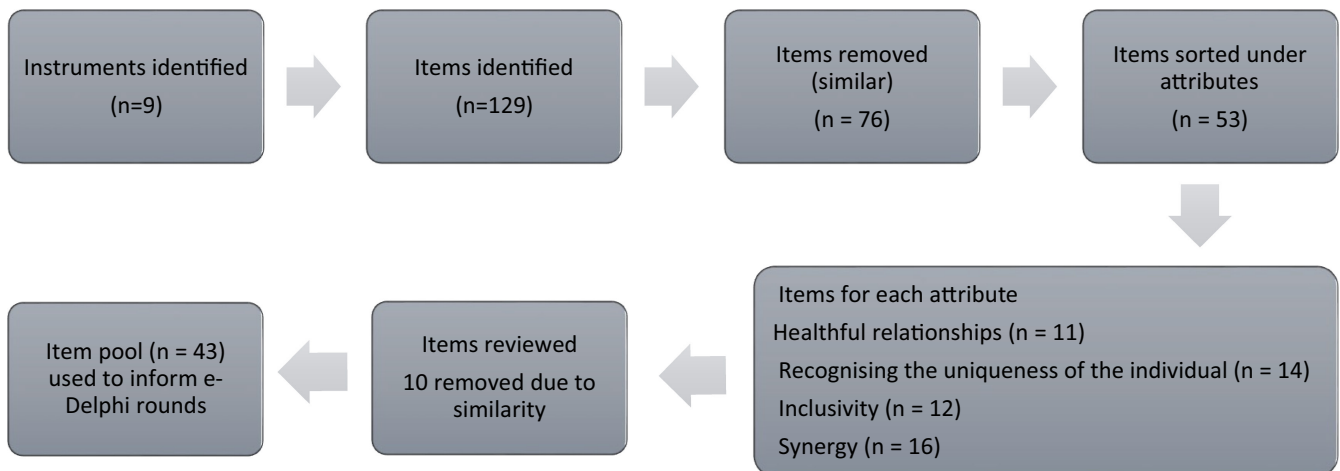


FIGURE 2 Summary of item identification and reduction.

2.5 | Communication with the panel

Sixteen experts were invited to participate. Each expert received an information leaflet informing them about the study, an informed consent document and a demographic information survey. The experts were e-mailed individually to ensure anonymity and confidentiality. Once the experts expressed an interest in participating and returned the signed informed consent form and completed the demographic information survey, Round 1 was initiated.

2.6 | Data collection

The four attributes and related items ($n=43$) were populated on a Google Form (Table 3). Before initiating the e-Delphi rounds, the Google Form was piloted. The online form was sent to one academic and two postgraduate students to obtain feedback regarding the clarity of instructions and ease of completing the form and to estimate the time needed for completion. No corrections were needed, and the Google Form was used in Round 1.

2.6.1 | Round 1

The experts received a Google Form including the definition of the concept of 'person-centred teamwork' and four attributes. For each attribute, the related items identified during the preparation phase were provided (Table 3). The experts rated the relevance of each item using a 4-point Likert scale: (1) strongly agree, (2) agree, (3) disagree and (4) strongly disagree. The experts were asked to rephrase the wording of the items, if necessary, in the space provided. Responses were analysed in Excel. Once the data analysis was completed, the results were used to inform Round 2 (Belton et al., 2019).

2.6.2 | Round 2

Experts received the feedback from Round 1 (Fink-Hafner et al., 2019; Ogbeifun et al., 2016), which included a table with the original attributes and items, the level of consensus for each item, and the changes that were implemented. Experts received a new link

to the updated Google Form that included only the items that did not achieve consensus as well as the rephrased items. The experts were asked to indicate the level of relevance and were given an opportunity to change the wording of the items if necessary. Data were analysed in Excel and used to inform Round 3.

2.6.3 | Round 3

The items were emailed in a word document to the experts for final inputs.

2.7 | Data analysis

Data analysis occurred simultaneously with data collection (Heuzenroeder et al., 2022). The quantitative data were analysed using descriptive statistics, which helped to determine the level of consensus (Trevelyan & Robinson, 2015). The level of consensus can be set at a minimum of 70% ($I-CVI > 0.7$) or more, as suggested in the literature (Belton et al., 2019; Heuzenroeder et al., 2022). We agreed that the level of consensus should be $\geq 75\%$ ($I-CVI > 0.75$), as suggested by Niederberger et al. (2021). We calculated the level of consensus by summing the Likert scores for 'disagree' and 'fully disagree' and 'agree' and 'fully agree' (Veugelers et al., 2020). Qualitative analysis focused on the experts' written comments for each item (Förster & von der Gracht, 2014). Content analysis was used to analyse the data and then adapt the items accordingly, indicating the clarity of each item (Veugelers et al., 2020). Two independent coders (AV and TH) analysed the data to avoid bias.

3 | RESULTS

3.1 | Actual time frame

Three e-Delphi rounds were performed, which is consistent with recommendations made by Jünger et al. (2017) and Niederberger and Spranger (2020). The e-Delphi rounds were conducted over a 7-week period. Round 1 started on 25 October 2022, and Round 3 was completed on 8 December 2022.

TABLE 2 Overall consensus per attribute during Rounds 1 and 2.

Attribute	Round 1		Round 2	
	Number of items	I-CVI	Number of items	I-CVI
Healthful relations	8	0.59	9	0.90
Recognising the uniqueness of the individual	13	0.71	9	0.82
Inclusivity	9	0.77	6	0.96
Synergy	13	0.77	14	0.82

Abbreviation: I-CVI, Item-level Content Validity Index.

3.2 | Response rate

Sixteen experts were invited, of whom nine (56%) participated in all three rounds. The experts did not indicate reasons for not participating. All the participants had an academic background, and their demographic information is summarised in [Table 1](#).

3.3 | Round 1

The experts responded to 43 items related to the four attributes of person-centred teamwork ([Table 3](#)). Each of the four attributes had a different leading question. In Round 1, the leading questions were adjusted to one leading question for all four attributes: 'In the healthcare setting where I work...'. The overall consensus for each item is presented in [Table 2](#).

[Table 3](#) summarises the results of each item. The 10 items that obtained consensus (≥ 0.75 I-CVI), were not included in Round 2. The experts identified five items that were similar in nature and suggested that these items be dropped. Seventeen items were rephrased according to the input given by experts. One new item was generated.

3.4 | Round 2

Eighteen items were included in the Google Form for expert review. It was agreed that 14 items were relevant and clear. The experts suggested that one of the items be split into two items. Four items were dropped because a consensus was not obtained. A word document including all items ($I-CVI \geq 0.75$) and suggested changes were emailed to experts for final feedback.

3.5 | Round 3

Round 3 included 38 items. The panel was asked to give final inputs. All items were accepted.

4 | DISCUSSION

In this study, we describe the e-Delphi process, including nine international experts, to reach consensus on the items to be included in an instrument to measure person-centred teamwork in medical settings. The experts were tasked with obtaining consensus on the relevance and clarity of items identified during a methodological literature search. The items were related to each of the four attributes of person-centred teamwork (Viljoen, 2023). This research can be used to develop a practical tool to measure person-centred teamwork in clinical settings, which will ultimately improve patient outcomes and satisfaction. [Figure 3](#) is a summary of the process used to obtain the items for the instrument.

During Round 1, the items were grouped under the four attributes of person-centred teamwork, each having an introduction question for the subsequent items. The experts suggested using a single introduction question that applied to all the attributes, namely, 'in the healthcare setting where I work...'. This approach directs respondents in the expected direction (Khai Quang et al., 2022) and enhances comprehension (DeVellis, 2016; Heuzenroeder et al., 2022; Streiner et al., 2015).

The first attribute, healthful relationships, pertains to the relationships among the healthcare team, patients and significant others. Person-centred teamwork interactions aim to maintain healthful relationships. Team members in healthful relationships are sympathetically present, show human kindness and compassion towards each other, try to understand each other's viewpoint and value each other (Byrne et al., 2020; McCance & McCormack, 2016; Wilkinson & Reed, 2008). This attribute included eight items. The experts agreed that seven items needed to be rephrased. One item (item 8) was split into two items. Nine items were forwarded to Round 2 and confirmed as being relevant and clear.

The second attribute, recognising the uniqueness of the individual, acknowledges that each person is a unique human being with their own ideas and needs (Byrne et al., 2020). Person-centred teams should acknowledge that patients are experts in their own lives (Louw et al., 2017; Waters & Buchanan, 2017). When person-centred teamwork is practised, healthcare providers and patients have an opportunity to participate and make shared decisions (McCance & McCormack, 2016). This attribute included 13 items. One item was regarded as relevant ($I-CVI 0.77$) and clear ($I-CVI 0.88$) after Round 1. Nine items needed revision. Items were rephrased to align with the wording of the definition of person-centred teamwork. The definition refers to 'person receiving care' and 'person giving care' (Viljoen, 2023). The items were thus rephrased to use the exact wording; for example, the item 'Family members are encouraged to ask questions about the care received by their loved one' was rephrased to 'With the person receiving care's approval, their significant others are encouraged to actively engage in the care received'. Three items were removed, because they overlapped with other items. The process formed part of item reduction to ensure that the instrument was not overburdened with items (Bull et al., 2022) and to reduce redundancy. Five items were included in Round 2. Four items obtained consensus. One item was removed as its level of consensus decreased from 0.66 to 0.44. The nine items that were regarded as relevant and clear in Rounds 1 and 2 were resent for confirmation in Round 3. All items were confirmed for inclusion in the instrument.

The third attribute, inclusivity, incorporates communication, task interdependency, information sharing and shared responsibility. Inclusivity indicates a level of task interdependence, necessitating excellent communication and interaction among the team (Fong et al., 2018; Franklin et al., 2015; Rydenfält et al., 2019). Teams also share responsibility, which relieves the burden on individual team members. The inclusivity attribute had nine items. During Round

TABLE 3 Item-level Content Validity Index (I-CVI) scores for each item in Rounds 1 and 2.

Item number	Item	Round 1			Round 2		
		Relevance I-CVI	Clarity I-CVI	Consensus decision	Relevance I-CVI	Clarity I-CVI	Consensus decision
Attribute 1: Healthful relations							
1	Positive role modelling for the development of effective relationships within the healthcare team	0.33	0.33	R2	1.0	0.77	A
2	I experience positive role modelling for the development of healthful relationships within the healthcare team	0.66	0.77	R2	0.88	0.77	A
3	Team leader is sensitive to the needs of the healthcare team members The team leader is sensitive to the needs of all team members	0.66	0.66	R2	1.0	1.0	A
4	Communication between healthcare team members is done in a respectful manner Communication (verbal and non-verbal) between team members occurs in a respectful manner	0.33	0.44	D			
5	Individual healthcare team members seek to resolve issues when their goals for the person they care for are conflicting Team members work collaboratively to agree on goals Team members work collaboratively to resolve conflicts through shared decision-making	0.77	0.66	R2	0.77	1.0	A
6	Healthcare team members listen to persons receiving care to identify needs Healthcare team members listen to persons receiving care to identify needs, hopes and desires	0.66	0.66	R2	0.88	1.0	A
7	Healthcare team members are fully focussed on the person they care for The healthcare team is focused on their commitment to deliver individualised holistic care Recognition is given to each healthcare team member for their contribution	0.77	0.66	R2	0.77	1.0	A
8	Each team member's contribution is acknowledged and valued Consensus are reached when an issue arises where all the healthcare team members do not agree	0.55	0.55	R2	0.88	1.0	A
Attribute 2: Recognising the uniqueness of the individual							
1	The healthcare team is able to reach consensus on areas of disagreement Healthcare team members are encouraged to discuss what is important to them	0.77	0.66	R2	1.0	1.0	A
2	Team members are encouraged to discuss what is important to them, as part of the team Patients are encouraged to voice their needs	0.88	0.55	D			
3	Healthcare team members try to understand each other's perspective Team members actively try to understand each other's perspectives	0.77	0.66	R2	0.77	1.0	A

(Continues)

TABLE 3 (Continued)

Item number	Item	Round 1			Round 2		
		Relevance I-CVI	Clarity I-CVI	Consensus decision	Relevance I-CVI	Clarity I-CVI	Consensus decision
4	Family members are encouraged to ask questions about the care received by their loved one With the person receiving care's approval, their significant others are encouraged to actively engaged in the care received	0.77	0.88	R2	0.77	1.0	A
5	I feel acknowledged as a member within the healthcare team	0.77	0.88	A			
6	Team leaders facilitate participation within the healthcare team	0.66	0.33	R2			
	Team leaders actively facilitate participation of each team member and/or person(s) experiencing care related to outcomes within the healthcare team				0.44	0.22	D
7	Healthcare team members are encouraged to suggest ideas related to the care plan of the person receiving care	0.44	0.33	R2			
	Team members collaborate in agreeing solutions for individualised care plans				0.77	0.66	A
8	Each healthcare team member has the freedom to be themselves within the team	0.55	0.33	R2			
	Each team member has the freedom to be authentic within the team's values				0.77	0.77	A
9	Opportunities are created to share ideas within the healthcare team	0.77	0.55	D			
10	Care plans are discussed among the healthcare team and family members	0.66	0.66	R2			
	Care plans are discussed between the healthcare team, significant others and person receiving care				0.77	0.88	A
11	Decision-making process includes the persons receiving care	0.77	0.88	R2			
	Where the person receiving care has capacity, s/he is involved in decision-making processes				0.77	1.0	A
12	Decision-making process includes the family members	0.66	0.44	R2			
	Decision-making process includes the person receiving care's significant others, where appropriate				0.88	0.77	A
13	I actively participate in healthcare team meetings to inform my decision-making	0.66	0.44	D			
Attribute 3: Inclusivity							
1	Reflection on experiences is encouraged within the healthcare team	0.77	0.66	R2			
	Team members are encouraged to reflect on their practice within the team				0.77	1.0	A
2	Language used to communicate is understood by the person receiving care	0.66	0.55	R2			
	When working with a person receiving care, language that they understand is used				1.0	0.77	A
3	Inputs from the person receiving care are valued by members of the healthcare team	0.88	0.88	A			
4	Healthcare team members are encouraged to ask for help without being judged	0.77	1.0	A			
5	Care plan is discussed with the person receiving care	0.66	0.55	R2			
	The care plans and alternatives are discussed with the person receiving care				0.88	0.66	D

TABLE 3 (Continued)

Item number	Item	Round 1			Round 2		
		Relevance I-CVI	Clarity I-CVI	Consensus decision	Relevance I-CVI	Clarity I-CVI	Consensus decision
6	Each team member's contribution is valued	0.77	0.88	A			
7	Family members contribute to the discussion about the care plan of their loved ones	0.66	0.55	D			
8	Each healthcare team member's knowledge regarding the care is taken into consideration	0.66	0.55	R2			
9	Each team member's knowledge, skill and expertise are respected and valued	0.88	0.77	D	1.0	0.88	A
	Each healthcare team member's input is sought in clinical decision-making						
Attribute 4: Synergy							
1	Reached consensus on their shared values and beliefs	0.77	0.77	R2			
2	Team members have developed shared values and beliefs	0.66	0.55	R2	0.77	1.0	A
3	Support healthcare team members to develop their practice through reflecting on realisation of team's values and beliefs						
4	Facilitated reflection is used to develop practice according to agreed evidence	0.88	0.88	A	0.88	0.88	A
5	Celebrate the healthcare team's achievements	0.88	1.0	A			
6	There is trust among the team members	0.77	1.0	R2			
7	Conflict between healthcare team members is managed without affecting care provided	0.66	0.77	R2	0.77	1.0	A
8	Conflict within the team is managed by the team without affecting care provided						
9	Healthcare team members discuss care plans	0.77	0.88	A	0.88	0.66	A
10	Healthcare team members discuss care plans to ensure consistency of practice	0.77	0.88	A			
11	Conflict is managed between healthcare team members without affecting team cohesion	0.88	1.0	A	0.88	0.66	A
12	Practices inconsistent with the healthcare team's shared values and beliefs are challenged	0.88	0.77	R2			
13	Healthcare team members collaborate to provide best care	0.88	0.77	R2	0.88	1.0	A
14	Healthcare team members collaborate to provide best practice						
15	I am respected within the team	0.88	0.77	A			
16	There is an effort to support and help each team member	0.88	1.0	A			
17	Care of person receiving care is well organised	0.88	0.44	R2			
18	Care of the person receiving care is effectively organised and communicated	0.33	0.33	R2	0.88	1.0	A
19	Healthcare team members work hand-in-hand						
20	Healthcare team members work collaboratively by promoting interdependency within the team	0.33	0.33	R2	0.66	0.44	D
21	Team effectiveness is evaluated by the team and service users	0.88	0.55	NI			
22	Team effectiveness is evaluated by the team				1.0	1.0	A
23	Team effectiveness is evaluated by the person(s) receiving care				1.0	1.0	A

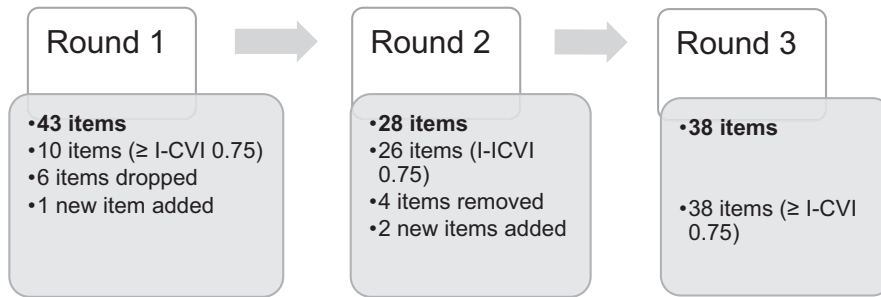


FIGURE 3 Summary of item process per round in the e-Delphi to identify elements to be included in an instrument to measure person-centred teamwork in medical settings.

1, three items were confirmed to be relevant and clear. Four items needed rephrasing. Two items were removed because they were deemed to overlap with items in other attributes. Four items were included in Round 2, of which three (items 1, 2 and 8) were regarded as relevant and clear. All three items obtained consensus. One item overlapped with another item, and even though it had consensus, it was removed to avoid redundancy (DeVellis, 2016; Heuzenroeder et al., 2022; Streiner et al., 2015). Six items were deemed relevant and clear in Rounds 1 and 2 and were sent for final confirmation in Round 3. Consensus was reached to include all six items in the instrument.

The fourth attribute, synergy, refers to the combined efforts of a team leading to improved patient outcomes (Franklin et al., 2015). Synergy describes how collaboration, conflict management and cohesiveness contribute to teamwork. The synergy attribute included 13 items. Six items were regarded as relevant and clear. Seven items needed rephrasing. One item was added as per expert suggestion, 'team effectiveness is evaluated including feedback from the service user, which could be an additional item' (participant 4). In Round 2, eight items were deemed relevant and clear and were thus included. The experts suggested that item 14 should be split into two different items, 'I would split this question...one question for team effectiveness evaluated by team and one question team effectiveness evaluated by service user...' (participant 5). One item was dropped because experts could not agree on the relevance and clarity of the item. A total of 14 items were sent for confirmation in Round 3.

A total of 38 items were distributed during Round 3 to confirm their relevance and clarity. All items were accepted.

4.1 | Limitations

The use of the e-Delphi technique may be seen as a limitation due to the lack of formal guidance in the process. However, the CREDES reporting guidelines were used to address this concern (Fink-Hafner et al., 2019; McPherson et al., 2018; Nasa et al., 2021; Niederberger & Spranger, 2020). The CREDES reporting guidelines ensure rigorous application of the Delphi technique for the development of best practices. The e-Delphi method has limitations regarding the ability to clarify misunderstandings with experts since it was

electronically conducted. Our panel of experts included only nine international experts, which may be regarded as small; however, Shinnars et al. (2021) caution against overrepresentation.

5 | CONCLUSIONS

We developed an instrument to measure person-centred teamwork in clinical settings, aiming to improve practice outcomes. Based on a consensus definition of person-centred teamwork and the related attributes, 43 items were generated from existing instruments identified in the literature. In three e-Delphi rounds, nine experts reached a consensus on the relevance and clarity of 38 items to be included in the final instrument for measuring person-centred teamwork in hospital settings. The nine experts participated in all three rounds. Future research should evaluate the instrument's validity and reliability, and a person-centred teamwork initiative should be implemented, monitored and evaluated in clinical practice. The evaluation of person-centred teamwork has the potential to identify strengths and weaknesses in clinical settings, which can be used to inform interventions to improve patient care.

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CONFLICT OF INTEREST STATEMENT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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CHAPTER 6

PHASES 3 AND 4: OBJECTIVE 4 SCALE DEVELOPMENT AND EVALUATION

6.1 INTRODUCTION

Chapter 5 established consensus on the items to be included in an instrument to measure person-centred teamwork in hospital units. This chapter addresses Objective 4:

To validate an instrument to measure healthcare workers perceptions of person-centred teamwork in hospital units

The objective was reached in five steps using Boateng et al's (2018) steps:

- Step 1: pre-testing the items
- Step 2: sampling and survey administration
- Step 3: item reduction and
- Step 4: factor extraction, for the measurement of person-centred teamwork
- Step 5: scale evaluation, including test dimensionality, test reliability and test validity

Chapter 2 discusses the research design and methods used to address the objective (see section 2.7).

6.2 OUTCOMES

An instrument measuring the perceptions of healthcare workers on person-centred teamwork in hospital units was validated (see Annexure F.7).

The report was submitted to the *Journal of Advanced Nursing*, a peer reviewed journal:

Vijoen, A, Leech, R, Masenga, A, Slater, P & Heyns, T. 2023. Psychometric validation of an instrument to measure healthcare workers perceptions of person-centred teamwork in hospital settings. *Journal of Advanced Nursing*, **submitted for review** (see Annexure F.6).

The report followed the author guidelines for the selected journal and is presented following Section 6.4.

6.3 SUMMARY

Chapter 6 provided the results following the validation of the instrument to measure healthcare workers perceptions of person-centred teamwork in hospital units. Chapter 7 focuses on the conclusions, imitations and recommendations of the study.

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Article



Title

PSYCHOMETRIC VALIDATION OF AN INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK IN HOSPITAL SETTINGS

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Statistics

The statistics were checked prior to submission by an expert statistician, AndriesMasenge-
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Conflict of interest

No conflict of interest to declare by the researchers.

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PSYCOMETRIC VALIDATION OF AN INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK IN HOSPITAL SETTINGS

ABSTRACT

Aim: To validate an instrument for measuring healthcare workers' perceptions of person-centred teamwork in hospital units.

Design: Quantitative cross-sectional exploratory descriptive design

Methods: The target population included healthcare workers who worked in hospital settings. Total sampling was used to identify healthcare workers. The participants completed the instrument. The data were captured and analyzed using the software IBM SPSS Statistics version 28 and RStudio 2023.06.

Results: A 38-item instrument measuring the perceptions of healthcare workers of person-centred teamwork was tested psychometrically. A total of 388 healthcare workers working in private (n=160) and public (n=228) hospitals completed the instrument. Confirmatory factor analysis was used, indicating that the items were significant and that the constructs were well measured. Factor loading was present, and bifactor analysis confirmed the multidimensionality of each construct. The Cronbach's α confirmed the reliability of each of the 38 items.

Conclusion: The person-centred teamwork instrument was reliable and validated as a multidimensional scale comprising 38 items. The instrument is psychometrically suitable for measuring person-centred teamwork in hospital settings.

Implications: The person-centred teamwork instrument provides the ability to measure person-centred teamwork efforts to improve practice. As a measurable concept, person-centred teamwork can be improved by distinguishing areas for improvement.

Impact: The 38 item person-centred teamwork instrument indicated good fit for measuring the constructs, and the instrument was validated. Each of the items was reliable for measuring person-centred teamwork. The instrument can be applied internationally to assist in the measurement of person-centred teamwork practices to improve clinical outcomes.

Patient or public contribution

Healthcare workers assisted with the psychometric testing of the items.

Contribution to global clinical community

- The instrument allows for the measurement of person-centred teams in clinical settings.
- Being able to measure the concept allows for better practice and manageable change.

Keywords

Person-centred, Teamwork, Instrument, Validation, Measurement, Empirical research

1. INTRODUCTION AND BACKGROUND

Person-centredness and teamwork are well-developed and established concepts for improving practice and outcomes (McCormack et al., 2021; Rydenfält et al., 2019). Person-centredness demands that healthcare workers adjust their emphasis from the “disease within the person” to the “person with the disease” (Dellenborg, 2020). Healthcare teamwork focuses on interprofessional collaboration, with patient outcomes serving as a goal (Sangaleti et al., 2017).

The interrelated use of person-centredness and teamwork has led to the defining and constructing of “person-centred teamwork” as a measurable concept in recent years. Person-centred teamwork as a single concept has been analyzed and defined recently (Viljoen, 2023). Separate measurable instruments exist for person-centredness (Rosenlund, et al., 2022; Slater et al., 2017) and teamwork (Margolis et al., 2022; Chen et al., 2019), but there is a need to develop an instrument to measure the concept as a whole.

Developing an instrument requires multiple steps and rigor to obtain the validation and reliability needed to ensure that the items measure the concept accurately (Boateng and Adams, 2023). The scale was developed by pretesting the items, sampling and survey administration, item reduction and factor extraction (Boateng and Adams, 2023). An instrument has been developed to measure person-centred teamwork but has not been validated for its applicability in healthcare settings. To address the lack of validation, this study aimed to validate an instrument that was developed to measure person-centred teamwork in healthcare settings (Viljoen, 2023).

2. METHODOLOGY

2.1 Aim

To validate an instrument to measure person-centred teamwork in hospital units.

2.2 Design

A quantitative cross-sectional exploratory descriptive design was used to test the measurement of the instrument.

2.3 Setting

The instrument was validated in the Gauteng province in South Africa, which is positioned on the southern tip of the African continent. South Africa covers 1.2 million km² and has a population of 60.6 million (Statistics South Africa, 2022b:18). South Africa is recorded as a third world or developing country with high unemployment and poverty rates even though it has an abundance of goods and natural resources and is recognized as one of the largest

industrialized countries in Africa in terms of both wealth and gross domestic product (Bakari & Ahmadi 2018). Furthermore, South Africa is divided into nine provinces (Statistics South Africa, 2017b:18). Despite being the geographically smallest, Gauteng Province has the largest population of the nine provinces, with just over 14 million inhabitants (Statistics South Africa, 2017a).

The South African health care system is currently a pluralistic system with separate public and private sectors, and third and first world health conditions are found in the population (Rowe & Moodley 2013). The public sector is funded by the National Treasury and Government. The estimated total health care expenditure in public sector hospitals is R122 bn annually. The private sector is compensated by medical schemes (medical insurance), which are funded by their members. The average annual expenditure in the private sector is R142bn (Mahlathi and Dlamini, 2015).

For the purpose of validating the instrument, one public tertiary hospital in the city of Pretoria and one private hospital in Pretoria were selected. Convenience sampling was used. The public hospital was chosen due to its academic affiliation with the researcher's higher education institution. It is also in close proximity to the researcher's place of work. The private hospital was selected because it is the workplace of the researcher. Therefore, the data collection was more convenient. At the time of the study, a total of 987 and 343 healthcare workers were selected from public and private hospitals, respectively.

2.4 Ethics

Ethical approval was given by the [Blinded]. Institutional consent to use the staff in the two hospitals was obtained. Participants were required to read an information leaflet. Participants consented to participate in the study by completing the instrument items.

2.5 Preparing for data collection

This validation study was preceded by four steps. The first step was a concept analysis to determine the four attributes and definition of person-centred teamwork (Viljoen et al., 2023). Step 2 involved an e-Delphi study with an international panel of experts to obtain a consensus on the four attributes and definitions (Viljoen, 2023). The consensus definition for person-centred teamwork was *'person-centred teamwork is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust, and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes'* (Viljoen, 2023).

Once consensus was reached, step 3 included generating items to measure the concept of person-centred teamwork. The items were generated through a methodological literature search with the assistance of an information specialist. We first identified existing instruments on person-centredness and teamwork to identify relevant items. A total of 129 items were identified. Step 4 involved a Delphi study with a panel of international experts to reach consensus on the items that should be included in the instrument. A consensus was reached on 38 items to be included in the instrument (Viljoen, et al., 2023).

A pilot study was also conducted. A sample of healthcare workers meeting the inclusion criteria was emailed and asked to participate. The purpose of the pilot study was to assess the clarity, understandability, and functionality of each item. The instrument included Section A, which included biographical information, and section B, which included the 38 items. There were four constructs: Healthful Relations (HR) and Recognition of the Uniqueness of the Individual (RUI), each with nine items; Inclusivity (INC) had six items; and Synergy (SYN) had 14 items. The items were scrambled and not presented under each construct.

Fifteen healthcare workers were invited to participate voluntarily. Volunteers were emailed the instructions to either print the instrument and complete it or 2) click on a Google form link and complete the instrument electronically. The participants were also asked if they clearly understood the items and if they recommended any appropriate changes. At the end of the questionnaire, there were three input questions: 1) Are the instructions to the instrument clear and understandable? 2) Is the layout of the instrument easy to use and functional? 3) Could you easily understand the wording used? The participants were required to respond to these three questions. Participants were asked to provide feedback within two weeks.

Seven healthcare workers volunteered (response rate=46%). The participants included nurses (n=4), physiotherapists (n=2), and dieticians (n=1). Two participants were from the public hospital, and five were from the private hospital. The participants' years of experience ranged from 5 to 33 years, with a mean of 17.14 and a standard deviation of 10.36. No changes to the layout, instructions or wording of the items were suggested. The same instrument was used during the validation. The data collected during the pilot study were not used for validation.

2.6 Population and sample

The target population included healthcare workers who worked in the hospital setting. Total sampling was used to select healthcare workers who 1) were nurses, medical doctors,

dieticians or physiotherapists; 2) were directly involved in patient care; and 3) were employed full time at one of the selected hospitals.

Various authors suggest different sample sizes when validating an instrument. Boateng et al. (2018) suggested a sample size of 10 participants per item. Clark and Watson (2019) suggested a sample size that is independent of the item number, namely 300 participants. MacCullum et al. (1999) suggested that a sample of 100 is poor, 200 is fair, 300 is good, 500 is very good, and 1000 is excellent. We aimed to obtain 380 participants because the instrument had 38 items, excluding the items focusing on biographical information, which is in line with the recommendations of MacCullum et al. (1999) and Boateng et al. (2018).

2.7 Data collection

The data were collected in two ways, namely, paper-based and electronic-based. The paper-based instrument consisted of four pages, where the first page included a description of the study and the researcher, the second page included the biographical information items (5 items), and the third and fourth pages included the 38 items measuring the perceptions of person-centred teamwork. The second data collection option involved an electronic link created on Google Forms that was sent to participants via e-mail or WhatsApp. The link took the participants to a page with the same information as the paper-based instrument. Once the participant clicks 'submit', the data are captured and stored. The data were collected by visiting each unit in the respective hospitals. The study was explained to the manager and staff present in the unit. The participants were given instructions to the manager to distribute the instruments to the staff. An envelope or closed box was used to ensure that the completed instruments were returned. We visited the respective units three times a week for 3 months. The completed instruments were then collected, and additional instruments were supplied. The electronic link was also given to the managers of the different groups. The manager then distributed the link to the staff by using WhatsApp or email. We captured the paper-based data in the electronic version. The data were subsequently exported to an Excel spreadsheet.

2.8 Data analysis

The data were analyzed using the software IBM SPSS Statistics version 28 and RStudio 2023.06.0. The demographic characteristics were descriptively analyzed. Exploratory factor analysis was not performed, because the items were rigorously identified and validated in a Delphi study. The validity of the 38 items was assessed via a confirmatory factor analysis (CFA) using techniques that included the chi-square test of exact fit (1–5 acceptable), the Comparative Fit Index (>0.90 acceptable), the Tucker Lewis Index (>0.90 acceptable), the Root Mean Square Error of Approximation (RMSEA, < 0.07 indicates good fit), and the

Standardized Root Mean Square Residual (0–1 good fit) to measure item fit (Boateng et al., 2018). Factor loading was determined, and the heterotrait–monotrait (HTMT) ratio was used to determine discriminant validity (discriminant validity was confirmed when the HTMT was <0.90). Bifactor analysis was used to determine general factor loading through chi-square tests, the comparative fit index, the Tucker Lewis index, the RMSEA, and the standardized root mean square residual. Bifactor indices were determined. To assess internal consistency, interitem correlations were examined, and the reliability coefficient was calculated by using Cronbach’s α .

3 RESULTS

3.1 Biographical data

The data were collected from January 31 to March 31, 2023. A total of 388 participants participated, of whom 160 (41.2%) were from a private hospital and 228 (58.8%) were from a public hospital. The total population of the private hospital was N=343, and the response rate was 46.5%. The public hospital instrument was distributed to N=600 staff members (n=228 responses were received), which is a 38% response rate.

Participants were from 138 wards; 136 participants were from intensive or high care units, 15 participants were from the theatre, 40 participants were from emergency departments, and 48 participants from multiple units, largely from non-nursing categories. There were 11 participants who indicated “Other” under the question related to the ward where they worked. The category “Other” represented nursing students, medical doctor interns, nursing managers, and administrators working in the ward. The years of experience in the participants’ chosen profession ranged from 1–44 years, with most of the participants having between 10–25 years of experience.

Table 1: Summary of the biographical data (n=388)

Variable	Count (%)
Number of respondents	388 (100)
Public	288 (59)
Private	160 (41)
Profession	Count (%)
Dietician	13 (3.35)
Enrolled nurse	48 (12.37)
Enrolled nursing assistant	30 (7.73)
Medical doctor	19 (4.89)
Physiotherapist	32 (8.24)
Registered nurse	238 (61.34)
Other	8 (2.06)
Current working department	Count (%)
Emergency department	40 (10.30)
Intensive care unit	136 (35.05)

Medical ward	37 (9.53)
Multiple units	48 (12.37)
Pediatric ward	13 (3.35)
Surgical Ward	88 (22.68)
Theatre	15 (3.86)
Other	11 (2.83)
Years of experience	Count (%)
1 to 5	100 (25.77)
6 to 10	106 (27.31)
11 to 20	106 (27.31)
21 to 30	60 (15.46)
31 to 40	14 (3.60)
40+	2 (0,005)

3.2 Dimensionality

The dimensionality of the items was tested to determine whether the items were duplicated across two samples via confirmatory factor analysis (Rai et al., 2019; Boateng et al., 2018). Confirmatory factor analysis indicates the measurement of the model and the item fit indices. The item fit indices used were as follows: chi-square test of model fit, 2283.189; degrees of freedom, 655; chi-square/df, 3.48; and p value, 0.001. The comparative fit index was 0.988, the Tucker Lewis index was 0.987, the RMSEA was 0.080, the upper tier RMSEA was 0.084, and the standardized root mean square residual was 0.069 (Rai et al., 2019; Boateng et al., 2018). The fit indices indicate a respectable item fit, in which the items are significant and the constructs are well measured. In addition, factor loading for all the constructs was determined. The four constructs had factor loadings on all items between 0.518 and 0.816. Discriminant validity was not achieved because the HTMT ratio ranged between 0.984 and 1.0. Therefore, discriminant validity was not achieved, but rather, the results indicated the presence of a general factor, which led to bifactor analysis. According to our bifactor analysis, the chi-square was 1.056, the comparative fit index was 0.999, and the Tucker–Lewis index was 0.999. All the items were used to measure the general factor. Table 2 indicates the factor loading and mean scores of the person-centred teamwork instrument.

The following bifactor statistics were calculated for the omega (ω), omega subscale (ω_s), omega hierarchical (ω_H), and omega hierarchical subscales (ω_{HS}) (Rodríguez, Reise, & Haviland, 2015) to assess the unidimensionality of the general factor scale. The omega for the general score is ($\omega=.968$), which implies that 96.8% of the variation in the total score can be attributed to common variance across the factors and that 3.2% of the variance is due to errors. For the subscales, the omegas were, for HR ($\omega_s=.888$), INC ($\omega_s=.832$), RUI ($\omega_s=.848$), and SYN ($\omega_s=.926$). To assess the proportion of the variance in the general score, the omega H was calculated. The omega H for the general score is ($\omega_H=.960$), which implies that

99.2% ($0.960/968=0.992$) of the variance is attributed to the general factor, whereas 0.8% ($0.008/968=0.008$) of the variance is attributed to the factors. The ω_{HS} for the subscales were HR ($\omega_{HS}=.000$), INC ($\omega_{HS}=.042$), RUI ($\omega_{HS}=.050$), and SYN ($\omega_{HS}=.028$). The explained common variance (ECV) by the general factor was 0.864, which implies that 86.4% of the common variance is explained by the general factor and that 13.6% of the variance is explained by the four subscales. When omega is greater than 0.80, the general score is considered unidimensional (Rodríguez, Reise, & Haviland, 2015). The authors thus confirmed construct validity.

Table 2: The factor loading and mean scores of the person-centred teamwork instrument (final 38 items)

Item	Mean	Est	SE
I experience positive role modeling for the development of healthful relationships within the healthcare team	3.106	0.177	0.054
The team leader is sensitive to the needs of all team members	2.972	0.22	0.065
There is an effort to support and help each team member	3.106	0.097	0.063
Team members work collaboratively to agree on goals	3.054	0.07	0.05
Team members are encouraged to discuss what is important to them, as part of the team	2.979	0.075	0.074
Team members actively try to understand each other's perspectives	2.923	0.018	0.065
With the person receiving care's approval, their significant others are encouraged to actively engaged in the care received.	3.041	0.082	0.067
I feel acknowledged as a person within the healthcare team	3.021	0.038	0.076
Team members are encouraged to reflect on their practice within the team	2.974	0.021	0.056
When working with a person receiving care, language that they understand is used	3.211	0.023	0.049
Inputs from the person receiving care is valued by members of the healthcare team	3.222	0.109	0.059
Healthcare team members are encouraged to ask for help without being judged	3.186	0.008	0.051
Team members have developed shared values and beliefs	2.956	0.075	0.063

Facilitated reflection is used to develop practice according to agreed evidence	2.943	0.033	0.057
The healthcare team's achievements are celebrated	2.794	0.133	0.072
There is trust among the team members	2.755	0.072	0.07
Team members work collaboratively to resolve conflicts through shared decision-making	2.832	0.032	0.053
Healthcare team members listen to persons receiving care to identify needs, hopes and desires	3.191	0.258	0.068
The healthcare team is focused on their commitment to deliver individualized holistic care	3.162	0.438	0.108
Team members collaborate by agreeing to solutions for individualized care plans	3.075	0.328	0.119
Each team member has the freedom to be authentic within the team's values	2.948	0.27	0.0103
Care plans are discussed between the healthcare team, significant others and person receiving care	2.928	0.186	0.08
Each team member's contribution is valued	2.995	0.535	0.278
Each team member's knowledge, skill and expertise are respected and valued	3.013	0.293	0.156
Conflict within the team is managed by the team without affecting care provided	2.987	0.187	0.068
Healthcare team members discuss care plans to ensure consistency of practice	2.992	0.129	0.061
Conflict within the team is managed by team members without affecting the team cohesion	2.887	0.18	0.066
Each team member's contribution is acknowledged and valued	2.889	0.102	0.051
The healthcare team is able to reach consensus on areas of disagreement	2.897	0.066	0.051
Where the person receiving care has capacity, s/he is involved in decision- making processes	3.162	0.105	0.063
Decision-making process includes the person receiving care's significant others, where appropriate.	3.17	0.095	0.075
Practices inconsistent with the healthcare team's shared values and beliefs are challenged	3.054	0.231	0.064
Healthcare team members collaborate to provide best practice	3.198	0.23	0.065
Team effectiveness is evaluated by the person(s) receiving care	3.031	0.17	0.066
Communication (verbal and nonverbal) between team members occurs in a respectful manner	2.974	0.048	0.054
Care of the person receiving care, is effectively organized and communicated	3.137	0.16	0.057

Team effectiveness is evaluated by the team	2.961	0.196	0.066
I am respected by the team	3.113	0.073	0.064

5.3 Reliability

Reliability was tested using Cronbach's α . A Cronbach's $\alpha < 0.70$ indicates that the item consistently measures the construct (Boateng et al., 2018). The unidimensional reliability of all four constructs across all items had a Cronbach's α between 0.811 and 0.922. The reliability of each item indicates that the item contributes to instrument reliability. Table 3 indicates the unidimensional reliability of the four constructs.

Table 3: Unidimensional reliability of the four person-centred teamwork instrument constructs

Unidimensional reliability				
Estimate	Healthful relations	Recognizing uniqueness individual	Inclusivity	Synergy
	Cronbach's α	Cronbach's α	Cronbach's α	Cronbach's α
Point estimate	0.872	0.859	0.811	0.922
95% CI lower bound	0.852	0.837	0.779	0.910
95% CI upper bound	0.890	0.879	0.838	0.933
*CI = Confidence interval				

4 DISCUSSION

This study describes the validation of an instrument to measure person-centred teamwork from the perspective of healthcare workers. The instrument was validated for use in healthcare settings. The data were collected using two methods, an electronic link and a paper-based instrument. The response rate on the electronic platform was low, with an average response rate between the two facilities of 15%, which is congruent with the findings of Wu et al. (2022). The paper-based platform response rate was 53% between the two facilities, which is considered an average response (Wu et al., 2022). Keeping the response rate in mind, the aim was to have a sample size of 380 or more (Boateng et al., 2018). A good sample was obtained with 388 responses.

Confirmatory factor analysis (CFA) was used to validate each item. The CFA yielded an excellent model fit and reliability of the factors. The instrument development process was driven by the theory of CFA (Dunn and McCray, 2020; Slater et al., 2017). CFA indicates the good internal structure of the items used to measure the constructs, and the relationships between the items are consistent (Boateng et al., 2018). The four constructs each had factor loadings with significant P values. The HTMT ratio confirmed that overlap occurred and that

discriminant validity was not achieved. Therefore, bifactor analysis was used to evaluate the unidimensional construct while recognizing the multidimensionality of each construct (Boateng et al., 2018). Each item was assessed and found to measure a general factor. This high indication of reliability from the Cronbach's alpha indicated that all the items measured the concept of person-centred teamwork. Therefore, none of the items were reduced. The 38 items accurately measured person-centred teamwork during the initial testing. Similarly, the four constructs of the instrument accurately measured person-centred teamwork. The person-centred teamwork instrument will therefore enable the measurement of effective implementation of person-centred teamwork or allow for effective benchmarking for future interventions that aim to improve person-centred teamwork. The instrument can be used to monitor person-centred teamwork over time, offering empirical support for evaluating revisions aimed at implementing person-centred teamwork in practice. The use of all healthcare workers in testing the instrument further enhances its comprehensive applicability. Consequently, this instrument is envisaged to aid in measuring person-centred teamwork across all healthcare workers.

5 LIMITATIONS

This study proposes an instrument to measure the perceptions of healthcare workers about person-centred teamwork. The limitations of this study were as follows: 1) the instrument was validated in South Africa; therefore, the instrument should be further validated in other countries, and 2) we did not request feedback about the time spent completing the instrument.

6 CONCLUSION

The person-centred teamwork instrument was developed and validated and found to be a reliable multidimensional scale comprising 38 items. The CFA indicated good model fit and reliability, with all four constructs exhibiting factor loadings confirmed via the HTMT ratio, indicating overlap. However, discriminant validity was not achieved, and the bifactor analysis affirmed the multidimensionality of each construct. The Cronbach's α values confirmed item reliability. The instrument facilitates the generation of evidence regarding the implementation of person-centred teamwork in practice. This information can be used to identify the developmental needs of person-centred teamwork in practice. The person-centred teamwork instrument may allow for comparative studies across various clinical and geographic settings.

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CHAPTER 7

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

INTRODUCTION

Chapters 3 to 6 presented the outcomes of the four phases of the study in detail. This chapter discusses the conclusions, limitations, recommendations and significance of the study.

7.2 AIM AND OBJECTIVES

The aim of the study was to define person-centred teamwork and develop an instrument to measure person-centred teamwork in hospital units. In order to achieve the aim, the study was conducted in phases with the following objectives:

- **Phase 1: Concept clarification**

Objective 1: To conduct a concept analysis of person-centred teamwork

Objective 2: To reach consensus on the definition and attributes of person-centred teamwork.

- **Phase 2: Item development**

Objective 3: To reach consensus on items to be included in an instrument to measure person-centred teamwork in a hospital setting

- Sub-objective 3.1: To generate items for an instrument to measure person-centred teamwork
- Sub-objective 3.2: To reach consensus on the constructs, items and rubric to measure person-centred teamwork

- **Phase 3 and 4: Scale development and evaluation**

Objective 4: To develop and validate an instrument to measure healthcare workers' perceptions of person-centred teamwork in hospital units

The instrument was developed and evaluated through pre-testing, sampling, item reduction and factor extraction, for the measurement of person-centred teamwork.

7.3 CONCLUSIONS

The conclusions of each phase and related objectives are presented next.

7.3.1 Phase 1: Concept clarification

In phase 1 an operational definition was developed and international consensus reached on the definition and related attributes of person-centred teamwork.

7.3.1.1 Objective 1: Concept analysis

Walker and Avant's (2019) 8-step model was used for concept analysis. The concept analysis revealed four attributes, namely healthful relations; recognising the uniqueness of individuals; inclusivity, and synergy, and an operational definition of person-centred teamwork was developed. The definition was:

Person-centred teamwork is a dynamic approach where healthcare professionals, patients and their significant others collaborate to meet the healthcare needs of the patient. Embedded in synergy, inclusivity and healthful relationships, the members recognise the uniqueness of each individual, allowing each team member to flourish and strive to attain optimal outcomes for all.

The operational definition and four attributes informed the second objective (Section 7.3.3).

7.3.1.2 Objective 2: Consensus on person-centred teamwork

An e-Delphi study was used to reach consensus on the concept person-centred teamwork and related attributes derived from Objective 1. A panel of 12 experts from six developed and one developing country participated to reach consensus within three e-Delphi rounds.

The consensus definition was:

Person-centred teamwork is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust, and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes'.

The four attributes derived from Objective 1: healthful relations; recognising the uniqueness of individuals; inclusivity, and synergy remained unchanged. These attributes were used as constructs during the generation of items for the instrument developed to measure the participant healthcare workers' perceptions regarding person-centred teamwork in their hospital units (Objective 3).

7.3.2 Phase 2: Item development

Using the constructs of person-centred teamwork derived from Objective 2, items (N=43) for an instrument to measure the perceptions of healthcare workers regarding person-centred teamwork in hospital units were generated using a methodological literature search (Annexure E. 3). The methodological literature search was conducted to search for current tools/ instruments/ guides that contained items to measure person-centredness and/or teamwork. The search generated nine instruments with a sum of 129 items. The items were reduced and refined/ reworded and reduced to 43 items and allocated to each of the four identified constructs: 1) Healthful relations 2) Recognising the uniqueness of individual, 3) Inclusivity and 4) Synergy. These items were then distributed to nine international experts using an e-Delphi to refine/ reword or delete the

items. After three rounds consensus was reached on 38 items, which included items for healthful relations (n=9), recognising the uniqueness of individuals (n=9), inclusivity (n=6), and synergy (n=14).

7.3.3 Phase 3: Scale development and evaluation

A quantitative cross-sectional exploratory descriptive design was used to test the measurement of the instrument (P-PCT).

Boateng et al's (2018) five steps were used to achieve the objective.

7.3.3.1 Step 1: Pre-testing of items

The 38 items related to each of the four constructs of person-centred teamwork derived from Phase 2 were pre-tested by healthcare workers (N=7) from the selected public and private hospitals. The participants were asked to indicate the clarity, understandability and functionality of each of the 38 items, using a 4-point Likert scale. All the participants concluded that the 38 items were clear, understandable and functional, and no changes were made to the instrument.

7.3.3.2 Step 2: Sampling and survey administration

Two hospitals, one public and one private, were conveniently selected and total sampling used to distribute the P-PCT to healthcare workers (HCWs) in both hospitals. The HCWs could participate by means of an online platform responding to the items via a link, or through a paper-based self-administered survey. Three-hundred and eighty eight (N=388) healthcare workers completed the survey.

7.3.3.3 Step 3: Item reduction

As part of the item reduction procedure, Cronbach's alpha was used to examine inter-item and item-total correlations, and all values were greater than the recommended 0.70 cut-off. The values ranged from 0.811 to 0.922. This eliminated the need to examine the inter-item and item-total correlations.

7.3.3.4 Step 4: Extraction of factors

Factor analysis was used to understand the internal structure and relationship between items. Extractions of factors view the variances among the responses of multiple items. This step was done as part of testing dimensionality (Boateng et al, 2018; Nuopponen, 2010).

7.3.3.5 Scale evaluation

Scale evaluation included two steps:

- Step 1: Test dimensionality and validity: Testing of dimensionality of the instrument items means to test if the items, their factors and functions are duplicated across two samples was done using confirmatory factor analysis. Confirmatory factor analysis indicates the measurement of the model and the item fit indices. The fit indices indicate a respectable item fit, that the items are significant and the constructs are well measured. In addition, factor loading for all the constructs was determined.

Discriminant validity was not achieved due to factor loading indicating coinciding. The Heterotrait-monotrait ratio (HTMT) was used to test discriminant validity. Discriminant validity was not achieved, but indicative of a general factor present, which led to bi-factor analysis. All items indicated to measuring the general factor. The general score was considered unidimensional and this concluded that construct validity was determined.

- Step 2: Test reliability: Testing reliability was done using the Cronbach α . The Cronbach α indicates that the items consistently measure the construct. The unidimensional reliability for all four constructs across all items indicated that the items contributed to the instrument's reliability.

A 38-item instrument measuring healthcare workers' perceptions regarding person-centred teamwork in hospital units was validated and can be implemented in clinical practice.

7.4 CONTRIBUTION

The study made theoretical, methodological and clinical practice contributions.

7.4.1 Theoretical

The study assisted the understanding of the concept "person-centred teamwork". An extensive literature search revealed no definition of the concept of person-centred teamwork. The study contributed an operational definition of person-centred teamwork that was internationally validated. The definition builds on studies that defined person-centredness and teamwork as separate concepts. The definition and four attributes formed the foundation and reference for the development of an instrument to measure healthcare providers' perceptions of person-centred teamwork in a hospital unit.

A consensus definition of person-centred teamwork was obtained from a panel of 12 experts, which may enhance buy-in and use of the instrument developed to measure the perceptions of healthcare providers of person-centred teamwork in hospital units in future.

The items to measure person-centred teamwork were discovered through a methodological search for instruments that measure person-centredness or teamwork. All items were categorized under the four attributes. The items were reduced, refined and restructured. The items were validated by a panel of international experts that reached

consensus on the items. The items underwent psychometric testing and were tested in the South African hospital healthcare system. Healthcare workers from all categories were involved in testing the items. The items were validated and found reliable to measure the concept. The instrument can be used to measure and evaluate person-centred teamwork in clinical practice.

7.4.2 Methodology

Teamwork and person-centred care have been implemented and accepted as strategies to improve outcomes within the healthcare setting (WHO, 2018; Naldemirci et al, 2018). Prior to developing an instrument to measure healthcare providers' perceptions of person-centred teamwork, it was necessary to define the concept and identify the related constructs (attributes). Concepts are building blocks to theory development, which aid in understanding the concept and enable one to measure the concept. To the researcher's knowledge, 'person-centred teamwork' has not been defined previously therefore it was considered an important first phase in the study. Consequently, she added Phase 1 to Boateng et al's (2018) model. Adding the concept analysis and international consensus prior to conducting Boateng et al's (2018) phases, provided methodological depth to the study.

The researcher is of the opinion that an instrument should be based on a definition, which includes constructs and considered it important to first obtain consensus on the definition and related attributes of person-centred teamwork. A consensus definition is applicable to an international audience and might increase buy-in on the definition and attributes (constructs) on which the instrument items were developed. In this study, the researcher used Walker and Avant's (2019) model for the concept analysis, which analysed the concept and established a definition for person-centred teamwork. The concept analysis was the foundation of the study that built on the best practice for developing and validating scales in healthcare (Boateng et al, 2018)

The use of the Delphi method and specifically the electronic Delphi (e-Delphi) assisted in obtaining consensus on the definition, attributes and items of person-centred teamwork. The use of international experts assisted in increasing the relevance and application. Using the CREDES guidelines ensured the integrity of the method. In addition, between the two Delphi studies, the researcher conducted an extensive methodological literature search focused on instruments/tools which provided the items used to measure person-centred teamwork.

The last methodological contribution was the psychometric testing of the items. The items were structured in a self-administered instrument. After completion by the healthcare providers, extensive statistical analysis was done.

7.4.3 Clinical practice

The consensus definition of “person-centred teamwork” provides a clear understanding of its meaning, which in turn should enhance its usability in clinical practice.

Person-centred teams improve outcomes for persons receiving care in hospitals. Building person-centred teams is now better understood. The measurement of person-centred teamwork is now possible and plans aimed to improve practice are measurable. The instrument was developed for use by healthcare workers in hospital settings and guides and assists settings with low compliance.

7.5 LIMITATIONS

The researcher identified the following limitations in the study:

The concept analysis was done using literature published in English, which may have led to the loss of information written in other languages (n=5) (see Chapter 3; PRISMA flow diagram). The definition developed was specifically focused on the healthcare setting, as person-centred teamwork may also present differently in other industries and settings, which were not incorporated in the definition. Doing a comparison between this newly

developed instrument and other person-centred and teamwork assessments, would have the possibility of adding depth to the study.

During the e-Delphi, the experts received a literature summary (see Annexure C.8) of how the concept was concluded, potentially limiting the experts' understanding of the concept as they were not involved in Objective 1. Future studies should invite and collaborate with experts in concept analysis.

Psychometric testing was done solely within the South African population of healthcare workers in the hospital setting. Implementation to healthcare workers outside of South Africa and outside the hospital setting might require further testing.

7.6 RECOMMENDATIONS

Based on the findings, the researcher makes the following recommendations for management, clinical practice, and further research.

7.6.1 Management

- Invest in strategies to enhance person-centred teamwork to improve patient outcomes. The value of having person-centred teams should not be underestimated.
- Support from management has the potential to ensure early engagement by healthcare practitioners in the strategy.
- Time investment is needed to allow healthcare practitioners to develop the culture needed for person-centred teamwork.
- The implementation of person-centred teamwork is now measurable and can allow continuous improvement of practice and outcomes.

7.6.2 Clinical practice

- Developing person-centred teams requires commitment to a continuous engagement of the dynamic healthcare team. New members of the team need to be informed and engaged in the strategy to ensure continuous practice.
- Measurement of person-centred teamwork is now possible and feedback from results should be used to further enhance the practice of person-centred teamwork.
- Measurement of quality indicators regularly is needed to monitor the effect of person-centred teamwork as a contributor to improved outcomes.

7.6.3 Further research

Further research should be conducted on the following topics:

- Psychometric testing of the person-centred teamwork outside the South African healthcare setting
- An examination of the implementation of person-centred teamwork
- The development and implementation of person-centred teamwork strategies to improve practice
- Measuring the perspectives of the person-centred team and the patient on the person-centred teamwork strategies
- Greater focus should be placed on the writing of scientific articles concerning the description of the methodology implemented. Allowing greater detail will allow future researchers to apply improved rigour to research
- A review of the CREDES guidelines as a requirement for the implementation of Delphi studies, to enhance the quality of the Delphi method

7.7 RESEARCHER'S REFLECTION

This journey of research has taken me through many layers of learning from the excitement at the start and not knowing what to expect. I delved into the concept of

person-centred teamwork, which I knew very little about but loved from the start. Developing a study proposal to guide my journey was enjoyable. The excitement began when the study was approved and the journey started. Doing a concept analysis took me through what seemed like mountains of literature and I escaped into this world of identifying and sorting attributes and consequences of person-centred teamwork. I loved the process and rigour involved. Arriving at a definition was a proud moment. Although it was refined and adapted during the Delphi study, I knew I was part of creating a new idea that became a reality when we obtained consensus on the measurable items. The consensus process was fascinating as the experts gave input and in so doing made me think differently about the concept. The final part was taking the items to the different units in the two hospitals. Again, I stood amazed at what we do daily as healthcare providers, and the intensity and passion of individuals towards strangers. At times I felt like an intruder, as I saw how hard the healthcare providers were working to save a life. The world of statistics made me stand in awe. It is a world with a language and culture of its own: a world of great meaning.

Finally, when I think back over the journey, I realise that doing a PhD is not about how intelligent or great you are, but about how willing you are to think wider, further and continuously. It is realising that although you are building your viewpoint, always consider others' perspectives. Consistency and persistence are your best friends. Writing a messy first draft is the first step to greatness. In the end, I am now a student with knowledge and the ability to ascertain knowledge. I can learn new concepts quickly, think about them widely and transfer the skill. I will forever be a student, grateful for this journey.

7.8 CONCLUSION

This study was initiated from the need to be able to understand and measure person-centred teamwork and was conducted in four phases. The study yielded a preliminary definition and attributes of the concept. Consensus on the definition and attributes was obtained and validated by a panel of international experts. The validated definition and attributes were used as a foundation to guide the process of identifying items to measure

person-centred teamwork. Consensus was obtained on the final 38 items to measure person-centred teamwork. The items underwent psychometric testing in the healthcare setting in South Africa. All categories of healthcare workers participated. The instrument was found valid and reliable in measuring person-centred teamwork.

The ability to measure person-centred teamwork will assist the implementation and continuous improvement of person-centred teams. Person-centred teamwork will allow the outcomes set from a management perspective to be realized. People receiving care and people giving care will be able to work towards the same outcome.

ANNEXURE A.1

ETHICAL APPROVAL FACULTY

OF HEALTH SCIENCES

RESEARCH ETHICS

COMMITTEE OF THE

UNIVERSITY OF PRETORIA



ANNEXURE A.2

INSTITUTIONAL PERMISSION

TO CONDUCT THE STUDY

GAUTENG DEPARTMENT OF

HEALTH





GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

STEVE BIKO ACADEMIC HOSPITAL

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For attention: __ Alida Viljoen

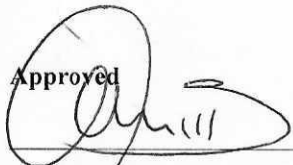
NHRD Ref Number: GP -202209-052

Re: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT STEVE BIKO ACADEMIC HOSPITAL

TITLE: DEVELOPMENT OF AN INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK IN HOSPITAL NURSING UNITS

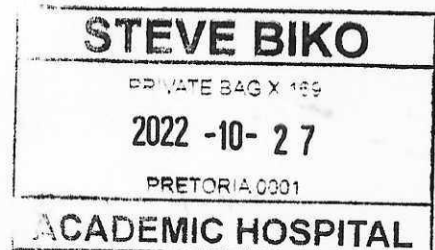
Permission is hereby granted for the above-mentioned research to be conducted at Steve Biko Academic Hospital. This is done in accordance to the "Promotion o access to information act No 2 of 2000". Please note that in addition to receiving approval from Hospital Research Committee, the researcher is expected to seek permission from all relevant department. Furthermore, collection of data and consent for participation remain the responsibility of the researcher. The hospital will not incur extra cost as a result of the research being conducted within the hospital.

You are also required to submit your final report or summary of your findings and recommendations to the office of the CEO.

Approved


Dr.LMB Majake-Mogoba
Clinical Director

Date: 27.10.22



ANNEXURE A.3

INSTITUTIONAL PERMISSION

TO CONDUCT THE STUDY

ZUID-AFRIKAANS HOSPITAL



**LETTER OF APPROVAL TO CONDUCT RESEARCH AT ZUID-AFRIKAANS
 HOSPITAL (ZAH)**
Applicant details: Alida Viljoen

Research:

 Development of an instrument to measure person-centred
 teamwork in hospital and nursing units

 The following decision was reached regarding the conduction of the mentioned research
 at Zuid-Afrikaans Hospital (ZAH) -

Please indicate outcome marked with "X"

Permission GRANTED	X
Permission NOT GRANTED	
Require MORE INFORMATION	

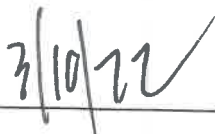
Comments (if applicable):

Robert Jordaan
 Chief Executive Officer



Priscilla Botha
 Nursing Manager

Date:



Zuid-Afrikaans Hospitaal
 (1918/05508/08)
Official Stamp
 255 Bourke Street
 Muckleneuk
 Pretoria, 0002

 Nie-uitvoerende direkteure/Non executive directors: GH Braak Snr (Voorsitter/Chairman); AR Prinsloo (Vise-Voorsitter/Vice-Chairman)
 D Warmenhoven; GH Braak Jnr; K Fleischhauer, Dr CJ Olivier; Uitvoerende direkteur/Executive director: RS Jordaan

ANNEXURE B.1

PRISMA 2020 CHECKLIST

CONCEPT ANALYSIS





PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review/ <i>concept analysis</i>	Title
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	√
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Methods (p4)
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Background (p4)
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Data sources (p 4 and 5)
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Data sources (p 4 and 5)
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Data sources (p 4 and 5)
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Inductive and deductive data analysis (p 5)
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	P 4 and 5
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Not applicable
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Not applicable
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	P 4 and 5
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Not applicable
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	P 4 and 5
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Not applicable
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Used Walker and Avant – not applicable
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Not applicable
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Not applicable



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Not applicable
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Not applicable
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Not applicable
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Figure 1
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Not applicable
Study characteristics	17	Cite each included study and present its characteristics.	Not applicable
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Not applicable
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Not applicable
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Not applicable
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	Not applicable
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Not applicable
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Not applicable
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Not applicable
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Not applicable
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	P 16 and 17
	23b	Discuss any limitations of the evidence included in the review.	P 17
	23c	Discuss any limitations of the review processes used.	P 17
	23d	Discuss implications of the results for practice, policy, and future research.	P 17
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Not applicable
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Not applicable
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Not applicable
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	No funding received
Competing interests	26	Declare any competing interests of review authors.	Nil



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	Corresponding author

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71
For more information, visit: <http://www.prisma-statement.org/>

ANNEXURE B.2

PROOF OF SUBMISSION FOR

PEER REVIEW: CONCEPT

ANALYSIS



Compose

Inbox 3,926

Starred

Snoozed

Important

Sent

Drafts 35

Categories

Social 2,687

Updates 4,174

Forums 14

Promotions 10,661

More

Labels

Huweliks Hande



Dear Dr. Viljoen,

Congratulations, the manuscript titled "DEFINING PERSON-CENTRED TEAMWORK: A CONCEPT ANALYSIS " successfully submitted to Nursing Forum.

We will confirm this submission with all authors of the manuscript, but you will be the primary recipient of c from the journal. As submitting author, you will be responsible for responding to editorial queries and maki manuscript.

In order to view the status of the manuscript, please visit the manuscript details page.

Thank you for submitting your work to Nursing Forum.

MANUSCRIPT DETAILS

Kind regards,
Ganga Maheshwaran
on behalf of "Nursing Forum"

This email was sent to alidavil5@gmail.com. You have received this email in regards to the account creation, peer review process of a paper submitted to a journal published by Hindawi Limited. Hindawi Limited, 3rd Floor, Adam House, 1 Fitzroy Square, London, W1T 5HF, United Kingdom. Hindawi respects your right to privacy. Please see our [privacy policy](#) for information on how we store. proces

ANNEXURE C.1

EMAIL INVITATION TO

PARTICIPATE IN DELPHI

STUDY 1



CONSENSUS ON DEFINITION OF PERSON-CENTRED TEAMWORK

My Name is Alida Viljoen, I am a registered nurse and currently pursuing my PhD in Nursing at the University of Pretoria, South- Africa. The title of my study is:

THE DEVELOPMENT OF AN INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK IN HOSPITAL NURSING UNITS

My support team includes:

Supervisor	Prof Tanya Heyns, University of Pretoria
Co- Supervisor	Prof Ronell Leech, University of Pretoria
Consultant	Dr Paul Slater, University of Ulster

The first phase of the study included a concept analysis of the concept 'person-centred teamwork'. The preliminary definition includes the core attributes extracted from the literature of the concept 'person-centred' and 'teamwork'. I now aim to invite you as an expert in the field of person-centred and/or teamwork to, through your practice wisdom, assist me to refine the concept which can then be used to develop a tool to measure 'person-centred teamwork in care settings. A Delphi (consisting of a *maximum of three rounds*) will be used to obtain consensus on the definition and related attributes.

The process that will be followed once you have volunteered to participate includes:

1. Signing the attached participant information leaflet and return the document to me (Alida) at: alidavil5@gmail.com
2. You will receive an e-mail providing you with preliminary definition of 'person-centred teamwork' as well as a brief summary of the extracted attributes of person-centred' and 'teamwork' to provide some background of how we came up with the definition.
3. The e-mail will also provide a link for a google form where you will be asked to give inputs related to the attributes and definition.
4. Please give feedback within two weeks, to ensure that the process does not drag out too much. A reminder to complete the google form will be sent two days before the due date.
5. After each round you will receive a summary of all the participants inputs and a google form to provide additional inputs. A maximum of three rounds will be done.
6. All participants will remain anonymous. Feedback will be given without any identification.
7. Should you agree to be acknowledged in the publication of the results, you will be asked formal permission in the consent document.

We appreciate your willingness to share your expertise and add to our vision to improve healthcare delivery.

Thank you

Alida Viljoen

ANNEXURE C.2

DELPHI (1) FORMAL

INVITATION



CREDES GUIDELINES APPLICATION (Jünger et al., 2017)

CRITERIA	APPLICATION	REFERENCING
RATIONAL FOR CHOICE OF DELPHI TECHNIQUE		
Justification	Used to obtain consensus Consult international experts e- Delphi values expertise of experts Allows development of under developed concept	Veugelers et.al., 2020; Jünger et al., 2017
PLANNING AND DESIGN		
Planning	Definition and attributes obtained from concept analysis	See section X
	Literature summary compiled for experts	Annexure X
	Participant information letter compiled that included consent	Annexure X
Design	Electronic form compiled and tested	Annexure X
	Consensus was planned at 75%	
STUDY CONDUCT		
Information input	Documentation reviewed by researchers before conducting study	
	Experts received an e-mail with all participating information and documentation	Annexure e-mail, PIL, Lit review, Link
Interpretation	Results was collated, anonymised and analysed. Feedback send back with new instructions	Feedback Email Link
	Consensus does not indicate correctness. Disagreement contribute to new insights on the concepts.	
Prevention of Bias	The researcher had minimal interaction with experts. No bias was made towards the experts responses due to anonymity	
REPORTING		
Purpose and rational	Methodology and decisions discussed in detail	Section 3.5.1 &3.5.2
Expert panel	Detailed description of the panel made	Section 3.5.2.1
Consensus	Consensus attainment discussed and clarified	Section 3.5.2.4
Results	Each round of results discussed	Section X
Limitations	Limitations reported on and impact discussed	Section X
Conclusion	Conclusion reflect the outcomes of e-Delphi with a view to inform practice	Section X
Publication	The e-Delphi is drafted for publication in a reputable journal. Results further published into a report to the institutions that participated	

ANNEXURE C.3

PARTICIPANT INFORMATION LETTER AND CONSENT





Alida Viljoen <alidavil5@gmail.com>

Invitation to participate in Delphi study

Alida Viljoen <alidavil5@gmail.com>

Fri, Mar 25, 2022 at 4:53 PM

To: botmay@ufs.ac.za, yolandehayton@gmail.com, yolande@emmanuel.ac.za

Cc: Tanya Heyns <tanya.heyns@up.ac.za>

Good Day

My name is Alida Viljoen, I am a registered nurse from South Africa. I am in the process of pursuing my PhD in Nursing.

I would like to invite you to participate in my study, Development of an instrument to measure person-centred teamwork. I have identified you as a potential expert in the field.

Attached find an invitation to participate in the study.

The invitation outlines the process.

If you are interested to participate in the study, reply to this email.

I will then send further information.

Thank you for your interest

--

Alida Viljoen



Delphi_Invitation_AV.pdf

108K

ANNEXURE C.4

DEMOGRAPHIC INFORMATION



PARTICIPANT INFORMATION LEAFLET AND INFORMED CONSENT

DELPHI STUDY

STUDY TITLE:

DEVELOPMENT OF AN INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK IN HOSPITAL NURSING UNITS

Principal Investigator: Alida Viljoen

Institution: University of Pretoria, South Africa

DAYTIME AND AFTER HOURS TELEPHONE NUMBER(S):

Daytime numbers 0823342768

After hours: 0823342768

Dear Participant,

Date of consent procedure ____./____./____

1) INTRODUCTION

I would like to invite you to participate in a research study. The information leaflet will help you decide if you would like to participate. Before you agree to take part in this study you should fully understand what is involved. If you have any questions, which are not fully explained in this leaflet, do not hesitate to ask the investigator. You should not agree to take part unless you are completely happy about all the procedures involved.

2) THE NATURE AND PURPOSE OF THIS STUDY

The aim of the study is the development of an instrument to measure person-centred teamwork in the hospital nursing unit. You as a participant are an important source of information.

3) EXPLANATION OF PROCEDURES TO BE FOLLOWED

During the development of the instrument to measure person-centred teamwork in the hospital nursing unit, you will be asked to partake in a Delphi study. The Delphi method is utilised to gain consensus on a specific matter. In this study it will be to gain consensus on the definition of person-centred teamwork and the related constructs of the term. The items to measure the constructs will also need consensus. You will receive an electronic version of the suggested definition that was derived from a concept analysis. You will then have the opportunity to give your input into the definition as an expert in the field of either person-centeredness or teamwork. Your response will be send back to me and I will collate the responses from all participants. You will then be sent the collated responses again, this is called rounding. We will have maximum 3 rounds to achieve

consensus. Once consensus on the definition and related constructs was reached a second Delphi study will be done. This time on the related items to measure person-centred teamwork. The same process of rounding will be followed. Your input as an expert in person-centeredness or teamwork will make a significant contribution.

4) RISK AND DISCOMFORT INVOLVED

There are no risks involved in taking part in the study. You will be participating with full anonymity. Only I, the researcher, will know your identity. You will also be able to partake in the study in your own time and own environment. This gives you full autonomy over your participation. Below there is an area to indicate if you would like to be acknowledged in the study. Should you choose to be acknowledged, you will then waive your anonymity. This will only be done once the study is concluded and not during the Delphi study. Should you wish to remain anonymous, your decision will be respected.

5) POSSIBLE BENEFITS OF THIS STUDY

There will be no direct benefit to you from participating in this study. You will be part of the international group of experts that will have defined person-centred teamwork. You will also be part of the group of experts to determine the items that will measure person-centred teamwork. This benefit will only be given to you if you consent to allowing me to make your identity known.

6) I UNDERSTAND THAT IF I DO NOT WANT TO PARTICIPATE IN THIS STUDY, I WILL NOT BE VICTIMISED

Your participation is completely voluntary. You may refuse to participate or stop at any time during the study without giving any reason.

7) I MAY AT ANYTIME WITHDRAW FROM THE STUDY

Your withdrawal will not affect you in any way.

8) HAS THE STUDY RECEIVED ETHICAL APPROVAL?

This Protocol will be submitted to the Faculty of Health Sciences Research Ethics Committee, University of Pretoria, telephone numbers 012 356 3084 / 012 356 3085 and written approval have been granted by that committee (Ethics approval nr: 11/2021) The study will be structured in accordance with the Declaration of Helsinki (last update: October 2013), which deals with the recommendations guiding doctors in biomedical research involving human/subjects. A copy of the ethics approval letter may be obtained from the investigator should you wish to review it.

9) INFORMATION

If you have any questions about your participation in the research process, you should contact the researcher Alida Viljoen at the daytime and night-time numbers supplied at the beginning of this document.

Alternatively, you can contact any of my supervisors:

Prof Tanya Heyns 0832873929

Dr. Ronell Leech 0824414576

10) CONFIDENTIALITY

All data collected during this study will be regarded as confidential. Your name as well as the names of other participants will not be reported on. Results will be published or presented in such a fashion that all participants remain unidentifiable. Your identity will only be made known if you so indicate, as discussed above.

11) CONSENT TO PARTICIPATE IN THIS STUDY

I have read or had read to me in a language that I understand the above information before signing this consent form. The content and meaning of this information have been explained to me. I have been given opportunity to ask questions and am satisfied that they have been answered satisfactorily. I am aware that the results of the study, including personal details, will be anonymously processed into research reports. I understand that if I do not participate I will not be victimised. I hereby volunteer to take part in this study.

I consent to my identity to be made known at the end of the study. As a contributor of the refinement of the definition: person-centred teamwork

Yes	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

I have received a signed copy of this informed consent agreement.

Participant name

Participant signature

Investigator's name

Investigator's signature

Date: _____

ANNEXURE C.5

CREDES GUIDELINES DELPHI

1



Demographical information

Please provide us the following information, by indicating your option with a **cross (x)** and/or **providing further information** if required.

Country of origin			
Highest professional qualification			
Current job description	Academic		
	Clinician		
	Other		
	If other, please list _____		
Which area do you regard as your expertise <i>(you can indicate more than one)</i>	Person-centred		Teamwork
Years of experience _____ years			
<i>Please explain why you regard yourself as an expert</i>			
<i>Have you published in a peer review journal on person-centred and/or teamwork</i>			Y N
<i>If yes, please indicate the number of publications _____</i>			

Thank you!

ANNEXURE C.6

EMAIL – START DELPHI

STUDY 1 – ROUND 1





Alida Viljoen <alidavil5@gmail.com>

Delphi Study_round1_Alida Viljoen

Alida Viljoen <alidavil5@gmail.com>

Wed, Apr 27, 2022 at 6:42 PM

To: "Xyrichis, Andreas" <andreas.xyrichis@kcl.ac.uk>

Good day Andreas

Thank you for your time to participate in my study.
Your contribution is much appreciated

Attached is a summary of the literature from the concept analysis done to acquire the definition of person-centred teamwork. It also includes the attributes of the concept.

After reading the literature you are required to click on the link provided and provide your feedback. You will have 2 weeks to complete this round. Weekly reminders will be sent. Once all participants have completed their input, I will summarise the feedback and we will start round 2 should it be required.

Should you have any questions please do not hesitate to contact me.

The link: <https://forms.gle/rUhkbu7qFCdSyeWp6> to participate

Best regards

--

Alida Viljoen



Delphi Participation_R1_AV.pdf
446K

ANNEXURE C.7

GOOGLE FORMS FOR DELPHI

1 ROUND 1



Person-Centred Teamwork

Delphi: Consensus on the definition

Section 1

Round 1:

* Indicates required question

1. Email *

General Information

Thank you for participating in this Delphi study to gain consensus on the definition of person-centred teamwork.

There are 2 sections to this study. The first is to obtain your view regarding the 4 attributes found during a concept analysis.

The second is to gain consensus on the definition of person-centred teamwork. You have been provided with the background information related to the topic.

You will be asked to rate your consensus to the attributes and definition by using a Likert scale.

You will then be asked to elaborate on your answer.

2. Rate your level of agreement/ disagreement on the inclusion of the attribute : *

RECOGNISE THE UNIQUENESS OF INDIVIDUAL

Mark only one oval.

1 2 3 4 5

Stro Strongly Agree

3. Explain your rating of the attribute: recognising the uniqueness of the individual *

4. Rate your level of agreement/ disagreement on the inclusion of the attribute : *
- RELATIONSHIP ORIENTED**

Mark only one oval.

1 2 3 4 5

Stro Strongly Agree

5. Explain your rating of the attribute: relationship oriented *

6. Rate your level of agreement/ disagreement on the inclusion of the attribute : *
- SYNERGY**

Mark only one oval.

1 2 3 4 5

Stro Strongly Agree

7. Explain your rating of the attribute: synergy *

8. Rate your level of agreement/ disagreement on the inclusion of the attribute : *

INCLUSIVITY

Mark only one oval.

1 2 3 4 5

Strongly Strongly Agree

9. Explain your rating of the attribute: inclusivity *

Consensus on the definition of person-centred teamwork.

Definition for Person-Centred Teamwork

(Adapted definition)

Person-centred teamwork is a dynamic approach where healthcare professionals, patients and their significant others collaborate to meet the healthcare needs of the patient. Embedded in synergy, inclusivity and healthful relationships, the members recognize the uniqueness of each individual, allowing each team member to flourish and strive to attain optimal outcomes for all

10. Rate your level of agreement/ disagreement on the definition of person-centred teamwork *

Mark only one oval.

1 2 3 4 5

Strongly Strongly Agree

11. Explain your rating of the definition on person-centred teamwork. *

Thank you for your participation

This concludes the first round of the Delphi study. You will receive feedback within 5 days. If needed the second round will be conducted.

This content is neither created nor endorsed by Google.

Google Forms

ANNEXURE C.8

DELPHI LITERATURE

SUMMARY



Thank you for volunteering to participate in the Delphi study to reach consensus on the concept '**Person-centred teamwork**'

Pre-liminary definition (including *attributes*)

Person-centred teamwork is a dynamic approach where healthcare professionals, patients and their significant others collaborate to meet the healthcare needs of the patient. Embedded in *synergy*, *inclusivity* and *healthful relationships*, the members recognise the *uniqueness of each individual*, allowing each team member to flourish and strive to attain optimal outcomes for all.

A summary of the attributes that were extracted for the concept 'person-centred teamwork' are summarized in Table 1, followed by a brief overview of the literature.

Table 1: Summary of the attributes of 'person-centred teamwork'

Concepts	Defining attributes	Sources
Person-centredness	Recognise uniqueness of individual -Ensure share decision-making -Facilitate participation -Self-determination (choice) -Engagement	Byrne et al. (2020) Louw et al. (2017) McCance and McCormack (2016) Røsvik et al. (2013) Waters and Buchanan (2017) Wilkinson and Reed (2008)
	Relationship orientated -Show human kindness -Share knowledge -Strengths / capacity focussed -Being sympathetically present -Feeling of belonging -Social inclusion / citizenship	Byrne et al. (2020) Santana et al. (2018) Wilkinson and Reed (2008)
Teamwork	Synergy Collaborate Cooperate Cohesiveness Manage conflict	Dietz et al. (2014) Franklin et al. (2015) Rydenfält et al. (2019) Sangaleti et al. (2017)
	Inclusivity Effective communication Task interdependency Share information Shared responsibility	Dietz et al. (2014) Mayo (2020) Rydenfält et al. (2019) Tremblay et al. (2017) Sangaleti et al. (2017) World Health Organization (2011)

Person-centred

The two main attributes for person-centred extracted were 1) **recognising uniqueness of individual** and 2) being **relationship orientated**.

Recognising the uniqueness of individual is acknowledging that each person is a human being with their own ideas and needs (Byrne, Baldwin & Harvey, 2020). Through engagement one can see and acknowledge an individual as an expert in their own life (Waters & Buchanan, 2017; Louw, Marcus & Hugo, 2017) and give the person an opportunity to participate and make choices, which is an essential part of person-centredness (McCance & McCormack, 2016). Shared decision making includes decision making from the service user's perspective as well as from the healthcare professional's standpoint (McCormack et al., 2021), where the healthcare team involves patients and their significant others, work together, share information about different options, and then come to an agreement on what the best option is relating to their care (Dixon et al 2016). The desire and freedom to make one's own choices that support the person's needs, wishes and/or preferences are valued (McCormack et al., 2021). Self-determination allows the individual to choose and control their own path but also leads to the ability of the team to share decision making responsibilities (Wilkenson & Reed, 2020; McCance & McCormack, 2016). Therefore rather than having a process where only one person makes the decisions, decision making is shared (Sundean et al., 2021). Subsequently, recognising the uniqueness of the individual encompasses seeing the person as an individual, allowing for engagement, ensuring shared decision making, and enabling a person to practice choice and self-determination. A therapeutic relationship between healthcare professionals, the patient and significant others is built on the premise that the patient and significant others know what is best for them and their circumstances, not only the healthcare professionals (Van Mol et al., 2016:1).

Being relationship orientated refers to the relationship between the healthcare team, the patient, and patient significant others. The interactions between all the individuals involved in person-centredness need to focus on maintaining a healthful relationship. A healthful relationship involves being sympathetically present and showing human kindness, showing compassion towards each other, trying to understand each other's viewpoint, and where both the caregiver and receiver of care are valued (Byrne, Baldwin & Harvey, 2020; Wilkenson & Reed, 2020; McCance & McCormack, 2016). Furthermore, sharing knowledge with each other assists all involved to build a relationship and inform decision making (McCormack et al., 2006). The ability of the individual to be strength and capacity focused allows for a positive outlook even if there is insufficient support (Waters & Buchanan, 2017). Focusing on a healthful relationship further includes ensuring social inclusion of every person involved. Social inclusion creates the potential for a person to feel supported and focussed on the strengths of the person and this then creates a sense of community within the group (Waters & Buchanan, 2017). One need to recognise that in any community there will always be differences, therefore when it comes to decision making or value acceptance,

consensus is needed. Consensus in a relationship shows that the persons involved can agree to a term even if they do not fully believe in it (Wilkenson & Reed, 2020; McCance & McCormack, 2016). Therefore being relationship orientated involves showing human kindness, sharing knowledge, being strengths and capacity focussed, being sympathetically present, ensuring social inclusion, and reaching consensus.

Teamwork

The two main attributes extracted for teamwork were: **synergy** and **inclusivity**. Table 1 reflects the complete and concise attributes of teamwork

Synergy, the combined efforts of a team that lead to improved patient outcomes (Franklin et al., 2015), describe how collaboration, conflict management and cohesiveness attribute to teamwork. Collaboration is the daily practices that are used to meet the needs of the individual (Slangaleti et al., 2017) and specifically focuses on inter-professional collaboration. Inter-professional collaboration is a combination of trust, respect, directness to collaboration, a feeling of belonging, humility, time to listen and talk, between team members (Rydenfält et al., 2019; Slangaleti et al., 2017). The way conflict is managed within the team, will determine the synergy of the team. Conflict management needs to be focussed on obtaining consensus towards the goal of the team and is underpinned by the principles respect for others, autonomy and protecting the relationship (Slangaleti et al., 2017; Dietz et al., 2014). Once collaboration and conflict management is established, it will lead to cohesiveness within the group. Cohesiveness is combining parts to make a whole, which in teamwork refers to the combination of individuals and their contribution that forms team (Dietz et al., 2014). Once there is collaboration, conflict management, and cohesiveness, team synergy is established.

Inclusivity of each member of the team is needed to ensure effective teamwork (Mayo, 2020; Rydenfält et al., 2019; Fong, 2018). It encompasses communication, task interdependency, sharing of information and shared responsibility. Communication in any relationship is paramount to the success of the relationship and is a crucial ingredient for optimal functionality and efficacy of the team. Effective teamwork requires communication that is multi-dimensional and includes all the team members (Mayo, 2020; Rydenfält et al., 2019; Tremblay et al., 2017; WHO, 2011). In any team there is a certain amount of task interdependence, which creates a platform for an increased need to communicate and interact within the team (Rydenfält et al., 2019; Fong, 2018; Franklin et al., 2015). A second important component that is crucial for effective teamwork is sharing information as this establishes continuity, holistic care and inclusivity (Slangaleti et al., 2017; Dietz et al., 2014). Shared information allows the group to share responsibility and allows for each individual in

the team not to feel overwhelmed by the magnitude of a task. Shared responsibility further creates a platform to select the most suitable team member to perform a task, for the best possible outcome. Communication, task interdependency, sharing information and shared responsibility is required for inclusivity to realise.

The concept person-centredness and teamwork were analyzed separately; thereafter a combined definition was concluded that obtains all the attributes of the 2 concepts.

Section 1, Round 1

Please click on the link below to participate in Round 1

<https://forms.gle/rUhkbu7qFCdSyeWp6>

Thank you for your participation

ANNEXURE C.9

EMAIL - DELPHI

PARTICIPATION - ROUND 2





Alida Viljoen <alidavil5@gmail.com>

Delphi Participation: Round 2

Alida Viljoen <alidavil5@gmail.com>
To: Emma Hyde <E.Hyde@derby.ac.uk>

Thu, May 26, 2022 at 10:20 AM

Good day Emma
Thank you for your participation in my study.
The first round had 12 participants and was summarised
Attached find the document for your reference

Round 2 to obtain consensus on the suggested definition of "**person-centred teamwork**" will commence now.

Read the attached document and then follow the link provided to participate.
You have until 7th June 2022 to complete your participation

To participate click the link below:

<https://forms.gle/zXQSuV52knLpg8276>

Thank you for your participation

--

Alida Viljoen

 Delphi_Summary_R1_AV.pdf
578K

ANNEXURE C.10

10 DELPHI (1) ROUND 1

FEEDBACK & ROUND 2

START



DELPHI STUDY: PERSON-CENTRED TEAMWORK, CONSENSUS ON THE DEFINITION

The first round of the Delphi study, to obtain consensus on the definition of the concept: **person-centred teamwork** and the **attributes**, yielded the following results:

Table1: Display of percentage of agreement by the participants (N12)

Attributes	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Consensus reached
Recognize uniqueness of individual	75% (n9)	16.7% (n2)	8.3% (n1)	0%	0%	91%
Relationship orientated	83.3% (n10)	16.7 (n2)	0%	0%	0%	100%
Synergy	58.3% (n7)	25% (n3)	8.3% (n1)	8.3% (n1)	0%	83%
Inclusivity	50% (n6)	33.3% (n4)	8.3% (n1)	8.3% (n1)	0%	83%
Definition	25% (n3)	41.7% (n5)	25% (n3)	8.3% (n1)	0%	66%

Consensus is reached when there is I-CVI, which measures the content validity, of $\geq 75\%$ agreement by the participants. Consensus was measured by combining the 'Strongly agree' and 'Agree' used on the Likert scale. The attribute recognizing the uniqueness of the individual obtained consensus of 91%. The comments made by the participants were supportive in nature. A summary of the responses is provided in Table 2.

Table 2: Summary of participants' verbatim explanations on their level of agreement to the attribute: 'recognizing the uniqueness of the individual'

Without this you have teams that expect everyone to act the same and have a rule based rather than values-based way of working that does not enable persons to flourish
The individual's preferences are necessary in a person-centered care.
this was the primary result from my full concept analysis of my thesis - Honouring the person and recognising the individual was significantly important
each individual we see/treat is unique - depends on their values/beliefs/experiences
Uniqueness for me is linked to the individual itself, not just the "healthcare professional" or the "patient" as a whole and as a specific part of the person-centred approach. It is more specific, i.e. in decision-making the uniqueness of the person, contributes to the situation. Therefore in each situation the patient's "voice" will be different and the healthcare professional's "voice" will be different based on traits such as personality / religion / worldviews etc. One can therefore not assume the all "healthcare professionals" or "patients" views will be the same when faced with a certain situation.
It is important to value each contribution and to work with diversity for greater team effectiveness
Person-centredness focuses on the person and personhood, therefor seeing and respecting of individuals is a core value
It highlights the context of the patient and significant others and the responsibility of the healthcare

workers to respond appropriately.
I'm not sure uniqueness is the best choice of words, though agree with 'individual'. Some needs may be individual but not necessarily unique.
Recognising the uniqueness of an individual is the fundamental underpinning of a person-centred approach.
If uniqueness of an individual is not recognised S/he will not feel that they are understood and will not enter in a meaningful relationship
Although I have no literature at hand, I miss an attribute which is may be a kind of prerequisite to apply the four amentioned attributes: seeing the person, truely noticing the person, acknowledge the person.

The attribute relationship orientated obtained consensus of 100%. The comments made by the participants were supportive in nature. A summary of the responses is provided in Table 3.

Table 3: Summary of participant's verbatim explanation on their level of agreement to the attribute: 'relationship orientated'

I believe health care practice is fundamentally relationship orientated and there is now evidence to suggest that when relationships are not good this negatively impacts on patient safety and morbidity and professional wellbeing and attendance at work.
I think trust should be added to this attribute, i.e. Trustful relationship.
again one of the most significant findings from my own concept analysis of person-centredness - being in relationship was the second most significant theme
a good relationship is crucial to ensure cooperation/compliance with tests/treatments/medication adherence etc
Relationships are critical to teamwork. Without the needed respect and recognition nothing will be accomplished. Patients are however often left out of this relationship, especially when from lower socio-economic classes.
Without a focus on relationship it is hard to work on the content, success depends on the quality of the relationships amongst people
Person-centredness and teams are built around relationships which enable us to connect with others. Relationships are required with 1) self, 2) colleagues and 3) patient and significant others to work in person-centred ways in a team
my interpretation is that it refers to relationships among the healthcare professionals and their relationship as individual and as group with the patient and significant others.
Agreed.
As persons we exist in relationships and being in relation is a key component of personhood. This is again fundamental for effective teamworking.
In healthcare it is about relationships. Poor relationship will ultimately lead to poor outcomes. In relationship orientation the health professional who will begin the relationship must be fully aware of the role it plays in person-centeredness and links with the above attribute of uniqueness
make a choice between descriptions in verbs or in nouns. Now it is both, that's not helpfull. This concerns all four concepts.

The attribute inclusivity obtained consensus of 83%. The comments made by the participants were supportive in nature. A summary of the responses is provided in Table 4.

Table 4: Summary of Participant’s explanation on their level of agreement to the attribute: ‘inclusivity’

I see teams that do not actively seek the views of lower paid workers for example and this leads to fractures or cliques in teams that ultimately lead to disengagement of some as a result of power imbalances.
Inclusivity is important in person-centred care.
I think you need to include everyone to get a good outcome - I'm unclear though how that results in each team member 'flourishing and attaining optimal outcomes for all'. Who is all? Patients or staff or both?
essential
Relationships cannot occur without communication and therefore deems inclusivity essential
For me inclusivity is an integral part of person-centredness and is also ethically related. The sub elements could also be part of 'synergy' and are a bit too 'technically' orientated. Could Teamwork probably more referring to processes (doing) and PC more to being? Shared responsibility or rather shared ownership?
To enable people to work in team and in a person-centred way - inclusivity is vital
I think the elements captured under inclusivity can be distributed to the other three constructs - for example - effective communication to relationship; task interdependency to synergy - share information relationship or unique - shared responsibility synergy
Inclusivity or inclusiveness?
Inclusivity is critical to team cohesion and to develop a person's sense of belonging, which is of course linked to healthful relationships.
Inclusiveness is not a “paper thing” in reality it is a lot to do about the “feelings” and uniqueness of the individual. If a person feel included shared responsibility becomes second nature
Overlaps my concern with Synergy

There is an 83% agreement on the attribute synergy. A summary of the responses is provided in Table 5.

Table 5: Summary of Participant’s explanation on their level of agreement to the attribute: ‘synergy’

A team that is not working synergistically does not assure positive care experiences for patients or professionals. it remains in routines and rituals and does not learn and grow.
I think you have to agree that you are going to work in collaboration by prioritizing the same things this is important, but their should also be emphasis on the individual team member
Synergy is essential although it is very rarely practiced. Healthcare professionals should start acknowledging that all disciplines have an important part to play in a patient's recovery. Treatments from different disciplines complement each other and can benefit even more if communication is improved between members.
I wonder how this differentiate with previous attribute. For me synergy is more outcome orientated in terms of mutual growth and becoming and achieving the task wherefore the team has come together (creating healthful relationships, autonomy, safety and happiness in working?). That a team strives for achieving synergy or synchronicity, but this is never a constant state. It is a sense of free floating together. The sub elements in this attribute are referring to 'working together' or

rather co-creating and with the intent to use multiple ways of knowledge and skills? What is the argument for teamwork - professionals working together?
Reflects on integration of competencies (knowledge, skills, attitude) required to work with people and address their needs
The word synergy implies achieving a greater effect as a group than what an individual can achieve - therefore it captures the elements listed in the reading you supplied
Not sure synergy means the same as combined effort.
I really support this notion of synergy and it is well articulated in the concept analysis.
Optimal outcomes depend on synergy
I've would have expected something like at one hand being open, openness, honesty. And at the other hand: room for deviation, critique, room for reflection. Also, mentioned in literature: mutual goals, views, attitude.
K (no comment offered by participant)

The four attributes have had consensus reached by the participants. Therefore, in Round 2 of the Delphi, the focus will be on the definition. The definition had an I-CVI of 66%. A summary of the responses is provided in Table 6.

“Person-centred teamwork is a dynamic approach where healthcare professionals, patients and their significant others collaborate to meet the healthcare needs of the patient. Embedded in synergy, inclusivity and healthful relationships, the members recognize the uniqueness of each individual, allowing each team member to flourish and strive to attain optimal outcomes for all”

Table 6: Summary of participant’s verbatim comments on their level of agreement to the definition

I like it but for me it could be strengthened with the inclusion of reflexivity in practice
I think the definition is good, but trust should be added.
As i previously stated, I'm not clear about the 'strive to attain optimal outcomes for all' - who is all? Patients, staff or both? I do like the dynamic approach part and the collaboration part that prioritises the patient though.
excellent definition
The definition brings together all individual aspects discussed in a definition that can be easily understood by anyone.
I wonder whether you need to limit it to healthcare professionals. I understand your data has been collected in this area. But why is this different than PC teamwork e.g. by a team of teachers at a School for Nurses? Healthful relationships is a key word and different from relationship orientated?

<p>It captures an outcome as well in order for mutual flourishing to happen. Optimal outcomes is somewhat vaguely - too generally- described in my opinion. It captures some conceptual order; it is through synergy and inclusivity and relationships that people recognise each uniqueness, but is the other way around also not true? The latter is a value and the other 3 more strategies?</p>
<p>I do suggest that it is not only the needs of the patients but also that of the family that should be met</p>
<p>My understanding of inclusivity is not to exclude people from the team; it does not reflect the elements captured in the accompanying document. The implication is that if you apply a person-centred approach in primary healthcare you need to include the care worker who is not a professional healthcare worker and the traditional healer. Should it be healthcare professionals? What about the people that i have mentioned? Inclusivity means that they should become part of the team, but it is not captured in the concepts related to the construct</p>
<p>I'm unsure about the "allowing each team member to flourish". With the focus on the patient, I'm not sure how clinicians are expected to flourish. I'm also not sure if the word flourish.</p>
<p>I believe the definition is comprehensive and easily understood. I also believe it encompasses critical elements that contribute to person--centred teamwork.</p>
<p>I would add consensus with collaboration, healthy relationships does not emphasise relationship orientated, trust and connectedness (core to a healthy relationship) enough. The common bases of respect and autonomy should be included. The definition begins with the outcome for the patient - is it only about patient outcome? Who is the all at the end of the definition? Synergy between what - synergy can be used between different things - I would add the concepts you mentioned in the Table</p>
<p>I have rated your concept based on the summary of the concept, and the 4 tot 6 subthemes. And than I miss some aspect, although some of them you mentioned in your explanation. So, I don't agree completely with your choice of the subthemes.</p>

The adapted definition of the concept '**person-centred teamwork**' based on the contributions made:

'Person-centred teamwork is a dynamic approach where the team, including the healthcare professionals, patients and their significant others, develop trust and connectedness to meet the healthcare needs of the patient. Embedded in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes through reflexivity in practice.'

Complete the link below to participate in the second round of the study.

<https://forms.gle/zXQSuV52knLpg8276>

ANNEXURE C.11

GOOGLE FORMS DELPHI 1

ROUND 2



R2: Person-Centred Teamwork

Delphi: Consensus on the definition Person-centred Teamwork
Round 2:

* Indicates required question

1. Email *

Feedback from Round 1

During the first round the following I-CVI was reached on the attributes and definition:

Recognizing the uniqueness of individual: 91%

Relationship orientated: 100%

Synergy: 83%

Inclusivity: 83%

Definition: 66%

Therefore the definition was adapted according to your valuable input. Below is the adapted definition.

You are requested to rate and explain your rating. The aim is to gain minimum I-CVI of 75%

Adapted definition

Person-centred teamwork is a dynamic approach where the team, including the healthcare professionals, patients and their significant others, develop trust and connectedness to meet the healthcare needs of the patient. Embedded in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes through reflexivity in practice.

2. Rate your level of agreement/ disagreement by completing the following Likert on the definition of person-centred teamwork *

Mark only one oval.

1 2 3 4 5

Strongly Disagree Strongly Agree

3. Explain your rating of the definition on person-centred teamwork. *

Thank you for your participation
Feedback will be provided to you

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ANNEXURE C.12

DELPHI (1) - FEEDBACK

SUMMARY ROUND 2



DELPHI STUDY: PERSON-CENTRED TEAMWORK, CONSENSUS ON THE DEFINITION

The second round of the Delphi study, to obtain consensus on the definition of the concept: *person-centred teamwork* yielded the following results:

Table1: Display of percentage of agreement by the participants (N11)

Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Consensus reached
Definition	54.5% (n6)	27.3% (n3)	0%	9.1% (n1)	9.1% (n1)	81%

Consensus is reached when there is I-CVI, which measures the content validity, of $\geq 75\%$ agreement by the participants. Consensus was measured by combining the 'Strongly agree' and 'Agree' used on the Likert scale. There were 12 participants in round 1. An attrition of unknown reason of this one participants occurred. Consensus was reached even if the attrition participant would have disagreed. The comments made by the participants were supportive and commending in nature. A summary of the responses is provided in Table 2.

Table 2: Summary of participants' verbatim explanations on their level of agreement to the definition

"The previous definition was already recognizable, but especially the adjustment from individual flourishing to mutual flourishing is a real enrichment. I wonder what your definition is of an person centred practice? It is different, but to what degree? "
Consistent with my own research, being person-centred means creating conditions for human flourishing in the presence of multiple histories of human suffering. I see no reason why this would not apply to staff as well as patients and clients.
The definition provides a clear description of person-centred teamwork. It clearly describes who needs to be included in the team and what the nature of their relationship should be as well as how they will be able to achieve the ultimate outcome, namely mutual flourishing.
"PC teamwork is -guided by- a 'constant' and dynamic ('reflexive') approach, where....develop trust - I would rather say safety and connectedness (this is key!) ..and not only meeting the healthcare needs of the patient but as well the needs of all team members to enable? them to meet the needs of patients and their own (mutual growth, wellbeing, a wider variety of actions,...?). Who or what is exactly meant by 'embedded in'...? Healthful relationships is of a different 'order' (outcome/ impact?); than synergy and inclusivity (they are guiding this process)..do members of the team only 'recognise' and also 'act' towards valuing uniqueness, mutual flourishing...? What are these optimal outcomes - where does PC teamwork needs to result in? (Healthful relationships with those they engage in and therefore mutual growth?) For me person-centered teamwork is a dynamic way of working (or engaging) that is characterised by a constant attention and action into creating relational connectedness with those the healthcare team engage with. This is enabled by participation (inclusiveness and synergy), constant reflexivity and (critical and creative) dialogues, to achieve better healthcare outcomes/ mutual flourishing for both patients, staff and relevant others. "
The revised definition is appropriate.
Including the word develop emphasize the dynamic nature of the approach. No further comments. you have captured the various comments successfully.
"I believe the important elements of person-centred teamwork are present in the definition,

however, I believe the articulation could be enhanced. The following are some of my thoughts:

- In the first sentence it might be easier to say those delivering care and those receiving care
- Could the term 'patient' be replaced by person without losing clarity of the definition?
- The use of the term 'embedded' doesn't quite work for me - could an alternative possibly be underpinned?
- 'Through reflexivity in practice' feels an add on at the end and for me it detracts from the outcome. Is this not part of the process for developing person-centred teamwork as it is for developing person-centred practice? "

Based on the information provided during Round 1 and Round 2 the definition has been well described and now the constructs are well incorporated and understood

encapsulates the essence of person centred ness and grounds it in the context of teams

I think 'develop trust and connectedness to meet' is not quite right. Trust does not directly meet needs (trust is not a need in this case, I don't think); trust helps the process through which needs may be met. The second sentence reads better, except the 'optimal outcomes' bit which is not the same thing as 'needs'. I am also unease with the phrase 'mutual flourishing', which I still do not get.

After careful analysis of the various contributions by participants, the definition was adapted and will be presented as follow:

“Person-centred teamwork is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes”

This definition will guide the development of an instrument to measure person-centred teamwork. Should you have any further contribution or enquiry, you can email me. Thank you for your time and valuable contribution in this study. You will be recognized in this process in accordance to the consent you signed.

ANNEXURE C.13

EMAIL - DELPHI (1) ROUND 2

FEEDBACK





Alida Viljoen <alidavil5@gmail.com>

Delphi round 2 feedback

Alida Viljoen <alidavil5@gmail.com>

Sun, Jul 3, 2022 at 2:40 PM

To: "McCance, Tanya" <tv.mccance@ulster.ac.uk>

Good day
Thank you for your participation in my Delphi study
The consensus was reached with an 81% CVI

Attached find the feedback and final definition
Should you have any further comments, please do not hesitate to contact me

Your participation is truly appreciated

Thank you

--

Alida Viljoen

 Delphi_Summary_R2_AV.pdf
277K

ANNEXURE C.14

ANNEXURE C.14 - GMAIL - WORLDVIEWS ON EVIDENCE- BASED NURSING



ORIGINAL ARTICLE

Consensus on the definition and attributes of person-centered teamwork: An e-Delphi study

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Abstract

Background: Effective health care relies on person-centeredness and teamwork, which are known to improve outcomes. These two concepts have been defined individually, but we could not find a definition of the combined concept. A preliminary definition was developed through a concept analysis; however, consensus on the concept has not been reached.

Aim: The aim of this study was to reach consensus on the definition and attributes of person-centered teamwork.

Methods: A consensus design allowed experts to collaborate and share their experience and wisdom to refine and reach consensus on the definition and attributes of person-centered teamwork. An e-Delphi was used to engage the experts.

Results: Three rounds of online engagement with 12 experts were needed to reach consensus on the definition and attributes of person-centered teamwork. The attributes reached consensus of 82% after the first round. The definition had 82% consensus after the three rounds. The definition had been adjusted and refined according to the expert input. The newly adjusted definition was established.

Linking Evidence to Action: We successfully used the e-Delphi method to obtain consensus on the attributes and definition of person-centered teamwork. The definition of person-centered teamwork can be further developed and included in clinical practice to guide improved clinical outcomes. The consensus definition of person-centered teamwork provides a clear understanding of the meaning thereof, which may in turn enrich the usability thereof in clinical practice. Person-centered teams improve outcomes for persons receiving care in hospitals. Building person-centered teams are now better understood and the foundation of building these teams defined. We engaged with 12 experts in the academic and clinical field of person-centeredness and teamwork. The use and value of the Delphi method to obtain consensus is now better understood and can assist future research development.

KEYWORDS

defining, e-Delphi, person-centered teamwork, person-centeredness, teamwork

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INTRODUCTION

“You cannot control what you cannot measure, and you cannot measure what you cannot define” (Fenton & Pfleeger, 1997, p. 14). Person-centeredness and teamwork have been well defined as individual concepts (Kalisch & Begeny, 2005; McCormack & McCance, 2017; Rosen et al., 2018; Rydenfält et al., 2018; Salas & Cannon-Bowers, 2001; Xyrichis & Ream, 2008). However, to our knowledge, the concept *person-centered teamwork* has not been defined. Defining the concept of person-centered teamwork will facilitate future research as well as enable the implementation and assessment of the realization thereof in clinical practice. Following a concept analysis (Viljoen, 2023), we conducted a Delphi study to obtain consensus on the attributes and definition of person-centered teamwork.

BACKGROUND

Person-centered teamwork represents the combination of two connected concepts often used in health care (Dellenborg, 2020) that are known to improve outcomes in healthcare settings (Donovan et al., 2018; Naldemirci et al., 2017; World Health Organization [WHO], 2018). Person-centeredness is an established way of doing and thinking that creates a culture of trust, respect, and mutual goals in the working environment (McCormack & McCance, 2017). McCormack and McCance (2017) proposed four core components of person-centeredness: (1) being in a relationship with those in your direct environment, (2) being part of a social world, (3) being in place, and (4) being with yourself. Thus, person-centered care is about all individuals in the care team having a common purpose and cultural value system. The WHO (2018) defined person-centered as “...an approach to care that consciously adopts the perspectives of individuals, families, and communities, and sees them as participants as well as beneficiaries of trusted health systems that respond to their needs and preferences in humane and holistic ways.” The WHO definition of person-centeredness is supported by McCormack et al. (2006), who defined person-centeredness in 2006 and then refined the concept in 2010 (McCormack et al., 2010), 2015 (McCormack et al., 2015), and 2017 (McCormack & McCance, 2017). Person-centeredness is enabled through a culture of empowerment that fosters continuous practice development (McCormack & McCance, 2017).

Teamwork is a clearly defined concept, often described as a cohesive group of people striving toward common goals (Rydenfält et al., 2018; Salas & Cannon-Bowers, 2001). Effective teamwork creates an environment where the workload is shared and made more manageable (Kaiser & Websters, 2018; Kendall-Gallagher et al., 2017). Teamwork creates a sense of belonging among team members and promotes positive relationships and job satisfaction, which increases staff retention, staff productivity, and quality of care (Kaiser & Websters, 2018; Kendall-Gallagher et al., 2017). Good teamwork improves patient outcomes, subsequently improving

patient satisfaction (Dahlke et al., 2018). High functioning teams that continuously improve the quality of care and patient outcomes take time to develop (Stocker et al., 2016). The concept of teamwork in healthcare settings has been comprehensively defined by Xyrichis and Ream (2008; 238) as “a dynamic process involving two or more health professionals with complementary backgrounds and skills, sharing common health goals and exercising concerted physical and mental effort in assessing, planning, or evaluating patient care.”

Person-centered care and teamwork share similar attributes and focus areas (McCormack & McCance, 2017). Effective health care relies on person-centeredness and teamwork, which are known to improve outcomes. Teamwork is essential to the success of person-centeredness, as teamwork creates an environment that allows the multi-disciplinary team, patient, and community to share in the care process (Li et al., 2018). Person-centeredness within a team has the potential to improve job satisfaction and staff retention, where retention of staff is imperative to ensure continuity of care and continuity of care leads to improved patient outcomes and experiences of care delivery (Nowaskie et al., 2018). Should either person-centeredness or teamwork break down, the outcomes of both aspects grow weaker (Dellenborg, 2020). Person-centered teamwork as a concept is not defined, nor is it explained as a measurable concept. To understand, develop, and improve any concept, it needs to be defined to measure it. We conducted a concept analysis to develop a preliminary definition of person-centered teamwork (Viljoen, 2023), but consensus has not been reached.

The study

Reaching consensus is an inclusive process where experienced and knowledgeable participants must agree on a concept (Zhang et al., 2019). Reaching consensus on the definition of person-centered teamwork is important for conceptual clarity, integration into the healthcare continuum, and outcome assessment. Consensus methodology requires the consideration of all participants, which in turn creates a sense of inclusivity and belonging. In this article, we report on a Delphi study that was conducted to reach agreement on the attributes and definition of person-centered teamwork.

METHODS

Study design

We used a consensus design to allow experts to collaborate and share their experience and wisdom to refine and reach consensus on the definition (Fink-Hafner et al., 2019; Nasa et al., 2021; Ogbeifun et al., 2016) and attributes of person-centered teamwork. We used electronic-Delphi (e-Delphi) to engage the experts. The data underwent content analysis with a focus on word frequency and thematic suggestion. Quantitative analysis was used to determine consensus.

Preparation for data collection

Data collection of the e-Delphi was preceded by a concept analysis using the Walker and Avant model for concept analysis (Walker & Avant, 2019). The Walker and Avant model uses eight steps to analyze a concept. The Walker and Avant model was used to determine the four attributes and definition of person-centered teamwork (Viljoen, 2023; Walker & Avant, 2019). The attributes were relationship reliant, recognizing the uniqueness of the individual, inclusivity, and synergy. The definition of person-centered teamwork was:

Person-centered teamwork is a dynamic approach where healthcare professionals, patients and their significant others collaborate to meet the healthcare needs of the patient. Embedded in synergy, inclusivity and healthful relationships, the members recognize the uniqueness of each individual, allowing each team member to flourish and strive to attain optimal outcomes for all.

(Viljoen, 2023; 72)

The Delphi panel

Experts were invited to participate in an e-Delphi panel. We defined an expert as someone with knowledge and experience of a specific subject (Nasa et al., 2021; Niederberger & Spranger, 2020). The experts were selected using pre-set, clear, and precise criteria (Fink-Hafner et al., 2019; Nasa et al., 2021; Niederberger & Spranger, 2020). The inclusion criteria were (1) English speaking, (2) a specific interest in person-centeredness=or teamwork, (3) a recognized authority on person-centeredness or teamwork as evidenced by publications in peer-reviewed journals, and (4) clinical or academic expertise in the field of person-centeredness or teamwork.

Using purposive sampling, we identified 13 experts who met the inclusion criteria. The experts were e-mailed a formal invitation letter, stating the aim and value of the study, and were asked whether they were interested and willing to participate. Once the experts

agreed to participate in the e-Delphi panel, a participant information, informed consent document, and demographic information questionnaire were e-mailed to them. Additionally, the experts were asked whether they knew other experts who met the inclusion criteria (snowball sampling) and who could contribute to the e-Delphi panel. Snowball sampling allowed experts to identify six additional potential participants, which provided access to a larger sample who would have otherwise been hidden (Etikan et al., 2016; Naderifar et al., 2017; Polit & Beck, 2020). In total, 19 experts were invited and 12 accepted the invitation (Table 1). The 19 experts consisted of 12 experts in person-centeredness and seven in teamwork. Once the signed consent forms and demographic questionnaires were received, round one of the e-Delphi was initiated.

Data collection

The e-Delphi survey was uploaded on Google Forms. During each round, experts were asked to indicate (1) do you agree that the attributes are relevant and (2) do you agree with the proposed definition of person-centered teamwork. Experts indicated their agreement on a 5-point Likert scale: 1=*strongly disagree*, 2=*disagree*, 3=*neutral*, 4=*agree*, and 5=*strongly agree*. Additionally, experts were asked to justify their ratings, and space was provided for additional comments. Before data collection, the e-Delphi survey was piloted. Two experts, who did not participate in the study, were asked to provide feedback on language, layout, clarity, and utility of the survey (Mallah et al., 2021).

Data were collected during three rounds. Each of the first two rounds was completed within 14 days and the third in 5 days to ensure that experts did not lose interest (Niederberger et al., 2021). Experts were reminded weekly to complete the e-Delphi, as recommended by Fink-Hafner et al. (2019). Data were collected anonymously.

During the first round of the e-Delphi, the experts were e-mailed a summary of the concept analysis, detailed instructions on what was expected during the survey, and a link to the Google Forms. During the second round, the experts received a summary

TABLE 1 Demographic information of the experts (N = 12).

Number of participants	Count (%)	Profession	Area of speciality
Developed countries			
Australia	1 (8)	Academic: Social work	Person-centeredness
England	2 (16)	Academic: Nursing (1) Academic: Radiography (1)	Teamwork Person-centeredness
Ireland	2 (16)	Academic: Nursing	Person-centeredness
Netherlands	1 (8)	Academic: Nursing	Person-centeredness
Scotland	1 (8)	Academic: Nursing	Person-centeredness
Sweden	1 (8)	Academic: Nursing	Person-centeredness
Developing countries			
South Africa	4 (33)	Academic: Nursing (3) Clinical practice: Nursing (1)	Person-centeredness Teamwork



of results from round one, instructions on what was expected during round two, and a link to the adapted Google Forms. The summary of the round two results was e-mailed to the experts for final feedback.

Data analysis

The e-Delphi data were quantitatively and qualitatively analyzed, which occurred concomitantly during data collection (Heuzenroeder et al., 2022). The qualitative data were analyzed using content analysis. Content analysis entailed the viewing of the written comments of each participant. The comments were analyzed by searching for similarities in content feedback. Suggested changes were evaluated for relevance against what was found in literature and discussed by the authors. If found relevant, the changes were made (Fink-Hafner et al., 2019; Ogbeifun et al., 2016). The quantitative data were analyzed using count data and proportions. Consensus was established at 75% agreement in alignment with previous studies (Belton et al., 2019; Heuzenroeder et al., 2022; Hong et al., 2019; Humphrey-Murto et al., 2016). The scores of strongly disagree, disagree, and neutral were combined into the disagree category, while strongly agree and agree were combined into an agree category.

Rigor

The Conducting and REporting DELphi Studies (CREDES) checklist (Jünger et al., 2017) was used to increase the quality of this study (Supplementary material). We selected a panel of international experts from different geographical settings (Table 1), which allowed for a rich data source (McPherson et al., 2018; Niederberger & Spranger, 2020). The e-Delphi reduced the opportunity for direct confrontation between experts, reducing any potential intimidation. Experts were able to participate from their own environment. The experts remained anonymous to each other and were able to participate without having to conform to the most dominant opinion (Fink-Hafner et al., 2019; Nasa et al., 2021; Trevelyan & Robinson, 2015). Experts could be creative, honest, and give input based on their expertise. Additionally, e-Delphis are cost-effective and time-saving (Fink-Hafner et al., 2019; Waggoner et al., 2016). Time was saved as experts had 2 weeks to complete each round (Jünger et al., 2017; Niederberger & Spranger, 2020) at their own convenience (Fink-Hafner et al., 2019; Nasa et al., 2021). Keeping to a specified timeline improved the attrition rate, and only one expert withdrew after round one, representing an attrition rate of 8%, which is acceptable considering that some studies have reported attrition rates of up to 44% (Ogbeifun et al., 2016; Stokes-Parish et al., 2019; Tyler et al., 2023). Participating in the e-Delphi was also an enriching experience for experts and they were able to view their own contribution in the context of the whole group, which allowed them to expand and grow their knowledge and views of the concept as well as adapt their response (Fink-Hafner et al., 2019; Jünger et al., 2017;

Niederberger & Spranger, 2020; Ogbeifun et al., 2016). The e-Delphi process gave the researcher an opportunity to check responses and collate and incorporate the suggested changes swiftly before initiating the next round. Figure 1 indicates the process followed during the e-Delphi study, which is in line with the CREDES guidelines.

Ethical approval

This study was approved by the Faculty of Health Sciences, Research Ethics Committee (University of Pretoria; 11/2021). The expert participants were informed about the study and signed informed consent forms before data collection. Experts were contacted via e-mail and asked to give permission for their names to be used in the acknowledgment section of the report.

RESULTS

Between May and June 2022, 12 experts participated in the three rounds of the e-Delphi. During round one, 100% of participants responded, of whom the majority were academics (92%) and experts in person-centeredness (84%). During rounds two and three, 91% of participants responded.

Round 1: Consensus regarding attributes and definition

Among the participants, the level of consensus was 83% on the four attributes of person-centered teamwork (Table 2).

Participants did not reach consensus on the definition after round one, at only 66% (Table 3).

Experts agreed on the attributes of person-centered teamwork as shown in the following statements: "Recognising the uniqueness of an individual is the fundamental underpinning of a person-centered approach," and "If uniqueness of an individual is not recognized. S/he will not feel that they are understood and will not enter in a meaningful relationships," and "Without this you have teams that expect everyone to act the same and have a rule based rather than value-based way of working that does not enable persons to flourish."

Being relationship orientated elicited a similar response. The experts made the following statements in support of being relationship orientated: "As persons we exist in relationships and being in relation is a key component of personhood. This is again fundamental for effective team working" and "In relationship orientation the health professional who will begin the relationship must be fully aware of the role it plays in person-centeredness and links with the above attribute of uniqueness."

Synergy was supported by 10 of the 12 experts. The statements in support were "I really support this notion of synergy and it is well articulated in the concept analysis" and "Optimal outcomes depend

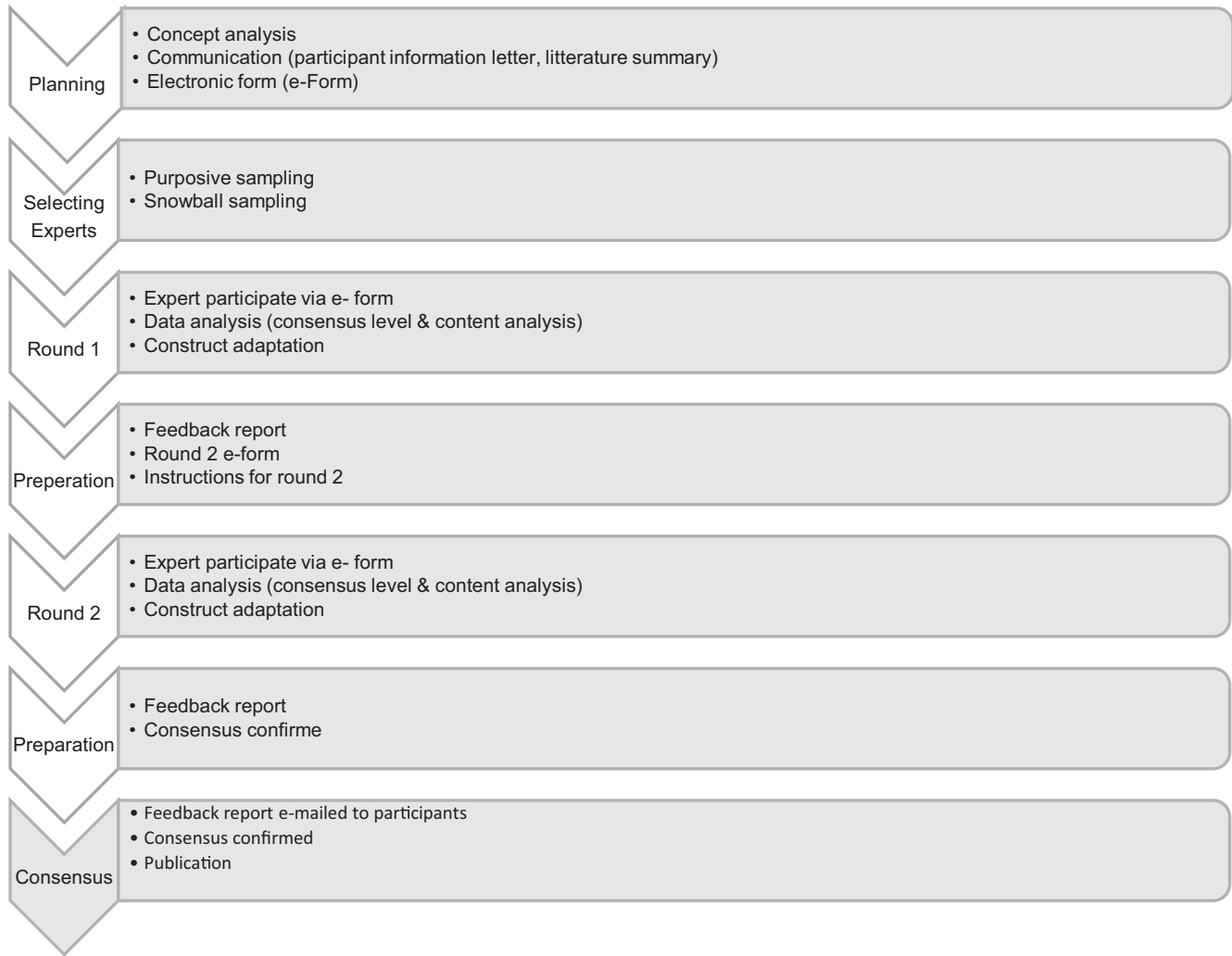


FIGURE 1 Summary of e-Delphi process.

TABLE 2 Level of agreement on the attribute of person-centered teamwork (N = 12).

Attributes	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Consensus (%)
	Count (%)	Count (%)	Count (%)	Count (%)	Count (%)	
Recognize uniqueness of individuals	9 (75%)	2 (16.7%)	1 (8.3%)	0 (0%)	0 (0%)	91
Relationship orientated	10 (83.3%)	2 (16.7%)	0 (0%)	0 (0%)	0 (0%)	100
Synergy	7 (58.3%)	3 (25%)	1 (8.3%)	1 (8.3%)	0 (0%)	83
Inclusivity	6 (50%)	4 (33.3%)	1 (8.3%)	1 (8.3%)	0 (0%)	83

TABLE 3 Level of agreement regarding the definition of person-centered teamwork (n = 12).

Definition	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Consensus (%)
	Count (%)	Count (%)	Count (%)	Count (%)	Count (%)	
Definition	3 (25%)	5 (41%)	3 (25%)	1 (9%)	0	66

on synergy.” Two experts indicated that synergy overlapped with being relationship orientated. The statements were “I wonder how this differentiate with previous attribute” and “Not sure synergy means the same as combined effort.”

Inclusivity was supported by 10 experts, who stated that inclusivity played an important and foundational role in person-centered teamwork. The statement was “Relationships cannot occur without communication and therefore deems inclusivity essential.” Two

experts indicated that inclusivity should be combined with synergy as they were synonymous. The statement was "...Overlaps my concern with Synergy."

The high level of agreement (82%) on the attributes meant that we did not include attributes in the second round.

Three experts agreed that our proposed definition was adequate. Three experts asked who was being referred to by *all* in the definition. Six further comments were considered when adapting the definition. The statements were "I think the definition is good, but trust should be added," "... strive to attain optimal outcomes for all - who is all? ...I do like the dynamic approach part and the collaboration part that prioritises the patient though," and "...Who is the all at the end of the definition?"

The definition attained a 66% level of agreement and was the focus of round two. The definition was adapted in accordance with experts' responses. The adapted definition was emailed to the experts with a link to the electronic response platform for further deliberation in round two.

Round 2: Consensus on definition

Eleven experts responded and consensus was reached on the definition (81.8%) (Table 4).

The adapted definition for person-centered teamwork was strongly supported. Seven experts agreed with the new adapted definition; for example, "Based on the information provided during Round 1 and Round 2 the definition has been well described and now the constructs are well incorporated and understood." One expert strongly disagreed but did not suggest changes: "I wonder what your definition is of a person-centered practice. It is different, but to what degree?" Three of the experts suggested rephrasing words and improving sentence construction, such as "...The second sentence reads better, except the 'optimal outcomes' bit which is not the same thing as needs."

The definition was adapted with minor wording changes as suggested by the participants. The final definition was formalized and sent to the experts in round three. No further comments were received on the final definition.

Round 3: E-mail communication

In the final e-Delphi round, the attributes and adapted definition of person-centered teamwork were distributed to the expert panel members for feedback. No further amendments were suggested, and consensus was achieved.

DISCUSSION

Here, we describe the findings of an e-Delphi study that aimed to obtain consensus on the four attributes and definition of person-centered teamwork, as developed during a prior concept analysis (Viljoen, 2023). The experts who participated in the e-Delphi agreed on the four proposed attributes of person-centered teamwork. Being person-centered means recognizing the uniqueness of people as human beings with their own ideas and needs (Byrne et al., 2020). Being person-centered also means acknowledging individuals as experts in their own lives (Louw et al., 2017; Waters & Buchanan, 2017) and giving them an opportunity to participate and make choices (McCance & McCormack, 2016).

Being relationship orientated is an important attribute of person-centered teamwork and refers to the relationships between healthcare teams, patients, and patients' significant others. All individuals involved in healthcare relationships should focus on maintaining healthful relationships. Healthful relationships involve being sympathetically present and showing human kindness, showing compassion, trying to understand alternative viewpoints, and valuing both caregivers and receivers of care (Byrne et al., 2020; McCance & McCormack, 2020; Wilkinson & Reed, 2008).

Person-centered teamwork also requires synergy, which represents the combined efforts of teams to improve patient outcomes (Franklin et al., 2015). The level of synergy determines how collaboration, conflict management, and cohesiveness attribute to teamwork. Effective teamwork also requires that all the team members are included (Fong et al., 2018; Mayo, 2020; Rydenfält et al., 2018). Inclusivity encompasses communication, task interdependency, information sharing, and shared responsibility.

In our study, one expert mentioned that synergy and inclusivity were overlapping attributes. The literature and concept analysis, however, supports these two attributes as separate constructs. Synergy describes how collaboration, conflict management, and cohesiveness attribute to person-centered teamwork. Inclusivity encompasses communication, task interdependency, sharing information, and shared responsibility (Dietz et al., 2018; Mayo, 2020; Rydenfält et al., 2018; Sangaleti et al., 2017; Tremblay et al., 2017; Viljoen, 2023; WHO, 2011). Inclusivity is related to communication, interdependency, shared information, and responsibility (Dietz et al., 2018; Franklin et al., 2015; Rydenfält et al., 2018; Sangaleti et al., 2017), while synergy is a combination of collaboration, conflict management, cohesiveness, trust, respect, and autonomy (Dietz et al., 2018; Mayo, 2020; Rydenfält et al., 2018; Sangaleti et al., 2017; Tremblay et al., 2017). As consensus of 83% was reached, we accepted these attributes as separate attributes.

TABLE 4 Definition: distribution of level of agreement responses (n = 11).

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
	Count (%)	Count (%)	Count (%)	Count (%)	Count (%)	Consensus (%)
Definition	6 (54.5%)	3 (27.3%)	0 (0%)	1 (9.1%)	1 (9.1%)	81.8

During round one, a 66% consensus was reached regarding the definition of person-centered teamwork. The experts' comments were carefully considered, and we adapted the definition to reflect that the team included the healthcare team, family, and patient. The adapted definition was then sent to the experts for round two. The adapted definition was:

Person-centered teamwork is a dynamic approach where the team, including the healthcare professionals, patients, and their significant others, develop trust and connectedness to meet the healthcare needs of the patient. Embedded in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes through reflexivity in practice.

In round two, the definition obtained an 81% consensus. Although there was consensus, we still considered the comments and changes suggested by the experts, especially any dissenting views. We agreed that the dissenting comments would change the essence of the definition, and we could not find any evidence supporting these dissenting views. We made a few conclusive changes; for example, we changed *team*, which included the healthcare team, family, and patient to *person(s) giving and person(s) receiving care*. This change increased the applicability of the definition across various sectors. The word *embedded* was replaced by *underpinned*, and *reflection* was removed as it suggested an add on to the definition that did not add value. The final definition was sent back to the experts, who did not make any further comments. The final definition for person-centered teamwork is:

Person-centered teamwork is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust, and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes.

Relevance to practice

This definition of person-centered teamwork establishes a basis for measuring person-centered teamwork, which is an important step to improve clinical practice. The definition and attributes provide clarity as to the development of measurable items for implementing person-centered teamwork in clinical practice.

The consensus definition of person-centered teamwork provides a clear understanding of the meaning thereof, which may in turn enrich the usability thereof in clinical practice. Person-centered teams improve outcomes for persons receiving care in hospitals. Building

person-centered teams are now better understood and the foundation of building these teams defined.

We engaged with 12 experts in the academic and clinical field of person-centeredness and teamwork. The use and value of the Delphi method to obtain consensus in the definition can assist future research development.

What does this contribute to larger global community

- Establishes a basis for measuring person-centered teamwork.
- Provides clarity on the development of items to measure person-centered teamwork.
- Person-centered teamwork will guide practice to improve patient outcomes.

Limitations

The e-Delphi as a technique is limited in that there is no formal guidance in the process of conducting an e-Delphi. This lack of guidance was overcome by following the CREDES guidelines (Fink-Hafner et al., 2019; McPherson et al., 2018; Nasa et al., 2021; Nienamber & Spranger, 2020). An e-Delphi does not allow opportunities for clarifying misunderstandings with the experts. Experts that accepted to participate in the study were predominant within the nursing profession. Experts identified did include the United States of America and Canadians, but the invitation was declined, or no response was received. Experts from Asia and South America were not included due to language barriers, that is, English was the communication language. The identification of Asian and South American participants was hampered due to our inability to communicate in the native languages of these continents. We only provided experts with a summary of the literature, which may have limited their understanding of the content and process. Notably, the teamwork experts did not have a full view of person-centeredness as a practice concept. The sample size was small, although we included experts from different nationalities. A bigger sample may have provided more reliable data.

Linking evidence to action

- The definition provides a clear understanding of the usability of person-centered teamwork.
- The definition establishes a basis for measuring person-centered teamwork.
- The results provide clarity on the development of items to measure person-centered teamwork.
- Person-centered teamwork will guide practice to improve patient outcomes.
- The use and value of the Delphi method to obtain consensus in the definition can assist future research development.

CONCLUSION

We successfully used the e-Delphi method to obtain consensus on the attributes and definition of person-centered teamwork. Experts engaged in three rounds, allowing for clarification and refinement of the definition. The inclusion of experts helped to reduce bias and clarify the definition. The newly established definition of person-centered teamwork can be further developed and included in clinical practice to improve clinical outcomes through the development of an instrument to measure person-centered teamwork.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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ANNEXURE D.1

CREDES REPORTING

GUIDELINES FOR DELPHI



Consensus on the content of an instrument to measure person-centred teamwork: An e-Delphi study

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Abstract

Aims and Objectives: To establish consensus on items to be included in an instrument to measure person-centred teamwork in a hospital setting. The objective was to identify the items through a methodological literature review. Refine the items and obtain consensus on the items.

Background: A definition and related attributes of person-centred teamwork have been agreed upon. An instrument is needed to measure and monitor person-centred teamwork in hospital settings.

Design: Consensus, electronic Delphi design.

Methods: Items were identified through a methodological literature review. These items were included in three electronic Delphi rounds. Using purposive and snowball sampling, 16 international experts on person-centred care, teamwork and/or instrument development were invited to participate in three electronic Delphi rounds via Google Forms. Descriptive statistics were used to demonstrate their agreement on the relevance and clarity of each item. Items were included if consensus was 0.75. Content analysis was used to analyse written feedback from experts.

Results: The response rate was 56% ($n=9/16$). Nine experts participated over an 8-week period to reach consensus on the items to be included in an instrument to measure person-centred teamwork in hospital settings. The experts' responses and suggestions for rephrasing, removing and adding items were incorporated into each round.

Conclusion: A Delphi consensus exercise was completed, and experts reached agreement on 38 items to be included in an instrument that can be used to evaluate person-centred teamwork in hospital settings.

Relevance to clinical practice: We engaged with nine international experts in the academic and clinical field of person-centeredness, teamwork and/or instrument development. An online platform was used to allow the experts to give input into the study. The experts engaged from their own environment with full autonomy and anonymity. Person-centred teamwork, aimed at improving practice is now measurable.

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Person-centred teams improve outcomes of patients. Person-centred teamwork was specifically developed to assist low compliance areas in hospitals.

KEYWORDS

consensus, electronic Delphi, instrument development, person-centred teamwork

1 | INTRODUCTION

Research has focused on implementing person-centeredness and teamwork as separate strategies (Dietz et al., 2018; Slater et al., 2015; WHO, 2018). Both strategies have shown benefits for practice. Person-centeredness creates a culture of trust, respect and mutual goals in the working environment (Byrne et al., 2020; Huang et al., 2020; McCormack & McCance, 2017; Sangaleti et al., 2017). For healthcare providers, person-centeredness increases job satisfaction (Nocon et al., 2019; van der Meer et al., 2018; van Diepen et al., 2020; Vassbø et al., 2019), creates a positive psychosocial work environment (Jessup et al., 2020) and increases intent to stay (van Diepen et al., 2020; Willemsse et al., 2015). Teamwork creates a sense of belonging among team members, and improves team relationships, job satisfaction, staff retention, staff productivity and quality of care delivered (Kaiser & Westers, 2018; Kendall-Gallagher, 2017; Kim et al., 2022). With good teamwork, patient outcomes are prioritised, which in turn will improve patient satisfaction (Dahlke et al., 2018). Ideally, healthcare providers should strive to practice person-centred teamwork.

Researchers have suggested that there is a need to define 'person-centred teamwork' and identify its measurable elements (DeVellis, 2016). Subsequently, a definition for person-centred teamwork has been suggested and consensus has been reached on its related attributes (Viljoen, 2023). Current practice should be continuously evaluated to ensure the implementation of best practices (Moule et al., 2017). Measurement provides insight into the efficacy of specific strategies. To the best of our knowledge, literature addressing the measurement of person-centred teamwork is lacking.

1.1 | Background

Person-centred teamwork is still a novel area of research. Teamwork is essential for successful person-centeredness as teamwork creates an environment where multidisciplinary teams, patients and communities share in the care process (Li et al., 2018). Measuring and evaluating person-centred teamwork in hospital settings will allow for data-driven best practices and improved quality of care (Atashzadeh-Shoorideh et al., 2022; Moule et al., 2017).

Measurement provides insights into the efficacy of implemented strategies. Accurate instruments are needed for accurate measurement of implemented strategies. A fundamental prerequisite of accurate instruments lies in a clear understanding of the concept. Therefore, the first step in developing an instrument (Hair

What does this paper contribute to the wider global community?

- Person-centred teams improve outcomes for persons receiving care in hospitals.
- Person-centred teamwork, aimed at improving practice, is now measurable.
- Improvement plans can specifically assist settings with low compliance.
- The instrument was developed for use by healthcare workers in hospital settings.

et al., 2019; Siedlecki, 2020) to measure person-centred teamwork was to define the concept and reach consensus on the attributes. The concept and attributes of person-centred teamwork were proposed to be 'person-centred teamwork is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust, and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes' (Viljoen, 2023).

While existing instruments measure teamwork, such as those developed by Rosen et al. (2018) and Kang (2019) and person-centred care (Slater et al., 2017), they do not assess the promotion of person-centred teamwork in clinical practice. This study aims to present a consensus on the items developed for measuring the attributes of person-centred teamwork.

2 | METHODS

2.1 | Study design

A consensus design was employed to collaborate with experts, facilitating the sharing of their insights to enhance and to identify elements for inclusion in an instrument to measure person-centred teamwork, as suggested by Nasa et al. (2021) and Fink-Hafner et al. (2019). The Delphi technique is a well-established method to obtain consensus (Heuzenroeder et al., 2022; Niederberger et al., 2021; Shinnars et al., 2021). An electronic Delphi (e-Delphi), utilising online platforms to engage with a panel of experts (Berg et al., 2022), was chosen to obtain consensus on the items to be included in a self-report

instrument to measure person-centred teamwork in hospital settings. An international panel of experts was selected to reduce direct confrontation, mitigating potential intimidation. Experts remained blinded to each other's identities, enabling participation without the pressure to conform to dominant opinions (Fink-Hafner et al., 2019; Nasa et al., 2021; Trevelyan & Robinson, 2015). Experts were able to voice their opinions freely, creatively and honestly (Fink-Hafner et al., 2019; Waggoner et al., 2016).

Additionally, e-Delphi proved to be a cost-effective and time-saving strategy (Fink-Hafner et al., 2019; Waggoner et al., 2016). Experts had 2 weeks per round to give feedback (Jünger et al., 2017; Niederberger & Spranger, 2020) and were able to give feedback at their own convenience (Fink-Hafner et al., 2019; Nasa et al., 2021). The e-Delphi process promotes the evolution of ideas as experts learn and adapt their feedback in the context of the group based on feedback and changes made in subsequent rounds (Fink-Hafner et al., 2019; Jünger et al., 2017; Niederberger & Spranger, 2020; Ogbeifun et al., 2016). Each expert responded individually, with no distractions (Fink-Hafner et al., 2019; Nasa et al., 2021). The e-Delphi gave the researchers control over responses, allowing them to collate and swiftly incorporate suggestions to initiate the next round. The e-Delphi method facilitates the process of achieving consensus to assess concepts (Shinners et al., 2021; Taylor, 2020) and has been increasingly used in healthcare research. The use of the

CREDES Guidelines to guide and ensure rigour of the method was done see the supporting document (CREDES guideline).

2.2 | Preparing for e-Delphi

A methodological literature review was conducted to identify the pool of items to be included in the e-Delphi rounds. In June 2022, a librarian assisted in developing a Boolean search string, encompassing variations and combinations of the keywords 'person-centeredness', 'teamwork' and 'interprofessional' and 'instruments'. We chose a 10-year time frame to account for the evolving nature of healthcare practice, person-centeredness and teamwork research, making newer studies more relevant to the study's aim. The search was conducted on EBSCO-host, Web of Science and Scopus. In total, 89 records from peer-reviewed journals were identified and exported to Rayyan, a web tool designed to expedite screening and study identification (McKeown & Mir, 2021; Ngo et al., 2020). Following automatic deduplication (n=4), the remaining records (n=85) were independently reviewed by two researchers (AV and TH). First, the titles and abstracts were reviewed for inclusion. We included articles that focused on person-centeredness and/or teamwork or interprofessional collaboration and referred to a tool, instrument, survey or questionnaire. Following review, the

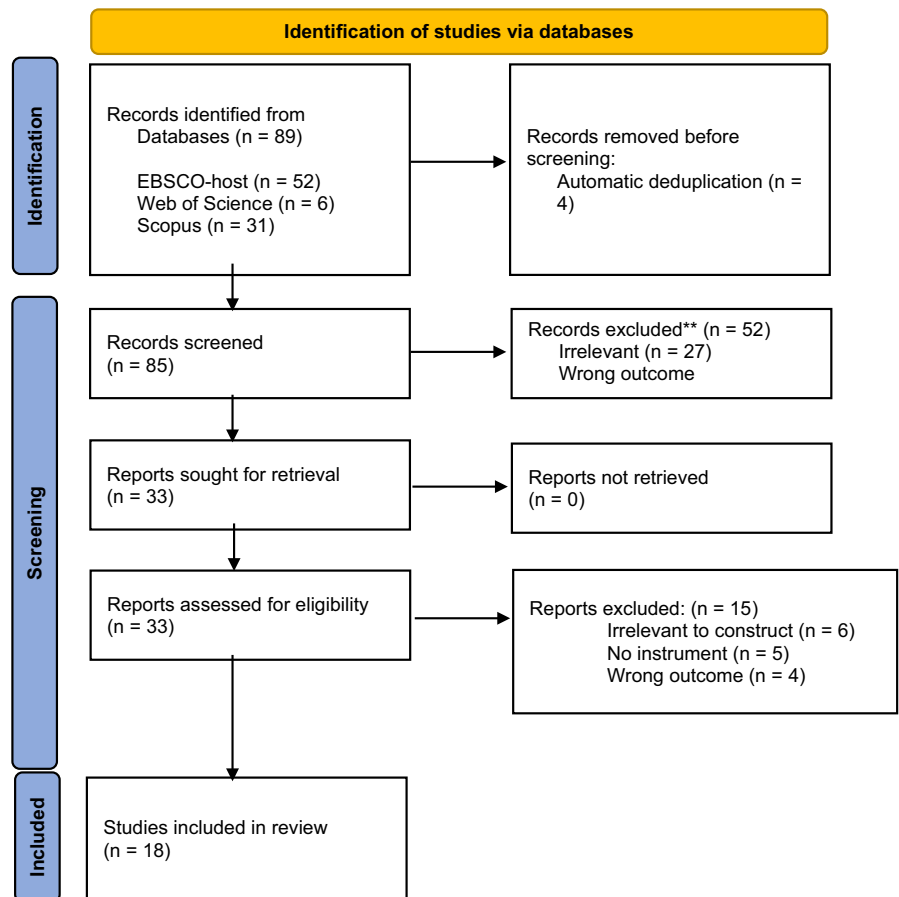


FIGURE 1 Process of literature selection to identify items to be included in the e-Delphi study.

researchers discussed conflicts and decided on whether to include the article or not. A total of 33 records were included (Figure 1), and full texts were retrieved. The two researchers (AV and TH) screened the full text articles. A total of 18 studies were included for review.

The articles were screened for references to other potentially useful articles, but none were identified. Nine instruments were identified, and their items were compiled, resulting in a pool of 129 items. Similar items were removed, and during online discussions, the remaining items were mapped to the four constructs of person-centred teamwork. This item review and alignment process was repeated five times during online discussions involving all authors. Once the item reduction was deemed complete, some items were rephrased, and sentences were constructed to align with the new instrument during three online discussions (AV and TH). A final online discussion focused on the 58 items selected, and consensus was reached to include a pool of 43 items, which informed Round 1 of the e-Delphi (Figure 2).

2.3 | Participants

Consensus on the ideal number of participants for an expert panel has not been established (Beiderbeck et al., 2021). An expert was defined as an individual with knowledge and expertise in the specific area (Nasa et al., 2021), which, in this case, was person-centeredness, teamwork or instrument development. The lead author identified experts using purposive and snowball sampling. The inclusion criteria were as follows: (1) English speaking, with a specific interest in (2) person-centeredness and/or teamwork and/or instrument development; (3) evidenced by publications on person-centeredness and/or teamwork in peer-reviewed journals; and/or (4) clinical and/or academic expertise in the field of person-centeredness and/or teamwork. An international panel was sought, aiming to collect diverse knowledge from experts with experience in various settings,

thus enhancing applicability. While some studies suggest that expert panels should comprise more than eight participants (Avella, 2016; Nasa et al., 2021), other studies recommend panels of 10–18 participants (Santana et al., 2018). Nine experts participated in this study (Table 1).

2.4 | Ethical considerations

The study was approved by the Faculty of Health Sciences Research Ethics Committee, University of Pretoria (11/2022). All the experts were emailed written information about the study, the benefits of the study and their right to withdraw. Written consent to participate was obtained from each expert before data collection.

TABLE 1 Demographic information of the experts (n=9).

Items	Count (%)
High income countries	
Australia	
Social worker	1 (11)
Nurse	1 (11)
England	
Nurse	1 (11)
Ireland	
Nurse	3 (33)
Psychologist	1 (11)
Sweden	
Nurse	1 (11)
Upper-middle income countries	
South Africa	
Nurse	1 (11)

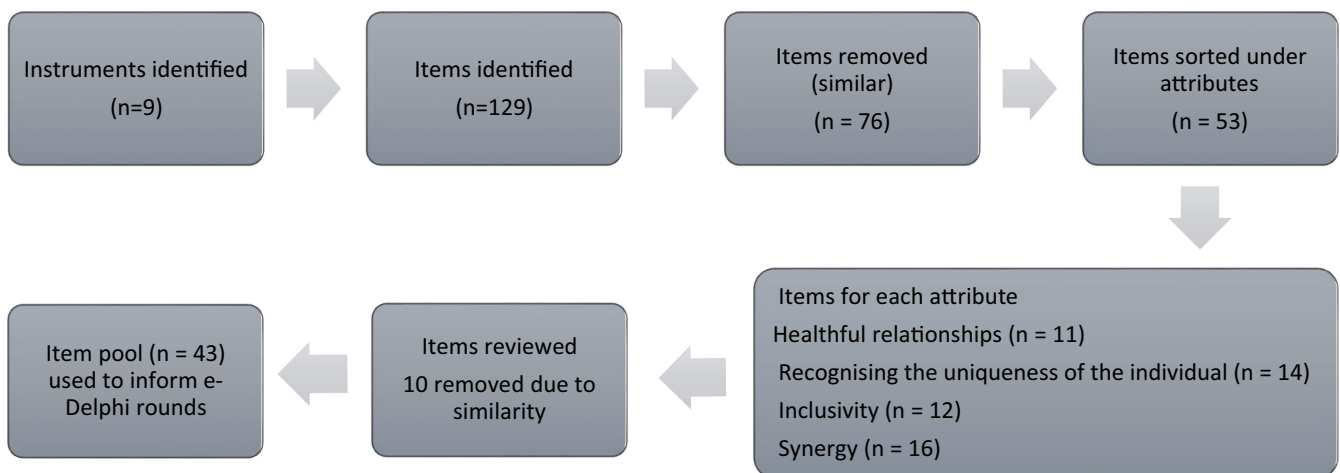


FIGURE 2 Summary of item identification and reduction.

2.5 | Communication with the panel

Sixteen experts were invited to participate. Each expert received an information leaflet informing them about the study, an informed consent document and a demographic information survey. The experts were e-mailed individually to ensure anonymity and confidentiality. Once the experts expressed an interest in participating and returned the signed informed consent form and completed the demographic information survey, Round 1 was initiated.

2.6 | Data collection

The four attributes and related items ($n=43$) were populated on a Google Form (Table 3). Before initiating the e-Delphi rounds, the Google Form was piloted. The online form was sent to one academic and two postgraduate students to obtain feedback regarding the clarity of instructions and ease of completing the form and to estimate the time needed for completion. No corrections were needed, and the Google Form was used in Round 1.

2.6.1 | Round 1

The experts received a Google Form including the definition of the concept of 'person-centred teamwork' and four attributes. For each attribute, the related items identified during the preparation phase were provided (Table 3). The experts rated the relevance of each item using a 4-point Likert scale: (1) strongly agree, (2) agree, (3) disagree and (4) strongly disagree. The experts were asked to rephrase the wording of the items, if necessary, in the space provided. Responses were analysed in Excel. Once the data analysis was completed, the results were used to inform Round 2 (Belton et al., 2019).

2.6.2 | Round 2

Experts received the feedback from Round 1 (Fink-Hafner et al., 2019; Ogbeifun et al., 2016), which included a table with the original attributes and items, the level of consensus for each item, and the changes that were implemented. Experts received a new link

to the updated Google Form that included only the items that did not achieve consensus as well as the rephrased items. The experts were asked to indicate the level of relevance and were given an opportunity to change the wording of the items if necessary. Data were analysed in Excel and used to inform Round 3.

2.6.3 | Round 3

The items were emailed in a word document to the experts for final inputs.

2.7 | Data analysis

Data analysis occurred simultaneously with data collection (Heuzenroeder et al., 2022). The quantitative data were analysed using descriptive statistics, which helped to determine the level of consensus (Trevelyan & Robinson, 2015). The level of consensus can be set at a minimum of 70% ($I-CVI > 0.7$) or more, as suggested in the literature (Belton et al., 2019; Heuzenroeder et al., 2022). We agreed that the level of consensus should be $\geq 75\%$ ($I-CVI > 0.75$), as suggested by Niederberger et al. (2021). We calculated the level of consensus by summing the Likert scores for 'disagree' and 'fully disagree' and 'agree' and 'fully agree' (Veugelers et al., 2020). Qualitative analysis focused on the experts' written comments for each item (Förster & von der Gracht, 2014). Content analysis was used to analyse the data and then adapt the items accordingly, indicating the clarity of each item (Veugelers et al., 2020). Two independent coders (AV and TH) analysed the data to avoid bias.

3 | RESULTS

3.1 | Actual time frame

Three e-Delphi rounds were performed, which is consistent with recommendations made by Jünger et al. (2017) and Niederberger and Spranger (2020). The e-Delphi rounds were conducted over a 7-week period. Round 1 started on 25 October 2022, and Round 3 was completed on 8 December 2022.

TABLE 2 Overall consensus per attribute during Rounds 1 and 2.

Attribute	Round 1		Round 2	
	Number of items	I-CVI	Number of items	I-CVI
Healthful relations	8	0.59	9	0.90
Recognising the uniqueness of the individual	13	0.71	9	0.82
Inclusivity	9	0.77	6	0.96
Synergy	13	0.77	14	0.82

Abbreviation: I-CVI, Item-level Content Validity Index.

3.2 | Response rate

Sixteen experts were invited, of whom nine (56%) participated in all three rounds. The experts did not indicate reasons for not participating. All the participants had an academic background, and their demographic information is summarised in [Table 1](#).

3.3 | Round 1

The experts responded to 43 items related to the four attributes of person-centred teamwork ([Table 3](#)). Each of the four attributes had a different leading question. In Round 1, the leading questions were adjusted to one leading question for all four attributes: 'In the healthcare setting where I work...'. The overall consensus for each item is presented in [Table 2](#).

[Table 3](#) summarises the results of each item. The 10 items that obtained consensus (≥ 0.75 I-CVI), were not included in Round 2. The experts identified five items that were similar in nature and suggested that these items be dropped. Seventeen items were rephrased according to the input given by experts. One new item was generated.

3.4 | Round 2

Eighteen items were included in the Google Form for expert review. It was agreed that 14 items were relevant and clear. The experts suggested that one of the items be split into two items. Four items were dropped because a consensus was not obtained. A word document including all items ($I-CVI \geq 0.75$) and suggested changes were emailed to experts for final feedback.

3.5 | Round 3

Round 3 included 38 items. The panel was asked to give final inputs. All items were accepted.

4 | DISCUSSION

In this study, we describe the e-Delphi process, including nine international experts, to reach consensus on the items to be included in an instrument to measure person-centred teamwork in medical settings. The experts were tasked with obtaining consensus on the relevance and clarity of items identified during a methodological literature search. The items were related to each of the four attributes of person-centred teamwork (Viljoen, 2023). This research can be used to develop a practical tool to measure person-centred teamwork in clinical settings, which will ultimately improve patient outcomes and satisfaction. [Figure 3](#) is a summary of the process used to obtain the items for the instrument.

During Round 1, the items were grouped under the four attributes of person-centred teamwork, each having an introduction question for the subsequent items. The experts suggested using a single introduction question that applied to all the attributes, namely, 'in the healthcare setting where I work...'. This approach directs respondents in the expected direction (Khai Quang et al., 2022) and enhances comprehension (DeVellis, 2016; Heuzenroeder et al., 2022; Streiner et al., 2015).

The first attribute, healthful relationships, pertains to the relationships among the healthcare team, patients and significant others. Person-centred teamwork interactions aim to maintain healthful relationships. Team members in healthful relationships are sympathetically present, show human kindness and compassion towards each other, try to understand each other's viewpoint and value each other (Byrne et al., 2020; McCance & McCormack, 2016; Wilkinson & Reed, 2008). This attribute included eight items. The experts agreed that seven items needed to be rephrased. One item (item 8) was split into two items. Nine items were forwarded to Round 2 and confirmed as being relevant and clear.

The second attribute, recognising the uniqueness of the individual, acknowledges that each person is a unique human being with their own ideas and needs (Byrne et al., 2020). Person-centred teams should acknowledge that patients are experts in their own lives (Louw et al., 2017; Waters & Buchanan, 2017). When person-centred teamwork is practised, healthcare providers and patients have an opportunity to participate and make shared decisions (McCance & McCormack, 2016). This attribute included 13 items. One item was regarded as relevant ($I-CVI 0.77$) and clear ($I-CVI 0.88$) after Round 1. Nine items needed revision. Items were rephrased to align with the wording of the definition of person-centred teamwork. The definition refers to 'person receiving care' and 'person giving care' (Viljoen, 2023). The items were thus rephrased to use the exact wording; for example, the item 'Family members are encouraged to ask questions about the care received by their loved one' was rephrased to 'With the person receiving care's approval, their significant others are encouraged to actively engage in the care received'. Three items were removed, because they overlapped with other items. The process formed part of item reduction to ensure that the instrument was not overburdened with items (Bull et al., 2022) and to reduce redundancy. Five items were included in Round 2. Four items obtained consensus. One item was removed as its level of consensus decreased from 0.66 to 0.44. The nine items that were regarded as relevant and clear in Rounds 1 and 2 were resent for confirmation in Round 3. All items were confirmed for inclusion in the instrument.

The third attribute, inclusivity, incorporates communication, task interdependency, information sharing and shared responsibility. Inclusivity indicates a level of task interdependence, necessitating excellent communication and interaction among the team (Fong et al., 2018; Franklin et al., 2015; Rydenfält et al., 2019). Teams also share responsibility, which relieves the burden on individual team members. The inclusivity attribute had nine items. During Round

TABLE 3 Item-level Content Validity Index (I-CVI) scores for each item in Rounds 1 and 2.

Item number	Item	Round 1			Round 2		
		Relevance I-CVI	Clarity I-CVI	Consensus decision	Relevance I-CVI	Clarity I-CVI	Consensus decision
Attribute 1: Healthful relations							
1	Positive role modelling for the development of effective relationships within the healthcare team	0.33	0.33	R2	1.0	0.77	A
2	I experience positive role modelling for the development of healthful relationships within the healthcare team	0.66	0.77	R2	0.88	0.77	A
3	Team leader is sensitive to the needs of the healthcare team members The team leader is sensitive to the needs of all team members	0.66	0.66	R2	1.0	1.0	A
4	Communication between healthcare team members is done in a respectful manner Communication (verbal and non-verbal) between team members occurs in a respectful manner	0.33	0.44	D			
5	Individual healthcare team members seek to resolve issues when their goals for the person they care for are conflicting Team members work collaboratively to agree on goals Team members work collaboratively to resolve conflicts through shared decision-making	0.77	0.66	R2	0.77	1.0	A
6	Healthcare team members listen to persons receiving care to identify needs Healthcare team members listen to persons receiving care to identify needs, hopes and desires	0.66	0.66	R2	0.88	1.0	A
7	Healthcare team members are fully focussed on the person they care for The healthcare team is focused on their commitment to deliver individualised holistic care Recognition is given to each healthcare team member for their contribution	0.77	0.66	R2	0.77	1.0	A
8	Each team member's contribution is acknowledged and valued Consensus are reached when an issue arises where all the healthcare team members do not agree	0.55	0.55	R2	0.88	1.0	A
Attribute 2: Recognising the uniqueness of the individual							
1	The healthcare team is able to reach consensus on areas of disagreement Healthcare team members are encouraged to discuss what is important to them	0.77	0.66	R2	1.0	1.0	A
2	Team members are encouraged to discuss what is important to them, as part of the team Patients are encouraged to voice their needs	0.88	0.55	D			
3	Healthcare team members try to understand each other's perspective Team members actively try to understand each other's perspectives	0.77	0.66	R2	0.77	1.0	A

(Continues)

TABLE 3 (Continued)

Item number	Item	Round 1			Round 2		
		Relevance I-CVI	Clarity I-CVI	Consensus decision	Relevance I-CVI	Clarity I-CVI	Consensus decision
4	Family members are encouraged to ask questions about the care received by their loved one With the person receiving care's approval, their significant others are encouraged to actively engaged in the care received	0.77	0.88	R2	0.77	1.0	A
5	I feel acknowledged as a member within the healthcare team	0.77	0.88	A			
6	Team leaders facilitate participation within the healthcare team	0.66	0.33	R2			
	Team leaders actively facilitate participation of each team member and/or person(s) experiencing care related to outcomes within the healthcare team				0.44	0.22	D
7	Healthcare team members are encouraged to suggest ideas related to the care plan of the person receiving care	0.44	0.33	R2			
	Team members collaborate in agreeing solutions for individualised care plans				0.77	0.66	A
8	Each healthcare team member has the freedom to be themselves within the team	0.55	0.33	R2			
	Each team member has the freedom to be authentic within the team's values				0.77	0.77	A
9	Opportunities are created to share ideas within the healthcare team	0.77	0.55	D			
10	Care plans are discussed among the healthcare team and family members	0.66	0.66	R2			
	Care plans are discussed between the healthcare team, significant others and person receiving care				0.77	0.88	A
11	Decision-making process includes the persons receiving care	0.77	0.88	R2			
	Where the person receiving care has capacity, s/he is involved in decision-making processes				0.77	1.0	A
12	Decision-making process includes the family members	0.66	0.44	R2			
	Decision-making process includes the person receiving care's significant others, where appropriate				0.88	0.77	A
13	I actively participate in healthcare team meetings to inform my decision-making	0.66	0.44	D			
Attribute 3: Inclusivity							
1	Reflection on experiences is encouraged within the healthcare team	0.77	0.66	R2			
	Team members are encouraged to reflect on their practice within the team				0.77	1.0	A
2	Language used to communicate is understood by the person receiving care	0.66	0.55	R2			
	When working with a person receiving care, language that they understand is used				1.0	0.77	A
3	Inputs from the person receiving care are valued by members of the healthcare team	0.88	0.88	A			
4	Healthcare team members are encouraged to ask for help without being judged	0.77	1.0	A			
5	Care plan is discussed with the person receiving care	0.66	0.55	R2			
	The care plans and alternatives are discussed with the person receiving care				0.88	0.66	D

TABLE 3 (Continued)

Item number	Item	Round 1			Round 2		
		Relevance I-CVI	Clarity I-CVI	Consensus decision	Relevance I-CVI	Clarity I-CVI	Consensus decision
6	Each team member's contribution is valued	0.77	0.88	A			
7	Family members contribute to the discussion about the care plan of their loved ones	0.66	0.55	D			
8	Each healthcare team member's knowledge regarding the care is taken into consideration	0.66	0.55	R2			
9	Each team member's knowledge, skill and expertise are respected and valued				1.0	0.88	A
	Each healthcare team member's input is sought in clinical decision-making	0.88	0.77	D			
Attribute 4: Synergy							
1	Reached consensus on their shared values and beliefs	0.77	0.77	R2			
2	Team members have developed shared values and beliefs				0.77	1.0	A
2	Support healthcare team members to develop their practice through reflecting on realisation of team's values and beliefs	0.66	0.55	R2			
3	Facilitated reflection is used to develop practice according to agreed evidence				0.88	0.88	A
3	Celebrate the healthcare team's achievements	0.88	0.88	A			
4	There is trust among the team members	0.88	1.0	A			
5	Conflict between healthcare team members is managed without affecting care provided	0.77	1.0	R2			
6	Conflict within the team is managed by the team without affecting care provided				0.77	1.0	A
6	Healthcare team members discuss care plans	0.66	0.77	R2			
7	Healthcare team members discuss care plans to ensure consistency of practice				0.88	0.66	A
7	Conflict is managed between healthcare team members without affecting team cohesion	0.77	0.88	A			
8	Practices inconsistent with the healthcare team's shared values and beliefs are challenged	0.88	1.0	A			
9	Healthcare team members collaborate to provide best care	0.88	0.77	R2			
9	Healthcare team members collaborate to provide best practice				0.88	1.0	A
10	I am respected within the team	0.88	0.77	A			
11	There is an effort to support and help each team member	0.88	1.0	A			
12	Care of person receiving care is well organised	0.88	0.44	R2			
12	Care of the person receiving care is effectively organised and communicated				0.88	1.0	A
13	Healthcare team members work hand-in-hand	0.33	0.33	R2			
13	Healthcare team members work collaboratively by promoting interdependency within the team				0.66	0.44	D
14	Team effectiveness is evaluated by the team and service users	0.88	0.55	NI			
	Team effectiveness is evaluated by the team				1.0	1.0	A
	Team effectiveness is evaluated by the person(s)receiving care				1.0	1.0	A

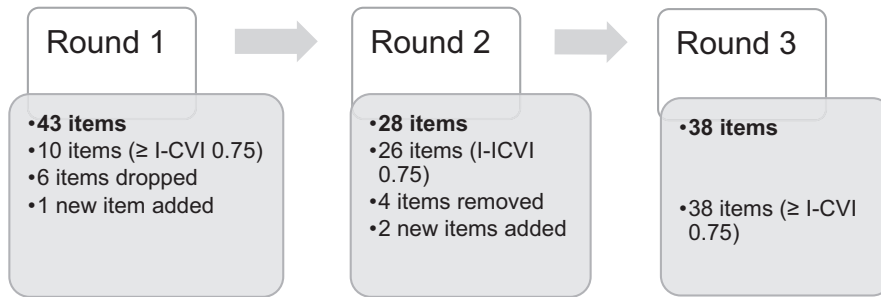


FIGURE 3 Summary of item process per round in the e-Delphi to identify elements to be included in an instrument to measure person-centred teamwork in medical settings.

1, three items were confirmed to be relevant and clear. Four items needed rephrasing. Two items were removed because they were deemed to overlap with items in other attributes. Four items were included in Round 2, of which three (items 1, 2 and 8) were regarded as relevant and clear. All three items obtained consensus. One item overlapped with another item, and even though it had consensus, it was removed to avoid redundancy (DeVellis, 2016; Heuzenroeder et al., 2022; Streiner et al., 2015). Six items were deemed relevant and clear in Rounds 1 and 2 and were sent for final confirmation in Round 3. Consensus was reached to include all six items in the instrument.

The fourth attribute, synergy, refers to the combined efforts of a team leading to improved patient outcomes (Franklin et al., 2015). Synergy describes how collaboration, conflict management and cohesiveness contribute to teamwork. The synergy attribute included 13 items. Six items were regarded as relevant and clear. Seven items needed rephrasing. One item was added as per expert suggestion, 'team effectiveness is evaluated including feedback from the service user, which could be an additional item' (participant 4). In Round 2, eight items were deemed relevant and clear and were thus included. The experts suggested that item 14 should be split into two different items, 'I would split this question...one question for team effectiveness evaluated by team and one question team effectiveness evaluated by service user...' (participant 5). One item was dropped because experts could not agree on the relevance and clarity of the item. A total of 14 items were sent for confirmation in Round 3.

A total of 38 items were distributed during Round 3 to confirm their relevance and clarity. All items were accepted.

4.1 | Limitations

The use of the e-Delphi technique may be seen as a limitation due to the lack of formal guidance in the process. However, the CREDES reporting guidelines were used to address this concern (Fink-Hafner et al., 2019; McPherson et al., 2018; Nasa et al., 2021; Niederberger & Spranger, 2020). The CREDES reporting guidelines ensure rigorous application of the Delphi technique for the development of best practices. The e-Delphi method has limitations regarding the ability to clarify misunderstandings with experts since it was

electronically conducted. Our panel of experts included only nine international experts, which may be regarded as small; however, Shinnars et al. (2021) caution against overrepresentation.

5 | CONCLUSIONS

We developed an instrument to measure person-centred teamwork in clinical settings, aiming to improve practice outcomes. Based on a consensus definition of person-centred teamwork and the related attributes, 43 items were generated from existing instruments identified in the literature. In three e-Delphi rounds, nine experts reached a consensus on the relevance and clarity of 38 items to be included in the final instrument for measuring person-centred teamwork in hospital settings. The nine experts participated in all three rounds. Future research should evaluate the instrument's validity and reliability, and a person-centred teamwork initiative should be implemented, monitored and evaluated in clinical practice. The evaluation of person-centred teamwork has the potential to identify strengths and weaknesses in clinical settings, which can be used to inform interventions to improve patient care.

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CONFLICT OF INTEREST STATEMENT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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ANNEXURE D.2

DELPHI 2 - PUBLISHED

ARTICLE



CREDES GUIDELINES APPLICATION (Jünger et al., 2017)

CRITERIA	APPLICATION	REFERENCING
RATIONAL FOR CHOICE OF DELPHI TECHNIQUE		
Justification	Used to obtain consensus Consult international experts e- Delphi values expertise of experts Allows development of under developed concept	Veugelers et.al., 2020; Jünger et al., 2017
PLANNING AND DESIGN		
Planning	Definition and attributes obtained from concept analysis and e- Delphi to obtain consensus on definition	Viljoen, 2023
	Literature summary compiled for experts	Viljoen, 2023
	Participant information letter compiled that included consent	Viljoen, 2023
	Items identified from literature search	
Design	Electronic form compiled and tested	Google forms used
	Consensus was planned at 75%	Viljoen, 2023
STUDY CONDUCT		
Information input	Documentation reviewed by researchers before conducting study	
	Experts received an e-mail with all participating information and documentation	Annexure e-mail, PIL, Lit review, Link
Interpretation	Results was collated, anonymised and analysed. Feedback send back with new instructions	Feedback Email Link
	Consensus does not indicate correctness. Disagreement contribute to new insights on the concepts.	
Prevention of Bias	The researcher had minimal interaction with experts. No bias was made towards the experts responses due to anonymity	Viljoen, 2023
REPORTING		
Purpose and rational	Methodology and decisions discussed in detail	Viljoen, 2023 Section 3.5.1 & 3.5.2
Expert panel	Detailed description of the panel made	Viljoen, 2023 Section 3.5.2.1
Consensus	Consensus attainment discussed and clarified	Viljoen, 2023 Section 3.5.2.4
Results	Each round of results discussed	yes
Limitations	Limitations reported on and impact discussed	yes

Conclusion	Conclusion reflect the outcomes of e-Delphi with a view to inform practice	yes
Publication	The e-Delphi is drafted for publication in a reputable journal. Results further published into a report to the institutions that participated	Journal of Clinical Nursing

ANNEXURE D.3

GMAIL - INVITATION TO

PARTICIPATE DELPHI (2)

STUDY



Participation in a Delphi study

Alida Viljoen <alidavil5@gmail.com>

Thu, Oct 13, 2022 at 9:28 PM

To: "Lieshout, Famke F. van" <F.vanlieshout@fontys.nl>, stefan.nilsson.4@gu.se, yolande@emmanuel.ac.za, botmay@ufs.ac.za, Lizemari Hugo <hugoL1@ufs.ac.za>, "McCance, Tanya" <tv.mccance@ulster.ac.uk>, brendan.mccormack@sydney.edu.au, d.brown1@ulster.ac.uk, nf.cook@ulster.ac.uk, d.odonnell@ulster.ac.uk, S.Cardiff@uea.ac.uk, cdickson@qmu.ac.uk, rmiddle@uow.edu.au, "Xyrichis, Andreas" <andreas.xyrichis@kcl.ac.uk>
Cc: "Slater, Paul" <pf.slater@ulster.ac.uk>, Tanya Heyns <tanya.heyns@up.ac.za>, Ronell Leech <ronell.leech@up.ac.za>

Good Day

My name is Alida Viljoen, I am a registered nurse from South Africa. I am in the process of pursuing my PhD in Nursing.

I would like to invite you to participate in my study, Development of an instrument to measure person-centred teamwork.

I have identified you as a potential expert in the field.

Should you be willing to participate, please read and complete the participant information letter. Once you have completed that, also complete the demographical information form. Email it back to me.

Once I have received it, we will start the Delphi study.
Could you have this back to me by 22nd October 2022?

We will then start the study on 26th October 2022 at the latest.
Should you have any questions or concerns, please do not hesitate to contact me.

Attached find an invitation to participate in the study. The invitation outlines the process.
Attached find the participant information letter, including the consent form and a demographic questionnaire

Thank you for your interest

--

Alida Viljoen

3 attachments

 **Delphi2_Invitation_AV.pdf**
112K

 **Participant information leaflet Delphi.docx**
159K

 **Demographical information.docx**
28K

ANNEXURE D.4

DELPHI2 – INVITATION – AV



CONSENSUS ON DEFINITION OF PERSON-CENTRED TEAMWORK

My Name is Alida Viljoen, I am a registered nurse and currently pursuing my PhD in Nursing at the University of Pretoria, South- Africa. The title of my study is:

THE DEVELOPMENT OF AN INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK IN HOSPITAL NURSING UNITS

My support team includes:

Supervisor	Prof Tanya Heyns, University of Pretoria
Co- Supervisor	Prof Ronell Leech, University of Pretoria
Consultant	Dr Paul Slater, University of Ulster

The first phase of the study included a concept analysis of the concept 'person-centred teamwork'. A preliminary definition was concluded and includes the core attributes extracted from the literature of the concept 'person-centred' and 'teamwork'. Then the definition and attributes was taken through a Delphi to reach consensus on. A literature search for current instruments was done. Analysis of the instruments derived was then measured against the definition and the attributes.

I now aim to invite you as an expert in the field of person-centred and/or teamwork or instrument development to, through your practice wisdom, assist me to refine the items which can then be used to measure 'person-centred teamwork in a care settings. A Delphi (consisting of a *maximum of three rounds*) will be used to obtain consensus on the items to measure person-centred teamwork.

The process that will be followed once you have volunteered to participate includes:

1. Signing the attached participant information leaflet and return the document to me (Alida) at: alidavil5@gmail.com
2. You will receive an e-mail providing you with the link for a google form where you will be asked to give inputs related to the items measuring person-centred teamwork.
3. You will complete the instrument from a validation of the item in relation to the measurement of the concept, point of view. Not as participant to complete the instrument.
4. Please give feedback within two weeks, to ensure that the process does not drag out too much. A reminder to complete the google form will be sent two days before the due date.
5. After each round you will receive a summary of all the participants inputs and a google form to provide additional inputs. A maximum of three rounds will be done.
6. Consensus is seen as 70% agreement on a item.
7. All participants will remain anonymous. Feedback will be given without any identification.
8. Should you agree to be acknowledged in the publication of the results, you will be asked formal permission in the consent document.

We appreciate your willingness to share your expertise and add to our vision to improve healthcare delivery.

Thank you

Alida Viljoen

ANNEXURE D.5

PARTICIPANT INFORMATION

LEAFLET DELPHI 2



PARTICIPANT INFORMATION LEAFLET AND INFORMED CONSENT

DELPHI STUDY

STUDY TITLE:

DEVELOPMENT OF AN INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK IN HOSPITAL NURSING UNITS

Principal Investigator: Alida Viljoen

Institution: University of Pretoria, South Africa

DAYTIME AND AFTER HOURS TELEPHONE NUMBER(S):

Daytime numbers 0823342768

After hours: 0823342768

Dear Participant,

Date of consent procedure ____./____./____

1) INTRODUCTION

I would like to invite you to participate in a research study. The information leaflet will help you decide if you would like to participate. Before you agree to take part in this study you should fully understand what is involved. If you have any questions, which are not fully explained in this leaflet, do not hesitate to ask the investigator. You should not agree to take part unless you are completely happy about all the procedures involved.

2) THE NATURE AND PURPOSE OF THIS STUDY

The aim of the study is the development of an instrument to measure person-centred teamwork in the hospital nursing unit. You as a participant are an important source of information.

3) EXPLANATION OF PROCEDURES TO BE FOLLOWED

During the development of the instrument to measure person-centred teamwork in the hospital nursing unit, you will be asked to partake in a Delphi study. The Delphi method is utilised to gain consensus on a specific matter. In this study it will be to gain consensus on the items of the instrument to measure person-centred teamwork. You will receive an electronic version of the suggested items that was derived from a literature search on instruments that measure person-centredness and teamwork. You will then have the opportunity to give your input into the items as an expert in the field of either person-centeredness, teamwork or instrument development. Your response will be send back to me and I will collate the responses from all participants. You will then be sent the collated responses again, this is called rounding. We will have maximum 2 rounds to

achieve consensus. Once consensus on the items was reached, the instrument will be validated by administering it to participants in the hospital setting.

4) RISK AND DISCOMFORT INVOLVED

There are no risks involved in taking part in the study. You will be participating with full anonymity. Only I, the researcher, will know your identity. You will also be able to partake in the study in your own time and own environment. This gives you full autonomy over your participation. Below there is an area to indicate if you would like to be acknowledged in the study. Should you choose to be acknowledged, you will then waver your anonymity. This will only done once the study is concluded and not during the Delphi study. Should you wish to remain anonymous, your decision will be respected.

5) POSSIBLE BENEFITS OF THIS STUDY

There will be no direct benefit to you from participating in this study. You will be part of the international group of experts that will have determine the items that will measure person-centred teamwork. This benefit will only be given to you if you consent to allowing me to make your identity known.

6) I UNDERSTAND THAT IF I DO NOT WANT TO PARTICIPATE IN THIS STUDY, I WILL NOT BE VICTIMISED

Your participation is completely voluntary. You may refuse to participate or stop at any time during the study without giving any reason.

7) I MAY AT ANYTIME WITHDRAW FROM THE STUDY

Your withdrawal will not affect you in any way.

8) HAS THE STUDY RECEIVED ETHICAL APPROVAL?

This Protocol will be submitted to the Faculty of Health Sciences Research Ethics Committee, University of Pretoria, telephone numbers 012 356 3084 / 012 356 3085 and written approval have been granted by that committee (Ethics approval nr: 11/2021) The study will be structured in accordance with the Declaration of Helsinki (last update: October 2013), which deals with the recommendations guiding doctors in biomedical research involving human/subjects. A copy of the ethics approval letter may be obtained from the investigator should you wish to review it.

9) INFORMATION

If you have any questions about your participation in the research process, you should contact the researcher Alida Viljoen at the daytime and night-time numbers supplied at the beginning of this document.

Alternatively, you can contact any of my supervisors:

Prof Tanya Heyns 0832873929

Dr. Ronell Leech 0824414576

10) CONFIDENTIALITY

All data collected during this study will be regarded as confidential. Your name as well as the names of other participants will not be reported on. Results will be published or presented in such a fashion that all participants remain unidentifiable. Your identity will only be made known if you so indicate, as discussed above.

11) CONSENT TO PARTICIPATE IN THIS STUDY

I have read or had read to me in a language that I understand the above information before signing this consent form. The content and meaning of this information have been explained to me. I have been given opportunity to ask questions and am satisfied that they have been answered satisfactorily. I am aware that the results of the study, including personal details, will be anonymously processed into research reports. I understand that if I do not participate I will not be victimised. I hereby volunteer to take part in this study.

I consent to my identity to be made known at the end of the study. As a contributor of the refinement of the instrument items to measure person-centred teamwork

Yes		NO	
-----	--	----	--

I have received a signed copy of this informed consent agreement.

Participant name

Participant signature

Investigator's name

Investigator's signature

Date: _____

ANNEXURE D.6

DEMOGRAPHICAL INFORMATION (2)



Demographical information

Please provide us the following information, by indicating your option with a **cross (x)** and/or **providing further information** if required.

Country of origin			
Highest professional qualification			
Current job description	Academic		
	Clinician		
	Other		
	If other, please list _____		
Which area do you regard as your expertise <i>(you can indicate more than one)</i>	Person-centred		Teamwork
Years of experience in the field of person-centredness, teamwork or instrument development: _____ years			
<i>Please explain why you regard yourself as an expert</i>			
Have you published in a peer review journal on person-centred and/or teamwork or instrument development?			Y
			N
If yes, please indicate the number of publications _____			

Thank you!

ANNEXURE D.7

PCT - ITEMS - GOOGLE

FORMS



Person-Centred Teamwork: Item consensus

Thank you for participating in the refinement of the specific items to measure the constructs of person-centred teamwork. You will be provided with the definition of person-centred teamwork and the 4 main constructs as determined through a concept analysis and Delphi. The criteria to measure the construct will also be provided.

You will be asked to indicate if you agree or disagree, that the specific item measures the construct. You are **not completing the instrument, but indicating if you agree or disagree that the item measures the constructs** of the definition. You will also be afforded the opportunity to challenge or re-phrase the wording of the items.

* Indicates required question

1. Email *

2. Email *

3. **Definition of Person-Centred Teamwork:**

"Person-centred teamwork is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes"
(Viljoen et. al, 2022)

The Four Criteria to be measured:

1. Healthful relations
2. Recognizing the uniqueness of the individual
3. Inclusivity
4. Synergy

The First Criteria to be measured:

Healthful relations

It consist of the following: maintaining the relationship, being kind /compassionate, Identify differences between individuals, being sympathetically presents, consensus on care

Indicate if you agree or disagree that the item measures healthful relations

You are **not completing the instrument, but indicating if you agree or disagree that the item measures the constructs** of the definition

4. **1. In the ward I work in, the following is in place:** *

Positive role modelling for the development of effective relationships within the healthcare team

Mark only one oval.

1 2 3 4

Fully Fully Disagree

5. **1a. Would you like to challenge or rephrase the item?**

Positive role modelling for the development of effective relationships within the healthcare team

6. **2. In the ward I work in, the following is in place:** *

Team leader is sensitive to the needs of the healthcare team members

Mark only one oval.

1 2 3 4

Fully Fully Disagree

7. **2a. Would you like to challenge or rephrase the item?**

Team leader is sensitive to the needs of the healthcare team members

8. **3. In the ward I work in, the following is in place:** *

Communication between healthcare team members is done in a respectful manner

Mark only one oval.

1 2 3 4

Fully Fully Disagree

9. **3a. Would you like to challenge or rephrase the item?**

Communication between healthcare team members is done in a respectful manner

10. **4. In the ward I work in, the following is in place:** *
- Individual healthcare team members seek to resolve issues when their goals for the person they care for are conflicting

Mark only one oval.

1 2 3 4

Fully Fully Disagree

11. **4a. Would you like to challenge or rephrase the item?**
- Individual healthcare team members seek to resolve issues when their goals for the person they care for are conflicting

12. **5. In the ward I work in, the following is in place:** *
- Healthcare team members listen to persons receiving care to identify needs

Mark only one oval.

1 2 3 4

Fully Fully Disagree

13. **5a. Would you like to challenge or rephrase the item?**
- Healthcare team members listen to persons receiving care to identify needs

14. **6. In the ward I work in, the following is in place:** *

Healthcare team members are fully focussed on the person they care for

Mark only one oval.

1 2 3 4

Fully Fully Disagree

15. **6a. Would you like to challenge or rephrase the item?**

Healthcare team members are fully focused on the person they care for

16. **7. In the ward I work in, the following is in place:** *

Recognition is given to each healthcare team member for their contribution

Mark only one oval.

1 2 3 4

Fully Fully Disagree

17. **7a. Would you like to challenge or rephrase the item?**

Recognition is given to each healthcare team member for their contribution

18. **8. In the ward I work in, the following is in place:** *

Consensus are reached when an issue arises where all the healthcare team members do not agree

Mark only one oval.

1 2 3 4

Fully Fully Disagree

19. **8a. Would you like to challenge or rephrase the item?**

Consensus are reached when an issue arises where all the healthcare team members do not agree

The second criteria to be measured: Recognizing the uniqueness of the individual

It consist of the following: Engagement, Uniqueness of individual, sharing ideas, sharing information, decision making by healthcare team and patient

Indicate if you agree or disagree that the item measures recognizing the uniqueness of the individual

You are **not completing the instrument, but indicating if you agree or disagree that the item measures the constructs** of the definition

20. **1. In the ward I work in, the following are accomplished** *

Healthcare team members are encouraged to discuss what is important to them

Mark only one oval.

1 2 3 4

Fully Fully Disagree

21. **1a. Would you like to challenge or rephrase the item?**

Healthcare team members are encouraged to discuss what is important to them

22. **2. In the ward I work in, the following are accomplished ***

Patients are encouraged to voice their needs

Mark only one oval.

1 2 3 4

Fully Fully Disagree

23. **2a. Would you like to challenge or rephrase the item?**

Patients are encouraged to voice their needs

24. **3. In the ward I work in, the following are accomplished ***

Healthcare team members try to understand each other's perspective

Mark only one oval.

1 2 3 4

Fully Fully Disagree

25. **3a. Would you like to challenge or rephrase the item?**

Healthcare team members try to understand each other's perspective

26. **4. In the ward I work in, the following are accomplished** *

Family members are encouraged to ask questions about the care received by their loved one

Mark only one oval.

1 2 3 4

Fully Fully Disagree

27. **4a. Would you like to challenge or rephrase the item?**

Family members are encouraged to ask questions about the care received by their loved one

28. **5. In the ward I work in, the following are accomplished** *

I feel acknowledged as a member within the healthcare team

Mark only one oval.

1 2 3 4

Fully Fully Disagree

29. **5a. Would you like to challenge or rephrase the item?**

I feel acknowledged as a member within the healthcare team

30. **6. In the ward I work in, the following are accomplished** *

Team leaders facilitate participation within the healthcare team

Mark only one oval.

1 2 3 4

Fully Fully Disagree

31. **6a. Would you like to challenge or rephrase the item?**

Team leaders facilitate participation within the healthcare team

32. **7. In the ward I work in, the following are accomplished** *

Healthcare team members are encouraged to suggest ideas related to the care plan of the person receiving care

Mark only one oval.

1 2 3 4

Fully Fully Disagree

33. **7a. Would you like to challenge or rephrase the item?**

Healthcare team members are encouraged to suggest ideas related to the care plan of the person receiving care

34. **8. In the ward I work in, the following are accomplished** *

Each healthcare team member has the freedom to be themselves within the team

Mark only one oval.

1 2 3 4

Fully Fully Disagree

35. **8a. Would you like to challenge or rephrase the item?**

Each healthcare team member has the freedom to be themselves within the team

36. **9. In the ward I work in, the following are accomplished** *

Opportunities are created to share ideas within the healthcare team

Mark only one oval.

1 2 3 4

Fully Fully Disagree

37. **9a. Would you like to challenge or rephrase the item?**

Opportunities are created to share ideas within the healthcare team

38. **10. In the ward I work in, the following are accomplished** *

Care plans are discussed among the healthcare team and family members

Mark only one oval.

1 2 3 4

Fully Fully Disagree

39. **10a. Would you like to challenge or rephrase the item?**

Care plans are discussed among the healthcare team and family members

40. **11. In the ward I work in, the following are accomplished** *

Decision-making process includes the persons receiving care

Mark only one oval.

1 2 3 4

Fully Fully Disagree

41. **11a. Would you like to challenge or rephrase the item?**
Decision-making process includes the persons receiving care

42. **12. In the ward I work in, the following are accomplished ***
Decision-making process includes the family members

Mark only one oval.

1 2 3 4

Fully Fully Disagree

43. **12a. Would you like to challenge or rephrase the item?**
Decision-making process includes the family members

44. **13. In the ward I work in, the following are accomplished ***
I actively participate in healthcare team meetings to inform my decision-making

Mark only one oval.

1 2 3 4

Fully Fully Disagree

45. **13a. Would you like to challenge or rephrase the item?**

I actively participate in healthcare team meetings to inform my decision-making

The third criteria is: Inclusivity

It consist of the following: Communication, interdependency and inclusion

Indicate if you agree or disagree that the item measures inclusivity

You are **not completing the instrument, but indicating if you agree or disagree that the item measures the constructs** of the definition

46. **1. In the ward I work in, the following realizes**

*

Reflection on experiences is encouraged within the healthcare team

Mark only one oval.

1 2 3 4

Fully Fully Disagree

47. **1a. Would you like to challenge or rephrase the item?**

Reflection on experiences is encouraged within the healthcare team

48. **2. In the ward I work in, the following realizes** *
- Language used to communicate is understood by the person receiving care

Mark only one oval.

1 2 3 4

Fully Fully Disagree

49. **2a. Would you like to challenge or rephrase the item?**
- Language used to communicate is understood by the person receiving care

50. **3. In the ward I work in, the following realizes** *
- Inputs from the person receiving care is valued by members of the healthcare team

Mark only one oval.

1 2 3 4

Fully Fully Disagree

51. **3a. Would you like to challenge or rephrase the item?**
- Inputs from the person receiving care is valued by members of the healthcare team

52. **4. In the ward I work in, the following realizes** *
Healthcare team members are encouraged to ask for help without being judged

Mark only one oval.

1 2 3 4

Fully Fully Disagree

53. **4a. Would you like to challenge or rephrase the item?** Healthcare team members are encouraged to ask for help without being judged

54. **5. In the ward I work in, the following realizes** *
Care plan is discussed with the person receiving care

Mark only one oval.

1 2 3 4

Fully Fully Disagree

55. **5a. Would you like to challenge or rephrase the item?**
Care plan is discussed with the person receiving care

56. **6. In the ward I work in, the following realizes ***

Each team member's contribution is valued

Mark only one oval.

1 2 3 4

Fully Fully Disagree

57. **6a. Would you like to challenge or rephrase the item?**

Each team member's contribution is valued

58. **7. In the ward I work in, the following realizes ***

Family members contribute to the discussion about the care plan of their loved ones

Mark only one oval.

1 2 3 4

Fully Fully Disagree

59. **7a. Would you like to challenge or rephrase the item?**

Family members contribute to the discussion about the care plan of their loved ones

60. **8. In the ward I work in, the following realizes** *
- Each healthcare team member's knowledge regarding the care is taken into consideration

Mark only one oval.

1 2 3 4

Fully Fully Disagree

61. **8a. Would you like to challenge or rephrase the item?**
- Each healthcare team member's knowledge regarding the care is taken into consideration

62. **9. In the ward I work in, the following realizes** *
- Each healthcare team member's input is sought in clinical decision making

Mark only one oval.

1 2 3 4

Fully Fully Disagree

63. **9a. Would you like to challenge or rephrase the item?**
- Each healthcare team member's input is sought in clinical decision making

The fourth criteria is: Synergy

It consist of the following: Cohesiveness, trust, collaboration, respect and combined effort

Indicate if you agree or disagree that the item measures synergy

You are **not completing the instrument, but indicating if you agree or disagree that the item measures the constructs** of the definition

64. **1. In the ward you work in, the members of the healthcare team ***

Reached consensus on their shared values and beliefs

Mark only one oval.

1 2 3 4

Fully Fully Disagree

65. **1a. Would you like to challenge or rephrase the item?**

Reached consensus on their shared values and beliefs

66. **2. In the ward you work in, the members of the healthcare team ***

Support healthcare team members to develop their practice through reflecting on realization of team's values and beliefs

Mark only one oval.

1 2 3 4

Fully Fully Disagree

67. **2a. Would you like to challenge or rephrase the item?**

Support healthcare team members to develop their practice through reflecting on realization of team's values and beliefs

68. **3. In the ward you work in, the members of the healthcare team ***

Celebrate the healthcare team's achievements

Mark only one oval.

1 2 3 4

Fully Fully Disagree

69. **3a. Would you like to challenge or rephrase the item?**

Celebrate the healthcare team's achievements

70. **4. In the ward you work in ***

There is trust among the team members

Mark only one oval.

1 2 3 4

Fully Fully Disagree

71. **4a. Would you like to challenge or rephrase the item?**

There is trust among the team members

72. **5. In the ward you work in**

*

Conflict between healthcare team members is managed without affecting care provided

Mark only one oval.

1 2 3 4

Fully Fully Disagree

73. **5a. Would you like to challenge or rephrase the item?**

Conflict between healthcare team members is managed without affecting care provided

74. **6. In the ward you work in** *

Healthcare team members discuss care plans

Mark only one oval.

1 2 3 4

Fully Fully Disagree

75. **6a. Would you like to challenge or rephrase the item?**

Healthcare team members discuss care plans

76. **7. In the ward you work in,** *

Conflict is managed between healthcare team members without affecting team cohesion

Mark only one oval.

1 2 3 4

Fully Fully Disagree

77. **7a. Would you like to challenge or rephrase the item?**

Conflict is managed between healthcare team members without affecting team cohesion

78. **8. In the ward you work in**

*

Practices inconsistent with the healthcare team's shared values and beliefs are challenged

Mark only one oval.

1 2 3 4

Fully Fully Disagree

79. **8a. Would you like to challenge or rephrase the item?**

Practices inconsistent with the healthcare team's shared values and beliefs are challenged

80. **9. In the ward you work in**

*

Healthcare team members collaborate to provide best care

Mark only one oval.

1 2 3 4

Fully Fully Disagree

81. **9a. Would you like to challenge or rephrase the item?**

Healthcare team members collaborate to provide best care

82. **10. In the ward you work in** *

I am respected within the team

Mark only one oval.

1 2 3 4

Fully Fully Disagree

83. **10a. Would you like to challenge or rephrase the item?**

I am respected within the team

84. **11. In the ward you work in** *

There is an effort to support and help each team member

Mark only one oval.

1 2 3 4

Fully Fully Disagree

85. **11a. Would you like to challenge or rephrase the item?**

There is an effort to support and help each team member

86. **12. In the ward you work in,** *

Care of person receiving care is well organized

Mark only one oval.

1 2 3 4

Fully Fully Disagree

87. **12a. Would you like to challenge or rephrase the item?**

Care of person receiving care is well organized

88. **13. In the ward you work in** *

Healthcare team members work hand-in-hand

Mark only one oval.

1 2 3 4

Fully Fully Disagree

89. **13a. Would you like to challenge or rephrase the item?**

Healthcare team members work hand-in-hand

Thank you for participating in round 1

Please ensure you **did not complete the instrument as a participant, but indicated if you agree or disagree that the *item measures the constructs*** of the definition

You will receive feedback regarding all the responses within a week. Then round 2 will commence.

This content is neither created nor endorsed by Google.

Google Forms

ANNEXURE D.8

GMAIL - DELPHI 2 START R1





Alida Viljoen <alidavil5@gmail.com>

Delphi 2 Participation

Alida Viljoen <alidavil5@gmail.com>

Tue, Oct 25, 2022 at 8:09 PM

To: brendan.mccormack@sydney.edu.au, "McCance, Tanya" <tv.mccance@ulster.ac.uk>, Lizemari Hugo <hugoL1@ufs.ac.za>, Stefan Nilsson <stefan.nilsson.4@gu.se>, d.brown1@ulster.ac.uk, cdickson@qmu.ac.uk, d.odonnell@ulster.ac.uk, rmiddle@uow.edu.au, "Slater, Paul" <pf.slater@ulster.ac.uk>
Cc: Tanya Heyns <tanya.heyns@up.ac.za>, Ronell Leech <ronell.leech@up.ac.za>
Bcc: Alida Viljoen <alida@zah.co.za>

Good Day

Thank you for your willingness to participate in my Delphi study.
Your input will be of great value.

Before we start please ensure you have read and signed the participant information letter and completed the demographic document and send it back to me.

You will now engage in an electronic Delphi study that will consist of a maximum of 3 rounds. You are afforded a 10-day period to complete each round. I will send out a reminder after 5 days and again 2 days before the closing date of the round. After each round, you will be given feedback and the next round will start.

Attached is a document that afford you with some background information on how this instrument was developed up to now. Please read it before you click on the link to participate.

Remember you are participating as an expert to validate the relevance of each item, in relation to how it measures the constructs of person-centred teamwork. You are not to complete it as a person working in a ward.

Should you have any questions, please email me, I will respond asap.

Here we go. You have until 4th of November to respond.

The link to the study:

<https://forms.gle/uY3ftdvVqqGiocVQ8>

Thank you

--

Alida Viljoen



Delphi 2_PCT info letter_AV.pdf

221K

ANNEXURE D.9

DELPHI 2 ROUND 1

FEEDBACK





Alida Viljoen <alidavil5@gmail.com>

Participation in Delphi round 2

Alida Viljoen <alidavil5@gmail.com>

Sat, Nov 12, 2022 at 2:11 PM

To: "Slater, Paul" <pf.slater@ulster.ac.uk>, Stefan Nilsson <stefan.nilsson.4@gu.se>, "McCance, Tanya" <tv.mccance@ulster.ac.uk>, brendan.mccormack@sydney.edu.au, d.brown1@ulster.ac.uk, cdickson@qmu.ac.uk, rmiddle@uow.edu.au, d.odonnell@ulster.ac.uk

Cc: Ronell Leech <ronell.leech@up.ac.za>, Tanya Heyns <tanya.heyns@up.ac.za>, Alida Viljoen <alida@zah.co.za>

Good day

Thank you for your participation in the first round of the Delphi
We obtained some very valuable input

Attached is a document with feedback from the first round.
The document also contains the adapted items and an indication of the consensus
There are also some items that were found to be similar and were removed.
Should you require more information or clarity, feel free to contact me

Please read through the document and then click on the link for the second round.
You will have 10 days to complete the round and a reminder will be sent 2 days before the deadline.
The deadline is on **23 November 2022**.

Click on the link below to participate in round 2:
<https://forms.gle/21Y4dhFGbZMzjWYK6>

Thank you again for your time and expertise

--

Alida Viljoen



Delphi 2 round 1 feedback.pdf
167K

ANNEXURE D.10

PCT - ITEMS 2 - GOOGLE

FORMS



DELPHI STUDY 2: PERSON-CENTRED TEAMWORK, CONSENSUS ON THE ITEMS TO MEASURE THE CONCEPT

The first round of the Delphi study, to obtain consensus on the items to measure: person-centred teamwork, yielded the following results:

Table1: Display of percentage of overall agreement per attribute by the participants (N9)

Attribute	Consensus %
Healthful Relations	59
Recognizing the uniqueness of the individual	71
Inclusivity	77
Synergy	77

Consensus is reached when there is 70% or more agreement by the participants. Consensus was measured by adding the Strongly Agree and Agree Likert contributions. An overall consensus of 71% was obtained during the first round.

Below are the items as presented in the first round with an adapted version of the item. It also indicates the items to be removed due to similarity with other items. The lead question to each item was adapted to: *In the healthcare setting where I work*

Table 2.1:

Healthful Relations (HR)				
Item no	Original Item	Adapted Item	Consensus %	Removed
1	In the ward I work in, the following is in place: Positive role modelling for the development of effective relationships within the healthcare team	In the healthcare setting where I work: I experience positive role modelling for the development of effective relationships within the healthcare team	33	
2	In the ward I work in, the following is in place: Team leader is sensitive to the needs of the healthcare team members	In the healthcare setting where I work: The team leader is sensitive to the needs of the team members	66	
3	"In the ward I work in, the following is in place: Communication between healthcare team members is done in a respectful manner "	In the healthcare setting where I work: Communication (verbal and non-verbal) between team members occurs in a respectful manner	66	
4	In the ward I work in, the following	In the healthcare setting	33	

	is in place: Individual healthcare team members seek to resolve issues when their goals for the person they care for are conflicting	where I work: Team members work collaboratively to agree goals and resolve conflicts through shared decision-making		
5	In the ward I work in, the following is in place: Healthcare team members listen to persons receiving care to identify needs	In the healthcare setting where I work: Healthcare team members listen to persons receiving care to identify needs, hopes and desires	77	Similar to RUI #2
6	In the ward I work in, the following is in place: Healthcare team members are fully focussed on the person they care for	In the healthcare setting where I work: The healthcare team do not get distracted from their commitment to deliver individualised holistic care	66	
7	In the ward I work in, the following is in place: Recognition is given to each healthcare team member for their contribution	In the healthcare setting where I work: Each team member's contribution is acknowledged and valued	77	
8	In the ward I work in, the following is in place: Consensus are reached when an issue arises where all the healthcare team members do not agree"	In the healthcare setting where I work: Processes are in place to reach consensus when issues arise where the team members do not agree	55	
Recognising the uniqueness of the individual (RUI)				
Item no	Original Item	Adapted Item	Consensus %	Removed
1	In the ward I work in, the following are accomplished Healthcare team members are encouraged to discuss what is important to them	In the healthcare setting where I work: Team members are encouraged to discuss what is important to them, as part of the team	77	
2	In the ward I work in, the following are accomplished Patients are encouraged to voice their needs	In the healthcare setting where I work: Person receiving care are encouraged to voice their needs	88	Removed Similar to HR #5
3	In the ward I work in, the following are accomplished Healthcare team members try to understand each other's perspective	In the healthcare setting where I work: team members actively try to understand each other's perspectives	77	
4	In the ward I work in, the following are accomplished Family members are encouraged to ask questions about the care received by their loved one	In the healthcare setting where I work: With the person receiving care's approval, their significant others are encouraged to actively engaged in the care received.	77	Similar to IC #7

5	In the ward I work in, the following are accomplished I feel acknowledged as a member within the healthcare team	In the healthcare setting where I work: I feel acknowledged as a person within the healthcare team	77	
6	In the ward I work in, the following are accomplished Team leaders facilitate participation within the healthcare team	In the healthcare setting where I work: Team leaders actively facilitate participation related to outcomes within the healthcare team	66	Similar to RUI #13
7	In the ward I work in, the following are accomplished Healthcare team members are encouraged to suggest ideas related to the care plan of the person receiving care	In the healthcare setting where I work: team members are encouraged to collaboratively discuss solutions related to the care plan of the person receiving care	44	Similar to RUI #9 &13
8	In the ward I work in, the following are accomplished Each healthcare team member has the freedom to be themselves within the team	In the healthcare setting where I work: Each team member has the freedom to be authentic within the team's values	55	
9	In the ward I work in, the following are accomplished Opportunities are created to share ideas within the healthcare team	Remove, overlap with question 7 4/9 participants agreed it overlaps		Removed Similar to RUI #7
10	In the ward I work in, the following are accomplished Care plans are discussed among the healthcare team and family members	In the healthcare setting where I work: Care plans are discussed between the healthcare team, significant others and person receiving care	66	
11	In the ward I work in, the following are accomplished Decision-making process includes the persons receiving care	In the healthcare setting where I work: Where the person receiving care has capacity, s/he is involved in decision- making processes	88	
12	In the ward I work in, the following are accomplished Decision-making process includes the family members	In the healthcare setting where I work: Decision-making process includes the person receiving care's significant others, where appropriate.	66	
13	In the ward I work in, the following are accomplished I actively participate in healthcare team meetings to inform my decision-making	Remove the item as it overlaps with item 6&7		Removed similar RUI # 6&7
Inclusivity (IC)				
Item no	Original Item	Adapted Item	Consensus %	Removed

1	In the ward I work in, the following realizes Reflection on experiences is encouraged within the healthcare team	In the healthcare setting where I work: Team members are encouraged to reflect on their practice within the team	77	
2	In the ward I work in, the following realizes Language used to communicate is understood by the person receiving care	In the healthcare setting where I work: When working with a person receiving care, language that they understand is used	66	
3	In the ward I work in, the following realizes Inputs from the person receiving care is valued by members of the healthcare team	In the healthcare setting where I work: NO CHANGE	88	
4	In the ward I work in, the following realizes Healthcare team members are encouraged to ask for help without being judged	In the healthcare setting where I work: NO CHANGE	77	
5	In the ward I work in, the following realizes Care plan is discussed with the person receiving care	In the healthcare setting where I work: The care plans and alternatives are discussed with the person receiving care	66	
6	In the ward I work in, the following realizes Each team member's contribution is valued	In the healthcare setting where I work: NO CHANGE	77	
7	In the ward I work in, the following realizes Family members contribute to the discussion about the care plan of their loved ones	Remove the item as it overlaps with item 4 in RUI	66	Removed Similar RUI #4
8	In the ward I work in, the following realizes Each healthcare team member's knowledge regarding the care is taken into consideration	In the healthcare setting where I work: Each team member's knowledge, skill and expertise is respected and valued	66	
9	In the ward I work in, the following realizes Each healthcare team member's input is sought in clinical decision making	Remove the item as it overlaps with item 7 in RUI	88	Removed Similar RUI #7
Synergy				
Item no	Original Item	Adapted Item	Consensus %	Removed
1	In the ward you work in, the members of the healthcare team Reached consensus on their shared values and beliefs	In the healthcare setting where I work: Team members have developed shared values and beliefs	77	

2	In the ward you work in, the members of the healthcare team Support healthcare team members to develop their practice through reflecting on realization of team's values and beliefs	In the healthcare setting where I work: Reflecting on practice is facilitated to develop practice in line with the team's shared values and beliefs	66	
3	In the ward you work in, the members of the healthcare team Celebrate the healthcare team's achievements	In the healthcare setting where I work: NO CHANGE	88	
4	In the ward you work in There is trust among the team members	In the healthcare setting where I work: NO CHANGE	88	
5	In the ward you work in Conflict between healthcare team members is managed without affecting care provided	In the healthcare setting where I work: Conflict within the team is managed by the team without affecting care provided	77	
6	In the ward you work in Healthcare team members discuss care plans	In the healthcare setting where I work: Healthcare team members discuss care plans to ensure it is understood by the team	66	
7	In the ward you work in, Conflict is managed between healthcare team members without affecting team cohesion	In the healthcare setting where I work: Conflict within the team is managed by team members without affecting the team cohesion	77	
8	In the ward you work in Practices inconsistent with the healthcare team's shared values and beliefs are challenged	In the healthcare setting where I work: NO CHANGE	88	
9	In the ward you work in Healthcare team members collaborate to provide best care	In the healthcare setting where I work: Healthcare team members collaborate to provide best practice	88	
10	In the ward you work in I am respected within the team	In the healthcare setting where I work: I am respected by the team	88	
11	In the ward you work in There is an effort to support and help each team member	In the healthcare setting where I work: NO CHANGE	88	
12	In the ward you work in, Care of person receiving care is well organized	In the healthcare setting where I work: Care of the person receiving care, is effectively organised and communicated	77	
13	In the ward you work in Healthcare team members work hand-in-hand	In the healthcare setting where I work: Healthcare team members work collaboratively by	33	

		having interdependency within the team		
New item		In the healthcare setting where I work: Team effectiveness is evaluated by the team and service users	new	

You are now requested to review the items that did not obtain consensus again. The numbering of the items was kept as per the first round. The items with consensus were removed and will be used as indicated.

Complete the link below to participate in the second round of the study.

<https://forms.gle/21Y4dhFGbZMzjWYK6>

ANNEXURE D.11

DELPHI 2 ROUND 2

FEEDBACK



DELPHI STUDY 2: PERSON-CENTRED TEAMWORK, CONSENSUS ON THE ITEMS TO MEASURE THE CONCEPT

The second round of the Delphi study, to obtain consensus on the items to measure: person-centred teamwork, yielded the following results:

Table1: Display of percentage of overall agreement per attribute by the participants (N9)

Attribute	Consensus %
Healthful Relations	90
Recognizing the uniqueness of the individual	82
Inclusivity	96
Synergy	82

Consensus is reached when there is 70% or more agreement by the participants. Consensus was measured by adding the Strongly Agree and Agree Likert contributions. Consensus of 87% was obtained during the second round. The Delphi started with 43 items. The number of items removed were eight (8), six (6) due to being similar to other items and two (2) due to no consensus. There was three (3) new items added. Final number of items after consensus is 38.

Below in table 2, are the items as presented in the first round with an adapted version of the item. It also indicates the items to be removed due to similarity with other items or no consensus reached. The lead question to each item was adapted to: *In the healthcare setting where I work*

TABLE 2: CONSENSUS AND ADAPTATION PROGRESSION OF ITEMS

HEALTHFUL RELATIONS (HR)							
Item no	Original Item	Consensus % after round 1	Adapted Item	Consensus % after round 2	Adapted Item after round 2	Outcome	Final Items {9}
1	In the ward I work in, the following is in place: Positive role modelling for the development of effective relationships within the healthcare team	33	In the healthcare setting where I work: I experience positive role modelling for the development of effective relationships within the healthcare team	100	In the healthcare setting where I work: I experience positive role modelling for the development of healthful relationships within the healthcare team	Consensus	In the healthcare setting where I work: I experience positive role modelling for the development of healthful relationships within the healthcare team
2	In the ward I work in, the following is in place: Team leader is sensitive to the needs of the healthcare team members	66	In the healthcare setting where I work: The team leader is sensitive to the needs of the team members	88	In the healthcare setting where I work: The team leader is sensitive to the needs of all team members	Consensus	In the healthcare setting where I work: The team leader is sensitive to the needs of all team members
3	"In the ward I work in, the following is in place: Communication between healthcare team members is done in a respectful manner"	66	In the healthcare setting where I work: Communication (verbal and non-verbal) between team members occurs in a respectful manner	100	In the healthcare setting where I work: Communication (verbal and non-verbal) between team members occurs in a respectful manner	Consensus	In the healthcare setting where I work: Communication (verbal and non-verbal) between team members occurs in a respectful manner
4	In the ward I work in, the following is in place: Individual healthcare team members seek to resolve issues when their goals for the person they care for are conflicting	33	In the healthcare setting where I work: Team members work collaboratively to agree goals and resolve conflicts through shared decision-making	100	In the healthcare setting where I work: Team members work collaboratively to agree on goals & Team members work collaboratively to resolve conflicts through shared decision-making	Consensus	In the healthcare setting where I work: Team members work collaboratively to agree on goals & Team members work collaboratively to resolve conflicts through shared decision-making
5	In the ward I work in, the following is in place: Healthcare team members listen to persons receiving care to identify needs	77	In the healthcare setting where I work: Healthcare team members listen to persons receiving care to identify needs, hopes and desires			Similar to RUI #2 Consensus	In the healthcare setting where I work: Healthcare team members listen to persons receiving care to identify needs, hopes and desires
6	In the ward I work in, the following is in place: Healthcare team members are fully focussed on the person they care for	66	In the healthcare setting where I work: The healthcare team do not get distracted from their commitment to deliver individualised holistic care	66	In the healthcare setting where I work: The healthcare team is focused on their commitment to deliver individualized holistic care	Consensus	In the healthcare setting where I work: The healthcare team is focused on their commitment to deliver individualized holistic care
7	In the ward I work in, the following is in place: Recognition is given to each healthcare team member for their contribution	77	In the healthcare setting where I work: Each team member's contribution is acknowledged and valued			Consensus	In the healthcare setting where I work: Each team member's contribution is acknowledged and valued
8	In the ward I work in, the following is in place: Consensus are reached when an issue arises where all the healthcare team members do not agree"	55	In the healthcare setting where I work: Processes are in place to reach consensus when issues arise where the team members do not agree	88	In the healthcare setting where I work: The healthcare team is able to reach consensus on areas of disagreement	Consensus	In the healthcare setting where I work: The healthcare team is able to reach consensus on areas of disagreement

RECOGNISING THE UNIQUENESS OF THE INDIVIDUAL (RUI)

Item no	Original Item	Consensus % after round 1	Adapted Item	Consensus % after round 2	Adapted Item after round 2	Outcome	Final Items {9}
1	In the ward I work in, the following are accomplished Healthcare team members are encouraged to discuss what is important to them	77	In the healthcare setting where I work: Team members are encouraged to discuss what is important to them, as part of the team			Consensus	In the healthcare setting where I work: Team members are encouraged to discuss what is important to them, as part of the team
2	In the ward I work in, the following are accomplished Patients are encouraged to voice their needs	88	In the healthcare setting where I work: Person receiving care are encouraged to voice their needs			Removed Similar to HR #5	
3	In the ward I work in, the following are accomplished Healthcare team members try to understand each other's perspective	77	In the healthcare setting where I work: team members actively try to understand each other's perspectives			Consensus	In the healthcare setting where I work: team members actively try to understand each other's perspectives
4	In the ward I work in, the following are accomplished Family members are encouraged to ask questions about the care received by their loved one	77	In the healthcare setting where I work: With the person receiving care's approval, their significant others are encouraged to actively engaged in the care received.			Similar to IC #7 Consensus	In the healthcare setting where I work: With the person receiving care's approval, their significant others are encouraged to actively engaged in the care received.
5	In the ward I work in, the following are accomplished I feel acknowledged as a member within the healthcare team	77	In the healthcare setting where I work: I feel acknowledged as a person within the healthcare team			Consensus	In the healthcare setting where I work: I feel acknowledged as a person within the healthcare team
6	In the ward I work in, the following are accomplished Team leaders facilitate participation within the healthcare team	66	In the healthcare setting where I work: Team leaders actively facilitate participation related to outcomes within the healthcare team	44	In the healthcare setting where I work: Team leaders actively facilitate participation of each team member and/or person(s) experiencing care related to outcomes within the healthcare team	Similar to RUI #13 No consensus	
7	In the ward I work in, the following are accomplished Healthcare team members are encouraged to suggest ideas related to the care plan of the person receiving care	44	In the healthcare setting where I work: team members are encouraged to collaboratively discuss solutions related to the care plan of the person receiving care	77	In the healthcare setting where I work: Team members collaborate in agreeing solutions for individualised care plans	Similar to RUI #9 & 13 Consensus	In the healthcare setting where I work: Team members collaborate in agreeing solutions for individualised care plans
8	In the ward I work in, the following are accomplished Each healthcare team member has the freedom to be themselves within the team	55	In the healthcare setting where I work: Each team member has the freedom to be authentic within the team's values	77	In the healthcare setting where I work: Each team member has the freedom to be authentic within the team's values	Consensus	In the healthcare setting where I work: Each team member has the freedom to be authentic within the team's values
9	In the ward I work in, the following are accomplished Opportunities are created to share ideas within the healthcare team	77	Remove, overlap with question 7 4/9 participants agreed it overlaps			Removed Similar to RUI #7	
10	In the ward I work in, the following are accomplished Care plans are discussed among the healthcare team and family members	66	In the healthcare setting where I work: Care plans are discussed between the healthcare team, significant others and person receiving care	77	In the healthcare setting where I work: Care plans are discussed between the healthcare team, significant others and person receiving care	Similar to RUI #7 Consensus	In the healthcare setting where I work: Care plans are discussed between the healthcare team, significant others and person receiving care

11	In the ward I work in, the following are accomplished Decision-making process includes the persons receiving care	88	In the healthcare setting where I work: Where the person receiving care has capacity, s/he is involved in decision-making processes			Consensus	In the healthcare setting where I work: Where the person receiving care has capacity, s/he is involved in decision- making processes
12	In the ward I work in, the following are accomplished Decision-making process includes the family members	66	In the healthcare setting where I work: Decision-making process includes the person receiving care's significant others, where appropriate.	88	In the healthcare setting where I work: Decision-making process includes the person receiving care's significant others, where appropriate.	Similar to RUI #7 &10 Consensus	In the healthcare setting where I work: Decision-making process includes the person receiving care's significant others, where appropriate.
13	In the ward I work in, the following are accomplished I actively participate in healthcare team meetings to inform my decision-making	66	Remove the item as it overlaps with item 6&7			Removed similar to RUI # 6&7	

INCLUSIVITY (IC)

Item no	Original Item	Consensus % after round 1	Adapted Item	Consensus % after round 2	Adapted Item after round 2	Outcome	Final Items {6}
1	In the ward I work in, the following realizes Reflection on experiences is encouraged within the healthcare team	77	In the healthcare setting where I work: Team members are encouraged to reflect on their practice within the team			Consensus	In the healthcare setting where I work: Team members are encouraged to reflect on their practice within the team
2	In the ward I work in, the following realizes Language used to communicate is understood by the person receiving care	66	In the healthcare setting where I work: When working with a person receiving care, language that they understand is used	100	In the healthcare setting where I work: When working with a person receiving care, language that they understand is used	Consensus	In the healthcare setting where I work: When working with a person receiving care, language that they understand is used
3	In the ward I work in, the following realizes Inputs from the person receiving care is valued by members of the healthcare team	88	In the healthcare setting where I work: NO CHANGE			Consensus	In the healthcare setting where I work: Inputs from the person receiving care is valued by members of the healthcare team
4	In the ward I work in, the following realizes Healthcare team members are encouraged to ask for help without being judged	77	In the healthcare setting where I work: NO CHANGE			Consensus	In the healthcare setting where I work: Healthcare team members are encouraged to ask for help without being judged
5	In the ward I work in, the following realizes Care plan is discussed with the person receiving care	66	In the healthcare setting where I work: The care plans and alternatives are discussed with the person receiving care	88	In the healthcare setting where I work: The care plans and alternatives are discussed with the person receiving care	Removed Similar to RUI # 10	
6	In the ward I work in, the following realizes Each team member's contribution is valued	77	In the healthcare setting where I work: NO CHANGE			Consensus	In the healthcare setting where I work: Each team member's contribution is valued

7	In the ward I work in, the following realizes Family members contribute to the discussion about the care plan of their loved ones	66	Remove the item as it overlaps with item 4 in RUI			Removed Similar RUI #4	
8	In the ward I work in, the following realizes Each healthcare team member's knowledge regarding the care is taken into consideration	66	In the healthcare setting where I work: Each team member's knowledge, skill and expertise is respected and valued	100	In the healthcare setting where I work: Each team member's knowledge, skill and expertise are respected and valued	Consensus	In the healthcare setting where I work: Each team member's knowledge, skill and expertise are respected and valued
9	In the ward I work in, the following realizes Each healthcare team member's input is sought in clinical decision making	88	Remove the item as it overlaps with item 7 in RUI			Removed Similar RUI #7	

SYNERGY

Item no	Original Item	Consensus % after round 1	Adapted Item	Consensus % after round 2	Adapted Item after round 2	Removed	Final Items {14}
1	In the ward you work in, the members of the healthcare team Reached consensus on their shared values and beliefs	77	In the healthcare setting where I work: Team members have developed shared values and beliefs			Consensus	In the healthcare setting where I work: Team members have developed shared values and beliefs
2	In the ward you work in, the members of the healthcare team Support healthcare team members to develop their practice through reflecting on realization of team's values and beliefs	66	In the healthcare setting where I work: Reflecting on practice is facilitated to develop practice in line with the team's shared values and beliefs	88	In the healthcare setting where I work: Facilitated reflection is used to develop practice according to agreed evidence	Consensus	In the healthcare setting where I work: Facilitated reflection is used to develop practice according to agreed evidence
3	In the ward you work in, the members of the healthcare team Celebrate the healthcare team's achievements	88	In the healthcare setting where I work: NO CHANGE			Consensus	In the healthcare setting where I work: Celebrate the healthcare team's achievements
4	In the ward you work in There is trust among the team members	88	In the healthcare setting where I work: NO CHANGE			Consensus	In the healthcare setting where I work: There is trust among the team members
5	In the ward you work in Conflict between healthcare team members is managed without affecting care provided	77	In the healthcare setting where I work: Conflict within the team is managed by the team without affecting care provided			Consensus	In the healthcare setting where I work: Conflict within the team is managed by the team without affecting care provided

6	In the ward you work in Healthcare team members discuss care plans	66	In the healthcare setting where I work: Healthcare team members discuss care plans to ensure it is understood by the team	88	In the healthcare setting where I work: Healthcare team members discuss care plans to ensure consistency of practice	Consensus	In the healthcare setting where I work: Healthcare team members discuss care plans to ensure consistency of practice
7	In the ward you work in, Conflict is managed between healthcare team members without affecting team cohesion	77	In the healthcare setting where I work: Conflict within the team is managed by team members without affecting the team cohesion			Consensus	In the healthcare setting where I work: Conflict within the team is managed by team members without affecting the team cohesion
8	In the ward you work in Practices inconsistent with the healthcare team's shared values and beliefs are challenged	88	In the healthcare setting where I work: NO CHANGE			Consensus	In the healthcare setting where I work: Practices inconsistent with the healthcare team's shared values and beliefs are challenged
9	In the ward you work in Healthcare team members collaborate to provide best care	88	In the healthcare setting where I work: Healthcare team members collaborate to provide best practice			Consensus	In the healthcare setting where I work: Healthcare team members collaborate to provide best practice
10	In the ward you work in I am respected within the team	88	In the healthcare setting where I work: I am respected by the team			Consensus	In the healthcare setting where I work: I am respected by the team
11	In the ward you work in There is an effort to support and help each team member	88	In the healthcare setting where I work: NO CHANGE			Consensus	In the healthcare setting where I work: There is an effort to support and help each team member
12	In the ward you work in, Care of person receiving care is well organized	77	In the healthcare setting where I work: Care of the person receiving care, is effectively organised and communicated			Consensus	In the healthcare setting where I work: Care of the person receiving care, is effectively organised and communicated
13	In the ward you work in Healthcare team members work hand-in-hand	33	In the healthcare setting where I work: Healthcare team members work collaboratively by having interdependency within the team	66	In the healthcare setting where I work: Healthcare team members work collaboratively by promoting interdependency within the team	Removed No consensus	
New item		new	In the healthcare setting where I work: Team effectiveness is evaluated by the team and service users	88	In the healthcare setting where I work: Team effectiveness is evaluated by the team & Team effectiveness is evaluated by the person(s)receiving care	Consensus	In the healthcare setting where I work: Team effectiveness is evaluated by the team & Team effectiveness is evaluated by the person(s)receiving care

Thank you for your participation in my study. Your participation and valuable input is highly appreciated.


 Alida Viljoen

ANNEXURE E.1

GMAIL - PARTICIPATION IN PRE-TEST



Participation in validation of instrument

Alida Viljoen <alidavil5@gmail.com>

Sun, Dec 11, 2022 at 7:34 PM

To: marlize.kuhn@gmail.com, Karien.Basson@airrescuegroup.com, luschg@gmail.com, santeldl@sun.ac.za, yolandeh@tecmed.co.za, nicolemitropapas@gmail.com, kimre@zah.co.za, ilze.vaneden@zah.co.za, jeanette.tlooe01@gmail.com, "tmaringa78@gmail.com" <tmaringa78@gmail.com>, "engela.francis@gmail.com" <engela.francis@gmail.com>, "bokanglesedi@gmail.com" <bokanglesedi@gmail.com>, "zulutania3@gmail.com" <zulutania3@gmail.com>, "asherphysio@gmail.com" <asherphysio@gmail.com>
Cc: Tanya Heyns <tanya.heyns@up.ac.za>, Ronell Leech <ronell.leech@up.ac.za>

Good day

My name is Alida Viljoen, I am a PhD student at the University of Pretoria.

My supervisor is Prof Tanya Heyns. The title of my study is:

Development of an instrument to measure person-centred teamwork

My Ethical clearance nr: 11/2021

I also have permission from the Gauteng Department of Health and the management of Zuid- Afrikaans hospital to conduct the study. Should you require the proof, I am more than happy to provide it

I would like to invite you to participate in the validation of an instrument we developed to measure person-centred teamwork, the target population. A definition for Person-centred teamwork was developed through a concept analysis and consensus reached via an international Delphi panel. Content validation of the items was done via an international Delphi study.

The Definition is as follows:

"Person-centred teamwork is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes" (Viljoen *et.al*, 2022)

You are asked to read the participant information letter and sign the consent form. The consent form needs to be sent back to me. Then you can either request a printed version of the participation instrument and send it back to me.

OR

Follow the link to participate electronically. You would need 15-20 minutes to participate. Should you have any questions, please do not hesitate to contact me on my cell phone: 0823342768 or reply to this email.

You will have until **20th December 2022** to participate.

Attached find 2 documents

1. Participant Information letter and consent form
2. Instrument to measure person-centred teamwork

The link: <https://forms.gle/jC3ND37TE8H5moqB9>

Thank you for your willingness to participate

Regards

--

Alida Viljoen

2 attachments

 **Instrument target population.pdf**
358K

 **PIL Instrument Target Population.pdf**
505K

ANNEXURE E.2

PIL INSTRUMENT PRE-TEST

SAMPLE



PARTICIPANT'S INFORMATION & INFORMED CONSENT DOCUMENT

Stage 2: Evaluation by target population

Alida Viljoen
Student Number 20814977
Department of Nursing Science
University of Pretoria

Dear Colleague,

RE: DEVELOPMENT OF AN INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK

I am a PhD student at the University of Pretoria, Department of Nursing Science. You are invited as a representative of the target population to volunteer to participate in my research study titled "*Development of an instrument to measure person-centred teamwork.*"

This letter gives information to help you to decide if you want to take part in this study. Before you agree you should fully understand what is involved. If you do not understand the information or have any other questions, do not hesitate to ask me. You should not agree to take part unless you are completely happy about what is expected of you.

The overall aim of the study is to adapt and validate an instrument to measure person-centred teamwork in nursing units. The instrument was developed through an extensive literature search. Consensus was obtained on the items by means of an international panel of experts in the field of person-centredness and teamwork.

You will receive a link or hard copy of the instrument and asked to give feedback on the **instructions and clarity** of the items in the instrument, as well as rate each item. In addition you will be asked to give feedback on the instruments structure, layout and wording. All your inputs will be incorporated to refine the instrument which will then be used to measure person-centred teamwork in nursing units

You are asked to participate as an **individual** healthcare professional and **not as an employee of a specific hospital**. Your participation in this study is voluntary. You can refuse to participate or stop at any time without giving any reason. Once input has been given to us, you cannot

recall your consent as we will not be able to trace your information. There are no foreseeable risks involved in participating in this survey as the questions are not sensitive in nature.

The Research Ethics Committee of the University of Pretoria, Faculty of Health Sciences, telephone numbers 012 356 3084 / 012 356 3085 granted written approval for this study (Reference number: 11/2021). Should you have any queries or need clarification feel free to contact me on my cell phone: 082 334 2768

I sincerely appreciate your input and participation.

Best Regards



Alida Viljoen
(PhD Candidate)

CONSENT TO PARTICIPATE IN THIS STUDY

I have read or had read to me in a language that I understand the above information before signing this consent form. The content and meaning of this information have been explained to me. I have been given opportunity to ask questions and am satisfied that they have been answered satisfactorily. I am aware that the results of the study, including personal details, will be anonymously processed into research reports. I understand that if I do not participate I will not be victimised. I hereby volunteer to take part in this study.

Date: _____

Participant name

Participant signature

ANNEXURE E.3

INSTRUMENT PRE-TEST

SAMPLE



PERSON-CENTRED TEAMWORK INSTRUMENT:

Thank you for your willingness to participate in this study. The overall aim of this phase of the study is to adapt and validate an instrument to measure person-centred teamwork in nursing units. This is phase 3 of 4 in a study to develop an instrument to measure person-centred teamwork.

You are asked to:

1. Tell us about yourself
2. Answer each item as a per your experience within the healthcare team
3. Give feedback on the instrument developed to measure person-centred teamwork in nursing units

SECTION A: DEMOGRAPHIC INFORMATION

Please tell us about yourself. Mark the appropriate box with a cross (X) in each instance.

1. Profession:

Dietician	
Physiotherapist	
Professional Nurse	
Enrolled Nurse	
Enrolled Nursing Assistant	
Medical Doctor	
Other	

If other indicate your profession: _____

2. Indicate your highest qualification and speciality if applicable:

Highest Qualification: _____

Speciality: _____

3. Health care setting where you work:

Steve Biko Academic Hospital	
Zuid-Afrikaans Hospital	

4. Type of unit you practice in:

Medical ward	
Surgical ward	
Intensive Care Unit	
Emergency Department	
Pediatric ward	
Multiple Units	
Other	

If other, indicate the practice unit: _____

5. Years of experience in your profession: _____ years

SECTION B: PERSON-CENTRED TEAMWORK

Section B focusses on your current experience about person-centred teamwork in the health care setting you are working in. Answer **ALL** the questions. Mark the appropriate box with a cross (X) in each instance. Are the instructions to participants clear? If not, please comment

1. In the healthcare setting where I work:

I experience positive role modelling for the development of healthful relationships within the healthcare team

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer.

2. In the healthcare setting where I work:

The team leader is sensitive to the needs of all team members

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer.

3. In the healthcare setting where I work:

Communication (verbal and non-verbal) between team members occurs in a respectful manner

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer.

4. In the healthcare setting where I work:

Team members work collaboratively to agree on goals

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer.

5. In the healthcare setting where I work:

Team members work collaboratively to resolve conflicts through shared decision-making

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

6. In the healthcare setting where I work:

Healthcare team members listen to persons receiving care to identify needs, hopes and desires

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer.

7. In the healthcare setting where I work:

The healthcare team is focused on their commitment to deliver individualized holistic care

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

8. In the healthcare setting where I work:

Each team member's contribution is acknowledged and valued

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer.

9. In the healthcare setting where I work:

The healthcare team is able to reach consensus on areas of disagreement

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

10. In the healthcare setting where I work:

Team members are encouraged to discuss what is important to them, as part of the team

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

11. In the healthcare setting where I work:

Team members actively try to understand each other's perspectives

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

12. In the healthcare setting where I work:

With the person receiving care's approval, their significant others are encouraged to actively engaged in the care received.

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

13. In the healthcare setting where I work:

I feel acknowledged as a person within the healthcare team

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

14. In the healthcare setting where I work:

Team members collaborate by agreeing to solutions for individualised care plans

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

15. In the healthcare setting where I work:

Each team member has the freedom to be authentic within the team's values

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer.

16. In the healthcare setting where I work:

Care plans are discussed between the healthcare team, significant others and person receiving care

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

17. In the healthcare setting where I work:

Where the person receiving care has capacity, s/he is involved in decision-making processes

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

18. In the healthcare setting where I work:

Decision-making process includes the person receiving care's significant others, where appropriate.

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

19. In the healthcare setting where I work:

Team members are encouraged to reflect on their practice within the team

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

20. In the healthcare setting where I work:

When working with a person receiving care, language that they understand is used

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

21. In the healthcare setting where I work:

Inputs from the person receiving care is valued by members of the healthcare team

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

22. In the healthcare setting where I work:

Healthcare team members are encouraged to ask for help without being judged

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

23. In the healthcare setting where I work:

Each team member's contribution is valued

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

24. In the healthcare setting where I work:

Each team member's knowledge, skill and expertise are respected and valued

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

25. In the healthcare setting where I work:

Team members have developed shared values and beliefs

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

26. In the healthcare setting where I work:

Facilitated reflection is used to develop practice according to agreed evidence

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

27. In the healthcare setting where I work:

The healthcare team's achievements are celebrated

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

28. In the healthcare setting where I work:

There is trust among the team members

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

29. In the healthcare setting where I work:

Conflict within the team is managed by the team without affecting care provided

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

30. In the healthcare setting where I work:

Healthcare team members discuss care plans to ensure consistency of practice

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

31. In the healthcare setting where I work:

Conflict within the team is managed by team members without affecting the team cohesion

Fully Disagree	Disagree	Agree	Fully Agree

Is the question clear? Elaborate on your answer.

32. In the healthcare setting where I work:

Practices inconsistent with the healthcare team's shared values and beliefs are challenged

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

33. In the healthcare setting where I work:

Healthcare team members collaborate to provide best practice

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

34. In the healthcare setting where I work:

I am respected by the team

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

35. In the healthcare setting where I work:

There is an effort to support and help each team member

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer.

36. In the healthcare setting where I work:

Care of the person receiving care, is effectively organised and communicated

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

37. In the healthcare setting where I work:

Team effectiveness is evaluated by the team

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

38. In the healthcare setting where I work:

Team effectiveness is evaluated by the person(s) receiving care

Fully Disagree	Disagree	Agree	Fully Agree

Is the wording of the item clear? Elaborate on your answer

SECTION C: FEEDBACK ON THE INSTRUMENT

1. Are the instructions to the instrument clear and understandable? Elaborate on your answer

2. Is the layout to the instrument easy to use and functional? Elaborate on our answer.

3. Could you easily understand the wording used? Elaborate on our answer.

4. Do you have any additional input?

Thank you for your participation.

ANNEXURE E.4

PCT INSTRUMENT TARGET

POPULATION - GOOGLE

FORMS



PERSON-CENTRED TEAMWORK INSTRUMENT:

Thank you for your willingness to participate in this study. The overall aim of this phase of the study is to adapt and validate an instrument to measure person-centred teamwork in nursing units. This is phase 3 of 4 in a study to develop an instrument to measure person-centred teamwork.

You
are asked to:

1.
Tell
us about yourself
2.
Answer
each item as a per your experience within the healthcare team
3.
Give
feedback on the instrument developed to measure person-centred teamwork in
nursing units

The implication of completing the instrument is that informed consent has been obtained from you. Thus any information derived from your input may be used by the researchers.

* Indicates required question

1. Email *
-

SECTION A: DEMOGRAPHIC DATA

Please tell us about yourself. Choose the appropriate option in each instance.

2. 1. Your Profession *

Mark only one oval.

- Dietician
- Physiotherapist
- Medical Doctor
- Professional Nurse
- Enrolled Nurse
- Enrolled Nursing Assistant
- Other

3. 1a. If other indicate your profession

4. 2a. Indicate your highest qualification *

5. 2b. Indicate your specialty, if applicable

6. 3. Health care setting where you work *

Mark only one oval.

- Steve Biko Academic Hospital
- Zuid-Afrikaans Hospital

7. 4. Type of unit you practice in *

Mark only one oval.

- Medical ward
- Surgical ward
- Pediatric ward
- Emergency Department
- Intensive Care Unit
- Multiple units
- Other

8. If other, indicate the type of unit

9. Years of experience in your profession *

PERSON-CENTRED TEAMWORK INSTRUMENT

Section B focusses on your current experience about person-centred teamwork in the health care setting you are working in. Answer **ALL** the questions. Click on the appropriate option to answer to complete the Likert scale of each item. Also indicate if the instructions to participants clear? If not, please comment

10. 1. **In the healthcare setting where I work:** *

I experience positive role modelling for the development of healthful relationships within the healthcare team

Mark only one oval.

1 2 3 4

Fully Fully Agree

11. 1a. Is the wording of the item clear? Elaborate on your answer. *

12. 2. **In the healthcare setting where I work:** *

The team leader is sensitive to the needs of all team members

Mark only one oval.

1 2 3 4

Fully Fully Agree

13. 2a. Is the wording of the item clear? Elaborate on your answer. *

14. 3. **In the healthcare setting where I work:** *

Communication (verbal and non-verbal) between team members occurs in a respectful manner

Mark only one oval.

1 2 3 4

Fully Fully Agree

15. 3a. Is the wording of the item clear? Elaborate on your answer. *

16. **4. In the healthcare setting where I work:** *

Team members work collaboratively to agree on goals

Mark only one oval.

1 2 3 4

Fully Fully Agree

17. 4a. Is the wording of the item clear? Elaborate on your answer. *

18. **5. In the healthcare setting where I work:** *

Team members work collaboratively to resolve conflicts through shared decision-making

Mark only one oval.

1 2 3 4

Fully Fully Agree

19. 5a. Is the wording of the item clear? Elaborate on your answer. *

20. **6. In the healthcare setting where I work:** *

Healthcare team members listen to persons receiving care to identify needs, hopes and desires

Mark only one oval.

1 2 3 4

Fully Fully Agree

21. 6a. Is the wording of the item clear? Elaborate on your answer. *

22. 7. **In the healthcare setting where I work:** *

The healthcare team is focused on their commitment to deliver individualized holistic care

Mark only one oval.

1 2 3 4

Fully Fully Agree

23. 7a. Is the wording of the item clear? Elaborate on your answer. *

24. 8. **In the healthcare setting where I work:** *

Each team member's contribution is acknowledged and valued

Mark only one oval.

1 2 3 4

Fully Fully Agree

25. 8a. Is the wording of the item clear? Elaborate on your answer. *

26. **9. In the healthcare setting where I work:** *

The healthcare team is able to reach consensus on areas of disagreement

Mark only one oval.

1 2 3 4

Fully Fully Agree

27. 9a. Is the wording of the item clear? Elaborate on your answer. *

28. **10. In the healthcare setting where I work:** *

Team members are encouraged to discuss what is important to them, as part of the team

Mark only one oval.

1 2 3 4

Fully Fully Agree

29. 10a. Is the wording of the item clear? Elaborate on your answer. *

30. **11. In the healthcare setting where I work:** *

Team members actively try to understand each other's perspectives

Mark only one oval.

1 2 3 4

Fully Fully Agree

31. 11a. Is the wording of the item clear? Elaborate on your answer. *

32. 12. **In the healthcare setting where I work:** *

With the person receiving care's approval, their significant others are encouraged to actively engaged in the care received.

Mark only one oval.

1 2 3 4

Fully Fully Agree

33. 12a. Is the wording of the item clear? Elaborate on your answer. *

34. 13. **In the healthcare setting where I work:** *

I feel acknowledged as a person within the healthcare team

Mark only one oval.

1 2 3 4

Fully Fully Agree

35. 13a. Is the wording of the item clear? Elaborate on your answer. *

36. **14. In the healthcare setting where I work:** *

Team members collaborate by agreeing to solutions for individualized care plans

Mark only one oval.

1 2 3 4

Fully Fully Agree

37. 14a. Is the wording of the item clear? Elaborate on your answer. *

38. **15. In the healthcare setting where I work:** *

Each team member has the freedom to be authentic within the team's values

Mark only one oval.

1 2 3 4

Fully Fully Agree

39. 15a. Is the wording of the item clear? Elaborate on your answer. *

40. **16. In the healthcare setting where I work:** *

Care plans are discussed between the healthcare team, significant others and person receiving care

Mark only one oval.

1 2 3 4

Fully Fully Agree

41. 16a. Is the wording of the item clear? Elaborate on your answer. *

42. 17. **In the healthcare setting where I work:** *

Where the person receiving care has capacity, s/he is involved in decision-making processes

Mark only one oval.

1 2 3 4

Fully Fully Agree

43. 17a. Is the wording of the item clear? Elaborate on your answer. *

44. 18. **In the healthcare setting where I work:** *

Decision-making process includes the person receiving care's significant others, where appropriate.

Mark only one oval.

1 2 3 4

Fully Fully Agree

45. 18a. Is the wording of the item clear? Elaborate on your answer. *

46. **19. In the healthcare setting where I work:** *

Team members are encouraged to reflect on their practice within the team

Mark only one oval.

1 2 3 4

Fully Fully Agree

47. 19a. Is the wording of the item clear? Elaborate on your answer. *

48. **20. In the healthcare setting where I work:** *

When working with a person receiving care, language that they understand is used

Mark only one oval.

1 2 3 4

Fully Fully Agree

49. 20a. Is the wording of the item clear? Elaborate on your answer. *

50. **21. In the healthcare setting where I work:** *

Inputs from the person receiving care is valued by members of the healthcare team

Mark only one oval.

1 2 3 4

Fully Fully Agree

51. 21a. Is the wording of the item clear? Elaborate on your answer. *

52. **22. In the healthcare setting where I work:** *

Healthcare team members are encouraged to ask for help without being judged

Mark only one oval.

1 2 3 4

Fully Fully Agree

53. 22a. Is the wording of the item clear? Elaborate on your answer. *

54. **23. In the healthcare setting where I work:** *

Each team member's contribution is valued

Mark only one oval.

1 2 3 4

Fully Fully Agree

55. 23a. Is the wording of the item clear? Elaborate on your answer. *

56. **24. In the healthcare setting where I work:** *

Each team member's knowledge, skill and expertise are respected and valued

Mark only one oval.

1 2 3 4

Fully Fully Agree

57. 24a. Is the wording of the item clear? Elaborate on your answer. *

58. **25. In the healthcare setting where I work:** *

Team members have developed shared values and beliefs

Mark only one oval.

1 2 3 4

Fully Fully Agree

59. 25a. Is the wording of the item clear? Elaborate on your answer. *

60. **26. In the healthcare setting where I work:** *

Facilitated reflection is used to develop practice according to agreed evidence

Mark only one oval.

1 2 3 4

Fully Fully Agree

61. 26a. Is the wording of the item clear? Elaborate on your answer. *

62. 27. **In the healthcare setting where I work:** *

The healthcare team's achievements are celebrated

Mark only one oval.

1 2 3 4

Fully Fully Agree

63. 27a. Is the wording of the item clear? Elaborate on your answer. *

64. 28. **In the healthcare setting where I work:** *

There is trust among the team members

Mark only one oval.

1 2 3 4

Fully Fully Agree

65. 28a. Is the wording of the item clear? Elaborate on your answer. *

66. **29. In the healthcare setting where I work:** *

Conflict within the team is managed by the team without affecting care provided

Mark only one oval.

1 2 3 4

Fully Fully Agree

67. 29a. Is the wording of the item clear? Elaborate on your answer. *

68. **30. In the healthcare setting where I work:** *

Healthcare team members discuss care plans to ensure consistency of practice

Mark only one oval.

1 2 3 4

Fully Fully Agree

69. 30a. Is the wording of the item clear? Elaborate on your answer. *

70. **31. In the healthcare setting where I work:** *

Conflict within the team is managed by team members without affecting the team cohesion

Mark only one oval.

1 2 3 4

Fully Fully Agree

71. 31a. Is the wording of the item clear? Elaborate on your answer. *

72. **32. In the healthcare setting where I work:** *

Practices inconsistent with the healthcare team's shared values and beliefs are challenged

Mark only one oval.

1 2 3 4

Fully Fully Agree

73. 32a. Is the wording of the item clear? Elaborate on your answer. *

74. **33. In the healthcare setting where I work:** *

Healthcare team members collaborate to provide best practice

Mark only one oval.

1 2 3 4

Fully Fully Agree

75. 33a. Is the wording of the item clear? Elaborate on your answer. *

76. **34. In the healthcare setting where I work: ***

I am respected by the team

Mark only one oval.

1 2 3 4

Fully Fully Agree

77. 34a. Is the wording of the item clear? Elaborate on your answer. *

78. **35. In the healthcare setting where I work: ***

There is an effort to support and help each team member

Mark only one oval.

1 2 3 4

Fully Fully Agree

79. 35a. Is the wording of the item clear? Elaborate on your answer. *

80. **36. In the healthcare setting where I work: ***

Care of the person receiving care, is effectively organized and communicated

Mark only one oval.

1 2 3 4

Fully Fully Agree

81. 36a. Is the wording of the item clear? Elaborate on your answer. *

82. 37. **In the healthcare setting where I work:** *

Team effectiveness is evaluated by the team

Mark only one oval.

1 2 3 4

Fully Fully Agree

83. 37a. Is the wording of the item clear? Elaborate on your answer. *

84. 38. **In the healthcare setting where I work:** *

Team effectiveness is evaluated by the person(s) receiving care

Mark only one oval.

1 2 3 4

Fully Fully Agree

85. 38a. Is the wording of the item clear? Elaborate on your answer. *

FEEDBACK ON INSTRUMENT

In this section you are asked to give feedback on the instruments instructions, layout and wording

86. 1. Are the instructions to the instrument clear and understandable? Elaborate on your answer *

87. 2. Is the layout to the instrument easy to use and functional? Elaborate on our answer. *

88. 3. Could you easily understand the wording used? Elaborate on our answer. *

89. 4. Do you have any other additional input. *

Thank You

Your participation is appreciated.

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Google Forms

ANNEXURE F.1

SBAH PERMISSION





GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

STEVE BIKO ACADEMIC HOSPITAL

Enquiries: Dr LMB Majake-Mogoba

Tel No: +2712 345 2336/1141

Fax No: +2712 354 2151

e-mail: lehlohonolo.majake@gauteng.gov.za

For attention: __ Alida Viljoen

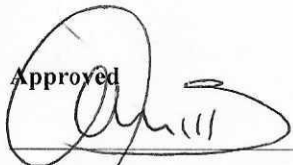
NHRD Ref Number: GP -202209-052

Re: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT STEVE BIKO ACADEMIC HOSPITAL

TITLE: DEVELOPMENT OF AN INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK IN HOSPITAL NURSING UNITS

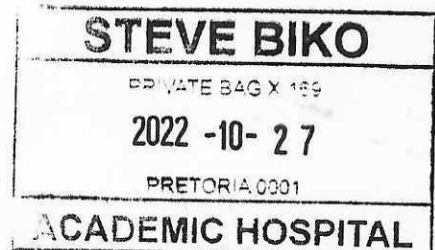
Permission is hereby granted for the above-mentioned research to be conducted at Steve Biko Academic Hospital. This is done in accordance to the "Promotion o access to information act No 2 of 2000". Please note that in addition to receiving approval from Hospital Research Committee, the researcher is expected to seek permission from all relevant department. Furthermore, collection of data and consent for participation remain the responsibility of the researcher. The hospital will not incur extra cost as a result of the research being conducted within the hospital.

You are also required to submit your final report or summary of your findings and recommendations to the office of the CEO.

Approved


Dr.LMB Majake-Mogoba
Clinical Director

Date: 27.10.22



ANNEXURE F.2

ZAH PERMISSION



**LETTER OF APPROVAL TO CONDUCT RESEARCH AT ZUID-AFRIKAANS
 HOSPITAL (ZAH)**
Applicant details: Alida Viljoen

Research:

 Development of an instrument to measure person-centred
 teamwork in hospital and nursing units

 The following decision was reached regarding the conduction of the mentioned research
 at Zuid-Afrikaans Hospital (ZAH) -

Please indicate outcome marked with "X"

Permission GRANTED	X
Permission NOT GRANTED	
Require MORE INFORMATION	

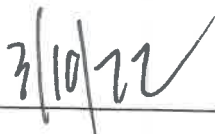
Comments (if applicable):

Robert Jordaan
 Chief Executive Officer



Priscilla Botha
 Nursing Manager

Date:



Zuid-Afrikaans Hospitaal
 (1918/05508/08)
Official Stamp
 255 Bourke Street
 Muckleneuk
 Pretoria, 0002

 Nie-uitvoerende direkteure/Non executive directors: GH Braak Snr (Voorsitter/Chairman); AR Prinsloo (Vise-Voorsitter/Vice-Chairman)
 D Warmenhoven; GH Braak Jnr; K Fleischhauer, Dr CJ Olivier; Uitvoerende direkteur/Executive director: RS Jordaan

ANNEXURE F.3

PERSON-CENTRED

TEAMWORK PAPER-BASED

INSTRUMENT_SBAH



PERCEPTIONS TO MEASURE PERSON-CENTRED TEAMWORK IN HOSPITAL UNITS

PARTICIPANT'S INFORMATION LEAFLET & INFORMED CONSENT

Researchers' name Alida Viljoen
Student Number 20814977
Title The development of an instrument to measure person-centred teamwork in hospital nursing units.

I am a PhD student in the field of person-centred teamwork in the Department of Nursing Science, University of Pretoria. You are invited to volunteer to participate in my research project. This letter gives information to help you to decide if you want to take part in this study. Before you agree you should fully understand what is involved. If you do not understand the information or have any other questions, do not hesitate to ask us. You should not agree to take part unless you are completely happy about what we expect of you.

The purpose of the study is to validate a person-centred teamwork instrument, to measure the perceptions of healthcare providers related to person-centred teamwork. I would like you to complete an instrument. This may take about 15 minutes. Once you have completed the instrument, please place it in the designated box in the unit manager's office. We will collect the completed instruments from the unit manager's office within two weeks. It will be kept in a safe place to ensure confidentiality. Please do not write your name on the instrument, as to ensure your confidentiality and anonymity. If you have any questions, the unit manager or clinical facilitator, Ms Lucy Dolo, will be able to help you.

The Faculty of Health Sciences Research Ethics Committee of the University of Pretoria has granted written approval for this study (11/2021) as well as the Gauteng Department of Health.

Your participation in this study is voluntary. You can decline to participate or stop at any time without giving any reason. As you do not write your name on the instrument, you give us the information anonymously. Once you have given the instrument back to us, you cannot recall your consent as we will not be able to trace your specific instrument. Therefore, you will also not be identified as a participant in any publication that comes from this study.

Note: The implication of submitting the questionnaire is that informed consent has been given by you. Thus, any information derived from your form (which will be anonymous) may be used for e.g. publication, by the researchers.

We sincerely appreciate your help.

Yours truly,

Alida Viljoen

SECTION A: DEMOGRAPHIC INFORMATION

Please tell us about yourself. Mark the appropriate box with a cross (X) where appropriate.

Use a black pen and write in CAPITAL LETTERS.

1. What is your current profession?

Dietician	Physiotherapist	Professional Nurse	Enrolled Nurse	Enrolled Nursing Assistant	Medical Doctor	Other
If other, please indicate your profession: _____						

2. Indicate your highest qualification and speciality if applicable:

Highest Qualification: _____

Speciality: _____

3. Which health care setting do you work in?

Steve Biko Academic Hospital		Zuid-Afrikaans Hospital	
------------------------------	--	-------------------------	--

4. What type of unit do you practice in:

Medical ward	Surgical ward	Intensive Care Unit	Emergency Department
Paediatric ward	Theatre	Multiple Units	Other

If other, indicate the practice unit: _____

5. Years of experience in your profession: _____ years

Official use:

Study identification unit	
Participant identification number	

SECTION B: PERSON-CENTRED TEAMWORK

Section B focusses on your current perceptions about person-centred teamwork in the health care setting you are working in. Read the definition and key concepts to familiarise yourself with the concepts of the instrument.

Definitions of the key concepts used in the instrument:

- **'Person-centred teamwork** is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes' (Viljoen et al., 2023)
- **Healthcare team** include the professionals impacting on the care of the patient, also referred to as **person giving care**. The healthcare team comprise all nurses, dieticians, physiotherapists, psychologists, psychiatrists, medical doctors, occupational therapists and speech therapist. It can also include the family/ significant other of the patient.
- **Person receiving care** refers to the patient/ client under the care of the healthcare team.
- **Person giving care** refers to the members of the healthcare team delivering care to a patient
- **Significant other** refers to a person or persons who has a close, meaningful relationship with the patient and is not necessarily blood related.

Answer **ALL** the questions. Mark the appropriate box with a cross (X) in each instance. If you require changing your answer, block out your current answer and marking the new answer with a cross (X).

In the healthcare setting where I work		Fully disagree	Disagree	Agree	Fully agree
1	I experience positive role modelling for the development of healthful relationships within the healthcare team				
2	The team leader is sensitive to the needs of all team members				
3	There is an effort to support and help each team member				
4	Team members work collaboratively to agree on goals				
5	Team members are encouraged to discuss what is important to them, as part of the team				
6	Team members actively try to understand each other's perspectives				
7	With the person receiving care's approval, their significant others are encouraged to actively engaged in the care received.				
8	I feel acknowledged as a person within the healthcare team				
9	Team members are encouraged to reflect on their practice within the team				
10	When working with a person receiving care, language that they understand is used				
11	Inputs from the person receiving care is valued by members of the healthcare team				
12	Healthcare team members are encouraged to ask for help without being judged				
13	Team members have developed shared values and beliefs				
14	Facilitated reflection is used to develop practice according to agreed evidence				
15	The healthcare team's achievements are celebrated				
16	There is trust among the team members				
17	Team members work collaboratively to resolve conflicts through shared decision-making				

In the healthcare setting where I work		Fully disagree	Disagree	Agree	Fully agree
18	Healthcare team members listen to persons receiving care to identify needs, hopes and desires				
19	The healthcare team is focused on their commitment to deliver individualized holistic care				
20	Team members collaborate by agreeing to solutions for individualised care plans				
21	Each team member has the freedom to be authentic within the team's values				
22	Care plans are discussed between the healthcare team, significant others and person receiving care				
23	Each team member's contribution is valued				
24	Each team member's knowledge, skill and expertise are respected and valued				
25	Conflict within the team is managed by the team without affecting care provided				
26	Healthcare team members discuss care plans to ensure consistency of practice				
27	Conflict within the team is managed by team members without affecting the team cohesion				
28	Each team member's contribution is acknowledged and valued				
29	The healthcare team is able to reach consensus on areas of disagreement				
30	Where the person receiving care has capacity, s/he is involved in decision-making processes				
31	Decision-making process includes the person receiving care's significant others, where appropriate.				
32	Practices inconsistent with the healthcare team's shared values and beliefs are challenged				
33	Healthcare team members collaborate to provide best practice				
34	Team effectiveness is evaluated by the person(s) receiving care				
35	Communication (verbal and non-verbal) between team members occurs in a respectful manner				
36	Care of the person receiving care, is effectively organised and communicated				
37	Team effectiveness is evaluated by the team				
38	I am respected by the team				

1. Do you have any additional comments related to person-centred teamwork?

Thank you for your participation

ANNEXURE F.4

PERSON-CENTRED

TEAMWORK PAPER-BASED

INSTRUMENT – FINAL – ZAH



PERCEPTIONS OF HEALTHCARE WORKERS REGARDING PERSON-CENTRED TEAMWORK IN HOSPITAL UNIT (P-PCT)

PARTICIPANT'S INFORMATION LEAFLET & INFORMED CONSENT

Researchers' name Alida Viljoen
Student Number 20814977
Title The development of an instrument to measure person-centred teamwork in hospital nursing units.

I am a PhD student in the field of person-centred teamwork in the Department of Nursing Science, University of Pretoria. You are invited to volunteer to participate in my research project. This letter gives information to help you to decide if you want to take part in this study. Before you agree you should fully understand what is involved. If you do not understand the information or have any other questions, do not hesitate to ask us. You should not agree to take part unless you are completely happy about what we expect of you.

The purpose of the study is to validate a person-centred teamwork instrument, to measure the perceptions of healthcare providers related to person-centred teamwork. I would like you to complete an instrument. This may take about 15 minutes. Once you have completed the instrument, please place it in the designated envelope in the unit manager's office. I will collect the completed instruments from the unit manager's office within two weeks. It will be kept in a safe place to ensure confidentiality. Please do not write your name on the instrument, as to ensure your confidentiality and anonymity. If you have any questions, the unit manager or myself, will be able to help you.

The Faculty of Health Sciences Research Ethics Committee of the University of Pretoria has granted written approval for this study (11/2021) as well as the CEO of Zuid- Afrikaans Hospital, Mr Robert Jordaan.

Your participation in this study is voluntary. You can decline to participate or stop at any time without giving any reason. As you do not write your name on the instrument, you give us the information anonymously. Once you have given the instrument back to us, you cannot recall your consent as we will not be able to trace your specific instrument. Therefore, you will also not be identified as a participant in any publication that comes from this study.

Note: The implication of submitting the questionnaire is that informed consent has been given by you. Thus, any information derived from your form (which will be anonymous) may be used for e.g. publication, by the researchers.

We sincerely appreciate your help.

Yours truly,

Alida Viljoen

SECTION A: DEMOGRAPHIC INFORMATION

Please tell us about yourself. Mark the appropriate box with a cross (X) where appropriate.

Use a black pen and write in CAPITAL LETTERS.

1. What is your current profession?

Dietician	Physiotherapist	Professional Nurse	Enrolled Nurse	Enrolled Nursing Assistant	Medical Doctor	Other
If other, please indicate your profession: _____						

2. Indicate your highest qualification and speciality if applicable:

Highest Qualification: _____

Speciality: _____

3. Which health care setting do you work in?

Steve Biko Academic Hospital		Zuid-Afrikaans Hospital	
------------------------------	--	-------------------------	--

4. What type of unit do you practice in:

Medical ward	Surgical ward	Intensive Care Unit	Emergency Department
Paediatric ward	Theatre	Multiple Units	Other

If other, indicate the practice unit: _____

5. Years of experience in your profession: _____ years

Official use:

Study identification unit	
Participant identification number	

SECTION B: PERSON-CENTRED TEAMWORK

Section B focusses on your current perceptions about person-centred teamwork in the health care setting you are working in. Read the definition and key concepts to familiarise yourself with the concepts of the instrument.

Definitions of the key concepts used in the instrument:

- **'Person-centred teamwork** is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes' (Viljoen et al., 2023)
- **Healthcare team** include the professionals impacting on the care of the patient, also referred to as **person giving care**. The healthcare team comprise all nurses, dieticians, physiotherapists, psychologists, psychiatrists, medical doctors, occupational therapists and speech therapist. It can also include the family/ significant other of the patient.
- **Person receiving care** refers to the patient/ client under the care of the healthcare team.
- **Person giving care** refers to the members of the healthcare team delivering care to a patient
- **Significant other** refers to a person or persons who has a close, meaningful relationship with the patient and is not necessarily blood related.

Answer **ALL** the questions. Mark the appropriate box with a cross (X) in each instance. If you require changing your answer, block out your current answer and marking the new answer with a cross (X).

In the healthcare setting where I work		Fully disagree	Disagree	Agree	Fully agree
1	I experience positive role modelling for the development of healthful relationships within the healthcare team				
2	The team leader is sensitive to the needs of all team members				
3	There is an effort to support and help each team member				
4	Team members work collaboratively to agree on goals				
5	Team members are encouraged to discuss what is important to them, as part of the team				
6	Team members actively try to understand each other's perspectives				
7	With the person receiving care's approval, their significant others are encouraged to actively engaged in the care received.				
8	I feel acknowledged as a person within the healthcare team				
9	Team members are encouraged to reflect on their practice within the team				
10	When working with a person receiving care, language that they understand is used				
11	Inputs from the person receiving care is valued by members of the healthcare team				
12	Healthcare team members are encouraged to ask for help without being judged				
13	Team members have developed shared values and beliefs				
14	Facilitated reflection is used to develop practice according to agreed evidence				
15	The healthcare team's achievements are celebrated				
16	There is trust among the team members				
17	Team members work collaboratively to resolve conflicts through shared decision-making				

In the healthcare setting where I work		Fully disagree	Disagree	Agree	Fully agree
18	Healthcare team members listen to persons receiving care to identify needs, hopes and desires				
19	The healthcare team is focused on their commitment to deliver individualized holistic care				
20	Team members collaborate by agreeing to solutions for individualised care plans				
21	Each team member has the freedom to be authentic within the team's values				
22	Care plans are discussed between the healthcare team, significant others and person receiving care				
23	Each team member's contribution is valued				
24	Each team member's knowledge, skill and expertise are respected and valued				
25	Conflict within the team is managed by the team without affecting care provided				
26	Healthcare team members discuss care plans to ensure consistency of practice				
27	Conflict within the team is managed by team members without affecting the team cohesion				
28	Each team member's contribution is acknowledged and valued				
29	The healthcare team is able to reach consensus on areas of disagreement				
30	Where the person receiving care has capacity, s/he is involved in decision-making processes				
31	Decision-making process includes the person receiving care's significant others, where appropriate.				
32	Practices inconsistent with the healthcare team's shared values and beliefs are challenged				
33	Healthcare team members collaborate to provide best practice				
34	Team effectiveness is evaluated by the person(s) receiving care				
35	Communication (verbal and non-verbal) between team members occurs in a respectful manner				
36	Care of the person receiving care, is effectively organised and communicated				
37	Team effectiveness is evaluated by the team				
38	I am respected by the team				

1. Do you have any additional comments related to person-centred teamwork?

Thank you for your participation

ANNEXURE F.5

PERSON-CENTRED

TEAMWORK - GOOGLE

FORMS



Person- Centred Teamwork

I am, Alida Viljoen, a PhD student in the field of person-centred teamwork in the Department of Nursing Science, University of Pretoria. You are invited to volunteer to participate in my research project. This section gives information to help you to decide if you want to take part in this study. Before you agree you should fully understand what is involved. If you do not understand the information or have any other questions, do not hesitate to ask us. You should not agree to take part unless you are completely happy about what we expect of you.

The purpose of the study is to validate a person-centred teamwork instrument, to measure the perceptions of healthcare providers related to person-centred teamwork. I would like you to complete an instrument. This may take about 15 minutes. The Faculty of Health Sciences Research Ethics Committee of the University of Pretoria has granted written approval for this study (11/2021) as well as the Gauteng Department of Health, CEO of Steve Biko Academic Hospital and CEO of Zuid-Afrikaans Hospital.

Your participation in this study is voluntary. You can decline to participate or stop at any time without giving any reason. As you do not write your name on the instrument, you give us the information anonymously. Once you have completed the instrument, you cannot

recall your consent as we will not be able to trace your specific instrument. Therefore, you will also not be identified as a participant in any publication that comes from this study.

Note: The implication of submitting the questionnaire is that informed consent has been given by you. Thus, any information derived from your form (which will be anonymous) may be used for e.g. publication, by the researchers.

* Indicates required question

A: Demographic information

Please tell us about yourself. Choose the appropriate option by clicking on it.

1. 1. What is your current profession *

Mark only one oval.

- Dietician
- Physiotherapist
- Medical Doctor
- Enrolled Nursing Assistant
- Enrolled Nurse
- Registered Nurse
- Other

2. If other, please indicate your profession

3. 2. Indicate your highest qualification *

4. 3. Indicate your specialty if applicable

5. 4. Which health care setting do you work in? *

Mark only one oval.

- Steve Biko Academic Hospital
- Zuid- Afrikaans Hospital

6. 5. What type of unit do you practice in? *

Mark only one oval.

- Medical Ward
- Surgical Ward
- Paediatric Ward
- Intensive Care Unit
- Emergency Department
- Theatre
- Multiple Units
- Other

7. If Other, please indicate the type of unit

8. 6. Please name the unit you practice in currently *

9. 7. Indicate the number of years of experience in your profession *

B: PERSON-CENTRED TEAMWORK INSTRUMENT

Section B focusses on your current perceptions about person-centred teamwork in the health care setting you are working in. Read the definition and key concepts to familiarize yourself with the concepts of the instrument.

Definitions of the key concepts used in the instrument:

'Person-centred

teamwork is a dynamic approach where the team, person(s) delivering care and person(s) receiving care, develop trust and connectedness to meet the healthcare needs of the person. Underpinned in synergy, inclusivity, and healthful relationships, the members of the team recognize the uniqueness of each individual, allowing mutual flourishing in striving to attain optimal outcomes' (Viljoen et al., 2023)

Healthcare team include the professionals impacting on the care of the patient, also referred to as **person giving care**. The healthcare team comprise all nurses, dieticians, physiotherapists, psychologists, psychiatrists, medical doctors, occupational therapists and speech therapist. It can also include the family/ significant other of the patient.

Person receiving care refers to the patient/ client under the care of the healthcare team.

Person giving care refers to the members of the healthcare team delivering care to a patient

Significant other refers

to a person or persons who has a close, meaningful relationship with the patient and is not necessarily blood related.

Answer **ALL** the questions by indicating your perception on the likert scale.

The lead question is: **In the healthcare setting where I work**

10. 1. I experience positive role modelling for the development of healthful relationships within the healthcare team *

Mark only one oval.

1 2 3 4

Fully Fully Agree

11. 2.The team leader is sensitive to the needs of all team members *

Mark only one oval.

1 2 3 4

Fully Fully Agree

12. 3. There is an effort to support and help each team member *

Mark only one oval.

1 2 3 4

Fully Fully Agree

13. 4.Team members work collaboratively to agree on goals *

Mark only one oval.

1 2 3 4

Fully Fully Agree

14. 5. Team members are encouraged to discuss what is important to them, as part *
of the team

Mark only one oval.

1 2 3 4

Fully Fully Agree

15. 6. Team members actively try to understand each other's perspectives *

Mark only one oval.

1 2 3 4

Fully Fully Agree

16. 7. With the person receiving care's approval, their significant others are encouraged to actively engaged in the care received. *

Mark only one oval.

1 2 3 4

Fully Fully Agree

17. 8. I feel acknowledged as a person within the healthcare team *

Mark only one oval.

1 2 3 4

Fully Fully Agree

18. 9. Team members are encouraged to reflect on their practice within the team *

Mark only one oval.

1 2 3 4

Fully Fully Agree

19. 10. When working with a person receiving care, language that they understand is used *

Mark only one oval.

1 2 3 4

Fully Fully Agree

20. 11. Inputs from the person receiving care is valued by members of the healthcare team *

Mark only one oval.

1 2 3 4

Fully Fully Agree

21. 12. Healthcare team members are encouraged to ask for help without being judged *

Mark only one oval.

1 2 3 4

Fully Fully Agree

22. 13. Team members have developed shared values and beliefs *

Mark only one oval.

1 2 3 4

Fully Fully Agree

23. 14. Facilitated reflection is used to develop practice according to agreed evidence *

Mark only one oval.

1 2 3 4

Fully Fully Agree

24. 15. The healthcare team's achievements are celebrated *

Mark only one oval.

1 2 3 4

Fully Fully Agree

25. 16. There is trust among the team members *

Mark only one oval.

1 2 3 4

Fully Fully Agree

26. 17. Team members work collaboratively to resolve conflicts through shared decision-making *

Mark only one oval.

1 2 3 4

Fully Fully Agree

27. 18. Healthcare team members listen to persons receiving care to identify needs, hopes and desires *

Mark only one oval.

1 2 3 4

Fully Fully Agree

28. 19. The healthcare team is focused on their commitment to deliver individualized holistic care *

Mark only one oval.

1 2 3 4

Fully Fully Agree

29. 20. Team members collaborate by agreeing to solutions for individualized care plans *

Mark only one oval.

1 2 3 4

Fully Fully Agree

30. 21. Each team member has the freedom to be authentic within the team's values *

Mark only one oval.

1 2 3 4

Fully Fully Agree

31. 22. Care plans are discussed between the healthcare team, significant others and person receiving care *

Mark only one oval.

1 2 3 4

Fully Fully Agree

32. 23. Each team member's contribution is valued *

Mark only one oval.

1 2 3 4

Fully Fully Agree

33. 24. Each team member's knowledge, skill and expertise are respected and valued *

Mark only one oval.

1 2 3 4

Fully Fully Agree

34. 25. Conflict within the team is managed by the team without affecting care provided *

Mark only one oval.

1 2 3 4

Fully Fully Agree

35. 26. Healthcare team members discuss care plans to ensure consistency of practice *

Mark only one oval.

1 2 3 4

Fully Fully Agree

36. 27. Conflict within the team is managed by team members without affecting the team cohesion *

Mark only one oval.

1 2 3 4

Fully Fully Agree

37. 28. Each team member's contribution is acknowledged and valued *

Mark only one oval.

1 2 3 4

Fully Fully Agree

38. 29. The healthcare team is able to reach consensus on areas of disagreement *

Mark only one oval.

1 2 3 4

Fully Fully Agree

39. 30. Where the person receiving care has capacity, s/he is involved in decision-making processes *

Mark only one oval.

1 2 3 4

Fully Fully Agree

40. 31. Decision-making process includes the person receiving care's significant others, where appropriate. *

Mark only one oval.

1 2 3 4

Fully Fully Agree

41. 32. Practices inconsistent with the healthcare team's shared values and beliefs are challenged *

Mark only one oval.

1 2 3 4

Fully Fully Agree

42. 33. Healthcare team members collaborate to provide best practice *

Mark only one oval.

1 2 3 4

Fully Fully Agree

43. 34. Team effectiveness is evaluated by the person(s) receiving care *

Mark only one oval.

1 2 3 4

Fully Fully Agree

44. 35. Communication (verbal and non-verbal) between team members occurs in a respectful manner *

Mark only one oval.

1 2 3 4

Fully Fully Agree

45. 36. Care of the person receiving care, is effectively organized and communicated *

Mark only one oval.

1 2 3 4

Fully Fully Agree

46. 37. Team effectiveness is evaluated by the team *

Mark only one oval.

1 2 3 4

Fully Fully Agree

47. 38. I am respected by the team *

Mark only one oval.

1 2 3 4

Fully Fully Agree

48. Do you have any additional comments related to person-centred teamwork?

Thank you for your participation!

This content is neither created nor endorsed by Google.

Google Forms

ANNEXURE F.6

PROOF OF SUBMISSION FOR PUBLICATION





Alida Viljoen <alidavil5@gmail.com>

New submission to Journal of Advanced Nursing - Manuscript ID JAN-2024-0427

Journal of Advanced Nursing <onbehalf@manuscriptcentral.com>

Sat, Feb 10, 2024 at 4:43 PM

Reply-To: jan@wiley.com

To: alidavil5@gmail.com, tanya.heyns@up.ac.za, ronell.leeche@up.ac.za, pf.slater@ulster.ac.uk, andries.masenge@up.ac.za

Cc: alidavil5@gmail.com, tanya.heyns@up.ac.za, ronell.leeche@up.ac.za, pf.slater@ulster.ac.uk, andries.masenge@up.ac.za

10-Feb-2024

JAN-2024-0427: PSYCOMETRIC VALIDATION OF AN INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK IN HOSPITAL SETTINGS

Dear Mrs Viljoen:

This manuscript has been successfully submitted to the Journal of Advanced Nursing. You have been listed as an author. Please make a note of your manuscript ID:

JAN-2024-0427

Please note that all papers are subject to preliminary review by the Editor-in-Chief before being sent for review.

The review process is usually completed within 10 weeks, but can take longer, depending on reviewer availability (e.g. during holiday periods or if an alternative reviewer needs to be approached). This time frame includes selecting and inviting reviewers, awaiting their response to the request, consideration of the reviews by the assigned Editor and, finally, the Editor-in-Chief's decision and communication with the author. Please be patient during this process and it would be much appreciated if you would not email the Editorial Office to enquire about the status of your manuscript until a period of at least 10 weeks has lapsed. You can track the progress of your paper using the tracking facility in your author centre.

If there are any changes to your personal details or e-mail address, please login to ScholarOne Manuscripts at <http://mc.manuscriptcentral.com/jan> and edit your user information accordingly.

This journal offers a number of license options, information about this is available here: <https://authorservices.wiley.com/author-resources/Journal-Authors/licensing/index.html>. All co-authors are required to confirm that they have the necessary rights to grant in the submission, including in light of each co-author's funder policies. For example, if you or one of your co-authors received funding from a member of Coalition S, you may need to check which licenses you are able to sign.

You can keep track of your manuscript at any time by logging on to your Author Centre at <http://mc.manuscriptcentral.com/jan>.

Thank you for submitting your manuscript to the Journal of Advanced Nursing.

Best wishes,

Abirami Munisamy
Journal of Advanced Nursing

ANNEXURE F.7

VALIDATED INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK



Annexure F.7 : Validated instrument to measure person-centred teamwork

Answer **ALL** the questions. Mark the appropriate box with a cross (X) in each instance. If you require changing your answer, block out your current answer and marking the new answer with a cross (X).

In the healthcare setting where I work		Fully disagree	Disagree	Agree	Fully agree
1	I experience positive role modelling for the development of healthful relationships within the healthcare team				
2	The team leader is sensitive to the needs of all team members				
3	There is an effort to support and help each team member				
4	Team members work collaboratively to agree on goals				
5	Team members are encouraged to discuss what is important to them, as part of the team				
6	Team members actively try to understand each other's perspectives				
7	With the person receiving care's approval, their significant others are encouraged to actively engaged in the care received.				
8	I feel acknowledged as a person within the healthcare team				
9	Team members are encouraged to reflect on their practice within the team				
10	When working with a person receiving care, language that they understand is used				
11	Inputs from the person receiving care is valued by members of the healthcare team				
12	Healthcare team members are encouraged to ask for help without being judged				
13	Team members have developed shared values and beliefs				
14	Facilitated reflection is used to develop practice according to agreed evidence				
15	The healthcare team's achievements are celebrated				
16	There is trust among the team members				
17	Team members work collaboratively to resolve conflicts through shared decision-making				

In the healthcare setting where I work		Fully disagree	Disagree	Agree	Fully agree
18	Healthcare team members listen to persons receiving care to identify needs, hopes and desires				
19	The healthcare team is focused on their commitment to deliver individualized holistic care				
20	Team members collaborate by agreeing to solutions for individualised care plans				
21	Each team member has the freedom to be authentic within the team's values				
22	Care plans are discussed between the healthcare team, significant others and person receiving care				
23	Each team member's contribution is valued				
24	Each team member's knowledge, skill and expertise are respected and valued				
25	Conflict within the team is managed by the team without affecting care provided				
26	Healthcare team members discuss care plans to ensure consistency of practice				
27	Conflict within the team is managed by team members without affecting the team cohesion				
28	Each team member's contribution is acknowledged and valued				
29	The healthcare team is able to reach consensus on areas of disagreement				
30	Where the person receiving care has capacity, s/he is involved in decision- making processes				
31	Decision-making process includes the person receiving care's significant others, where appropriate.				
32	Practices inconsistent with the healthcare team's shared values and beliefs are challenged				
33	Healthcare team members collaborate to provide best practice				
34	Team effectiveness is evaluated by the person(s) receiving care				

In the healthcare setting where I work		Fully disagree	Disagree	Agree	Fully agree
35	Communication (verbal and non-verbal) between team members occurs in a respectful manner				
36	Care of the person receiving care, is effectively organised and communicated				
37	Team effectiveness is evaluated by the team				
38	I am respected by the team				

1. Do you have any additional comments related to person-centred teamwork?

Thank you for your participation

ANNEXURE G.1

LETTER OF STATITICAL

SUPPORT





UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Denkeleers • Leading Minds • Dikgopolo tsa Dihlolefi

DEPARTMENT OF STATISTICS

LETTER OF STATISTICAL SUPPORT

Date: 02 February 2024

I hereby declare that I have provided statistical support to **Ms. A. Viljoen** studying at the University of Pretoria, with the project title “**Development and validation of an instrument to measure Person-Centered Teamwork.**”

Mr. Andries Masenge

A handwritten signature in black ink, appearing to read 'Andries Masenge', with a long horizontal stroke extending to the right.

Senior Research Consultant

Faculty of Natural and Agricultural Sciences

Department of Statistics

Internal Statistical Consultation Service

IT- Building Room 6 - 28

Tel 012 420 3645

ANNEXURE G.2

LETTER TO CONFIRM EDITING OF THESIS



Cell/Mobile: 073-782-3923

53 Glover Avenue
Doringkloof
0157 Centurion

3 February 2024

TO WHOM IT MAY CONCERN

I hereby certify that I have edited Alida Viljoen's doctoral dissertation, **Development of an instrument to measure person-centred teamwork in hospital nursing units**, for language.

lauma M Cooper
192-290-4



Institution: The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.

- FWA 00002567, Approved dd 18 March 2022 and Expires 18 March 2027.
- IORG #: IORG0001762 OMB No. 0990-0278 Approved for use through August 31, 2023.

Faculty of Health Sciences Research Ethics Committee

16 February 2023

Approval Certificate Annual Renewal

Dear Mrs AH Viljoen,

Ethics Reference No.: 11/2021 – Line 1

Title: DEVELOPMENT OF AN INSTRUMENT TO MEASURE PERSON-CENTRED TEAMWORK IN HOSPITAL NURSING UNITS

The **Annual Renewal** as supported by documents received between 2023-02-01 and 2023-02-15 for your research, was approved by the Faculty of Health Sciences Research Ethics Committee on 2023-02-15 as resolved by its quorate meeting.

Please note the following about your ethics approval:

- Renewal of ethics approval is valid for 1 year, subsequent annual renewal will become due on 2024-02-16.
- Please remember to use your protocol number (11/2021) on any documents or correspondence with the Research Ethics Committee regarding your research.
- Please note that the Research Ethics Committee may ask further questions, seek additional information, require further modification, monitor the conduct of your research, or suspend or withdraw ethics approval.

Ethics approval is subject to the following:

- The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment for approval by the Committee.

We wish you the best with your research.

Yours sincerely



On behalf of the FHS REC, Dr R Sommers

MBChB, MMed (Int), MPharmMed, PhD

Deputy Chairperson of the Faculty of Health Sciences Research Ethics Committee, University of Pretoria

The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes, Second Edition 2015 (Department of Health)