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# Perceptions of Hearing Healthcare: A Qualitative Analysis of Satisfied and Dissatisfied Online Reviews

by

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Submitted in fulfilment of the requirements for the degree MA Audiology

In the Faculty of Humanities

University of Pretoria

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**Date:** 31st August 2023

# PLAGIARISM DECLARATION

UNIVERSITY OF PRETORIA
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DEPARTMENT OF SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY

## PLAGIARISM DECLARATION

Full name: **Sanchla van Bruggen**

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Degree/Qualification: **MA (Audiology)**

Title of thesis/ dissertation/ mini dissertation: **Perceptions of Hearing Healthcare: A Qualitative Analysis of Satisfied and Dissatisfied Online Reviews**

I declare that this thesis/ **dissertation**/ mini dissertation is my own original work. Where secondary material is used and has been carefully acknowledged and referenced in accordance with university requirements.

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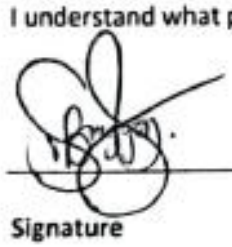

Signature

2023-08-28

Date

## ETHICS STATEMENT

The author, whose name appears on the title page of this dissertation, has obtained for the research described in this work, the applicable research ethics approval.

The author declares that she has observed the ethical standards required in terms of the University of Pretoria's Code of ethics for researchers and the Policy guidelines for responsible research.

Please refer to Appendix C.

## ACKNOWLEDGEMENTS

Firstly, I would like to thank my heavenly Father who has time and again been my source of strength throughout the duration of this research study (Isaiah 41:31)

Furthermore, I would not have been able to complete this study without the patient guidance of my supervisors. Prof. Swanepoel and Prof. Biagio, you have gone above and beyond in teaching and encouraging me. Thank you for every comment made and every online meeting. Your constructive feedback in each step of this process has helped shaped this project and taught me so much. Dr Bennett, thank you for always believing in me – you were always ready to assist me, and I truly appreciate this. You have played an enormous role in sharpening my research skillset. I would also like to give a big thank you to Prof Manchaiah for your kind and knowledgeable guidance throughout the duration of this research study.

To my loving and ever supportive husband, this journey would not have been the same without you. Thank you for inspiring me to always want to be and do better and carrying me throughout this time. To my parents and in-laws, and close friends, thank you for your unwavering support and believing in me. You formed a great part of my motivation throughout this journey.

To each co-worker throughout my community service year and private practice - thank you for always checking in. Thank you for being interested in my project and allowing me to have endless conversations with you about it! To my fellow Master students – thank you for always lending an ear, giving advice, reading my drafts, helping me troubleshoot, and encouraging me when I needed it most.

Lastly, to my gran. I will always strive towards being the formidable woman everyone knew you to be. Thank you that you always believed in this journey of mine and embraced every dream and hope I've ever had.

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## ABBREVIATIONS

**ASL – American Sign Language**

**CPD – Continued Professional Development**

**DW.S. – De Wet Swanepoel**

**ENT – Ear Nose and Throat**

**L.BdJ. - Leigh Biagio de Jager**

**R.J.B. – Rebecca Jane Bennett**

**S.vB. – Sanchia van Bruggen**

**V.M. – Vinaya Manchaiah**

**U.S. – United States**

## FORMATTING STATEMENT

Note that for journal article submission purposes (American Journal of Audiology), American English was used throughout the article. Considering that Chapter 3 of this dissertation is a direct representation of what had been submitted to the journal, American English is used for the purposes of Chapter 3.

This research dissertation used the American Psychological Association (APA), 7th edition referencing style.

## ABSTRACT

Online review platforms have become increasingly popular among healthcare consumers for providing feedback. The aim of this study was to comprehensively describe the hearing healthcare experience through the exploration of satisfied and dissatisfied consumer feedback as reported on Google reviews. This study employed a thematic analysis on open-text responses from Google regarding hearing healthcare clinics across 40 United States (U.S.) cities. Purposive sampling led to a sample that consisted of 500 5-star (satisfied) and 234 1-star (dissatisfied) reviews. Thematic analysis yielded nuanced dimensions of the hearing healthcare consumer experience, grouped into distinct domains, themes, and sub-themes. Six common domains –overall experience, clinical outcomes, standard of care, facilities, audiologist, and administrative and support staff - were identified from the satisfied (5-star) and dissatisfied (1-star) consumer reviews. A seventh domain, 'Inclusivity', was identified amongst dissatisfied consumer reviews, describing interactions tainted by discrimination based on race, mode of communication, age, and insurance type. The overall experience domain revealed emotions, ranging from contentment and gratitude to dissatisfaction and waning loyalty. The findings highlighted the pivotal contribution of well-being, hearing- and product-related outcomes to the consumer experience, whilst consumers also shared expectations for punctuality, person-centred care, affordable services, and efficient communication. Furthermore, facility quality, cleanliness and general atmosphere of institutions were identified as important 'exterior' factors. Professional competence displayed both by audiologists and support staff were prominent themes. Findings emphasize the critical dimensions of satisfied and dissatisfied hearing healthcare consumer experiences, identifying areas for service refinement, informing more person-centric service-delivery in hearing healthcare.

***Keywords:*** Communication, consumer dissatisfaction, consumer feedback, consumer satisfaction, healthcare consumer experience, hearing healthcare, inclusivity, online consumer reviews, person-centred care, thematic analysis.

# CHAPTER ONE: INTRODUCTION

Healthcare consumer feedback is integral to quality-of-care improvement within the clinical setting (Gingold, 2011; Reinders et al., 2011). Feedback from consumers provides clinicians with the opportunity to modify and fine-tune healthcare service provision, striving towards the desired 'person-centred care' approach (Manchaiah et al., 2021; Murphy et al., 2019; Shaw, 2014).In a study by Lagu et al. 2010, healthcare consumers refer to various elements contributing to their experience, from which providers can then draw inferences. These elements included the facility location, staff characteristics, provider-consumer interactions, provider bedside manner, punctuality, and availability (Lagu et., al 2010).

A person-centred approach suggests that consumers actively participate in their healthcare journey within a power-balanced relationship between the consumer and the healthcare provider (Coulter & Oldham, 2016; Vahdat et al., 2014). Furthermore, an essential component to promoting person-centred healthcare includes the active utilization of consumer feedback in the process of assessing and executing quality improvements (Hall et al., 2018).

In contrast, the traditional 'practitioner-centred' approach is based on a power imbalance within the therapeutic relationship, causing the consumer to act as a passive recipient of care and reduces patient autonomy. Resultingly, evidence-based care advocate for and recognizes the value of consumer input to achieve optimal clinical outcomes (Wong et al., 2020). Moreover, consumer centred care has been known for improving healthcare consumer satisfaction, adherence to treatment, and consumer health status (Grenness et al., 2014In their 2004 study, Swenson et al. found that a significant proportion of healthcare consumers (69%) favoured a consumer-centered approach in their interactions with healthcare providers. Additionally, Michie et al. (2003) conducted a comprehensive review of 30 studies focusing on the psychological and physical outcomes associated with consumer-centred healthcare. Their findings indicated that consumer involvement in healthcare

interventions led to better treatment adherence and more favorable health outcomes, in comparison to approaches with less consumer involvement. Michie et al. also noted improvements in physiological indicators linked to more consumer-centred care.

In the past, healthcare consumers were often instructed on what treatment regime was chosen as health care followed a widely held perspective that the healthcare professional 'knows best' (Mead & Bower, 2002). However, present healthcare consumers' attitudes differ radically from this previously held viewpoint, which in part is due to increased internet access and a resulting abundance of health information available online. In this context, the modern consumer favours the consumer-centred approach to healthcare in which their values, preferences, knowledge, and social and family circumstances are not only acknowledged, but also taken into consideration during treatment/care decision-making processes (Coulter & Oldham, 2016). Further, healthcare consumers expect exceptional care and are much more prone to object when service delivery falls short of high-held expectations (Coulter & Oldham, 2016). Evidently, public reporting of satisfaction with healthcare delivery, such as posting an online review, could guide healthcare consumers when making decisions regarding the selection of healthcare providers. Thus, consumer satisfaction in healthcare plays an integral role in quality care improvement and delivery.

In addition, policymakers on a global scale are showing increased enthusiasm for aggregating healthcare consumer experience data to evaluate the quality of care and encourage enhancements in service delivery (Ahmed et al., 2014). Consumer experience could be defined as feedback on "the actual events" occurring while receiving treatment or care, reporting on both the objective facts and subjective views that consumers have regarding the healthcare interaction or treatment (Foster, 2010). Utilizing consumer feedback data offers a means to gauge the overall satisfaction of consumers, which has been acknowledged as a valuable indicator of healthcare quality. Within various healthcare fields, consumer experience and satisfaction are increasingly considered as vitally important

components of health metrics (Manchaiah et al., 2021a). Health metrics inform clinical decision-making, research studies, healthcare policies, and the implementation of specifically formulated intervention/care protocols aiming to improve healthcare outcomes, at an individual or population level. However, limited scholarly efforts have been dedicated to examining consumer experience and satisfaction as pivotal metrics, especially within the domain of hearing healthcare (Manchaiah et al., 2021a). Moreover, as noted by Grenness et al. 2014, limited research examining the hearing healthcare consumer and provider relationship, particularly from the consumer perspective exists. To address this, qualitative studies identifying barriers and facilitators to consumer-centric care, as experienced by the consumer, are deemed necessary. . These insights obtained could refine clinical practices and contribute to audiologists' education and professional development. Various methods can be employed to gather consumer experience data (Ahmed et al., 2014). Previous research indicates that feedback has predominantly been gathered by means of paper-based questionnaires, albeit recent technological advancements that facilitate online surveys, SMS based surveys, and real-time feedback (Ahmed et al., 2014). Additionally, online review sites have become increasingly popular amongst healthcare consumers (Hanauer et al., 2014). In recent years, healthcare consumers have turned to online platforms not only for advice and information but also to share their healthcare experiences with the public (Prasad, 2013; Masters, 2017). Given the wide accessibility and reach of online platforms, internet users around the world have access to other healthcare consumers' opinions, thoughts, and reactions which impacts healthcare decision-making and feedback on care (Dellarocas, 2003).

Online reviews do exhibit certain limitations, notably the presence of fraudulent reviews, such as intentional negative assessments posted by competitors. Past concerns raised by healthcare providers emphasized the potential reputational harm stemming from unfounded negative online reviews. Moreover, the sensitive nature of healthcare information and the imperative of maintaining provider-consumer confidentiality preclude providers from promptly

addressing negative reviews through responses. Despite these constraints, research indicates that online reviews tend to be predominantly positive, potentially mitigating the overall impact of negative assessments (López et al., 2012). An examination of 3,000 narrative comments on a German physician review website indicated that the preponderance (80%) was positive, while 16% were negative and 4% neutral (Emmert et al., 2015). Comparable findings were observed on China's largest doctor review platform, the Good Doctor (Hao, 2015). Another limitation includes that online reviews may not always be a true reflection of the overall clinical outcomes achieved and should not be used in isolation to choose a healthcare provider (Daskivich et al., 2017; Okike et al., 2016). Notwithstanding these limitations, online review sites such as Google reviews, serve as a distinctive platform for healthcare consumers to voice personal evaluations of healthcare services and products, providing valuable information to clinicians and fellow consumers. Potential consumers could consult online reviews for easily accessible insights into healthcare facilities and providers, which may assist consumers to make more informed healthcare decisions or deter access to certain service providers. In comparison to questionnaires that consist of predetermined questions, consumers can highlight specific elements they find important when leaving an online review. When utilizing questionnaires for consumer feedback, it remains unclear whether respondents understood all questions and took the time necessary to provide accurate responses (Rowley, 2014). Moreover, questionnaires can also be tiresome or tedious, whilst others might experience an unwillingness to share certain information (Rowley, 2014). In contrast, data obtained from online reviews ae mostly self-initiated and unprompted, providing clinicians with additional insights into the consumer experience (Manchaiah et al., 2021a, 2021b). Multiple studies have analysed online consumer reviews by means of qualitative and or quantitative designs to better understand different phenomena such as, but not limited to, how clinicians could better manage their online reputation; the gender and age of consumers who generally gave higher ratings; determining the consumer’s influence on the clinician’s online reputation or presence; the prevalence of various specialties’ reviews on reviewing websites; and whether consumers ought to rely on

online reviews to determine the quality of clinical care provided (Adelhardt et al., 2015; Frost & Mesfin, 2015; Sobin & Goyal, 2014). Furthermore, the aforementioned studies focussed on specialities such as orthopaedic services, otolaryngology, plastic surgery, and dentistry. Albeit the growing research regarding consumer satisfaction with healthcare services, the literature on elements contributing to the overall hearing healthcare consumer experience and the understanding thereof remains dearth as previously noted (Manchaiah et al., 2021a). Yet there has been a recent growing interest in how hearing healthcare is represented in online reviews, and the potentially valuable information pertaining to the hearing healthcare experience that can be identified within these reviews (Heselton et al., 2022; Manchaiah et al., 2021a, 2021b).

The general consumer, who purchases goods and utilises a variety of services, does not make decisions whilst in a state of vulnerability or illness. In comparison, healthcare consumers are often vulnerable, frightened, and confused when having to make important and complex decisions in regard to their own wellbeing (Torpie, 2014). Similarly, hearing healthcare consumers must make important decisions with regards to their hearing health and may, for example, feel overwhelmed by varying types and brand of amplification options. Additionally, due to some of the negative emotions and stigma surrounding hearing healthcare interventions, individuals who would benefit from amplification may shy away and postpone intervention until much later – impacting the onset of treatment (Knoetze et al., 2023). Evidently, according to Simpson et al. (2019), adults who qualify for hearing aids reportedly delay hearing aid adoption by up to nine years.

As a result, previous research studies highlight that unaddressed hearing loss is associated with accelerated cognitive decline, increased risk for dementia, depression, falls and associated injuries, balance problems, as well as more rapid overall physical and cognitive health decline (Jayakody et al., 2017, 2018; Loughrey et al., 2018). Evidence gathered from both a longitudinal study such as Deal et al. (2017), and a cross-sectional study by Jayakody

et al. (2018), support the notion that a link exists between peripheral hearing loss and cognitive impairment. In this sense, hearing loss entails more than a sensory impediment and the psychosocial impacts and consumer experience need to be considered. The psychosocial impacts of hearing loss are far reaching and includes feelings of grief, anger, frustration, stigmatisation, loneliness, isolation, inferiority, and a loss of identity for a lot of individuals (Barker et al., 2017; Bennett et al., 2022; Jayakody et al., 2018). In a study by Monzani et al. (2008), adults of working age with an acquired hearing loss exhibited higher levels of psychological distress and disability, as measured by self-administered psychometric rating scales, when compared to their abled hearing counterparts. The findings highlighted that research participants presenting with a hearing loss were more prone to anxiety, interpersonal sensitivity, depression, and hostility (Monzani et al., 2008).

Further, the World Health Organisation (WHO) reports that more than 1.5 billion people worldwide suffer from a hearing impairment of some degree (WHO, 2021). Similarly, Wilson and Tucci (2021) state that more than 20% of the world's population has a mild to complete hearing loss in their better hearing ear. In addition, those who have a hearing loss that could greatly hinder spoken communication amount to more than 5% of the world's population (Wilson & Tucci, 2021). According to Haile et al. (2021), hearing loss is classified as the leading cause of years lived with disability among individuals older than 70 years of age. For all ages, hearing loss is the third leading cause for years lived with disability (Haile et al., 2021). Notably, the WHO (2021) estimated that approximately 2.5 billion people will present with hearing loss, of which 700 million will require rehabilitation in the year 2050. If left unaddressed, the financial burden of hearing loss globally adds up to 980 billion US dollars. This could potentially put the global goal of the United Nations Member at risk, which is to end poverty and ensure prosperity and peace for all individuals by 2030 (United Nations, 2015; WHO, 2017).

Considering the aforementioned impact of hearing loss as an overall health burden, it is noteworthy that the majority of individuals across all age groups with a clinically significant hearing loss still do not make use of hearing aids (Arnold et al., 2019; Chien & Lin, 2012; Mamo et al., 2016). Hearing aids have been shown to increase listening satisfaction in almost all environments. Hearing aid users report increased intimacy within family relationships, an improved sense of control with regards to life events, and increased emotional stability (Picou, 2020). Moreover, negative consequences associated with hearing loss could be avoided and or alleviated significantly if individuals seek assistance sooner - whilst their losses are relatively mild (Johnson et al., 2018). Noteworthy, Lin et al. (2023) revealed that implementing auditory interventions following the diagnosis of hearing loss amongst individuals aged 70 years and above, who present with an elevated risk for cognitive decline and dementia, could play a pivotal role in mitigating cognitive deterioration within a span of three years. A systematic review conducted by Ferguson et al. (2017) demonstrated that hearing aids have a significantly positive effect on the auditory capabilities of adults by facilitating enhanced listening skills, thereby improving the performance of daily activities, and encourages increased engagement in social interactions. Furthermore, there is evidence that the consistent use of hearing aids could improve the user's quality of life with regards to physical, social, emotional, and mental wellbeing (Ferguson et al., 2017).

It is therefore important that hearing healthcare professionals strive to create a positive, person-centred experience for all and encouraging consumers to be proactive and self-autonomous in regard to their hearing healthcare. Thus, hearing healthcare professionals should aim to improve the quality-of-care delivery throughout the consumer's journey of prescribing and fitting hearing aids, as well as aftercare and support, which could increase the satisfaction and benefit from hearing aids for users (Knudsen et al., 2013). In this context, unfiltered online reviews may inform clinicians about what consumers truly prefer, value, and need when receiving care, and how they feel after consultations, which could guide clinicians in superior service delivery (Jain, 2010; Manchaiah et al., 2021). In a recent

study, Manchaiah et al. (2021) identified critical factors influencing the hearing healthcare consumer experience, as revealed through consumer feedback in online reviews. Similarly, Heselton et. al (2021) emphasized that insights gleaned from hearing aid users can guide clinicians in optimizing fitting procedures, while also addressing potential criticisms about their fittings and clinical practices. Furthermore, a deeper understanding of the hearing aid user's experience could offer valuable direction for industry-level improvements in hearing aid design.

To evaluate consumer feedback both quantitative and qualitative approaches could be employed. However, even though surveys and predetermined response questionnaires provide valuable insights into general trends which are quantifiable, these methods lack the nuanced and rich information necessary to devise specific modifications to service delivery that suit unique, contextual experiences (De Silva, 2013; Edwards et al., 2015). Arguably, Cleary et al. (2014) stated that an optimal scholarly approach to understanding the healthcare consumer experience is through qualitative inquiry. Furthermore, considering that online feedback typically includes open-text responses, reflecting the consumer's own words, these are well-suited to focus on the subjectivity of the human experience and to classify and interpret the perceptions and experiences of varying individuals.

In the prior research studies by Manchaiah et al. (2021a, 2021b) online hearing healthcare reviews were analysed employing automated linguistic analysis of textual responses. Even though the data proved beneficial in gaining an improved understanding of the subjective consumer experience, it was found that the software did not consider crucial aspects which had an influence on the meaning of responses such as irony, sarcasm, idioms, and contextual expressions. To mediate this, these aspects could be considered when a manual, thematic analysis is done by the researcher him/herself such as in this study (Tausczik & Pennebaker, 2010). To further support this point, a recent qualitative, thematic analysis done by Heselton et al., 2022 on online hearing-aid user reviews demonstrated that the manual

coding of themes allows for more discernment regarding the nature of comments (negative, neutral, or positive tone) than automated analysis of the same dataset (Bennett et al., 2021).

Consequently, the aim of the current study was to examine the experience of hearing healthcare consumers, utilizing a qualitative, thematic analysis, with the objective of gaining deeper insights into their values, requirements, and preferences. By employing this methodological approach, the researchers sought to enhance their understanding of the subjective perspectives and experiences of hearing healthcare consumers. Armed with the knowledge of the consumer experience, clinicians can aim to minimize negative experiences and implement strategies that facilitate higher standards of care (Shaw, 2014).

# CHAPTER 2: METHODOLOGY

## 2.1 Research Aim

The primary aim of the study was to comprehensively describe the experiences of consumers regarding hearing healthcare services by examining relevant Google reviews. A method of inductive, thematic analysis was employed to gain insight into the first-hand experiences of dissatisfied and satisfied hearing healthcare consumers.

## 2.2 Research Design

A cross-sectional, retrospective research design was applied while examining online hearing healthcare consumer reviews from Google.com. To better understand how hearing healthcare consumers interpret their experiences, and what meaning they attribute thereto, reviews were analysed employing qualitative, inductive, thematic analysis, as described by Braun and Clarke (2006). Thematic analysis was employed to identify, analyse, and report on sub-themes and themes throughout the data that were actively identified by the researcher (Braun & Clarke, 2006).

Alternative to thematic analysis, various qualitative research methodologies exist including qualitative content analysis, interpretive phenomenological analysis, grounded theory, and conversational analysis (Knudsen et al., 2012). Thematic analysis is both accessible and versatile and its popularity as a qualitative analysis method is on the rise (Braun & Clarke, 2006). Moreover, qualitative research can be guided either by theoretically motivated deductive or data-driven inductive approaches (Knudsen et al., 2012). A data-driven / 'bottom-up' (inductive) approach could be described as a process in which the coding of the data is done without trying to conform it to an existing coding structure or the predetermined notions of the researcher (Braun & Clarke, 2006; Manchaiah et al., 2022b). Furthermore, as noted by Fine (1992), in the current study the researchers did not merely 'give voice' to the consumer, but rather strived towards unearthing unacknowledged themes within the hearing

healthcare consumer experience. Additionally, the student researcher (S.vB) considered identified themes whilst formulating clinical recommendations; thereby, presenting supporting data to strengthen the recommendations.

## 2.3 Data Extraction Procedures and Tools

### *2.3.1 Data search procedure*

Online reviews left by hearing healthcare consumers on Google.com regarding various audiology-related services and institutions, spanning 40 cities of the United States (U.S.) were utilised for the purpose of this study. A search for hearing healthcare reviews posted on Google.com was conducted within no specific timeframe. Various keywords were used during the informal search to obtain the data such as: 'hearing clinics'; 'audiology clinics'; or 'hearing aid centre', specific to each city. For this search, cities with various population sizes (i.e., 1 million, 500,000 to 1 million, 200,000 to 500,000, and <200,000) and cities from various regions (i.e., Northeast, Midwest, South, West) were included.

This search strategy resulted in reviews obtained from hearing healthcare clinics in different settings such as facilities attached to hospitals, Ear Nose and Throat (ENT) practices, or independent practices. Clinics which had less than 10 reviews were excluded from the data set as a measure to ensure inclusion of reviews for established clinics. Reviews were left by consumers who were either the consumer themselves or someone who attended an appointment with a family member, next of kin, or an underaged child (Manchaiah et al., 2021a). Online consumer reviews were obtained by an open-ended question such as, "*Share details of your own experience at this place"*, with a request to rate the experience on a 5-point scale (1-star = *very poor experience*; 5-star= *very good experience*). Meta-data concerning the clinic (e.g., city in which the clinic is located, clinic name, and Uniform Resource Locator) and cities (i.e., region, population, percentage of the population over 65

years of age) were extracted and exported to a Microsoft Excel document. Meta-data extracted was published separately (Manchaiah et al., 2021b).

### *2.3.2 Criteria for data analysis*

The aforementioned search yielded a total of 13,168 reviews. From these, 3546 reviews supplied no written response which were excluded from the thematic analysis. The remaining reviews with text-response (9622) were extracted and imported for analysis to a Microsoft Excel spreadsheet. Further criteria were applied, such as a cut-off review length of 10 words or more, to ensure that data used was rich in content and to avoid the analysis of short or single word responses which were likely to provide insufficient content for thematic analysis (e.g., “Great clinic”).

Furthermore, for the purpose of the current study 2-,3-, and 4-star reviews weren’t included in the dataset due to their potential neutral nature and due to the researchers being interested in examining polarising experiences. To gain additional insights into hearing healthcare experiences, resulting in satisfaction and dissatisfaction respectively, only 1- and 5-star reviews were used for the current study. The remaining 1- and 5-star written reviews compliant with length restrictions, were 321 and 8420 reviews respectively. The entire set of 1-star reviews available (n=321) and a portion of the 5-star reviews (n=500) were further utilised. A sample of 500 5-star reviews were selected, ensuring an adequate sample size to reach data saturation. If data saturation had not been achieved at this juncture, an additional set of 50 reviews (5-star) would have been selected for further analysis. This procedure would persist until the point of saturation was attained.

After length restrictions had been considered, any reviews unrelated to hearing healthcare, such as ENT or other medical specialist related reviews and reviews not in any manner related to hearing healthcare, were excluded for this study. In the case of the 5-star reviews, all excluded reviews (20) were replaced to maintain the original set amount of 500 reviews since additional reviews were available to serve as substitutes. However, the

aforementioned process could not be repeated for the 1-star review data due to the unavailability of substitute reviews. Hence a final total of 234 1-star reviews were analysed after omitting reviews unrelated to audiological services (87).

## 2.4 Ethical Considerations

Comments left by hearing healthcare consumers were done so at their own will and by means of various electronic devices such computers, smartphones, and tablets. Google.com provides any consumer with the opportunity to leave an online review of any institution. This review can then be viewed by anyone of the public. In addition, this study received institutional review board ethical clearance from the University of Pretoria (reference number: 16078022 [HUM012/0122], Appendix C).

### *2.4.1 Respect for confidentiality and privacy*

The anonymity of all participants was guaranteed. Participants were not asked to leave any identifying data during the process of data collection. For example, participants were not asked to leave their name, date of birth, or contact details when typing their reviews. However, in some cases, participants have included potentially identifying data embedded within their open-text responses such as the name of the audiologist or visiting clinic or their names as part of their review. In these cases, the research team de-identified the data by replacing the name with the symbol “X” while deducing meaning units, as it is the responsibility of the researcher to maintain the confidentiality of all research participants.

### *2.4.2 Data storage*

The data will be retained digitally and in hard copy for a duration of 15 years at the University of Pretoria within the Department of Speech Language Pathology and Audiology, in accordance with the policies of the University of Pretoria (See Appendix D).

## 2.5 Data Analysis

Online consumer reviews were extracted and imported into a Microsoft Excel worksheet for qualitative thematic analysis, aiming to organise and describe the data set comprehensively by using the following approach (Braun & Clarke, 2006):

1. Meaningful units of information were deduced from the raw responses. Each review was thoroughly read by the student researcher (S.vB.) and subdivided into meaning units. The student researcher mostly used the original wording of the consumer, when possible, thereby increasing the trustworthiness of the research results. Additionally, the rigorous recording of all details identified within reviews remained a priority. For example, if the consumer said: “The audiologist was kind, friendly, and tested my hearing in a thorough manner”, meaning units deduced would be:

   a) The audiologist was kind.

   b) The audiologist was friendly.

   c) The audiologist tested my hearing in a thorough manner.
2. Meaning units deduced were coded under relevant sub-themes (frequency counting). Codes refer to the fundamental elements or units that can be deduced from the raw data that relate to the phenomenon being investigated in a meaningful way (Boyatzis, 1998).
3. The sub-themes were grouped into categories of themes, and thereafter domains. A theme encapsulates an important facet of the data concerning the research question, representing a /recurring meaning or response discovered within the dataset. Researcher judgement was used to determine what constituted a theme or not, as no ‘rules’ exist regarding the number of instances a response or meaning unit must occur across the dataset for it to qualify as a theme. Furthermore, the importance/relevance of a theme cannot be determined by the number of occurrences within the data, but rather by whether it captures something important in connection to the overall research question (Braun & Clarke, 2006).

The student researcher (S.vB.) finalised the coding, while 100% of the 5-star coding was verified by R.J.B. (co-supervisor). For the 1-star coding, a random sample was verified by R.J.B. since the student researcher (S.vB.) was more experienced in the data analysis methodology at that point. S.vB. and R.J.B. continually consulted throughout the data analysis process by means of online meetings to plan and implement finer details of the study. This is true to a qualitative research process in which the design is emergent (Cypress, 2017).

Further, the categorisation of meaning units and consequent identification of sub-themes, themes, and domains was conducted by the student researcher (S.vB.) and verified by a co-supervisor (R.J.B.) as explained above. No analysis software was used in contrast to the papers written by Manchaiah et al. (2021a, 2021b). This approach enabled the researcher to understand the hearing healthcare experience from the consumer perspective, as the data was not based on a predetermined or existing framework (Manchaiah et al., 2021; Patton, 2002).

Before the study commenced, the first author (S.vB) had foundational knowledge in qualitative analysis, which was significantly augmented by the mentorship of the second author (R.J.B), a seasoned qualitative researcher. R.J.B provided an in-depth orientation to qualitative thematic analysis and was instrumental in guiding the collaborative analysis process. Together, they created a data analysis framework in Microsoft Excel and began developing the codebook. The initial batch of 25 reviews was collaboratively analysed to establish meaning units. S.vB then independently managed subsequent sets of 25 reviews, consistently engaging with R.J.B for insightful review and discussion, thus ensuring a rigorous analytical approach. This collaborative cycle was repeated for additional sets.

As the study progressed, S.vB took on larger batches of reviews (100 at a time), benefiting from R.J.B's regular expert input to refine the analysis process. They resolved any analytical discrepancies through diligent email exchanges and online meetings, where both authors

had the opportunity to critically assess and discuss potential biases and their influence on the interpretation of data. Following S.vB's thorough analysis of 500 5-star reviews, any emergent queries were thoughtfully addressed with R.J.B.

R.J.B then led the process of data grouping and deductive codebook refinement. Initially co-coding a set of meaning units, S.vB then independently coded the next segments, presenting them to R.J.B for constructive feedback and potential revisions. After several iterations, S.vB scaled up to coding in larger batches, with R.J.B meticulously overseeing each code to provide nuanced guidance. Upon finalization, S.vB revisited the codebook to ensure that all meaning units were accurately represented.

The coding process, themes, and findings were then collaboratively examined with DWS, L.BdJ, and V.M., broadening the discussion to include various perspectives on coding methodology and thematic analysis. With a demonstrated grasp of the analysis process for 5-star reviews, S.vB proceeded to analyse 1-star reviews, receiving less direct supervision yet still under the occasional review of R.J.B, who cross-checked a sample to guarantee consistent accuracy. An extensive audit trail, detailing all analytical decisions, fortified the inter-coder reliability (Castleberry & Nolen, 2018). Such meticulous practices underpin the data's transparency, elevate its credibility, and respect diverse viewpoints, solidifying the study's overall integrity (Anney, 2014; Manchaiah et al., 2022b). Thematic data saturation was also verified by reviewing whether any new sub-themes could be identified during the concluding 10% of the 5-star and 1-star datasets, respectively (Green & Thorogood, 2018). It is noteworthy that no novel themes emerged from the 5-star dataset during the concluding 10% of the sample set. However, new sub-themes did emerge from the 1-star data within the concluding 10% of the sample set. In this sense, thematic data saturation occurred within the 5-star dataset, but not within the 1-star dataset.

### 2.6 Trustworthiness

Measures utilised in quantitative research to assess validity and reliability cannot be applied to qualitative research methodologies. Validity in qualitative research can be described in terms of rigor, trustworthiness, appropriateness, and quality. To evaluate the quality/trustworthiness of qualitative studies, the following criteria are considered: credibility, transferability, dependability, and confirmability (Anney, 2014).

Credibility strategies employed for the sake of the current study include peer-debriefing and research triangulation. Peer debriefing and research triangulation created an opportunity for the student researcher (S.vB) to test their deepening awareness and consequent insights, as well as to expose a researcher to searching questions (Guba,1981; Janesick, 2015). In this context, S.vB was provided with consistent guidance, support, and input from all senior researchers involved by means of email correspondence, assistance with data analysis, regular review of written work, and online meetings. Aforementioned steps taken are in line with recommendations made by Bitsch (2005), stating that a researcher ought to gain their peer's input on conclusions that could be drawn from the study. Addressing comments left on written work by supervisors ensured the consideration of all perceptions held during the writing process which is relevant to researcher triangulation (Anney, 2014).

Additionally, departmental level feedback (Speech Language Pathology and Audiology Department, University of Pretoria) was provided to the student (S.vB.) during an in-person departmental research committee meeting by various departmental members after their review of the research proposal for the current study. Increased transferability of the current study's results was ensured by making use of a purposive sampling method (Anney, 2014; Cypress, 2017). Purposive sampling allows the researcher to concentrate on fundamental informants of the specific phenomena being investigated; thereby, providing detailed findings in comparison to other probability sampling methods (Cowan, 2011).

For this study, research triangulation and reflexive practice was employed to ensure confirmability of the research findings. Throughout this study the student researcher (S.vB.) remained aware of held sentiments and viewpoints regarding the hearing healthcare consumer experience, realising that the aforementioned may taint the research findings and consequent conclusions. The student researcher devoted time towards self-reflection throughout the data analysis and writing process, encouraging themselves to be aware of potentially held biases and to strive towards impartiality (Cypress, 2017).

# CHAPTER THREE: RESEARCH ARTICLE

## Perceptions of Hearing Healthcare: A Qualitative Analysis of Satisfied and Dissatisfied Online Reviews

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**Journal:** American Journal of Audiology (AJA)

**Submitted: 31st August 2023**

**Status:** (see Appendix E)

# Perceptions of Hearing Healthcare: A Qualitative Analysis of Satisfied and Dissatisfied Online Reviews

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Journal: American Journal of Audiology (AJA)

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## CONFLICTS OF INTEREST STATEMENT

All authors whose names are listed above hereby affirm that they have no conflicts of interest.

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## ABSTRACT

**Purpose:** The aim of this study was to examine the hearing healthcare experience of satisfied and dissatisfied consumers as reported on Google reviews.

**Method:** Using qualitative thematic analysis, open-text responses from Google regarding hearing healthcare clinics across 40 U.S. cities were examined. During the original search 13168 reviews were identified. Purposive sampling led to a total of 8420 5-star reviews and 321 1-star reviews. The sample consisted of 500 5-star (satisfied) and 234 1-star (dissatisfied) reviews, describing experiences with audiology clinics, excluding reviews related to Ear Nose and Throat (ENT) services, other medical specialties, and those not relevant to hearing healthcare.

**Results:** Satisfied and dissatisfied consumer reviews yielded nuanced dimensions of the hearing healthcare consumer experience, which were grouped into distinct domains, themes, and sub-themes. Six and seven domains were identified from the satisfied and dissatisfied reviews, encompassing 23 and 26 themes respectively. The overall experience domain revealed emotions ranging from contentment and gratitude to dissatisfaction and waning loyalty. The clinical outcomes domain highlights the pivotal contribution of well-being and hearing outcomes to the consumer experience, while the standard of care domain underscores shared expectations for punctuality, person centered care, and efficient communication. Facility quality, professional competence and inclusive care were also highlighted across positive and negative reviews.

**Conclusion:** Findings indicate dimensions of satisfied and dissatisfied hearing healthcare consumer experiences, identifying areas for potential service refinement. These consumer experiences inform person-centric service-delivery in hearing healthcare.

**Keywords:** Consumer dissatisfaction, consumer feedback, consumer satisfaction, hearing healthcare, online consumer reviews.

# INTRODUCTION

A new type of healthcare consumer, known as the "e-patient", has emerged through the widespread adoption and integration of digital technologies in society. The resultant improved connectivity facilitates communication and information sharing. In the past, healthcare consumers rarely questioned or requested clarification of treatment options and recommendations made by clinicians. In contrast to a passive participatory role, the modern healthcare consumer seeks out health information online, leading to increased participation in managing their healthcare (Masters, 2017). A manifestation of this shift is seen in how healthcare consumers now interact with online platforms. These digital platforms have reinvented the way in which consumers evaluate and access healthcare services, and how they share their healthcare experiences publicly (Emmert et al., 2014). Online consumer reviews increase the transparency of consumer needs and expectations, challenging healthcare providers to be more proactive in providing person-centered care (Deshwal & Bhuyan, 2018; Han et al., 2019).

Person-centered care can be promoted through the utilization of consumer feedback during the process of assessing and executing quality improvements (Hall et al., 2018). Despite the growing research regarding consumer satisfaction with healthcare services, a dearth of literature on elements contributing to the overall hearing healthcare consumer experience and the understanding thereof remains (Manchaiah et al., 2021a). There has, nonetheless, been a recent growing interest in how hearing healthcare is represented in online reviews (Heselton et al., 2022; Manchaiah et al., 2021a, 2021b).

According to the World Health Organization (WHO) hearing loss affects one in five people. Individuals with hearing loss experience a diverse set of challenges, as shaped by their unique circumstances and surroundings, calling for individually tailored care (Entwistle & Watt, 2013). In this context, addressing hearing loss extends beyond intervention by means of amplification. Psychosocial elements and the experiences of the consumer during the

service-delivery process, are to be taken into consideration if clinicians aim to approach care holistically (Barker et al., 2017; Bennett et al., 2022; Jayakody et al., 2018).

Furthermore, person-centered care could improve consumer satisfaction, adherence to treatment, and consumer health status (Grenness et al., 2014). This study aimed to employ the use of consumer feedback, in the form of online reviews, to better understand the hearing healthcare consumer experience. A better understanding of the hearing healthcare consumer experience could provide practicing clinicians with insights into how consumer dissatisfaction could be minimized. Additionally, an increased understanding of the hearing healthcare consumer experience may lead clinicians to implement strategies that foster more responsive and higher standards of person-centered care (Manchaiah et al., 2021a; Murphy et al., 2019; Shaw, 2014).

Healthcare consumer feedback is typically determined using quantitative measures such as standardized questionnaires with closed-ended questions. These are less time-consuming for respondents and relatively easy for researchers to code and consequently analyze (Rowley, 2014). However, questionnaires incorporating more qualitative, open-ended questions may provide deeper insights into the consumer experience (Rowley, 2014; Manchaiah et al., 2018). Even though evaluations of the consumer experience by means of standardized questionnaires may provide a broad indication of patient satisfaction, they seldom pinpoint the source of the perceived satisfaction or dissatisfaction (Schlesinger et al., 2015). The unequal balance of power between provider and consumer may prevent candid reviews of services when elicited by clinicians (Black & Jenkinson, 2009).

In contrast to standardized questionnaires, online reviews are mostly unstructured, and consumer generated. The analysis of online reviews can enable researchers to report on nuanced themes which may be missed by traditional, standardized consumer surveys (Ranard et al., 2016). In turn, these themes can provide feedback which may prove to be more practically applicable within the clinical setting. Notably, in a study by Ranard et al.

(2016) online consumer reviews yielded 12 additional themes describing the consumer experience which were not identified by conventional consumer surveys for example, scheduling and compassion of staff. Analyzing text responses to open-ended questions could therefore yield additional beneficial elements when examining populations of diverse demographic compositions (Manchaiah et al., 2022).

Online consumer reviews have been referred to as the 'missing link' for consumers seeking to understand the experience of other consumers and for clinicians seeking to learn from consumers to improve their service delivery (Glover et al., 2015; Hong et al., 2019; Ko et al., 2019; Schlesinger et al., 2015). Fellow consumers' online reviews are typically viewed as unbiased and trustworthy (Pitman, 2022). Research has shown that approximately 49% of consumers consider online reviews just as trustworthy as personal recommendations, while 28% trust online reviews as much as they would a credible article (Pitman, 2022).

Large sets of textual data, such as online reviews, have been analyzed through automated text pattern analysis, for gaining rapid and reliable insights (Manchaiah et al., 2019). This method was used by Manchaiah et. al (2019) to examine consumer feedback on direct-to-consumer (DTC) hearing devices on Amazon, identifying fundamental themes from the data set. More recently, hearing healthcare consumer reviews on Google were examined using automated Natural Language Processing (NLP) techniques (Manchaiah et al., 2021a, 2021b). The automated text pattern analysis uncovered valuable domains and clusters related to clinical experiences as reported by hearing healthcare consumers (Manchaiah et al., 2021a). The same dataset was analyzed using Linguistic Inquiry Word Count (LIWC) which identified some key language dimensions related to overall satisfaction ratings, e.g., higher ratings noted when users were personally, socially, and emotionally engaged with the hearing device experience (Manchaiah, et al., 2021b).

Automated analyses of online reviews, although of value, are not able to distinguish whether the views expressed by consumers were negative, positive, or neutral (Manchaiah et al.,

2019; Manchaiah et al., 2021b). Furthermore, the software was not able to consider aspects such as irony, sarcasm, idioms, and the context of expressions (Tausczik & Pennebaker, 2010). In contrast to an automated analysis, a thematic, qualitative inquiry may delve deeper into the nuances of these reviews. A manual thematic analysis could offer insights into the explicit and implicit ideas within the data, as well as capturing the subtleties, context, and emotions that automated methods may miss (Manchaiah et al., 2022). Therefore, thematic analysis can be used to complement existing automated analyses, to better understand the consumer experience. Subsequently, this study aimed to comprehensively explore the hearing healthcare experience of satisfied and dissatisfied consumers reported on Google reviews, using qualitative inductive thematic analysis.

## METHOD

### Research Design

This cross-sectional study examined online hearing healthcare consumer reviews. Qualitative, inductive, thematic analysis was used to identify, analyze, and report on the themes or patterns within the dataset (Braun & Clarke, 2006). This study received institutional review board clearance (reference number: 16078022 [HUM012/0122]). This study did not necessitate the acquisition of informed consent since it exclusively utilized publicly accessible data, specifically online Google reviews. These reviews, authored by consumers, are openly available for public viewing, aligning with the study's data collection methodology.

### Data Extraction Procedure

Online reviews left by hearing healthcare consumers on Google regarding various audiology-related services and institutions, spanning 40 cities of the United States (U.S.) were extracted for the primary/initial dataset (primary dataset used in studies by Manchaiah et al.

2021 a, 2021b). Data from cities with various population sizes (i.e., 1 million, 500 000 to 1 million, 200 000 to 500 000, and <200 000) and cities from various regions (i.e., Northeast, Midwest, South, West) were included. This search for hearing healthcare reviews posted on Google was conducted by a research assistant. No time criteria were applied to existing Google reviews; instead, all available reviews, regardless of their date of creation, were extracted. By extracting both old and new reviews, the assumption was made that the data set contains reviews encompassing periods before and after potential service improvements. Focusing solely on the most recent reviews may introduce a bias, as clinics may have enhanced their service quality in response to negative feedback. Conversely, exclusively considering older reviews may overlook insights into improvements that have positively impacted the consumer experience, which is integral to the study's findings and subsequent clinical implications. Various keywords were used during the search for audiology clinics within aforementioned 40 cities including: ‘hearing clinics’ in ‘city name’; ‘audiology clinics’ in ‘city name’; or ‘hearing aid center’ in ‘city name’ (Manchaiah et al., 2021a, 2021b). This search yielded a compilation of hearing healthcare clinics indexed by Google.com.

Reviews were obtained from hearing healthcare clinics in different settings such as hospitals, Ear Nose and Throat (ENT) practices, or independent practices. As part of our search criteria, clinics with fewer than 10 reviews were omitted from the dataset. This decision was grounded in two key assumptions made by the research team. Firstly, it was posited that clinics with fewer than 10 reviews on their Google profile might be newly established or less frequently visited by consumers. Secondly, the rationale for prioritizing clinics with a higher review count was based on the belief that more established clinics could potentially offer a more comprehensive representation of consumer experiences. The accumulation of more reviews increases the likelihood of capturing diverse opinions and experiences from consumers with varying demographic backgrounds.

Reviews were left by consumers who were either the patient themselves or who attended an appointment with a family member, next of kin, or an underaged child (Manchaiah et al.,

2021a). Moreover, the hearing healthcare consumer reviews on Google were obtained through a statement allowing for open responses, *"Share details of your own experience at this place",* with a request to rate the experience on a 5-point scale (1=very poor experience; 5=very good experience). Clinic related meta-data (e.g., URL, city, clinic name) and cities (i.e., region, population, percentage of the population over 65 years of age) were extracted and exported to a Microsoft Excel document. The meta-data that was extracted was published separately (Manchaiah et al., 2021b).

**Inclusion criteria for data analysis**

The initial search yielded a total of 13 168 individual reviews. From this, 3546 reviews provided no text in the response and were excluded from the thematic analysis. The remaining reviews with text-responses (n=9622), were extracted and imported to a Microsoft Excel spreadsheet for analysis. Two further criteria were applied, recommended, and implemented by the second author (R.J.B.), an experienced qualitative researcher. Firstly, a cut-off review length of 10 words or more was set. This criterion ensured data used was rich in content, avoiding analysis of short phrases or single word responses, which are likely to have insufficient information for thematic analysis. Lastly, for the purposes of the current study 2-, 3-, and 4-star reviews were not included in the dataset due to their potential neutral nature and due to the researcher's interest in examining polarizing experiences. To gain insights into experiences resulting in satisfaction and dissatisfaction respectively, only 1- and 5-star reviews were used for the current study. The remaining 1- and 5-star written reviews, which were compliant with length restrictions, were 321 and 8420 respectively. The entire set of 1-star reviews available (n=321) and a portion of the 5-star reviews (n=500) were further utilized. A sample of 500 5-star-reviews were selected, ensuring an adequate sample size to reach data saturation. If data-saturation had not been achieved at this juncture, an additional set of 50 reviews (5-star) would have been selected for further analysis. This procedure would persist until the point of saturation was attained.

Any reviews pertaining to hospitals or Ear Nose and Throat practices were excluded in this study, so that this study could focus on reviews describing audiology clinic experiences. In the case of the 5-star reviews, all excluded reviews (n=20) were replaced to maintain the target amount of 500 reviews since additional reviews were available to serve as substitutes. Resultingly, a final amount of 500 5-star reviews was analyzed. However, the process could not be repeated for the 1-star review data due to the unavailability of substitute reviews. Therefore, a final total of 234 (n) 1-star reviews were analyzed after omitting all reviews unrelated to hearing healthcare services (n=87).

**Data Analysis**

Online consumer reviews were extracted and imported into a Microsoft Excel worksheet for inductive thematic analysis, aiming to organize and describe the dataset comprehensively. An inductive approach may be more successful in the identification of nuanced themes and sub-themes present in the data, that may be overlooked when data is analyzed with a predetermined framework in mind (Manchaiah, 2022b). This approach enabled the researcher to assess the hearing healthcare experience from the consumer perspective, as the data was not based on a predetermined or existing framework (Manchaiah et al., 2021a, 2022; Patton, 2002).

Thematic analysis was carried out, as described by Braun and Clarke (2006). Firstly, the raw/unprocessed reviews were coded into representative units of information. Each review was carefully examined by the first author (S.vB), subdivided and coded into representative meaning units. The researcher mostly retained the original wording of the consumer, when possible, thereby increasing the trustworthiness of the research results. Additionally, the rigorous recording of all details identified within reviews remained a priority. Secondly, meaning units deduced were coded under relevant sub-themes (frequency counting on Excel spreadsheet; ‘Sum Functions’ to calculate the total amount of codes per sub-theme) and then grouped into similar themes. In the case of no applicable sub-theme to code a

particular meaning unit under, a new sub-theme was identified. Likewise, new themes were identified to accommodate sub-themes not suited for categorization under existing themes at that point in the data analysis process. Finally, the themes were grouped into categories of domains.

Before embarking on this study, the first author had limited experience with qualitative analyses. Recognizing this, the second author provided comprehensive training and ongoing supervision throughout the research process. The training commenced with the second author illustrating the fundamentals of qualitative thematic analysis, initiating the analysis collaboratively. Together, both researchers set up the data analysis spreadsheet in Microsoft Excel, commenced the development of the codebook, and jointly converted the first 25 reviews into meaning units. Following this, the first author independently proceeded with the subsequent set of 25 reviews, presenting these to the second author for review and discussion. Each of these 25 reviews was scrutinized to ensure the rigor of the data analysis and to provide constructive training feedback to the first author. This process repeated for a third set of 25 reviews.

Following this, the first author commenced with the conversion of larger batches (100) of raw reviews into meaning units. Regular meetings with the second author ensued to discuss each conversion, refining as necessary. During these meetings the researchers (S.vB and R.J.B) could acknowledge potential personal biases. Moreover, reflexive memos, encompassing the reflections, insights, and inquiries of both the first and second authors, were shared to facilitate consensus during data analysis.

Once all 500 of the 5-star reviews were converted to meaning units, the first author revisited them, highlighting any questions or concerns for discussion with the second author. Inconsistencies were addressed and the commencement of further steps were contingent on the resolving thereof. Upon the joint review of all meaning units derived from the 5-star reviews, the second author demonstrated how data grouping was conducted, including the

development of the codebook. Initially, they coded 25 meaning units collaboratively for the second author to illustrate the process. The first author then independently coded 25 meaning units, presenting them to the second author. for discussion, review, and potential amendments. This process iterated for two additional rounds of 25 codes before the first author, having demonstrated competence, progressed to coding in batches of 100. The second author meticulously checked each code, offering guidance and fostering skill development throughout. Upon completion, the first author re-examined the codebook, identifying units present in categories which were in contradiction with the true meaning of these units. Re-examination also aimed to identify data, which was exceedingly broad and varied, causing a sub-theme, theme or domain, respectively, to lack coherence (Braun & Clarke, 2006). Upon completion of the coding process, the first and second authors shared the codebook and coding data, including identified themes with the third, fourth and last authors (DW.S, L.BdJ. and V.M.). The five researchers engaged in discussions about coding, code allocation, and theme descriptions.

Having demonstrated proficiency with the 5-star reviews, the first author conducted the analysis of the 1-star reviews with less supervision. Following standard practice, the second author cross-checked a random sample of 20% to ensure accuracy and consistency in the coding process. An audit trial of the data analysis recorded modifications and determinations made by the first and second authors. Verification of results by a second researcher (R.J.B.) during various stages of the data-analysis process, established inter-coder reliability (Castleberry & Nolen, 2018). This practice enhances data transparency, subsequently bolstering trustworthiness (Manchaiah, 2022b). Furthermore, cross-checking ensured different perceptions of the inquiry were taken into consideration which aids in strengthening the integrity of the findings and overall trustworthiness of the study (Anney, 2014).

Moreover, thematic data saturation was verified by reviewing whether any new themes could be identified during the final 10% of the 5-star and 1-star data (Green & Thorogood, 2018).

No novel sub-themes, and consequently no novel themes nor domains, emerged from the final 10% of the 5-star dataset. New information, in the form of meaning units deduced from reviews, produced no change to the codebook (Guest et al., 2006). Consequently, no further 5-star reviews were retrieved for analysis. Novel sub-themes emerged from the final 10% of the 1-star dataset (n=234), however we were unable to retrieve additional reviews as all 234 reviews, matching aforementioned criteria in terms of review length (10 or more words) and content (non-audiological content excluded) were already included in the analysis. Thus, thematic data saturation was reached for the 5-star data set, but not for the 1-star dataset. As more 1-star review data becomes available in the future, these findings should be revisited and updated to incorporate any additional or new themes identified.

## RESULTS

Domains, themes, and sub-themes were identified for satisfied and dissatisfied consumers (Please refer to Appendices A and B respectively).

### Satisfied (5-star) Review Domains (Table 1)

#### *Overall experience*

Consumers praised institutions, clinicians, and staff members for their excellence, professionalism, uniqueness, and continuity in their overall experience. Regarding professionalism, frequently mentioned factors included efficient service delivery and respectful conduct by clinicians and support staff. Additionally, the theme gratitude and a sense of loyalty towards the institution, clinician, and/or staff members were expressed by many consumers. Loyalty extended to a willingness to travel for services. Furthermore, consumers appreciated feeling welcomed, receiving quality and friendly care, and finding the service process effortless, comfortable, and enjoyable.

#### *Standard of care*

Consumers commented on various factors contributing to the overall standard of care encompassing communication, timeliness, ethical and best practice service delivery, finances, products, and personalized care. Firstly, successful communication within the therapeutic relationship (clinician and consumer) and beyond (administrative/support staff and consumer), were described within this theme. Effective communication involved addressing inquiries and providing comprehensive explanations of procedures and results in a clear manner. Consumers appreciated the incorporation of their feedback into hearing aid adjustments. Notably, one consumer (a parent/caregiver) applauded the clinician for including their child in the conversation. Secondly, timeliness was evaluated through punctual and comprehensive service delivery, good turn-around time for device adjustments and repairs, and accommodative appointment scheduling.

Thirdly, institutions and clinicians who adhered to ethical and best-practiced principles, transparency, and honesty were commended by consumers. In this sense, consumers praised the clinicians' dedication to service delivery (amount of effort) and emphasized the personalized nature of the entire experience. The latter involved creative problem-solving, personalized guidance and the presentation of viable alternatives/solutions, if required. Lastly, regarding finance, consumers stressed the importance of a pressure-free sales approach and the reasonability of product and/or service pricing was often commented on. Additionally, increased quality, variety and diversity of products offered positively affected consumers' overall experiences.

***Clinical outcomes***

Clinical outcomes were further categorized in terms of the consumer's general well-being, hearing-specific outcomes, and device-specific outcomes. Terms like" life-saving experience" or "life-changing" were used to describe improved general well-being after treatment. In this context, many individuals felt optimistic after visiting the institution – and anticipated future appointments. Within this theme consumers also commented on their improved hearing ability among other hearing-related benefits after receiving treatment.

Additionally, consumers expressed contentment with their hearing devices with some stating how the hearing aids are the best thing that ever happened to them. These statements encompassed various devices such as hearing aids and hearing protection devices.

***Facilities***

Several factors contributed to the consumer's overall experience of the facilities visited (location, amenities, atmosphere/environment). These included convenient location, the ease of access to the institution, and availability of parking. Furthermore, the layout, cleanliness, aesthetics, and overall organization of the clinic were highlighted as positive aspects. In terms of equipment, three consumers noted that the facility they visited had state-of-the-art equipment. Consumers also stressed the significance of the institution's atmosphere – valuing a welcoming, peaceful, and professional environment. Furthermore, one consumer mentioned the importance of a child-friendly setting.

***Audiologist***

Two themes emerged, namely personal traits and professional traits displayed by clinicians, which contributed to consumers viewing clinicians in a positive light. While numerous traits were identified, the primary soft skills of audiologists noted by most consumers included friendliness/being pleasant; helpfulness; patience; attentiveness/caring; and kindness. Moreover, a range of professional traits contributing to a positive experience emerged from the data including professional behavior; knowledgeability; and the clinician's perceived mastery in the field. Further, a few consumers commented on efficiency, competency, and good bed-side manners as attributed to a positive health care experience.

***Support and/or administrative staff***

Similarly, to the previous domain two themes emerged - personal traits and professional traits which were exhibited by staff, contributing to consumers viewing staff members of an institution in a positive light. Among these, the most frequently mentioned personal trait was the friendliness of staff members with whom consumers interacted with. A total of 89

consumers commented on appreciating the friendliness of staff. Second to that, consumers also held helpfulness in high regard. Furthermore, the main professional traits described by consumers included staff being knowledgeable within their field of expertise and servicing consumers in a professional manner. Additional qualities that were mentioned included, but were not limited to, competency, trustworthiness, and treating consumers in a respectful manner.

**Unsatisfied (1-star) Review Domains (Table 2)**

***Overall experience***

General negative remarks were made by consumers, whilst others gave specific reasons contributing to their overall dissatisfaction. Phrases included expressions like “awful”, “disappointed”, “poor service”, and “bad experience”. Consumers also highlighted unprofessional behaviors and processes included the staff’s manner of responses to queries and questions, the behavior of students who train at attended institutions, and dissatisfaction with the format that test results were provided (e.g., provided on a piece of paper instead of a formal document). Furthermore, any inconvenience caused to the consumer contributed to an overall dissatisfaction with services. In this context, a loss of loyalty to the clinician or institution was stated by some unsatisfied consumers. Within this theme consumers used the online review platform to warn the public/other potential consumers of services provided by certain clinicians and or institutions. Thus, loss of loyalty to the clinician/institution resulted in many consumers seeking alternative care and some reported receiving better care elsewhere.

***Clinical outcomes***

Consumers described experiences specifically related to outcomes obtained from clinical experiences. These included outcomes related to the consumer’s overall well-being, hearing- and device-related outcomes. In terms of overall well-being, this theme focused on clinical experiences resulting from the poor management of consumer doubts, concerns, and

needs. Furrher, various factors contributed to the poor hearing outcomes experienced by consumers after audiological assessment and intervention. These factors ranged from consumers disputing their diagnoses, to disagreeing with treatment plans or receiving inadequate treatment recommendations. Device-related outcomes related to various problems consumers encountered with devices purchased from specified institutions, including but not limited to, hearing aids and hearing protection devices which contributed to an overall negative consumer experience.

***Standard of care***

This theme involved various factors contributing to the overall standard of care consumers received at an institution which resulted in a negative experience. Ineffectual processes and policies are identified by consumers, as well as the inadequate general management of these. Examples include tedious appointment scheduling; inadequate appointment policies; disorganized processes; disconnect between different departments; and the inability of institutions and staff to handle criticism constructively. Further, services that were not provided in a timely manner contributed to a negative experience as consumers often spent prolonged periods in waiting rooms before hearing assessments. Extended waiting times for appointments, products, and test results generated frustration among consumers. Additionally, dissatisfaction was expressed when staff members and clinicians were late and didn't provide comprehensive care. Responsiveness from clinicians, specifically with regards to concerns and problems raised during the session, was a critical expectation. Thus, the absence of personalized care or person-centered care resulted in poor experiences and negative ratings.

Moreover, dishonest service delivery by audiologists, administrative or support staff members, and institutions was observed. With regards to finances, concerns included suspected credit card fraud and insurance fraud which resulted in potential legal actions in some cases. In this sense, consumers commented on being charged exorbitant fees for goods and services, obscured costs, and inconsistent pricing accompanied by poor payment

policies. Institutions focusing on sales-driven approaches and offering pricier hearing aids also elicited dissatisfaction among consumers. In turn, this related to grievances about the lack of affordable hearing aid options, poor return and warranty policies on products, and practical issues such as short hearing aid battery life.

Furthermore, consumers described various communication breakdowns – particularly between consumers and providers (audiologist and support staff). With regards to telephonic communication, the lack of proper phone skills, reminder calls, and voice mail options were noted. Providers' failure to respond to emails and calls was seen as unresponsiveness. In addition, clear communication about medical aid and co-payments, appointment scheduling, and cancellation were cited. In this context, consumers expected clinicians and support staff to introduce themselves, offer comprehensive explanations of procedures, and ensure efficient communication during service delivery.

***Facilities***

Within this theme, amenities of clinic facilities and location related factors contributed to a negative experience for consumers. Specific factors highlighted by consumers which contributed to a poor rating included the size of the institution; inappropriate/poor advertisement of products and services within the waiting area; and disorganization of the clinic. Unappealing characteristics of the institution's location included confusing and expensive parking services, difficult-to-find locations, and locations that caused consumer inconvenience.

***Audiologist***

Personal and professional qualities of the audiologist, with whom the consumer had interacted, resulted in an overall unpleasant experience when this included unhelpfulness, disrespect, unfriendliness, impatience, and arrogance relating to the clinicians' personal qualities. Audiologists who display a lack of sympathy and compassion also received a poor rating. Various professional qualities displayed by the audiologist causing the consumer to

have an unpleasant experience included a lack of general professionalism and condescending and argumentative behavior. Clinicians who came across as unknowledgeable further caused harm to the clinician-consumer relationship, also resulting in poor consumer experience.

***Support/administrative staff***

The personal and professional qualities of the administrative and or support staff with whom the consumer interacted with were also discussed in the context of a negative consumer experience. Various personal qualities, often referenced to as a lack of soft skills or people skills, displayed by staff members of the institution caused an unpleasant consumer experience. The most prominently mentioned shortcomings included a lack of helpfulness and accommodation. Less frequently noted, but equally as significant, were qualities such as impatience, unfriendliness, thoughtlessness, and failure to acknowledge mistakes through apologies. In addition, various unprofessional behaviors displayed by support or administrative staff such as any form of disrespect or rudeness shown by the staff member towards the consumer was highlighted. Incompetence or lack of knowledge and skills of staff were also negatively perceived by the consumer.

***Inclusivity***

Consumers who felt discriminated against or who could not benefit from services due to these not being friendly to all, described several contributing factors to exclusion. Institutions not well-equipped to assess and provide treatment to the pediatric population were noted. Conversely, reports also emerged about institutions inadequately addressing the needs of the elderly population. Further, some consumers expressed discontent with the absence of access to deaf professionals or the lack of ability of the audiologist or staff members to communicate by means of sign-language. In addition, consumers stated that the institute's inability to make services more accessible to individuals with a handicap or disability showed a lack of care. Instances of racism were also reported by consumers who caution other

potential fellow minority or foreign consumers against this clinic. In this context, consumers also highlighted instances where staff members were unfamiliar or insufficiently trained in serving a diverse population. Lastly, another factor contributing to a negative experience was an institution's non-acceptance of a consumer's medical aid or if they were shown away based on their medical plan.

## DISCUSSION

The purpose of this study was to explore consumer experiences with hearing health care services through analysis of online consumer reviews. Six common domains describing the hearing healthcare consumer experience were identified for highly satisfied (5-star ratings) and highly dissatisfied (1-star ratings) consumers, with one additional domain for dissatisfied consumers (i.e., inclusivity). Various operational-, staff-, and practitioner-specific factors influencing the consumer experience were identified, as were product, process, and outcome specific factors.

### Overall Consumer Experience

The overall consumer experience domain encompassed consumers' overall satisfaction or discontent when interacting with hearing healthcare services. Satisfied consumers frequently expressed positive recommendations and demonstrated loyalty towards the institution or clinician. This aligns with general primary healthcare research linking consumer satisfaction and loyalty (Setyawan et al., 2020). Favorable recommendations, including online referrals, distinguish providers from competitors, enhance a clinician's credibility, and simultaneously attract new consumers (Gingold, 2011; Hanauer et al., 2014). Likewise, negative consumer reports could dissuade others from visiting a respective institution (Gingold, 2011). These findings highlight the importance of implementing strategies to enhance institutional and or clinician online presence respectively. This contributes to building a new consumer base whilst ensuring loyalty from existing consumers.

### Standard of Care

Distinct themes were identified for the standard of care domain reflecting how the quality of hearing healthcare was perceived. These encompassed factors such as communication, timeliness, financial and ethical aspects of hearing healthcare and the degree to which personalized care was provided.

In a study by Manchaiah et al. (2021a), an automated text analysis namely, Natural Language Processing analyses (automated text analysis), was applied to the original data set (9622 reviews) and identified clinician communication as a cluster; reflecting the prominence of communication, which was also identified as a qualitative theme in the current study. However, the study findings of Manchaiah et al. (2021a) revealed predominantly positive therapeutic communication interactions (between clinicians and consumers) in contrast to the current study which identified positively and negatively communication themed comments. The apparent underrepresentation of negative communication themed experiences may be considered a limitation of automated analysis, precluding readers from gaining insights into unfavorable communication encounters. Examining unfavorable communication encounters have shown the potential to enhance service delivery in various healthcare sectors (Menendez et al., 2019; Orhurhu et al., 2019). The current study adds depth to existing literature of the hearing healthcare experiences reported by dissatisfied consumers (1-star).

In addition to the therapeutic relationship, interactions between consumers and administrative or support staff were examined. Insights emerged regarding the importance of prompt and careful email and phone call responses, precision in conveying financial details, and challenges associated with miscommunications in appointment scheduling. These aspects should be incorporated into office management protocols by practice managers and clinicians in an attempt to be proactive and prevent such incidents from reoccurring. Communication within the therapeutic relationship was, nevertheless, identified as predominantly positive in the current study, and its prominence throughout the data underscores the important role of consumer-clinician partnerships for improved care, clinical

outcomes, and psychosocial support (Amutio-Kareaga et al., 2017; Bellon-Harn et al., 2019; Epstein & Street, 2011; Street, 2013). Insights gained may aid hearing healthcare professionals and support staff to customize interactions based on elements known to improve and deteriorate communication with consumers, respectively. Elements may include the types of questions and responses posed, tone of voice, body language and facial expressions used.

Financial consideration was also a prominent theme as part of standard of care, emphasizing issues around hearing healthcare affordability. Substantial out-of-pocket expenses are a significant barrier to hearing aid adoption rates (Donahue et al., 2010; Jilla et al., 2020). Clinicians could explore offering affordable hearing aid packages to cater to diverse financial capacities within their clinics. Similarly, timeliness was another theme highlighted by dissatisfied consumers when confronted with prolonged appointment waiting periods. Consumers expressed a preference for thorough service delivery without a rushed atmosphere. Extended appointment waiting times and short interactions with clinicians have been associated with lower levels of consumer satisfaction (Anderson et al., 2007). Therefore, optimizing appointment scheduling to balance clinician availability with minimal waiting times is important for a positive consumer experience (Kuiper et al., 2023).

Lastly, personalized care was a prominent and a recurring theme that aligns with the concept of the person-centered care recognized for enhancing healthcare outcomes, satisfaction, and adherence to treatment regimens (Michie et al., 2003). In the current study, satisfied consumers frequently used phrases such as, “The audiologist/staff listened to me”, reflecting a preference for person-centered care, as a central aspect to perceived standard of care. Understanding consumer perceptions of care standards can inform valuable frameworks for continued professional development (CPD) training workshops and undergraduate programs.

**Clinical Outcomes**

The clinical outcomes of hearing healthcare service provision greatly influenced the overall consumer experience. Satisfied consumers frequently described an improvement in general well-being following treatment as life-changing or lifesaving. However, despite a positive outcome the highly informed e-patient may be more prone to complain when best-practice protocols are not followed. For example, a dissatisfied consumer highlighted the absence of Real-Ear-Measurement testing, endorsed by most hearing organizations as best practice (American Speech-Language-Hearing Association, 2006). Addressing consumers' hearing needs typically involved fitting amplification devices and many satisfied consumers reported positive outcomes. These positive responses reflect the reported benefits of better social interactions, reduced listening effort, less anxiety and depression, and greater independence (Mahmoudi et al., 2019). In contrast, dissatisfied consumers reported problems that physical modifications, re-orientation, and fine-tuning of the hearing aid software could easily resolve. The importance of comprehensive counseling and training on hearing aid use, for improved device satisfaction, including the value of follow-up appointments, is emphasized by these findings (Saunders et al., 2018).

**Facilities**

Consumer experiences were influenced by the exterior and physical attributes of clinics as also highlighted by previous surveys of hearing healthcare experiences (Bidmon et al., 2020; Hendriks et al., 2017). Important factors that clinics should be mindful of include parking, a professional and welcoming environment, and physical accessibility to the clinic during the service delivery process.

**Audiologist**

The personal and professional clinician qualities were important to the consumer experience. Clinician pleasantness, friendliness, and empathy as reported previously in general health care, are important to an overall positive impression and could potentially foster consumer loyalty (Bidmon et al., 2020). Moreover, consumers frequently associated what they

perceived as a knowledgeable and skilled audiologist with a positive experience, which highlights a consistently held value across various healthcare fields (Huang et al., 2020). The predominant aspect that drew the most feedback from dissatisfied consumers was disrespectful or impolite demeanor exhibited by the audiologist. Disrespectful behaviour hampers collaboration and communication and contributes to a hostile atmosphere (Grissinger, 2017).

**Administrative and Support Staff**

Non-clinical personnel played a significant role in shaping the consumer experience, a concept supported by prior research (Hendriks et al., 2017). Satisfied consumers frequently noted the friendliness and helpfulness of staff, which aligned with the findings of Manchaiah et al. (2021a) using the same dataset albeit with a different analysis approach. Perceived unfriendliness, disrespect, or a lack of knowledge and expertise from staff members was typical of experiences reported by unsatisfied consumers. The identification of staff attributes as a discrete domain underlines the essential role that recruitment and training of hearing healthcare staff members play in the successful operation of an audiology practice. Accordingly, clinicians should prioritize ongoing training focused on person-centered service for their administrative staff (Kasewurm, 2005; Manchaiah et al., 2021b).

**Inclusivity**

Within the 1-star reviews, inclusivity surfaced as a new domain that was not identified by the automated textual analysis conducted by Manchaiah et al. (2021a, 2021b). A lack of inclusivity, and the perceived discrimination based on race, disability, or insurance type, were described within this domain. The inclusivity-related statements covered various demographic characteristics such as age, race, physical mobility, handicap, and those who communicate using American Sign Language.

It is well-established that discrimination cultivates poor physical and psychological health outcomes for minority populations (Carter et al., 2017; Yearby, 2018). Therefore, if hearing

healthcare consumers perceive bias held by providers and support staff, it may lead to delayed help-seeking behaviors, non-compliance with treatment regimes, mistrust, and avoidance of the healthcare system entirely (Sabin et al., 2009). The promotion of inclusive care provision for minority groups consequently requires healthcare providers to foster cultural competency. Culturally competent clinicians need to have knowledge about the consumer's core cultural issues, develop self- and situational awareness, use a culturally appropriate communication repertoire, and be highly adaptable during communication interactions and the provision of care (Teal & Street, 2009). Sign-Language-dependent consumers were particularly vocal about having access to a staff member or clinician who could communicate using Sign-Language. Hearing healthcare institutions should therefore consider employing persons who are certified as American Sign Language (ASL) interpreters to address this bias (Olson & Swabey, 2017).

**Study Limitations and Future Recommendations**

The study has some limitations. Sampling bias might be present due to the unconfirmed spontaneity of all consumer reviews. As businesses often request reviews from consumers (Manchaiah et al., 2021a), this could lead to a skewed prevalence of positive statements (Black & Jenkinson, 2009). The demographic of consumers posting online reviews may also be younger, more educated, and more technologically proficient, thus potentially limiting the generalizability of the study results. Furthermore, demographic details for individual reviewers, in this context, are unknown which does limit generalizability. In addition, the 1-star dataset did not reach thematic data saturation as new sub-themes emerged within the concluding 10% of the dataset. This suggests that a larger dataset might have revealed additional novel themes. It is recommended that future research further explores the dissatisfied hearing healthcare consumer experience by analyzing 2- and 3-star reviews as these may contain elements of dissatisfaction. Future research could furthermore explore practical strategies to address service delivery deficiencies identified in this study. Additionally, the active engagement of consumers in the decision-making and

implementation processes for improvements could offer significant value (Crawford et al., 2002).

## Conclusions

The seven identified domains of consumers' experiences regarding hearing health care satisfaction provide insights for improving services and interactions between providers and consumers. The thematic review revealed that effective communication is crucial in the consumer-clinician partnership, underscoring its importance not only between clinicians and consumers but also among administrative and support staff. Financial considerations, the importance of personalized care, timeliness, and the profound effect of clinical outcomes on consumers' overall experience were all key to the consumer's perceived satisfaction. Inclusivity should be prioritized as a cultural competency among healthcare providers, particularly for diverse consumer populations, including those requiring sign language communication.

## ACKNOWLEDGEMENT

The work which is reported on in this manuscript did not receive any funding. Furthermore, no funding was received by any parties and or authors involved.

## DATA AVAILABILITY STATEMENT

The datasets generated and or analyzed during the current study are available from the corresponding author on reasonable request.

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## TABLES

**Table 1. Domains and themes identified for satisfied consumers (5-star reviews)**

| Domain | Theme | Example of a meaning unit |
|---|---|---|
| Overall experience (n= 829; 31.0%) | Excellence (452; 54.5%) | *"Among all the other clinics that I've been to, this is one of the best."* |
| | Professionalism (33; 4.0%) | *"My follow-up appointments were consistent."* |
| | Gratitude/loyalty (338; 40.8%) | *"I would recommend this clinic to anyone with hearing issues."* |
| | Continuity (3; 0.4%) | *"Even though the clinic name has changed over the years the one constant has been the presence of X"* |
| | Unique (3; 0.4%) | *"X allowed me to pet kittens and bunnies while she was working on my hearing aids"* |
| Clinical outcomes (n=288; 10.9%) | General well-being (77; 26.7%) | *"It's wonderful to be able to actively participate in things that I once struggled with."* |
| | Hearing specific outcomes (157; 54.5%) | *"I have heard things I haven't heard in twenty years."* |
| | Device-specific outcomes (54; 18.8%) | *"X and her team made a plan to assist my grandmother with stylish and comfortable hearing aids."* |
| Standard of care (n=617; 23.3%) | Timeliness (148; 24%) | *"The appointment was not rushed in any way."* |
| | Personalized care (193; 31.3%) | *"I appreciate the personal attention the staff pays to each patient."* |
| | Ethical service delivery (17; 2.8%) | *"X was extremely transparent."* |
| | Evidence based practice (5; 0.8%) | *"X believes in evidence-based practice in his clinic."* |
| | Communication (185; 30.0%) | *"Everything was explained to me in a way that I understood."* |
| | Finances (50; 8.1%) | *"No-high pressure sales tactics."* |
| | Products (19; 3.1%) | *"This clinic has the latest and best technology."* |
| Facilities (n=54; 2.0%) | Equipment (3; 5.6%) | *"It was easy to see early on that they have state-of-the-art testing equipment."* |
| | Amenities (22; 40.7%) | *"Great coffee at this clinic."* |
| | Location (17; 31.5%) | *"The clinic's location is easy to find."* |
| | Atmosphere/environment (12; 22.2%) | *"Friendly atmosphere."* |
| Audiologist (n=494; 18. 7%) | Personal traits (311; 63%) | *"X is the most patient healthcare professional I have come across."* |
| | Professional traits (183; 37%) | *"I was impressed with X's professional conduct immediately."* |
| Administrative and support staff (n=365; 13.8%) | Personal traits (264; 72.3%) | *"The staff are always pleasant."* |
| | Professional traits (101; 27.7%) | *"The staff's knowledge far surpassed my expectations."* |

*Note.* For cases where participants have included potentially identifying data within their open-text responses (e.g., the name of the audiologist or visiting clinic or their names), the research team

has deidentified the data by replacing the name with the symbol "x" while deducing meaning units.

**Table 2. Domains and themes identified for unsatisfied consumers (1-star reviews)**

| Domain | Theme | Example of a meaning unit |
|---|---|---|
| Overall experience (n= 317; 30.1%) | Dissatisfaction (153; 48.3%) | *"My experience at this institution bothered me enough to post a review about it, and I've never posted a review before."* |
| | Unprofessionalism (23; 7.3%) | *"Very unprofessional."* |
| | Loss of loyalty (141; 44.5%) | *"I highly recommend going elsewhere."* |
| Clinical outcomes (n= 83; 7.9%) | Well-being (19; 22.9%) | *"I left this clinic feeling more hopeless."* |
| | Hearing-related outcomes (35; 42.2%) | *"I had to do research and diagnose myself."* |
| | Device-related outcomes (29; 34.9%) | *"The hearing aids hurt my ears."* |
| Standard of care (n=409; 38.9%) | General management (33; 8.1%) | *"Scheduling appointments are difficult."* |
| | Timeliness (47; 11.5%) | *"I feel like they don't value my time."* |
| | Lack of personalized care (22; 5.4%) | *"This office doesn't understand individualized care- they take a cookie-cutter approach."* |
| | Untrustworthy/unethical (62; 15.3%) | *"I was fitted with a different hearing aid than I was charged for, while they were fully aware that this is what they are doing."* |
| | Communication (137; 33.5%) | *"I have attempted calling their business multiple times without getting an answer."* |
| | Finances (92; 22.5%) | *"Money-hungry people working here."* |
| | Products (13; 3.2%) | *"Hearing aid batteries only last four days tops."* |
| Facilities (n= 14; 1.3%) | Amenities (4; 28.6%) | *"Not a well-organized clinic."* |
| | Location (10; 71.4%) | *"Off-the-wall location."* |
| Audiologist (n= 68; 6.5%) | Personal qualities (50; 73.5%) | *"The audiologist was rude when we expressed our concerns."* |
| | Professional qualities (18; 26.5%) | *"X's website claims she is a rare expert in tinnitus- not my experience."* |
| Support staff/administrative staff (140; 13.3%) | Personal qualities (98; 70%) | *"Not accommodating regarding the sudden payment, I had to make due to their lack of providing the right information."* |
| | Professional qualities (42; 30%) | *"The way business is handled by the staff is a joke."* |
| Inclusivity (n= 21; 2.0%) | Pediatric population (4; 19%) | *"They don't assist anybody under the age of 18 years."* |
| | Deaf population (5; 23.8%) | *"I'm disappointed that the audiologist couldn't use sign language to communicate with the deaf customer."* |
| | Race (6; 28.6%) | *"Staff are extremely racist."* |
| | Handicap/disability (1; 4.8%) | *"No parking designated for those with a handicap. No elevators either."* |
| | Geriatric population (2; 9.5%) | *"The staff discriminated against my elderly father."* |
| | Insurance (2; 9.5%) | *"I was turned away due to my insurance type."* |
| | General lack of inclusivity (1; 4.8%) | *"You would think that the staff would be used to a diverse population by now given the area."* |

*Note.* For cases where participants have included potentially identifying data within their open-text responses (e.g., the name of the audiologist or visiting clinic or their names), the research team has deidentified the data by replacing the name with the symbol “x” while deducing meaning units.

# CHAPTER FOUR: DISCUSSION, CLINICAL IMPLICATIONS AND CONCLUSION

## 4.1 Research Findings Overview

The significance of person-centric hearing healthcare is comprehensively underscored by the pivotal impact that the ability to communicate, without restrictions, can have on the various domains of an individual's life such as personal relationships, employment, education, and career prospects (Iwagami et al., 2019; McDaid et al., 2021). Person-centred care has been extensively researched and linked to enhanced clinical outcomes, consumer satisfaction, and improved quality of care (Epstein & Street, 2011; Grenness et al., 2014). Nevertheless, to effectively implement person-centric service delivery, hearing healthcare professionals must attentively 'listen' to consumer feedback (Manchaiah et al., 2021a; Shaw, 2014). Online reviews offer a distinctive opportunity for clinicians to access valuable consumer feedback in order to promote a person-centred care approach. The current study identified and raised awareness of such opportunities.

A qualitative, thematic analysis of satisfied (5-star) and dissatisfied (1-star) consumer Google reviews, respectively, revealed detailed dimensions of the hearing healthcare experience in its entirety - prior, during, and after appointments. Various operational, staff-, and practitioner-specific factors influencing the hearing healthcare consumer experience were identified, as well as product-, process-, and outcome-specific factors.

Across both datasets (1-star and 5-star reviews) the **overall consumer experience** domain revealed voiced consumer sentiments such as contentment, gratitude, loyalty, or dissatisfaction and waning loyalty. The prominence of adverse critique cautioning prospective consumers throughout 1-star reviews, reiterates the importance of a satisfactory experience, as these types of negative statements resulting from dissatisfaction can taint a hearing healthcare clinician's/clinic's online reputation, given that online reviews are the electronic version of 'word-of-mouth' (Deng et al., 2019; Gingold, 2011).

Interestingly, several themes across identified domains highlighted that the timeframe on which overall experience was based extends beyond the consumer's consultation time with the clinician (including experiences prior to, during and after consultation), and beyond the therapeutic relationship (clinician-consumer). One such theme, *communication*, sheds light on various communication interactions between consumers and support or administrative staff. In the current study, communication interactions with administrative and/or support staff mostly resulted in disgruntlement due to challenges such as poor phone skills, incorrect information being relayed about insurance acceptance, payments and co-payments, and poor appointment-related communication. The identification and thorough exploration of these errors are complementary to the research findings of Manchaiah et al. (2021a), where automated text analysis identified office management as an important factor influencing the consumer experience.

Moreover, it is noteworthy that the automated analysis done on the larger, original online review dataset (9622 reviews) by Manchaiah et al. (2021a), of which a subset was extracted for analysis in the current study, predominantly identified feedback pertaining to positive communication interactions within the therapeutic relationship. In contrast, the current study identified positively and negatively themed communication experiences. The apparent under representation of negative communication themed experiences in the study by Manchaiah et al. (2021a), may be considered a limitation of automated analysis. Predominantly positive feedback will preclude readers from the opportunity to glean insights from less favourable communication experiences. Cognisance and investigation of unfavourable consumer feedback, as was achieved in the current study, has been shown to be valuable in assisting healthcare institutions to enhance service delivery (Menendez et al., 2019; Orhurhu et al., 2019).

The prominence of communication interactions within the therapeutic relationship throughout the data underscores the importance of effective consumer-clinician partnerships for

improved care and clinical outcomes, as well as fostering psychosocial support (Amutio-Kareaga et al., 2017; Bellon-Harn et al., 2019; Epstein & Street, 2011; Street, 2013). Findings of the current study showed a preference for procedures and outcomes to be communicated comprehensively - in a clear and understandable manner. To communicate effectively, clinicians need to engage in conversation styles that aid consumers in understanding their hearing healthcare options/treatment and which facilitate consumer involvement (Bellon-Harn et al., 2019). Thus, it is recommended that clinicians consider a more personal approach in conversations with consumers, especially considering that previous research highlights that many clinicians tend to approach conversations from a biomedical viewpoint (Bellon-Harn et al., 2019). Clinicians should be aware of not overwhelming consumers with an abundance of clinical information, rather addressing their more immediate psychosocial concerns as part of a person-centred approach (Bellon-Harn et al., 2019; Ekberg et al., 2014; Mead & Bower, 2002).

The receipt of a diagnosis of permanent hearing loss could also bring forth intense emotions within a consumer, which could interfere with the effective management thereof (Coleman et al., 2018). Well-orchestrated delivery of bad news results in an informed consumer understanding their diagnosis, yet a feeling of being comforted emotionally (Kaplan, 2010; Mast et al., 2005). Likewise, poor delivery of bad news can leave a healthcare consumer confused and distressed (Fallowfield & Jenkins, 2004). Clinicians who attend to a consumer's emotional concerns allows consumers to feel valued, increasing their overall well-being. Additionally, Coleman et al. (2018) found that by responding to consumers with reflection, including paraphrasing and summarizing what the consumer had said, assists the clinician in identifying and clarifying emotions voiced. Similarly, expanding on what had been said and validating a consumer's emotions, contributes positively to the counselling process (Coleman et al., 2018). These findings are in line with what had been found in the current study as consumers frequently used phrases such as: "The audiologist/staff listened to me"; "All my questions and concerns were addressed", "The audiologist was understanding" -

indicating that consumers demonstrated a need to feel heard and understood. Alongside responsive care, hearing healthcare consumers also strongly emphasized the significance of clinicians and staff members dedicating ample time, effort, and energy to service provision, which were considered essential elements that contributed to an overall satisfactory experience.

In addition to empathetic communicative skills, clinician attributes such as pleasantness, friendliness, and empathy were important to an overall positive impression, as was reported previously for clinicians within other healthcare fields (Bidmon et al., 2020). Moreover, consumers frequently associated what they perceived as a knowledgeable and skilled audiologist with a positive experience, which highlights a consistently held value across other healthcare fields (Huang et al., 2020). Positive impressions stemming from these qualities not only contribute to consumer satisfaction but also have the potential to foster loyalty (Bidmon et al., 2020). Conversely, instances of dissatisfaction were frequently linked to encounters characterized by perceived disrespect or impoliteness from the audiologist. Disrespectful behaviour hampers communication and collaboration within the therapeutic environment and contributes to a hostile atmosphere (Grissinger, 2017).

Consumers placed significant importance on effective communication regarding financial consideration. The high number of comments predominantly focused on the affordability of hearing aids, emphasized the ongoing importance of addressing hearing healthcare affordability concerns and improved access to hearing healthcare for all (Donahue et al., 2010; Jilla et al., 2020). For numerous years, the substantial out-of-pocket expenses have consistently proven to be a significant barrier to high hearing aid adoption rates (Donahue et al., 2010). Hearing healthcare is often costly and underutilised by many individuals who need these services most (Blazer et al., 2016). According to Jilla et al. (2020), the cost of purchasing a single hearing aid, considering that most individuals require two, would make the purchase thereof unaffordable for many adults. The study referred to “the catastrophic reference case” in which the cost of a single hearing aid amounts to 3% of the American

adult's annual income. The expenses related to one hearing aid would subsequently result in a burdensome healthcare expenditure for more than three-quarters of American adults who require hearing aids (Jilla et al., 2020). The absence of comprehensive health insurance coverage for hearing healthcare constitutes a notable obstacle in achieving a prompt diagnosis and consequent treatment for hearing impediments (Jilla et al., 2020). The significance of addressing financial constraints gains additional emphasis when considering the well-documented consequences that hearing loss can have on different aspects of an individual's life - encompassing social, emotional, and occupational domains (Mondelli & de Souza, 2012). It is therefore not surprising that *overall well-being* and *hearing related outcomes* were identified as prominently expressed themes, within the **clinical outcomes'** domain, contributing to the hearing healthcare consumer experience. Satisfied consumers frequently experiencing an improvement in auditory wellness used phrases such as, "Life changing" or "Lifesaving", to describe the quality-of-life improvement post intervention. With regards to hearing related outcomes, consumers expected solutions and alternative methods, if necessary, to resolve any auditory related matters.

The 'e-patient' who actively gathers health related information online may be more knowledgeable regarding various protocols that form part of best practice and expect a certain standard of care when visiting a hearing healthcare institution (Masters, 2017). In the current study, a dissatisfied consumer highlighted the absence of Real-Ear-Measurement (REM) testing in the treatment protocol of the institution under consideration, which partly contributed to an unfavourable review. REM testing is endorsed by most hearing organizations as best practice, yet some institutions don't offer REM testing (American Speech-Language-Hearing Association, 2006; Ganguly & Ferguson, 2022). Part of addressing the consumer's hearing needs often involves the fitting of amplification devices. Several satisfied consumers in the study highlighted positive device outcomes. These findings are in line with research indicating that favourable hearing aid outcomes could promote better social interactions, reduce levels of hearing effort whilst following

conversation, decrease levels of anxiety and depression, and facilitate independence (Mahmoudi et al., 2019). It is further reported that despite the improved hearing ability and quality of life experienced by many hearing aid users, experiencing difficulties with amplification devices decreased optimal (daily) device wearing (McCormack & Fortnum, 2013). In this study, consumers dissatisfied with their amplification devices reported difficulties encountered with their devices such as poor performance of the hearing aid and perceived poor sound quality (Bennett et al., 2020). These findings highlight the necessity of re-orientating users on hearing aid maintenance and care during follow-up audiology visits (Desjardins & Doherty, 2009).

Beyond ethical and best practice procedures and principles considered for the fitting of amplification devices*, trustworthiness and ethical service delivery* were considered important components to consider throughout the entire hearing healthcare journey. Various ethical misdemeanours were reported by dissatisfied consumers in the current study such as testing minors without parental consent and suspected insurance and credit card fraud. Hearing healthcare professionals should therefore follow and implement the ethical guidelines set out by their professional policies as a 'moral compass' (Rao, 2020).

One ethical code within the American Speech-Language-Hearing Association (ASHA) policies states that hearing healthcare providers should not discriminate against consumers based on disability and ethnicity or natural origin. The identification of the domain, **inclusivity,** from the one-star reviews, indicated that not all healthcare providers were consistently impartial during hearing healthcare service delivery. Consideration of the diversity of hearing healthcare consumers requires clinicians to cultivate and demonstrate cultural competency. Cultural competency and person-centred care are concepts that converge in meaningful ways (Stubbe, 2020) as both involve care that is respectful of, and responsive to, individual consumer needs, values, and preferences (Institute of Medicine, 2001). The emergence of this domain, although unanticipated from previous research, remains immensely important in the context of cultural sensitivity, which has the potential to

enhance person-centred-care (Saha et al., 2008).Moreover, the identification of inclusivity as a novel domain is noteworthy, as this domain was not identified by the automated text analyses completed by Manchaiah et al. (2021a, 2021b).

In summary, although certain findings of the current study aligned with those from previous automated analysis of the same online hearing healthcare consumer reviews (Manchaiah et al., 2021a, 2021b), additional and previously unexplored dimensions were identified. This emphasizes the value of a manual coding analysis approach, despite being more time consuming than automated text analysis. Automated text analysis allows for a broad overview of large amounts of data in minimal time, yet manual analysis allows for a more in-depth insight into a dataset (Manchaiah et al., 2021a). The emerging domains, themes, and sub-themes were able to advocate for a variety of clinical adaptations of service provision. The successful implementation of changes or enhancements during the delivery of hearing healthcare services, guided by the findings of the present study, could facilitate a more responsive, person-centred approach, promoting higher satisfaction among consumers of hearing healthcare services.

## 4.2 Clinical Implications

### *4.2.1 Consumer health informatics*

The current study contributes to a larger, rapidly growing field of consumer health informatics by analysing consumer preferences and gaining insights into consumer emotions, experiences, and thoughts (Demiris, 2016; Eysenbach, 2009). In the context of this study, the field of audiology is enriched by valuable, subjective consumer information to explore and develop methods to improve health promotion, clinical-, educational-, and research-activities by means of online consumer reviews. The domains, themes, and sub-themes identified shed light onto various contributing elements worth exploring.

### *4.2.2 Increased awareness surrounding online provider reputation*

Online ratings, such as Google reviews, provide an alternate and novel approach for healthcare consumers to gather information about clinicians before seeking consultation. This source is progressively gaining traction among consumers (Deng et al., 2019). The present study's findings substantiate the proposition that the online reputation of providers can influence healthcare consumers 'selection of clinicians (Deng et al., 2019), although this effect is being explicitly acknowledged only by some consumers in the present study. To emphasise online review platforms as a digital version of 'word-of-mouth', opinions voiced by satisfied and dissatisfied consumers can be considered. For example, "I chose this clinic because of all the positive online reviews", in contrast to, "Your online presence motivated me to not continue with hearing aids through your company." Considering the above, hearing healthcare providers should consistently monitor their online reputation.

### *4.2.3 Quality of service delivery improvements based on complaints*

Manual coding of 1-star reviews allowed for the detailed exploration of complaints left by hearing healthcare consumers, providing direction for improvement strategies (Råberus et al., 2019). Within healthcare, the debate on the quality of services and healthcare consumer safety has predominantly centred around a confined clinical viewpoint - disregarding the outlook or experiences of the consumers themselves (Råberus et al., 2019). This study highlights the importance of consulting disgruntled online consumer reviews as evidence suggests that consumer complaints often contain information about challenges and subsequent solutions to improving quality of care and consumer safety (Van Dael et al., 2020). Consulting online consumer reviews, given the highly subjective nature thereof, endows healthcare providers with a deeper understanding of the experiences from the point of view of a diverse sample of consumers (Van Dael et al., 2020).

### *4.2.4 Office management (administrative protocols and communication strategies)*

The study facilitated discerning consumer-perceived instances of ‘inadequate’ or ‘adequate’ office management in areas encompassing, e.g., complaint handling, organizational procedures, and policies (such as product return policies). In particular, communication scenarios resulting in disgruntled consumers were described. These insights offer an opportunity to equip practice managers and clinicians with enhanced clarity regarding the implementation of efficient communication management protocols and procedures, leveraging from typically mentioned unsatisfactory processes. Some consumers stipulated what they would require as part of quality service delivery such as courtesy appointment reminder calls, in-tact formal complaints procedures, responses to calls and emails, and clear and thorough explanations of financial matters (fees, medical aid payments, co-payments).

Furthermore, the current study highlighted the importance of timely, yet thorough, service delivery, including reduced waiting-room time periods and reduced product delivery time-periods. Notably, time-efficient appointment scheduling significantly influences the cost-efficiency of service delivery, the capacity of providers, and the perceived excellence of service delivery by consumers (Kuiper et al., 2023). Considering this, clinics could focus on the implementation of processes maximising clinician and staff availability, while minimising consumer waiting times while factoring in variation and unpredictability (Kuiper et al., 2023). It is important to note that potentially challenging scenarios may pose a threat to the seamless coordination of service delivery, such as unpunctual consumers, ‘no-shows’, peak hours, and idle clinicians between peak times (Deceuninck et al., 2018). These could be discussed during staff meetings and agreed-upon scenario planning management strategies could be implemented and refined.

Under the theme, *general management,* some consumers commented on the lack of proper feedback/apologies provided to them after raising a complaint, and that critique, “wasn’t

received kindly". The current body of research in healthcare indicates that the methods utilized to manage healthcare complaints have not effectively fulfilled their dual function, being responding to complaints on an individual basis, but through systemic improvements (Liu et al., 2019; De Vos et al., 2018). Research indicates that healthcare consumers who raise a formal complaint primarily seek an explanation for how the situation might have been addressed differently in an attempt to avert/prevent similar negative incidents for others (Dael et al., 2020). Although providers respond to individual complaints, the case is not 'closed' once a response is sent instead, it should trigger a deeper exploration of the reason behind the complaint, and possible solutions (De Vos et al., 2018). Taking the above information into consideration, the need for hearing healthcare establishments to explore formal and person-centric, complaint procedures specific to their organisational structures may be warranted. This was evident due to a number of consumers who indicated a lack of formal complaints procedures as a contributing factor to an overall dissatisfactory experience.

### *4.2.5 Training for administrative and support staff on person-centric- communication strategies, customer care, and desired professional conduct during service delivery*

The identification of various personal-, and professional qualities displayed by administrative and support staff as prominent themes in addition to detailed input on communication pitfalls influencing the hearing healthcare consumer experience, provides for the framework for focussed discussion during internal staff training sessions. Studies in other healthcare disciplines have also focused on the importance of good communication between healthcare staff and the consumer (Huang et al., 2020; Skea et al., 2014). Moreover, clinicians may learn that the front-desk staff they've employed are less knowledgeable regarding certain topics consumers typically inquire about (Kasewurm, 2005) as the lack of knowledge was a prominent sub-theme identified amongst 1-star consumer reviews. It is therefore the clinician's responsibility to create and facilitate training opportunities for consumer first-contact staff. Support staff training can be facilitated by courses such as the Ida Institute's:

"Patient-centred care for support staff." (Ida Institute,n.d.). Clinicians can further impart professional behavioural qualities valued by consumers, such as competency, efficiency and responsibility as identified by this study, to their staff members, aiming to instil a clear understanding of the expected standards of behaviour and demeanour in a clinical setting. Additionally, it is recommended that clinicians and practice managers communicate on their staff's unacceptable, unprofessional behaviour as the research indicated that a dissatisfied consumer commented on unprofessional conduct displayed by administrative staff - "Front desk staff was unhelpful and busy surfing the internet on their phone."

### *4.2.6 Guidance on challenges experienced by hearing aid users, post-fitting follow-up and support for the hearing-aid user*

The current study contributes valuable insights to clinicians regarding common challenges faced by hearing-aid users. *Device-specific outcomes*, identified as a prominent theme within the 'clinical outcomes' domain throughout the 1-star dataset, described a range of device-related troubles experienced by consumers. This included hearing aids producing feedback, poorly fit moulds causing discomfort, software settings preventing the hearing aid user from benefitting from all the potential features offered by the hearing aids and sounds experienced as over-or under-amplified. Clinicians who are well-informed have the ability to foresee possible issues that consumers might encounter. They can then allocate time during the hearing aid fitting session to recognize and resolve these concerns or pre-empt them. These issues may often be readily addressed by means of routine fine-tuning adjustments to hearing aid software, re-orientation in hearing aid care and usage, and physical modifications. Interestingly, Bennett et al. (2020) found that more than half of the easily resolvable difficulties that consumers experienced were never communicated to the clinic by the hearing aid user (consumer). This therefore reinforces the importance of comprehensive counselling, training on hearing aid maintenance and usage, as well as re-orientation during follow-up appointments.

Additionally, follow-up appointments serve as an opportunity to inquire about any difficulties experienced by hearing aid users with their devices which may be addressed. Addressing consumer's concerns formed a great part of the *well-being* theme. The value of adequate counselling regarding initial expectations and the habituation process, as well as general training on hearing aid use should be reiterated as the ability to manage hearing aids optimally is crucial to good hearing aid outcomes (Saunders et al., 2018). Clinicians could for example actively choose to make use of person-centric teaching tools in their practice to determine the baseline of a hearing aid user's knowledge and skills in terms of established skills and those yet to be mastered (Saunders et al., 2018). This will then act as a guideline and enable the clinician to counsel and orientate the consumer from a more personalized perspective, as the need for person-centric care was highlighted by sub-themes identified from the 5-star dataset applauding clinicians who assisted consumers with personalized solutions, sound guidance, recommendations, and appropriate referrals to other physicians if necessary.

### *4.2.7 Increased consideration of hearing aid affordability*

Complaints regarding affordability of hearing aids, and the lack of less-expensive options, were very prominently encountered throughout the 1-star dataset. An all-encompassing approach is vital to address affordability hurdles for a diverse hearing loss population which necessitates the exploration of supplementary solutions/remedies (Jilla et al., 2020). Clinics may therefore explore the implementation of a refurbished hearing aid project, or the provision of less costly prescription hearing aids, providing those with financial constraints with a more affordable, viable option.

### *4.2.8 Best practice protocol implementation*

Best practice protocols are readily available for hearing healthcare consumers online. The absence or deviation from best-practice protocols are therefore more easily identified by consumers, as indicated by a consumer who commented on the lack of Real-Ear-

Measurement (REM) testing during the hearing aid fitting process. This necessitates the importance of hearing healthcare providers to stay informed regarding the latest protocol of best practice service delivery. Continued Professional Development (CPD) courses and workshops could be used as an ideal opportunity for clinicians to enhance and sharpen their skillset and knowledge base.

### *4.2.9 Cultural competency of hearing healthcare clinicians and administrative and support staff*

Distinctly, the study highlighted the need for increased cultural sensitivity for both clinicians and support staff during hearing healthcare provision. This was classified as the 'inclusivity' domain which was identified from the 1-star review dataset. Prior research indicates that perceiving biases held by healthcare providers and support staff regarding consumers may result in delayed help-seeking behaviours, non-compliance to treatment regimes, mistrust, and avoidance of the healthcare system (Sabin et al., 2009). Furthermore, substantial evidence exists confirming the damaging mental health-related effects of discrimination, including anxiety, depression, and psychological distress among consumers (Williams et al., 2003). One notable theme identified within the inclusivity domain addresses the need of deaf American Sign Language (ASL) users to have a more inclusive hearing healthcare experience.

Considering that the Deaf ASL consumers expressed dissatisfaction due to the lack of a staff member clinician who could understand or speak ASL, hearing healthcare institutions could consider employing a credentialed ASL interpreter to improve the inclusivity (Olson & Swabey, 2017). Clinicians must not merely rely on lipreading and writing as substitutes during communicative interactions, considering that Deaf ASL users might further experience difficulties in spoken and written English comprehension (McKee et al., 2011). Additionally, utilizing poor supplementary or alternative methods to communicate could introduce or increase miscommunication (McKee et al., 2011).

Providing inclusive care to minority groups, such as Deaf ASL users, unique in their language and culture, requires healthcare providers to foster cultural humility. Cultural humility can be achieved by healthcare providers acknowledging consumer's core cultural issues, develop self- and situational awareness, make use of a culturally appropriate communication repertoire, and be highly adaptable during communication interactions and provision of care (Teal & Street, 2009). By practicing cultural humility clinicians can learn about the individual consumer's desires and needs, becoming enlightened and actively placing their biases aside when providing care, which in turn can facilitate improved health outcomes (Ansari et al., 2020). Kennedy et al. (2017) found that healthcare providers frequently require training and education in cultural sensitivity/humility to improve consumer-clinician relationships.

In addition to the needs of the deaf ASL user, increased inclusivity for consumers experiencing mobility challenges could be achieved by considering physical and structural modifications to institutions for improved accessibility. A dissatisfied consumer, for example, commented on the lack of handicap appropriate/friendly parking and the lack of elevators accommodating someone with a physical disability.

### 4.3 Study Strengths and Limitations

By critically evaluating the study's methodology, strengths and limitations were identified. A large sample set of 5-star reviews were analysed for the purpose of this study. During analysis of the current study, thematic saturation was obtained for the 5-star review set, increasing the likelihood of the respective domains, themes, and sub-themes identified being representative of the satisfied hearing healthcare consumer experience. Utilizing a qualitative, thematic, inductive analysis approach provided the researchers with a rich and detailed account of the hearing healthcare consumer experience (Braun & Clarke, 2006). Moreover, the content of the online reviews was motivated by what consumers consider important factors contributing to the hearing healthcare experience, as opposed to clinical studies during which the subject of conversation is influenced by the researcher/s. This

improves the ecological validity of the research findings, likely providing insights that are applicable and relevant to true clinical situations/scenarios. These insights derived from the study findings provide the hearing healthcare community with a more in-depth understanding regarding perceived priorities and critique of service delivery and the subsequent improvements necessary in striving towards person-centred care (Manchaiah et al., 2021a).

Further, consistent input from all researchers involved were provided, by means of email correspondence, regular review of data analysis findings and written work, and online discussion meetings. Additionally, the majority of the data analysed was cross-checked by two experienced researchers, ensuring the consideration of different perceptions of the inquiry, which aids in strengthening the integrity of the findings and trustworthiness of the study. Aforementioned triangulation of research outcomes increases the validity of the research findings (Anney, 2014). Furthermore, addressing comments left on written work by researchers involved, ensured the consideration of all perceptions held during the writing process. In addition, the researchers practiced reflexivity throughout the data analysis and writing process, encouraging their awareness of potentially held biases and strived for impartiality (Cypress, 2017).

The current study nevertheless presented with some limitations. Sampling bias may be present due to the unconfirmed spontaneity of all consumer reviews, as some businesses often request reviews from consumers (Manchaiah et al., 2021a). This potentially leads to a skewed prevalence of positive statements as consumers may feel pressured to write a positive review on request of the clinician/clinic (Black & Jenkinson, 2009). Furthermore, it might be assumed that those posting online reviews may be younger, more educated, and more technologically proficient (Manchaiah et al., 2021a), potentially excluding some consumers who made use of the hearing healthcare services at the respective institutions reviewed, but who might not have knowledge on how, and where to post a Google review. This implies that potentially contributing consumers might have been excluded, which may

place a constraint on the generalizability of the study findings. Subsequently, contributing or mediating factors to the hearing healthcare consumer experience may thus be missed.

Another possible limitation of the study includes the analysis process regarding the researcher's unfamiliarity of American English colloquialisms. The student researcher (S.vB.) who analysed the data, and the senior supervisor (R.J.B.) who cross-checked meaning units and codes, reside in South-Africa and Australia respectively, which may have introduced misunderstanding regarding the American English colloquialisms used in online reviews that are not commonly used or understood by non-USA citizens/residents. Furthermore, the manual coding analysis employed for the purpose of this study, although thorough, is timely and thus not ideal for immediate insights into large datasets, a limitation addressed by automated textual analysis as employed (Manchaiah et al., 2021a, 2021b).

Finally, the 1-star dataset did not reach thematic data saturation as new sub-themes emerged within the concluding 10% of the dataset. This suggests that a larger dataset might have revealed additional novel themes and warrants future research.

### 4.4 Recommendations for Future Research

**4.4.1** Future research should explore practical strategies to address service delivery deficiencies identified in this study, as well as the active engagement of consumers in the decision-making and implementation processes for improvements which could offer significant value (Crawford et al., 2002).

**4.4.2** Notably, during the search of the primary data set, some metadata was collected regarding the cities in which the clinics were located (population size, region, median age, and percentage of older adults) in an attempt to create heterogeneity within the data (Manchaiah et al., 2021a, 2021b). However, future exploration of the demographic characteristic of online reviewers (e.g., age and gender) and hearing healthcare providers being reviewed (e.g., age, gender and total years of practice) may provide additional insights into certain population trends. This type of research may hold the potential to create more

gender and age specific consumer needs awareness amongst providers of hearing healthcare services. Similarly, by utilising a mixed-method research approach, it's possible to explore how different attributes of the hearing healthcare provider, affect review frequency, review sentiment, and prevalent themes within the reviews. Additionally, online reviews constitute an untapped resource for studying the effects of gender and gender biases within the therapeutic relationship (Dunivin et al., 2020).

**4.4.3** Due to data-saturation not occurring for the 1-star review dataset, the identification of additional elements contributing to the dissatisfied hearing healthcare consumer experience may contribute to the current understanding thereof. Future research could consider analyses of 2- and 3-star reviews as certain elements to these consumers' experiences resulted in partial dissatisfaction.

**4.4.4** An in-depth exploration of hearing healthcare providers 'perspectives on online reviews in general and the impact thereof on their credibility, reputation and future clientele could yield valuable insights. Notably, in other healthcare domains clinicians have often expressed reservations about online consumer reviews (Lagu et al., 2019). If any reservations are held by hearing healthcare providers, further research efforts could be implemented towards the resolution of these reservations.

**4.4.5** Limited research exists on the influence that online hearing health care clinician reviews and ratings have on potential hearing healthcare consumers' selection of clinicians (Grabner-Kräuter & Waiguny, 2015; Li et al., 2019). To facilitate the effective management of online hearing healthcare provider reputation, influential trends within hearing healthcare online reviews that significantly shape consumer's choices of clinicians and institutions ought to be examined.

**4.4.6** Various practical frameworks and tools exists to measure and promote clinician cultural competency internationally (Betancourt, 2006; Masters et al., 2019). Despite this, there is a dearth of literature in South Africa addressing cultural competence and the training of

healthcare professionals to deliver care that is culturally competent (Matthews & Van Wyk, 2018). Even though clinicians care for healthcare consumers with increasingly diverse backgrounds, implicit biases are ever-present (Matthews & Van Wyk, 2018). This necessitates the provision of evidence-based guidance for clinicians in confronting and mitigating unconscious biases held to promote person-centric care (Masters et al., 2019).

Future research into frameworks and tools specifically designed for the field of hearing healthcare, and even more specifically, hearing healthcare provision within multilingual and multicultural contexts may prove beneficial not only within the clinical setting, but also in undergraduate and postgraduate training courses. Moreover, examining publicly accessible online consumer reviews presents a promising method for detecting instances of discrimination in healthcare experiences, given the scarcity of tools to exam discrimination in healthcare (Adkins-Jackson et al., 2021; Tong et al., 2022).

### 4.5 Conclusion

The current study undertook qualitative, thematic analysis of satisfied and dissatisfied online hearing healthcare consumer reviews. The exploration of the six and seven distinct domains, respectively identified for 5-star and 1-star reviews, with detailed themes and sub-themes, outlining consumers' experiences in hearing healthcare offers valuable insights for refining services and interactions in hearing healthcare. The central role of communication identified from unsolicited hearing healthcare consumer reviews underscores the need for effective communication, not only between clinicians and consumers, but also with administrative and support staff. Aspects such as financial considerations, personalized care, promptness, and the significant impact of clinical outcomes (general well-being, hearing-related and device-related outcomes) were identified. Furthermore, the recognition of inclusivity, and the negative impact of bias towards divergent populations seeking hearing healthcare, highlights the importance of providers' sensitivity to cultural differences and diverse hearing healthcare consumer populations, including paediatric and geriatric populations, the Deaf community

utilizing Sign-language, and various minority groups. This underscores the importance of fostering cultural competency among hearing healthcare providers. This study highlighted the value of a manual, thematic, qualitative analysis of online hearing healthcare reviews in providing an in-depth view on the hearing healthcare consumer experience.

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# APPENDICES

## Appendix A: Domains, Themes, and Sub-themes for Satisfied Consumers

| Domain | Theme | Sub-theme | Frequency count |
|---|---|---|---|
| **Overall experience (*n*= 829; 31.0%)** | **Excellence (*n*=452; 54.5%)** | Excellence (staff/audiologist/service) | 273 |
| | | Exceptional experience/ Loved the experience | 79 |
| | | Satisfied with service, staff and or audiologist | 30 |
| | | Impressive | 14 |
| | | Comfortable experience | 11 |
| | | Trust them with my hearing needs | 9 |
| | | Quality service/care | 9 |
| | | The process was made easy | 6 |
| | | Friendly experience | 6 |
| | | I went to this clinic based on all the good reviews | 6 |
| | | Recommended by another professional | 5 |
| | | Welcoming | 3 |
| | | Relaxing experience | 1 |
| | **Professionalism (*n*=33; 4.0%)** | Professional service/care | 27 |
| | | Treated with respect | 6 |
| | **Continuity (*n*=3; 0.4%)** | Consistent service | 2 |
| | | Clinician continuity | 1 |
| | **Gratitude/Loyalty (*n*=338; 40.8%)** | Highly recommended (clinic, staff, audiologist) | 179 |
| | | Grateful for the services received/grateful to clinic/grateful to audiologist | 78 |
| | | Have been a loyal and returning customer | 34 |
| | | Will return to this clinic/will continue using their services | 23 |
| | | I am glad that I found this clinic | 9 |
| | | I am glad that I found this audiologist/glad that I was referred to this audiologist | 9 |
| | | Willing to travel far to go to this clinic/see this audiologist | 4 |
| | | Highly recommend the online resources | 2 |
| | **Unique (*n*=3; 0.36%)** | Unique | 2 |
| | | Usage of animals during the session | 1 |

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|---|---|---|---|
| **Clinical outcomes (*n*=288; 10.9%)** | **Well-being (*n*=77; 26.7%)** | Lifesaving/life changing | 20 |
| | | Quality of life improvement | 16 |
| | | Addressed all my concerns | 13 |
| | | I look forward to my appointments/ I don't mind going to my appointments | 10 |
| | | I feel hopeful after my appointment/ I was reassured | 8 |
| | | Audiologist made me feel at ease | 5 |
| | | Helped me realized the need to obtain hearing aids | 4 |
| | | Helped me get my confidence back | 1 |
| | **Hearing specific outcomes (*n*=157; 54.5%)** | Addressed my hearing needs | 88 |
| | | Improved hearing ability | 68 |
| | | Amazed by the outcome of treatment | 1 |
| | **Device specific outcomes (*n*= 54; 18.8%)** | Happy with my hearing aids | 50 |
| | | Supported me with loaner devices | 4 |
| **Standard of care (*n*=617; 23.3%)** | **Timeliness (*n*=148; 24.0%)** | Thorough, services not rushed/everything was taken care of/attention to detail | 62 |
| | | Punctual and timely service delivery | 46 |
| | | Accommodating appointment times | 27 |
| | | Reasonable waiting time for new hearing aids/new products | 5 |
| | | Good turn- around time on repairs | 3 |
| | | Efficient process | 3 |
| | | Good turn-around time on adjustments | 2 |
| | **Personalized care (*n*=193; 31.3%)** | Goes the extra mile/helps until you're satisfied (a lot of effort is put in) | 51 |
| | | Gave me time and attention | 36 |
| | | Good problem solving, assisted with alternative personalized solutions | 26 |
| | | Provided me with good guidance/recommendations | 23 |
| | | Consumer oriented/dedicated to the consumer/customer service oriented | 9 |
| | | Responsive | 8 |
| | | Treated like family/friends | 8 |
| | | Felt taken care of | 6 |
| | | Caring/Gentle service/treatment | 6 |
| | | Personalized service | 5 |
| | | Developed a close relationship with the audiologist | 3 |
| | | Kind services | 2 |
| | | Referred me appropriately | 2 |
| | | Audiologist includes consumer in process | 2 |
| | | Audiologist remembers patient information | 1 |
| | | Audiologist has been an advocate for me | 1 |
| | | Supportive of returning clients (Offer incentive) | 1 |
| | | Provided with on-going support | 1 |

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|---|---|---|---|
| | | Thoughtful gift | 1 |
| | | Felt understood | 1 |
| | **Ethical (*n*=17; 2.8%)** | Focused on customer service not only sales | 7 |
| | | Trustworthy staff | 4 |
| | | Honest service | 2 |
| | | Ethical service | 1 |
| | | Audiologist was transparent | 1 |
| | | Audiologist has integrity | 1 |
| | | Audiologist was trustworthy | 1 |
| | **Evidence- based- practice (*n*=5; 0.8%)** | Services and or testing performed in an accurate manner | 3 |
| | | Uses best practice/EBP | 2 |
| | **Communication (*n*=185; 30.0%)** | Informative/thorough explanations | 82 |
| | | Answered/acknowledged all my questions | 41 |
| | | Understandable, clear explanations | 31 |
| | | Audiologist listened to me | 15 |
| | | Audiologist was easy to talk to | 6 |
| | | Adjusted based on my feedback | 3 |
| | | Staff listened to me | 3 |
| | | Open/honest communication | 2 |
| | | Included my child in the conversation | 1 |
| | | Staff were easy to talk to | 1 |
| | **Finances (*n*= 50; 8.1%)** | Reasonable/affordable prices | 18 |
| | | Pressure free purchases/no high sales tactics | 13 |
| | | Able to obtain insurance funding for hearing aids and or services | 6 |
| | | Follow-up/additional services are free of charge | 6 |
| | | Assisted with a cost-effective solution | 4 |
| | | Accommodating payment options | 2 |
| | | Financially savvy audiologist | 1 |
| | **Products (*n*=19; 3.1%)** | State of the art technology | 7 |
| | | Excellent products | 4 |
| | | Variety of hearing aids to choose from | 3 |
| | | Hearing aids are rechargeable | 1 |
| | | My hearing aids aren't noticeable | 1 |
| | | Low maintenance on hearing aids | 1 |
| | | The clinic assists with long term care of your hearing aids | 1 |
| | | Provided with different demo hearing aids to try | 1 |
| **Facilities (*n*= 54; 2.0%)** | **Equipment (*n*=3; 5.6%)** | State of the art equipment | 3 |

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|---|---|---|---|
| | **Amenities (*n*=22; 40.7%)** | Clean clinic | 5 |
| | | Professional office | 5 |
| | | State of the art facilities | 2 |
| | | Organized clinic | 2 |
| | | Well laid out clinic | 2 |
| | | Great coffee | 1 |
| | | Nice reception | 1 |
| | | Clinic smells good | 1 |
| | | Beautiful clinic | 1 |
| | | Ordinary clinic (nothing in excess) | 1 |
| | | Modern clinic | 1 |
| | **Location (*n*=17; 31.5%)** | Great location | 6 |
| | | Convenient location | 6 |
| | | Good parking at this clinic | 3 |
| | | Easy to find – location | 1 |
| | | Clinic is easily accessible | 1 |
| | **Atmosphere/environment (*n*= 12; 22.2%)** | Comfortable clinic | 3 |
| | | Clinic is inviting/inviting environment | 2 |
| | | Friendly atmosphere | 2 |
| | | Peaceful atmosphere | 1 |
| | | Nice environment | 1 |
| | | Home-like environment | 1 |
| | | Elegant environment | 1 |
| | | Child friendly | 1 |
| **Audiologist (*n*=494; 18.7%)** | **Personal trait (*n*=311; 63.0%)** | Audiologist was caring/attentive | 55 |
| | | Audiologist was friendly/personable | 59 |
| | | Audiologist was helpful | 44 |
| | | Audiologist is patient | 38 |
| | | Audiologist was kind | 28 |
| | | Audiologist was understanding | 15 |
| | | Audiologist was compassionate | 12 |
| | | Audiologist was welcoming | 9 |
| | | Audiologist was polite/courteous | 7 |
| | | Accommodating audiologist | 5 |
| | | Audiologist was funny | 5 |
| | | Audiologist was positive | 4 |
| | | Audiologist was fun | 4 |
| | | Audiologist was cheerful | 4 |

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|---|---|---|---|
| | | Audiologist was supportive | 3 |
| | | Passionate about the job | 3 |
| | | Audiologist was empathetic | 3 |
| | | Audiologist was calm | 3 |
| | | Audiologist was thoughtful | 2 |
| | | Audiologist was easy going | 2 |
| | | Audiologist was humble | 1 |
| | | Audiologist was intuitive | 1 |
| | | Audiologist was creative | 1 |
| | | Audiologist was a hard worker | 1 |
| | | Audiologist was sincere | 1 |
| | | Audiologist was charming | 1 |
| | **Professional traits (*n*= 183; 37.0%)** | Audiologist was knowledgeable | 66 |
| | | Professional audiologist | 52 |
| | | Audiologist is an expert/highly skilled | 36 |
| | | Audiologist is efficient | 9 |
| | | Competent Audiologist | 9 |
| | | Audiologist has excellent bedside manner | 3 |
| | | Audiologist dealt with matters graciously | 2 |
| | | Audiologist is a good mentor/teacher | 2 |
| | | Dedicated/committed audiologist | 1 |
| | | Audiologist takes pride in his/her practice | 1 |
| | | Has a doctoral degree in Audiology | 1 |
| | | Audiologist was in control of the clinic | 1 |
| **Staff (*n*=365; 13.8%)** | **Personal traits (*n*= 264; 72.3%)** | Staff were friendly/personable | 90 |
| | | Staff were helpful | 54 |
| | | Staff were caring/attentive | 36 |
| | | Staff were kind | 18 |
| | | Staff were patient | 12 |
| | | Staff were understanding | 11 |
| | | Staff were polite/courteous | 11 |
| | | Staff were welcoming | 8 |
| | | Accommodating staff | 6 |
| | | Staff are compassionate | 3 |
| | | Staff were cheerful | 3 |
| | | Staff were empathetic | 2 |
| | | Staff were considerate | 2 |
| | | Staff were supportive | 2 |

| | | | |
|---|---|---|---|
| | | Staff were positive | 2 |
| | | Staff were thoughtful | 1 |
| | | Staff were fun | 1 |
| | | Staff had a good sense of humour | 1 |
| | | Staff put me at ease (comforting) | 1 |
| | **Professional traits (*n*= 101; 27.7%)** | Professional staff | 49 |
| | | Staff were knowledgeable | 28 |
| | | Competent staff | 8 |
| | | Staff are efficient | 7 |
| | | Staff were organized | 3 |
| | | Dedicated staff | 2 |
| | | Staff dealt with matters graciously | 2 |
| | | Responsible staff | 1 |
| | | Staff were reliable | 1 |

## Appendix B – Domains, Themes, and Sub-themes for Dissatisfied Consumers

| Domain | Theme | Sub-theme | Frequency count |
|---|---|---|---|
| **Overall experience (*n*=317; 30.1%)** | **Dissatisfaction (*n*=153; 48.3%)** | Disappointed/Poor service/Bad experience | 108 |
| | | Inconvenienced | 18 |
| | | Wasted my time at this clinic | 14 |
| | | Wasted my money at this clinic | 5 |
| | | Unwelcoming (general) | 2 |
| | | Feel offended by this clinic/offensive | 2 |
| | | Traveled unnecessarily | 1 |
| | | Will lodge a complaint | 1 |
| | | Felt uncomfortable | 1 |
| | | Clinic's online presence caused me not to do business with them | 1 |
| | **Unprofessionalism (*n*=23; 7.3%)** | Unprofessional services | 22 |
| | | Harassed by security staff at this institution | 1 |
| | **Loss of Loyalty (*n*=141; 44.5%)** | I don't recommend this clinic/Beware of this clinic | 64 |
| | | Went to another clinic or audiologist/ will go to another clinic or audiologist | 31 |
| | | Will not return to this clinic | 23 |
| | | Received better service from another clinic/clinician | 14 |
| | | Cancelled my appointment with this clinic | 6 |
| | | Reported the audiologist on various sites | 1 |
| | | Will post on various sites regarding the bad service I received | 1 |
| | | Insurance company advised me against clinic | 1 |
| **Clinical outcomes (*n*= 83; 7.9%)** | **Well-being (*n*=19; 22.9%)** | In general my needs were not met/my concerns weren't addressed | 15 |
| | | I felt hopeless after my appointment at this clinic | 1 |
| | | This clinic provides false hope to their patients | 1 |
| | | The staff caused me pain | 1 |
| | | Due to poor management at this clinic my quality of life has been affected negatively | 1 |
| | **Hearing specific outcomes (*n*=35; 42.2%)** | My hearing needs were not met | 31 |
| | | Disagree with the diagnosis I have been given | 1 |
| | | Disagree with the treatment plan I have been given | 1 |
| | | This clinic does not offer Real-Ear-Measurement (REM) testing | 1 |
| | | Unnecessary/tedious tests | 1 |
| | **Device specific outcomes (*n*= 29; 34.9%)** | General dissatisfaction with amplification devices/accessories/moulds | 17 |
| | | Hearing aids made sounds to soft or to loud | 3 |

| | | | |
|---|---|---|---|
| | | Hearing aids are a poor fit for me | 3 |
| | | Moulds/ear plugs don't fit me | 2 |
| | | Hearing aids produced a lot of feedback/static | 2 |
| | | My hearing aids hurt my ears | 1 |
| | | My hearing aids were set in a way that I could not benefit from all the available features | 1 |
| **Standard of care (*n*=406; 39.0%)** | **General management (*n*=33; 8.1%)** | Don't receive critique kindly | 10 |
| | | Terrible appointment policies | 7 |
| | | Unorganized processes | 4 |
| | | Difficult to schedule an appointment/tedious process | 2 |
| | | General poor management at this clinic | 2 |
| | | Struggle/tedious process to get test results from this clinic | 2 |
| | | Poor product return policies | 2 |
| | | No formal complaints procedure in place | 1 |
| | | Audiologist is not aware of what is going on in the practice | 1 |
| | | Website needs to be updated | 1 |
| | | Disconnect between different departments in this clinic (no flow) | 1 |
| | **Timeliness (*n*=47; 11.5%)** | General poor time and appointment management | 16 |
| | | Long waiting time before appointment (in waiting room) | 15 |
| | | Long waiting times for products/or hearing aids | 5 |
| | | Testing wasn't done thoroughly | 3 |
| | | Long waiting time to get an appointment at this clinic | 2 |
| | | My time isn't valued by this clinic | 2 |
| | | The audiologist showed up late for the appointment | 1 |
| | | Forms required by this clinic takes long to fill in | 1 |
| | | Staff were late | 1 |
| | | Long waiting time for test results | 1 |
| | **Lack of personalized care (*n*=22; 5.4%)** | The audiologist and or staff didn't give me time and attention/seemed preoccupied | 11 |
| | | Not customer/consumer focused | 5 |
| | | Not responsive to my problems/did not attend to my problems | 3 |
| | | Unhelpful referrals and recommendations | 2 |
| | | Care is not individualized/patient specific | 1 |
| | **Unethical/untrustworthy (*n*=62; 15.3%)** | Dishonest staff | 10 |
| | | Untrustworthy (general) | 9 |
| | | General unethical service delivery | 6 |
| | | Dishonest service | 5 |
| | | Advantage is being taken of healthcare consumers at this clinic | 4 |

| | | | |
|---|---|---|---|
| | | No/less than usual transparency | 3 |
| | | I don't trust the information given to me by the audiologist | 3 |
| | | Forced into a hearing test/examination at this facility | 3 |
| | | Hearing health practitioner did not seem to have legitimate qualifications | 2 |
| | | Treating an incurable disease by means of exploratory procedures | 1 |
| | | Suspect credit card fraud | 1 |
| | | Considering reporting the audiologist for malpractice | 1 |
| | | Testing conducted on a minor without parental consent and presence | 1 |
| | | Dishonest audiologist | 1 |
| | | Clinic is owned by a hearing aid manufacturer | 1 |
| | | Breach of contract between myself and the clinic | 1 |
| | | My patient rights were breached | 1 |
| | | Use of fear as a sales tactic | 1 |
| | | The audiologist threatens healthcare consumers | 1 |
| | | This clinic did not honor the terms of my benefit plan | 1 |
| | | Reported the audiologist for a formal harassment case | 1 |
| | | Suspect that this institution is committing insurance fraud | 1 |
| | | Don't follow through with incentives offered/promised | 1 |
| | | Due to my experience, I'm thinking of suing this institution | 1 |
| | | False advertising | 1 |
| | | I receive email spam against my wishes | 1 |
| | **Communication (*n*=137; 33.5%)** | Poor communication regarding financial matters | 25 |
| | | This clinic does not follow up on appointment times/don't return or respond to emails or calls | 18 |
| | | Misleading/false advertisement/misinformation | 18 |
| | | Poor communication in general | 12 |
| | | Poor communication regarding appointment scheduling and cancelling thereof | 10 |
| | | This clinic doesn't answer their phone | 10 |
| | | Poor phone skills | 9 |
| | | No explanation of procedures/results/waiting times | 7 |
| | | The audiologist did not listen to me | 5 |
| | | The staff disregard anything you say/they don't listen to you | 4 |
| | | No introductions were made by the audiologist | 2 |
| | | No voicemail option | 2 |
| | | I can't get hold of this clinic | 2 |
| | | My questions were not answered | 2 |
| | | No discernable contact options | 2 |

| | | | |
|---|---|---|---|
| | | This clinic doesn't give reminder letters or courtesy calls | 1 |
| | | No apology received for their mistake | 1 |
| | | Poor communication regarding services offered at this clinic | 1 |
| | | Wrong address for this clinic on Google Maps | 1 |
| | | A lot of personal questions are asked | 1 |
| | | Online chat option is not helpful | 1 |
| | | The audiologist was hard to understand due to a strong accent | 1 |
| | **Finances (*n*=92; 22.5%)** | Overcharged/hefty fees/exorbitant/pricing is not fair | 30 |
| | | Sales driven/not provided with the option of a less expensive hearing aid | 26 |
| | | Bad payment policies and poor management of payments | 10 |
| | | Payment process took long/was tedious and difficult | 5 |
| | | I feel I should be financially reimbursed/the fee could be waived | 5 |
| | | Had to/will have to take legal action to get my money back from this clinic | 3 |
| | | Hidden costs | 3 |
| | | No money back guarantee in case of dissatisfaction | 2 |
| | | Appointment booking fees are not refundable | 1 |
| | | Additional fee to secure appointments | 1 |
| | | Had to pay another co-payment to get an explanation of my hearing test results | 1 |
| | | No payment plans in place | 1 |
| | | Inconsistent pricing | 1 |
| | | Had to pay a fee to obtain test results | 1 |
| | | The clinic won't reimburse me after overcharging | 1 |
| | | Regret spending so much money on my hearing aids | 1 |
| | **Products (*n*=13; 3.2%)** | Expensive hearing aids | 3 |
| | | I wasn't provided with a variety of options | 2 |
| | | Lack of less expensive hearing aid options | 2 |
| | | Poor warranty policies on hearing aids and or accessories | 2 |
| | | Hearing aid batteries don't last long | 1 |
| | | Purchased the same hearing aids at another clinic for much less | 1 |
| | | Cheap hearing aids | 1 |
| | | The hearing aids are highly susceptible to water | 1 |
| **Facilities (*n*=14; 1.3%)** | **Amenities (*n*=4; 28.6%)** | Very small clinic | 2 |
| | | Disorganized clinic | 1 |
| | | Poor advertisement of products and services in waiting area | 1 |
| | **Location (*n*=10; 71.4%)** | Had to pay parking | 3 |
| | | Horrible/confusing parking | 2 |
| | | Expensive parking | 2 |

| | | | |
|---|---|---|---|
| | | Complicated to find this clinic | 1 |
| | | Inconvenient location | 1 |
| | | No signage to indicate location of clinic | 1 |
| **Audiologist (*n*= 68; 6.5%)** | **Personal trait (*n*=50; 73.5%)** | Audiologist was rude/disrespectful | 17 |
| | | Audiologist was not helpful | 6 |
| | | Unaccommodating audiologist | 4 |
| | | Unsympathetic audiologist | 4 |
| | | Arrogant audiologist | 3 |
| | | Audiologist was unfriendly | 3 |
| | | Audiologist was condescending | 2 |
| | | Audiologist is not passionate (about the practice or the consumers) | 2 |
| | | Audiologist has poor people skills | 2 |
| | | Audiologist was not responsive/welcoming | 1 |
| | | Audiologist was impatient | 1 |
| | | Audiologist was not compassionate | 1 |
| | | Audiologist was not caring | 1 |
| | | Audiologist had no empathy | 1 |
| | | Audiologist was aggressive | 1 |
| | | Audiologist had bad bedside manner | 1 |
| | **Professional trait (*n*=18; 26.5%)** | The audiologist is not experienced/not knowledgeable | 5 |
| | | Unprofessional audiologist | 4 |
| | | Audiologist makes excuses | 3 |
| | | Audiologist was argumentative | 2 |
| | | Audiologist did not apologize for being late | 1 |
| | | Audiologist didn't handle mistakes correctly | 1 |
| | | Incompetent audiologist | 1 |
| | | Audiologist is not interested in office management | 1 |
| **Support and or administrative staff (*n*=140; 13.3%)** | **Personal trait (*n*=98; 70%)** | Staff were rude/disrespectful | 37 |
| | | Staff were not helpful | 17 |
| | | Unaccommodating staff | 13 |
| | | Staff were not caring | 5 |
| | | Staff were not responsive or welcoming | 4 |
| | | Staff were impatient | 4 |
| | | Staff were not compassionate | 3 |
| | | Staff were unfriendly | 3 |
| | | Staff were unkind | 3 |
| | | Staff were inconsiderate | 2 |

| | | | |
|---|---|---|---|
| | | Staff were condescending | 2 |
| | | Staff were not attentive | 2 |
| | | Unsympathetic staff | 1 |
| | | Staff were pretentious | 1 |
| | | Staff were arrogant | 1 |
| | **Unprofessional trait (*n*=42; 30%)** | Unprofessional staff (general) | 14 |
| | | Staff were not knowledgeable/not experienced | 9 |
| | | Staff had poor customer service skills | 4 |
| | | Incompetent staff | 4 |
| | | Staff make excuses | 2 |
| | | Staff were lazy | 2 |
| | | Staff make you feel like you don't know anything as a consumer | 2 |
| | | Staff were disorganized | 2 |
| | | Staff were flirtatious | 1 |
| | | Front desk staff were on their phones | 1 |
| | | Staff used an abusive tone speaking to the consumer | 1 |
| **Inclusivity (*n*=21; 2.0%)** | **Pediatric population (*n*=4; 19.0%)** | Not a pediatric friendly institution | 4 |
| | **Deaf population (*n*=5; 23.8%)** | The audiologist cannot communicate to the deaf by means of sign-language | 2 |
| | | No deaf professionals working at this clinic | 1 |
| | | Not a deaf friendly institution | 1 |
| | | No staff who speak sign-language | 1 |
| | **Race (*n*=6; 28.6%)** | Staff were racist | 4 |
| | | I don't recommend this institution if you are from a minority race | 1 |
| | | The audiologist is not friendly towards foreigners | 1 |
| | **Handicap/disability (*n*=1; 4.8%)** | Not well equipped for people with a disability/handicap | 1 |
| | **Geriatric population (*n*=2; 9.5%)** | Discriminate against the elderly | 1 |
| | | No understanding of the needs of the elderly | 1 |
| | **Insurance/Medical aid (*n*=2; 9.5%)** | Turned away due to my insurance type | 1 |
| | | This clinic doesn't accept all medical aids | 1 |
| | **General (*n*=1; 4.8%)** | Staff are not use to/well educated regarding providing services to a diverse population | 1 |

## Appendix C – Ethical Clearance

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Humanities
Fakulteit Geesteswetenskappe
Lefapha la Bomotho

Humanities 100. Since 1919

5 March 2022

Dear Miss S van Bruggen

| | |
|---|---|
| Project Title: | What can be learned about the consumer experience from online hearing health care reviews? |
| Researcher: | Miss S van Bruggen |
| Supervisor(s): | Prof DCDW Swanepoel |
| Department: | Speech Language Pathology and Audiology |
| Reference number: | 16078022 (HUM012/0122) |
| Degree: | Masters |

I have pleasure in informing you that the above application was **approved** by the Research Ethics Committee on 3 March 2022. Data collection may therefore commence.

Please note that this approval is based on the assumption that the research will be carried out along the lines laid out in the proposal. Should the actual research depart significantly from the proposed research, it will be necessary to apply for a new research approval and ethical clearance.

We wish you success with the project.

Sincerely,

**Prof Karen Harris**
**Chair: Research Ethics Committee**
**Faculty of Humanities**
**UNIVERSITY OF PRETORIA**
**e-mail: tracey.andrew@up.ac.za**

## Appendix D – Declaration of Data Storage

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

FACULTY OF HUMANITIES
RESEARCH ETHICS COMMITTEE

### Declaration for the storage of research data and/or documents

I/ We, the principal researcher(s): Sanchia van Bruggen

and supervisor(s) : Professor De Wet Swanepoel and Professor Leigh Biagio-de Jager

of the following study, titled:

**Perceptions of Hearing Healthcare: A Qualitative Analysis of Satisfied and Dissatisfied Online Reviews**

will be storing all the research data and/or documents referring to the above-mentioned study in the following

department: Department of Speech-language Pathology and Audiology

**We understand that the storage of the mentioned data and/or documents must be maintained for a minimum of 15 years from the commencement of this study.**

Start date of study: 01 January 2021

Anticipated end date of study: 31 August 2023

Year until which data will be stored: 01 January 2036

| Name of Principal Researcher(s) | Signature | Date |
|---|---|---|
| Sanchia van Bruggen | Sanchia van Bruggen | 2023-08-28 |

| Name of Supervisor(s) | Signature | Date |
|---|---|---|
| Prof De Wet Swanepoel | | 2023-08-28 |
| Prof Leigh Biagio de Jager | | 2023-08-28 |
| | | |

| Name of Head of Department | Signature | Date |
|---|---|---|
| Prof van der Linde | | 2023-08-29 |

**Appendix E – Journal Submission Confirmation**

Dear Mrs van Bruggen,

This message serves as confirmation that your submission entitled "Perceptions of Hearing Healthcare: A Qualitative Analysis of Satisfied and Dissatisfied Online Reviews" has been received by the American Journal of Audiology.

You will be able to check on the progress of your paper by logging on to Editorial Manager as an author. The URL is https://www.editorialmanager.com/aja/.

The manuscript number is **AJA-23-00180**.

From: **AJA** <em@editorialmanager.com>

Date: Thu, Aug 31, 2023 at 12:27 PM

Subject: Submission Confirmation for Perceptions of Hearing Healthcare: A Qualitative Analysis of Satisfied and Dissatisfied Online Reviews - [EMID:9119d2abdda9eb35]

To: Sanchia van Bruggen <sanchvbruggen@gmail.com>