Development of Holistic Health Care Interventions for Women With Infertility : A Nominal Group Technique

Armah, Deborah PhD, MPhil, BSc[1], RGN; Van der Wath, Anna Elizabeth PhD, MCur[1,*]; Yazbek, Mariatha DCur, MCur[1]; Naab, Florence PhD, MPhil, BA, RM, SRN, Policy Fellow[2]

[1]Department of Nursing Science, Faculty of Health Sciences, University of Pretoria, Pretoria, South
[2]Department of Maternal and Child Health, School of Nursing, College of Health Sciences, University of Ghana, Legon, Accra, Ghana

*Correspondence**:** Anna Elizabeth van der Wath, PhD, MCur, Department of Nursing Science, Faculty of Health Sciences, University of Pretoria, Private Bag X323, Arcadia 0007, Pretoria, South Africa (annatjie.vanderwath@up.ac.za).

No potential conflict of interest was reported by the authors.

ABSTRACT

Infertility care is often directed by a biomedical approach rather than a holistic approach, especially in African countries. This article explores the opinions of health care providers regarding holistic health care interventions in managing women with infertility in Ghana. Data were retrieved using a qualitative design and nominal group technique with a purposive sample of 12 health care providers in Ghana. Data were analyzed through thematic analysis. Health care providers explored various psychological, educational, spiritual, social, and medical interventions to ensure women diagnosed with infertility receive holistic treatment and attain optimal health.

Keywords: holistic health care interventions, infertility, women

BACKGROUND AND SIGNIFICANCE

Infertility remains a neglected problem in most African countries where it is often accompanied by social, economic, relationship, and psychological morbidities.[1] Many African women do not have access to or cannot afford fertility treatment as fertility programs are not necessarily viewed as a priority.[2] Future research and interventions should include the provision of support and alternatives for couples with infertility.[3,4]

Infertility affects approximately 15% of reproductive-aged couples[1] and about one in every 4 couples in developing countries.[5] The condition is diagnosed by the failure to establish a clinical pregnancy after 12 months of regular and unprotected sexual intercourse.[5]

Couples experience infertility as a biopsychosocial crisis that affects their psychological well-being and social status.[6] In many African cultures, bearing children plays an important role in a couple's social and cultural identity.[7] As the patriarchal system may lend itself to men shifting the blame of childlessness onto women,[8] infertility increases the possibility of human rights violations for African women.[7] These women are often exposed to relational violence, social stigmatization, rejection, and socioeconomic hardship,[9–11] resulting in psychological distress and mental health problems.[12,13]

The well-being of women with infertility seems to be influenced by individual, interpersonal, and cultural factors; therefore, a holistic infertility health care approach should be followed.[14] Consumer organizations advocating for women with infertility who expressed a clear need to be managed in a holistic way.[12,15] Despite the aforementioned, psychosocial issues pertaining to infertility are often neglected when couples seek health care.[6]

In Ghana, the context of this study, women with infertility suffer severe sociocultural and economic consequences.[4] Infertility care is often inadequate, directed by a biomedical approach rather than a holistic approach, with inappropriate referral systems.[16] When the psychosocial needs of women with infertility are neglected, they experience feelings of loneliness, anxiety, and depression, as well as cognitive symptoms such as impaired concentration.[12] Couples with infertility often resort to traditional healing, witchcraft, and spiritual mediation.[4]

A study[17] was conducted to develop holistic health care interventions for women with infertility in Ghana. Phase 1[17] included a literature review of holistic health care interventions adapted globally in the management of women with infertility. Phase 2[17] highlighted the health care needs of women with infertility obtained through focus groups with women. The aim of phase 3,[17] on which this article is based, was to seek the opinions of health care providers in Ghana to develop holistic health care interventions in managing women with infertility.

LITERATURE REVIEW

Infertility threats the existential goal of humans to be parents. It affects the way couples perceive themselves as they need to reconsider their desire to have children.[18] The psychosocial pain and stress caused by infertility is widely acknowledged, and it is clear that patients need to be counseled and supported as they go through treatment. Psychological interventions for women with infertility not only decrease anxiety and depression but may also positively affect pregnancy rates. However, formal guidelines for psychological counseling during infertility are not readily available.[19]

Treatment protocols that can reduce the burden of fertility treatment and maximize the quality of life need to be developed.[20] Such protocols need to follow a multidisciplinary and multidimensional approach.[18] The psychological suffering of infertility depends on personal and psychosocial characteristics, and the unique emotional, social, and cultural needs of couples and individuals need to be considered.[18] Psychosocial care is not the responsibility of mental health care providers alone. An integrative approach requires all fertility clinic staff members to be involved and possess the skills to provide patient-centered care, emotional support, and health education.[20]

Midwives, for example, can liaise between the couple and the multidisciplinary health care team to explore treatment modalities to promote reproductive health in a holistic way. Couples with infertility need to share information of a personal and sensitive nature with health care providers. Building rapport may help the couple to explore their fears, feelings of hopelessness, loneliness, and psychological and spiritual distress and assist in developing coping strategies.[21]

METHODS

Study design and setting

A qualitative consensus research design was employed, using a nominal group technique (NGT), to generate ideas from health care providers regarding holistic health care interventions in managing women with infertility. A NGT aims to solve problems, generate ideas, determine priorities, and achieve a general agreement of opinions around a particular topic in small group discussions using the following steps: silent idea generation, round-robin, clarification, and voting.[22,23]

Purposive sampling was used to recruit health care providers employed at one of the district hospitals in Ghana. Participants with extensive experience (4 years or more) of working with women with infertility were considered for selection. The first author (researcher) invited potential participants through telephone calls. Of the 16 health care providers who met the inclusion criteria, 12 were willing to participate, 2 had other commitments, and 2 wished not to participate. Table 1 depicts the demographic information of participants.

TABLE 1. - Demographic Information

CATEGORY OF HEALTH CARE PROVIDERS	NUMBER OF EACH CATEGORY	GENDER	YEARS OF WORKING EXPERIENCE (RANGE)
REGISTERED NURSES	4	Female	8-12
REGISTERED MIDWIVES	5	Female	7-17
GYNECOLOGISTS	2	Male	6-15
HEALTH CARE MANAGER	1	Female	10-15

Data collection

This study was conducted in a boardroom in the study hospital. The steps of the NGT as outlined by Dang[24] were adopted for the process of data collection and analysis. The participants knew the researcher as a professional nurse working in the research setting. To prevent bias, a moderator with a PhD in psychology and experience in qualitative research facilitated the NGT. The researcher audio-recorded the NGT and took field notes during the proceedings.

Step 1: Introduction and explanation

Participants completed a registration form to record their occupations, years of service, and experience (see Table 1). The purpose of the NGT was explained, and expectations and roles of participants were clarified. Participants' written informed consent was obtained prior to participation.

Seeing that this was the third phase of a bigger study, participants were given an overview of the findings of phase 1 (literature review) and phase 2 (health care needs of women with infertility in Ghana).

Step 2: Silent generation of ideas

The moderator wrote the research question on a flip chart and read it aloud: “What should be included in the holistic health care interventions for women with infertility in Ghana?”

Participants were asked to independently jot down all ideas about the question and not to consult with others or discuss their responses. Step 2 took 15 to 20 minutes.

Step 3: Round-robin

Participants engaged in a round-robin session to share their ideas generated in step 1. The moderator, using the exact words of the participant, recorded each idea on a flip chart. This step took 20 to 35 minutes.

Step 4: Discussion or clarification

Participants were permitted to ask for explanations or further details to either confirm or clarify any ideas that were not clear. The 12 participants were divided into 3 small groups of 4 members each, named groups 1, 2, and 3. The ideas were debated and discussed by each small group. A representative from each group presented their ideas on what should be included in holistic health care interventions for women with infertility in Ghana. Each idea, documented by the moderator on the flip chart, was discussed in the large group until participants reached consensus on how the idea should be worded (theme) and what specific interventions would form part of the theme (categories). The session lasted 40 to 45 minutes.

Step 5: Voting and ranking

Participants were asked to vote in order to prioritize the themes listed in step 4. Each participant selected, recorded, and ranked the 6 most important themes, with the most important theme receiving a rank of 6 and the least important theme a rank of 1. The moderator recorded the participants' scores on a score sheet and calculated the score for each theme. Participants reached consensus on the 5 most important interventions that must be included when managing women with infertility in Ghana. These interventions are psychological, educational, spiritual, social, and medical (see Table 2).

TABLE 2. - Themes and Categories

THEMES	CATEGORIES
MEDICAL INTERVENTIONS	Comprehensive health assessment and management
PSYCHOLOGICAL INTERVENTIONS	Individual and group counselling Peer mentoring
EDUCATIONAL INTERVENTIONS	Creating awareness of infertility treatment options Education on causes and prevention of infertility
SPIRITUAL INTERVENTIONS	Instillation of hope and faith in a Supreme Being Incorporation of spiritual practices
SOCIAL INTERVENTIONS	Family support and partner involvement Support from health care providers

Data analysis

Data were analyzed concurrently with data collection during the NGT, following the steps of thematic analysis by Braun and Clarke.[25] During the first step, to become familiar with the data, the moderator repeatedly read the ideas generated by participants and made sure it was well understood by all. Second, the moderator, with the help of the participants, organized the retrieved ideas in a meaningful and systematic order and identified initial codes. Full and equal attention was given to all retrieved ideas. The third step entailed a review of all ideas that ran through the discussion, sorting them into possible themes. Different codes were

combined to form themes and categories. Finally, the moderator and the participants categorized the themes to obtain a clear, identifiable distinction between themes. They determined what aspect of the data each theme captured and defined and refined the themes to ascertain the categories for each theme. Five themes and 9 categories emerged (see Table 2).

Rigor

To ensure accuracy and consistency of the results, the participants were part of the research process to verify their views. The participants' ideas and perspectives were the main focus, and the researcher bracketed her experiences, beliefs, and personal perceptions regarding the study phenomenon. The authors comprehensively reviewed the audio recordings and transcripts of the NGT session to ensure accuracy of the results.

Ethical considerations

The Research Ethics Committee of the Faculty of Health Sciences, University of Pretoria (Ref: 579/2018), Ghana Health Service Ethics Committee, and the management of the hospital granted approval for this study.

RESULTS

The themes and categories derived from the data analysis revealed holistic health care interventions in managing women with infertility. The themes and categories are discussed with verbatim quotations. Group members' identities were replaced by their group number, for example, group 1, 2 or 3, to ensure anonymity.

Medical interventions

Comprehensive health assessment and management emerged as a category from this theme. Assessment included activities such as collecting and documenting both subjective and objective data through physical examination, monitoring of vital signs, and diagnostic tests. Medical management and effective referral were discussed. The participants expressed the following ideas:

> Comprehensive health assessment must include rendering of physical care, such as checking of vital signs, to rule out any abnormality, taking and recording both health history presented by patients (subjective data) and the ones we also observe through our interactions with them (objective data). (1)

> Conducting a physical examination to detect any abnormality from the normal and recording of findings as well as proper assessment of laboratory and any other investigative reports. (2)

> Ensuring the right diagnostic request since early detection will facilitate prompt treatment. (3).

Psychological interventions

Participants recommended psychological interventions such as individual and group counseling and peer mentoring.

Individual and group counseling

Counseling was determined as an essential intervention that should be provided by all health care workers. Women should also be referred to psychologists for more specialized interventions. Participants noted the following:

> Counselling must be offered consistently to allay psychological stress women with infertility go through. Counselling must be offered before and during treatment. (1)
>
> This intervention is vital since problems with infertility are more of mental problems than physical. This means that our women need our counselling a lot. Provision of information about support groups, counsellors and psychologist is also vital. (2)
>
> Counselling should be rendered in a form of education to women diagnosed with infertility; it must be rendered every day until pregnancy test turns out positive since issues related to infertility are sometimes disheartening and frustrating. Effective rendering of these services would improve upon the fertility status of our patients. (3)

Peer mentoring

Participants believed that peer mentoring will offer women the opportunity of interacting with each other and sharing each other's problems. Peer mentoring should be encouraged on the same day that women come for their follow-up. The 3 groups recorded the following:

> When these women are encouraged to interact among themselves at the clinic, it will somehow make them come to the realization that they are not alone in the fight of infertility. By this, they will also get some relief and have their minds free in a way. (1)
>
> Creating a friendly and therapeutic atmosphere as well as encouraging friendly and cordial relationships among patients will encourage them to relate, interact, and share each other's problems together while waiting to either see a doctor or get laboratory results. This in a way will de-stress them. (2)
>
> Creating a forum so that those patients who have finally come out positive after years of infertility will act as role models to encourage and inspire those in expectation. (3)

Educational interventions

Two categories were identified from this theme, namely, creating awareness of infertility treatment options, and education on causes and prevention of infertility.

Creating awareness of infertility treatment options

Participants expressed the view that when patients are given information about infertility and different available treatment modalities, they will be able to choose the option they can afford:

> Must be made aware of the various treatment options, and should be counselled to make an informed choice, especially the ones they could afford. (1)
>
> We must educate them on the varieties of treatment options that could actually be of help to them. They must be made known the various options of treatment and must also be allowed to select or choose from the lot. (2)
>
> Education must also be provided on various treatment protocols, treatment side effects and the chances or possibilities of having some options failing. (3)

Education on causes and prevention of infertility

Participants admitted that most patients were not fully informed about the causes of their infertility problems and preventive measures. As stated by participants, health education will increase the likelihood of adherence to preventive measures:

> Counselling on lifestyle modification, and healthy living including exercising and diet regimen, avoidance of alcohol, smoking, and intake of well-balanced diet, must be emphasized upon. (1)
>
> There is a need to give health educational talks to these women regarding the causes and prevention of infertility since some women attribute their condition to spirituality. Again, the urgency to report any abnormalities that might be experienced, especially diseases of the reproductive system must also be emphasized upon. (2)
>
> Health education must include causes and preventive measures, treatment options, treatment protocols, outcomes of treatments and every other information that deem necessary for them to know. This intervention is always neglected in their management. (3)

Spiritual interventions

The 2 categories that emerged from this theme are instillation of hope and faith in a Supreme Being, and incorporation of spiritual practices.

Instillation of hope and faith in a Supreme Being

Participants agreed that when hope and faith are integrated into the management of women diagnosed with infertility, it will help alleviate their suffering. Health care workers should consider and respect the belief systems and values of women and recognize the role spirituality plays in their treatment and healing. The participants made the following comments:

> Issues of spirituality become necessary when one finds him/herself in a situation that seems tough, especially when it has to do with a disease condition. Most people believe that the only way to have remedy or have situations changed is when they draw closer to their maker and continually have hope in Him. (1)

> When aspects of spirituality are added in the management protocols of women diagnosed with infertility, it will in a way offer them relief since some of them do believe the situation they find themselves is more of spiritual than physical. (2)
>
> Issues spirituality and religion become important, particularly when one finds him or herself in an unpleasant situation. We as health care workers must always respect the right of patients with regard to their believe system, religion, and their personal values. (3)

Incorporation of spiritual practices

Participants recommended incorporating spiritual practices such as early morning devotions before starting activities at the clinic and the involvement of a reverend minister (pastor) to ensure women who needs spiritual counseling are being attended to. The 3 groups articulated the following:

> In times like this, prayers or morning devotions offered at the outpatient department (OPD) will go a long way to heal such people spiritually, hence this must also be encouraged at the OPDs. (1)
>
> The services of a pastor must be on daily bases so as to ensure that their spiritual needs are met at all times. (2)
>
> Patients' beliefs and values must be treated with respect and at all times by ensuring that the aspect of spirituality is never neglected in the care of women with infertility. (3)

Social interventions

Social interventions help alleviate the social stressors women with infertility encounter; they need to be encouraged, supported, and cared for. Two categories emerged from this theme: family support and partner involvement, and support from health care providers.

Family support and partner involvement

Participants believed that when social support is given in addition to other interventions, women will be more likely to attain optimal health. Participants made the following statements:

> The need to encourage family support and partner involvement is very important. In times like this, the affected person needs encouragements, reassurances and extra love from both family members and partners particularly. This form of support brings them relief. (1)
>
> To encourage family support and partner involvements, women who come to the clinic with their partners should be given special attention. For example, such people should not be allowed to queue. (2)

> A diagnosis of a condition in an individual automatically affects the entire family and, therefore, absence of family support exposes these women to more psychosocial stressors. (3)

Support from health care providers

Participants identified a need for support from health care providers through follow-up, telephonic support and the creation of therapeutic environment. The groups expressed the following:

> Ensuring a serene and a peaceful environment through the establishment of rapport, good and effective communication, addressing them with respect and finally, treating them as unique individuals. (1)

> This type of support or management can include follow-up visits by liaising with the community or public health nurses so that they can check up on these women on a regular basis to ensure they are doing well. (2)

> Social interventions must include home visits, a stress-free atmosphere, and a therapeutic environment. This would encourage women diagnosed with infertility to freely approach health care providers and comfortably ask anything that is bothering them. (3)

DISCUSSION

Participants viewed comprehensive health assessment as the first step in the infertility treatment program. Research findings indicated that the initial comprehensive health care assessment for women diagnosed with infertility should allow adequate time to obtain a complete medical, reproductive, and family history.[26–28] Proper assessment and diagnosis form the foundation for medical interventions, seen as ways of intervening, interfering, or interceding with the intent to treat, cure, manage, or improve the health of women with infertility.[29]

While listening to the findings of the first phase of this study, participants realized that women with infertility need counseling. They acknowledged their responsibility to take care of the women's psychological needs. Psychological interventions provide support, relief, and soften the impact of infertility and its treatment on the individual's mental health, resulting in a sense of mental well-being.[30] Various studies[15,31–35] highlighted the benefits of counseling and peer mentoring. Apart from alleviating infertility-induced stress, anxiety, and depression, these interventions also enhance marital, sexual, and life satisfaction, improve infertility treatment outcomes, and potentially produce a lasting change. Peer group support provides women with infertility opportunities to express their ideas and feelings in an environment where they feel like they belong.[15,31–35]

The NGT created awareness among participants that women with infertility require health education about treatment options, as well as prevention and causes of infertility. Studies[14,35–37] have shown that educational measures should focus on increasing women's knowledge and skills so that they experience a reduced psychological burden during infertility treatment.

Information offered about causes and the medical and psychological impacts of different infertility treatment options increases health care users' feelings of satisfaction with medical and emotional care.[14,35–37] Providing preliminary information about infertility is one of the most effective ways to start implementing psychosocial care, and it is simple, efficacious, and feasible compared with other interventions.[38] Health education may also help reduce gender discrimination against women with infertility in low- and middle-income countries.[39]

During the NGT session, participants acknowledged spirituality as an integral part of holistic health care interventions. Spiritual interventions promote spiritual awareness and enhance patient-centered care and healing.[40,41] Through spirituality, women can be helped to take control of their behavior and lifestyle choices, feel better about themselves, and initiate preventive interventions.[42] Religiosity plays an important role in the experiences of women with infertility in Ghana.[43] These women use positive religious coping strategies, such as spiritual connection, spiritual support, and forgiveness, and negative religious coping strategies, such as spiritual discontent, interpersonal religious discontent, and reappraisal of God's power, to cope with the psychological distress associated with infertility.[43] Infertility puts into question assumptions and perceptions of the self, family, and life in general; therefore, the needs of patients with infertility are better served through a holistic approach, in particular by incorporating spirituality into mind-body interventions.[44]

The NGT encouraged participants to brainstorm ways to enhance holistic health care. They contemplated their roles as part of the woman's support system and even considered prioritizing treatment to couples who come together for treatment to enhance partner involvement. Social support given to women diagnosed with infertility, be it in a form of advice, encouragement, or reassurance, helps allay concerns and fears. The absence of support from husbands or significant others leads to more emotional instabilities.[45] Partner support is one of the core sources of support for women diagnosed with infertility. Even in the absence of family support, the love and understanding shown by a partner keep their hope alive and give them confidence to continue with the treatment regimen.[37]

Implications

A nominal group is an effective technique to create awareness and encourage health care providers to design holistic health care interventions for managing women with infertility.

Future research should focus on the implementation of holistic health care interventions and its effect on women diagnosed with infertility. Action research provides a way to work with health care providers to create and evaluate holistic infertility health care programs.

Limitations

This study was conducted in a single location in Ghana and included one NGT with only 12 participants. The small number of participants might be viewed as a limitation restricting the applicability of the study findings. However, qualitative research typically draws upon smaller sample sizes to collect in-depth information and does not aim for generalizability. Another limitation is that the views of male partners and cultural issues were not included in the development of the holistic health care interventions. The authors recommend further studies to explore the role of culture and gender in interventions for infertility in Ghana.

CONCLUSION

To ensure that women diagnosed with infertility are managed holistically, health care providers might consider psychological, educational, spiritual, and social interventions based on a comprehensive health care assessment of the woman's needs. Consensus research methods that include health care providers help create awareness of and enhance the implementation of holistic health care programs.

REFERENCES

1. Patel M. The socioeconomic impact of infertility on women in developing countries. Facts Views Vision Obgyn. 2016;8(1):59–61.
2. Ombelet W, OnOfre J. IVF in Africa: what is it all about? Facts Views Vision Obgyn. 2019;11(1):65–76.
3. Inhorn MC, Patrizio P. Infertility around the globe: new thinking on gender, reproductive technologies and global movements in the 21st century. Hum Reprod Update. 4. Osei NY. Need for accessible infertility care in Ghana: the patients' voice. Facts Views Vision Obgyn. 2016;8(2):125-127.
5. Van der Borght M, Wyns C. Fertility and infertility: definition and epidemiology. Clin Biochem. 2018;62:2-10.
6. Akhondi MM, Binaafar S, Ardakani ZB, Kamali K, Kosari H, Ghorbani B. Aspects of psychosocial development in infertile versus fertile men. J Reprod Infertil. 2013;14(2):90-93.
7. Aiyenigba AO, Week AD, Rahman A. Managing psychological trauma of infertility. Afr J Reprod. 2019;23(2):76-91.
8. Baloyi ME. Gendered character of barrenness in an African context: an African pastoral study. In die Skriflig. 2017;51(1):1-7.
9. Anokye R, Acheampong E, Mprah WK, Ope JO, Barivure TN. Psychosocial effects of infertility among couples attending St. Michael's Hospital, Jachie-Pramso in the Ashanti region of Ghana. BMC Res Notes. 2017;10(1):690. doi:10.1186/s13104-017-3008-8.
10. Kussiwaah DY, Donkor ES, Naab F. "I am tired of being childless": social experiences of women with infertility. Asian J Sci Technol. 2017; 8(1):4221-4226.

11. Ogar JN, Leonard N, Bassey SA. Issues related to infertility in Africa: an ethical scan. Int J Biomed. 2018;9(9):310-315. doi:10.7439/ijbar.v9i9.4898.
12. Donkor ES, Naab F, Kussiwaah DY. "I am anxious and desperate": psychological experiences of women with infertility in the greater Accra region, Ghana. Fertil Res Pract. 2017;3:6. doi:10.1186/s40738-017-0033-1.
13. Eniola OW, Adetola AA, Abayomi BT. A review of female infertility; important etiological factors and management. J Microbiol Biotechnol. 2017;2(3):379-385.
14. Batool SS, De Visser RO. Psychosocial and contextual determinants of health among infertile women: a cross-cultural study. Psychol Health Med. 2014;19(6):673-679. doi:10.1080/13548506.2014.880492.
15. Joy J, Mccrystal P. The role of counselling in the management of patients with infertility. Obstet Gynaecol. 2015;17(2):83-89.
16. Kussiwaah DY, Donkor ES, Naab F. "Management gap in the treatment of infertility in Ghana": the cry of childless women. Int J Nurs Health Sci. 2016;3(6):53-58.
17. Armah D. Development of Guidelines for Holistic Healthcare Interventions for Women With Infertility in Ghana [dissertation]. Pretoria, South Africa: University of Pretoria; 2019.

18. Limiñana-Gras RM. Reproductive psychology and infertility. Acta Psychopathol. 2017;3(S2:83):1-3.
19. Rooney KL, Domar AD. The relationship between stress and infertility. Dialogues Clin Neurosci. 2018;20(1):41-47.
20. Boivin J, Gameiro S. Evolution of psychology and counseling in infertility. Fertil Steril. 2015;104(2):251-259.
21. Anwar S, Anwar A. Infertility: a review on causes, treatment and management. Womens Health Gynecol. 2016;2(6):1-5.
22. McMillan SS, King M, Tully MP. How to use the nominal group and Delphi techniques. Int J Clin Pharm-Net. 2016;38(3):655-662.
23. Harvey N, Holmes CA. Nominal group technique: an effective method for obtaining group consensus. Int J Nurs Pract. 2012;18(2):188-194.
24. Dang VH. The use of nominal group technique: case study in Vietnam. World J Educ. 2015;5(4):14-25. doi:10.5430/wje.v5n4p14.
25. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):92-98.
26. Choussein S, Vlahos NF. Female fertility assessment. Curr Obstet Gynecol Rep. 2012;1(4):174-181.
27. Kuohung W, Hornstein MD. Evaluation of female infertility. UpToDate. https://www.uptodate.com/contents/evaluation-of-female-infertility. Published 2019. Accessed March 10, 2019.
28. O'Flynn N. Assessment and treatment for people with fertility problems: NICE guideline. Br J Gen Pract. 2014;64(618):50-51.
29. Stegenga J. Effectiveness of medical interventions. Stud Hist Philos Biol Biomed Sci. 2015;54:34-44.
30. Hanh TN. Supportive therapy. In: Peh A, ed. Effective Psychological Interventions in Primary Care. Singapore: Eastern Health Alliance; 2016: 10-27.
31. Yazdani F, Elyasi F, Peyvandi S, et al. Counseling-supportive interventions to decrease infertile women's perceived stress: a systematic review. Electron Physician. 2017;9(6):4694-4702.
32. Luk BHK, Loke AY. A review of supportive interventions targeting individuals or couples undergoing infertility treatment: directions for the development of interventions. J Sex Marital Ther. 2016;42(6):515-533.
33. Ying L, Wu LH, Loke AY. The effects of psychosocial interventions on the mental health, pregnancy rates, and marital function of infertile couples undergoing in vitro fertilization: a systematic review. J Assist Reprod Genet. 2016;33(6):689-701.
34. Hussein A. Effect of psychological intervention on marital satisfaction rate of infertile couples. Int J Educ Policy Res Rev. 2014;1(3):28-36.
35. Read SC, Carrier ME, Boucher ME, Whitley R, Bond S, Zelkowitz P. Psychosocial services for couples in infertility treatment: what do couples really want? Patient Educ Couns. 2014;94(3):390-395. doi:10.1016/j.pec.2013.10.025.
36. Verkuijlen J, Verhaak C, Nelen W, Wilkinson J, Farquhar C. Psychological and educational interventions for subfertile men and women. Cochrane Database Syst Rev. 2014;3(3):CD011034. doi:10.1002/14651858.CD011034.pub2.
37. Jafarzadeh-Kenarsari F, Ghahiri A, Habibi M, Zargham-Boroujeni A. Exploration of infertile couples' support requirements: a qualitative study. Int J Fertil Steril. 2015;9(1):81-

92.
38. Gameiro S, Boivin J, Dancet E, et al. ESHRE guideline: routine psychosocial care in infertility and medically assisted reproduction—a guide for fertility staff. Hum Reprod. 2015;30(11):2476-2485. doi:10.1093/humrep/dev177.
39. Chelagat D, Choge Kerama E, Morogo W, Ayieko BM, Maiko RK. Infertility in Africa: a great manifestation of gender discrimination. Int J Res Method Educ. 2017;7(3):42-44.
40. Chirico F. Spiritual well-being in the 21st century: it's time to review the current who's health definition. J Health Soc Sci. 2016;1(1): 11-16.
41. Ramezani M, Ahmadi F, Mohammadi E, Kazemnejad A. Spiritual care in nursing: a concept analysis. Int Nurs Rev. 2014;61(2):211-219.
42. Dhar N, Chaturvedi SK, Nandan D. Spiritual health, the fourth dimension: a public health perspective. WHO South East Asia J Public Health. 2013;2(1):3-5.
43. Oti-Boadi M, Asante KO. Psychological health and religious coping of Ghanaian women with infertility. Biopsychosocial Med. 2017; 11:20.
44. Chan CH, Chan CL, Ng EH, et al. Incorporating spirituality in psychosocial group intervention for women undergoing in vitro fertilization: a prospective randomized controlled study. Psychol Psychother. 2012;85(4):356-373.
45. Begum BN, Hasan S. Psychological problems among women with infertility problem: a comparative study. J Pak Med Assoc. 2014;64(11): 1287-1291.