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# Beliefs about children and the psychosocial implications of infertility on individuals seeking assisted fertilization in Ghana


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**Abstract** Infertility presents challenges to individuals and couples, particularly in Sub-Saharan Africa. This study aimed to document beliefs about childbearing/children and the psychosocial implications of infertility in individuals seeking assisted fertilization in the Ghanaian context. The study had an exploratory descriptive qualitative design. Six males and 12 females were recruited purposefully from five private fertility centres in the Greater Accra Region. Face-to-face interviews were performed. In Ghanaian society, couples and individuals with infertility who are seeking assisted fertilization consider having biological children to be important. The quest to have children was broadly centred on the associated benefits of being a parent, including societal recognition, the role of family inheritance, and support. The inability of participants to have biological children was found to have a negative effect on their psychological and social well-being. Anxiety, worry, hopelessness, stigma and suicidal ideations were some of the effects identified. It is recommended that those seeking assisted fertilization should be supported through counselling to minimize the potential negative effects of childlessness. 

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**KEYWORDS:** beliefs, children, infertility, psychosocial, assisted reproductive technology, Ghana

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## Introduction

The International Glossary on Infertility and Fertility Care (Zegers-Hochschild et al., 2017) defines infertility as the failure to establish a clinical pregnancy after 12 months of regular unprotected sexual intercourse, or due to impairment of a person's capacity to reproduce either as an individual or with his/her partner. The prevalence of infertility differs geographically, even within countries (Polis et al., 2017; Sharma et al., 2009). A higher proportion of couples with infertility reside in low- and middle-income countries, particularly in Sub-Saharan Africa (Polis et al., 2017; Sharma et al., 2009).

Generally, having biological children is considered as key to womanhood/manhood and is an avenue to gaining community acceptance in most developing societies (Bokaie et al., 2016; Dyer, 2002; Hollos, 2003; Pandian et al., 2008; Sami and Ali, 2012; Yao et al., 2018). There are several reasons for the high value placed on children in these areas (Behjati-Ardakani et al., 2017; Hasanpoor-azghdy et al., 2014; Hess et al., 2018; Liamputtong and Benza, 2018; Olusola and Ojo, 2012; Tabong and Adongo, 2013). To most individuals, having biological children is an important component of their lifetime achievement (Hess et al., 2018; Liamputtong and Benza, 2018). Others consider children as a form of social security for parents (Behjati-Ardakani et al., 2017; Hasanpoor-azghdy et al., 2014; Hess et al., 2018; Liamputtong and Benza, 2018; Olusola and Ojo, 2012). Children are recognized as a means to stabilize one's status in the family and within community circles (Hasanpoor-azghdy et al., 2014).

Given the aforementioned beliefs, individuals who are unable to achieve pregnancy and subsequently parenthood face various psychological and social challenges (Donkor et al., 2017; Hess et al., 2018; Polis et al., 2017), including stress, depression, divorce, partner violence, abuse and stigmatization (Donkor et al., 2017; Hess et al., 2018; Koert and Daniluk, 2017). In the worst scenario, affected persons suffer psychiatric disorders that could lead to suicidal ideations (Baldur-Felskov et al., 2013).

Previous studies in Ghana have documented psychosocial concerns among women with infertility (Donkor et al., 2017; Naab et al., 2013; Yusuf, 2016). For example, Donkor et al. (2017) reported psychological experiences of women with infertility in the Greater Accra Region of Ghana. However, none of these studies explored beliefs about children in the Ghanaian context that broadly underlie the psychosocial challenges widely reported in the literature. Thus, this study aimed to bridge this gap by exploring the phenomenon from the perspectives of individuals seeking assisted fertilization in selected fertility centres in the Greater Accra Region.

## Materials and methods

### Study design and setting

This study had a qualitative exploratory descriptive design (Polit and Beck, 2014). This was appropriate as the researchers were interested in understanding the meanings that subjects with infertility attach to their beliefs about

childbearing and its psychosocial implications on their lives (Baldur-Felskov et al., 2013; Polit and Beck, 2014). Given that little was known about the phenomenon under study, this was considered to be an appropriate approach. The study was conducted in five private fertility centres in the Greater Accra Region. These facilities treat individuals experiencing either primary or secondary infertility and undergoing various types of assisted reproductive technology (ART) treatment.

This study is part of a larger study on coping with ART. This article reports the findings pertaining to beliefs about childbearing and its psychosocial implications on individuals with infertility seeking assisted fertility treatment in Ghana. Ethical approval for the study was obtained from Ghana Health Service Review Board (Protocol No. GHS/REC: 02/01/2017).

### Participants and sampling

Individuals with either primary or secondary infertility seeking fertility treatment, who gave consent, were recruited. Male and female clients with infertility who were opting for surrogacy as a means of treatment were excluded. Purposive sampling was used to select respondents. In total, 18 individuals participated in the study. The participants were recruited from five fertility centres, with the initial aim being to obtain equal numbers from each facility. In each facility, two females and one male seeking treatment were recruited as individuals when the researchers visited their clinic. However, an additional three participants (two females and one male) were added from one large facility as saturation was reached.

Twelve females (67%) and six males (33%) were interviewed. This ratio of females to males was adopted as more females were present at any point in time in the fertility centres. This is because females undergo all treatment phases and therefore attended the fertility centres several times during the treatment period, whereas males usually only attend fertility centres for sperm donation and therefore were not easily accessible.

### Data collection

Data were collected over a period of 9 months. Respondents who met the inclusion criteria were contacted and recruited by the obstetric/gynaecologist or the embryologist, who subsequently linked them to the researchers. To ensure privacy, interviews were conducted in private rooms at the fertility centres. Interviews were conducted in English, which is an official language in Ghana, and were audio-recorded with the respondent's permission. Each interview lasted for approximately 1 h. Field notes were taken during the interviews. Data saturation was reached by the thirteenth respondent; nonetheless, an additional five interviews were conducted to ascertain whether new relevant issues would emerge (Polit and Beck, 2014). However, no new issues emerged.

### Research instrument

An interview guide (see online supplementary material) was developed based on a literature review and in consultation

with the research team. The interview guide was piloted using three participants, and the comments were used to improve the clarity of the guide.

### Data analysis

Data were analysed using inductive thematic analyses and this was aided using NVivo Version 11. This was subsequently reviewed by the research team throughout the analytic process. Braun and Clarke's (2006) procedure for data analysis was followed, and intercoder reliability was ensured during the analysis stage. Initially, three transcripts were coded separately by two authors (JMK and CAA), followed by the entire team holding a meeting to discuss the various codes and categories that differed. Final agreement was reached on the various categories and themes.

Trustworthiness was ensured throughout the study (Polit and Beck, 2014) through credibility, transferability, dependability and confirmability. Credibility was achieved through piloting the interview guide using three participants. To ensure dependability of the findings, the methodological processes were documented in detail to enable future researchers to repeat the process. Confirmability was ensured by an independent reviewer reviewing the proposal and the data instruments for its appropriateness.

### Results

The 18 study participants had experienced infertility for 2–27 years. The age of male participants ranged from 31 to 50 years, and the age of female participants ranged from 31 to 55 years. Three participants (one male and two females) had secondary infertility, and 15 participants (five males and 10 females) had primary infertility. The study had three major themes: cultural beliefs about children, psychological implications of infertility, and social implications of infertility.

Each theme is presented below with subthemes and associated quotes. Pseudonyms have been used.

#### Cultural beliefs about children

The participants reported a number of beliefs that they attached to parenthood in the Ghanaian context. These beliefs related more specifically to the extent to which children were valued by the participants. Some of the cultural meanings asserted can be classified into four subthemes: societal recognition, inheritance, companionship and social support.

#### Societal recognition

According to the majority of participants, their definition of womanhood/manhood centred on a person's ability to have biological children. More explicitly, having children was said to be associated with honour, which took the form of recognition. Individuals who are unable to fulfil the societal expectation of having a child after marriage are judged by

others to be worthless. These societal expectations do not hinge on whether the marriage is legal or not:

As you know, children are considered important in our society in Africa. In my culture, women are defined by their ability to have their own children. When you do not have kids of your own, you are seen as not doing what society expects of you especially after you are married for a year or two. [Esi]

In my community, people do not question whether you have a husband or not. What they care to know is whether you have a child or not. [Araba]

Some participants said they were sometimes not invited to certain events, such as children's birthday parties, by their families and friends:

I remember when my own cousin who lives not too far from our house had a birthday party for her 3-year-old child and she invited other family members who had children and left me out. I am sure it is because I had no child. [Aba]

Children are very important to me especially in my community. The way it is, if you don't have a child of your own in our society, you are not honoured even among your own family. [John]

The participants also recounted some experiences they had been through at church on special occasions where recognition is given to both parents and children:

I always do not want to be at church during children's day as well as mothers' day all because on these days parents and their children are called in front of the church and prayed for. Can you imagine how it feels like if you are in the service and you do not have a child of your own? [Joyce]

I have seen that every year in my church, children are sent for camping. In those times, parents are contacted by the leaders of the children ministry to solicit for funds. As an usher, I am always tasked to share these envelopes which have the names of the parents on them. I have never been given one before although I have been in the church for a long time. Maybe they do not see me as a mother. [Akos]

#### Family inheritance

Participants asserted that one of the hallmarks of successful adulthood is the ability to work hard and acquire properties that will support them in their old age. Therefore, the majority of participants recognized children as essential to family inheritance. According to some of the participants, the properties that one acquires in his/her lifetime are expected to be inherited by their own children when he/she passes on. Thus, children were considered as an essential component of the transition process by almost all of the participants:

As for children, they are very important to me and my husband in so many ways. My husband feels frustrated all the time that we do not have children who will inherit the many houses we have built. We often feel that we have worked so hard for nothing. [Abigail]

Some of the participants feared that after their death, persons who might not appreciate the enormity of their struggle will misappropriate the resources that they have worked for over the years:

I have been working all my lifetime and I am gradually becoming old. But who takes over all the wealth I have acquired in life? It is scary to think that all these may go into the hands of a person who may not value your sweat. [Gabi]

When you leave everything on earth and you have nobody to take care of the things, then what is the essence of all the struggles? That is why we are under pressure to have children. We don't just 'want it, we need it'. [Afua]

One of the beliefs that the participants deemed important was the continuity of their family name. Some of them were concerned that the name given to them by their parents would be lost if they died without a child:

For as the Akans, our names are carried by our children and that continues your lineage even when you are dead and gone. Now that I do not have a child on my own, it is possible that the name handed to me by my father will no longer be carried by the next generation to follow me. [Baffour]

## Companionship

Relationships were considered an essential component of the family fabric by the participants. The role of children in the provision of emotional support, affection and fulfilment was widely reported by the participants:

When children are around you, I can tell that it gives one much joy. This is something I see when I visit my friends who are with children. You can see that there is no loneliness in the marriage. [Abigail]

The boredom in our home is clearly as a result of the absence of the children. If we had, there would have been an ongoing discussion at all times, if nothing at all what happens in their school and with friends. But no such conversation does happen in my home. [Ekua]

Some participants indicated that having children could act as a form of coping, and that in an event where they were psychologically disturbed, engagement of children could divert their attention from the stressors:

..... At least if you have a child and you are worried, your child will make some noises or will come to talk to you, and this will distract you and take your mind off the problem. Such distances can be helpful at times. [Ama]

Further, some participants stated that their desire to have children was simply because they love them and wish to always be around them:

Children are very important to me. Personally, I love kids. I'm happy whenever I see children. Not because I want children to take care of me when I'm old, but I simply love children. [Asantewaa]

## Social and economic support

The participants reported two forms of support: social and economic support. According to the participants, each had a specific timeline. Some participants were already at a stage that they needed children to perform certain roles on their behalf. Other participants perceived the need to have children for future benefits:

Now that I am 40 years, ideally, I shouldn't be sweeping, mopping, washing dishes if I had a child. [Ekua]  
Sometimes you wish you could get your own child for errands. But hey, it's not so. [Sam]

Some participants placed a high premium on the type of support they would like to have in their old age. The participants were cognizant of the fact that dependency would occur at some point in their life, and that they needed to have some form of support when the need arose:

They [children] are important because as we are strong today, tomorrow you are old and might need some assistance. This can be in a form of money or buying of food stuff and so on. The point is if you don't have a child, whose child will gladly do all this for you? [Ekua]  
Just like my dad gave birth to me and I'm helping him in his old age. I also expect same when I am old. That is how life is supposed to be but not to beg for help when your bones become weak. [Seyram]

Other participants reported that in times of ill health, children are instrumental in the type of medical care they will receive. According to them, the weakness that characterizes old age often requires a supporting hand, and children were deemed as appropriate for such help:

I see a lot of children taking their parents to the hospital for care. What I keep asking myself is what would happen when I get to that stage? [Michael]

## Psychological implications of infertility

A number of participants asserted that childlessness was characterized by various psychological challenges, including worry, anxiety, hopelessness and suicidal ideations.

### Worry

Worry was a common psychological problem reported by the participants. The feeling of worry was exacerbated in an event where the participant encountered other families with children or participated in activities that involved children:

Just after 1 year of marriage, I realized that I was unable to achieve pregnancy. The thought of it alone causes me to worry almost every day. My feeling is much worsened any time I take part in an event that involves children. [Araba]

Any time I see children showing their talents in an event, I break into tears because of the worries built up in me over the years that I have lived without a child. [Aba]

Other participants said that they worried about how they are frequently confronted by people who demand an explanation for their childlessness:

.... can you imagine? I keep answering the same question on why I have not given birth almost every day to people and I'm now fed up because it makes me worry too much. [Esi]

Some participants said that they had experienced gossip from others as a result of their childlessness. According to them, discussion about their childlessness by others is very disturbing, and makes them worry about why people have so much interest in their private life:

People who don't know me seem to present my issue as if I share the same room with them. It's quite disturbing when you hear all these stories about you. [Joyce]

Some male participants indicated that the emotional feelings visibly expressed by their partner gave them cause to worry. According to the male participants, their wives tended to be particularly disturbed whenever they were invited to a child's christening by another couple:

My wife is always crying especially whenever she gets to know that any of her friends have given birth and we are invited for the naming ceremony. It bothers me to see her sad always. [Kofi]

## Anxiety

One of the concerns noted to fuel anxiety among the participants was aging. According to the participants, the delay in conception was considered a possible challenge that could affect their viability to have children. The fear of aging without a child was perceived by the participants as a threat to childbearing, and therefore contributed to severe anxiety among those who were older:

Now I am 43 years and as the years go by, I feel anxious about my chances of bringing forth a child. As you know, once you are 40 years and above, childbearing becomes difficult and at my age, I can't just be calm but be anxious about tomorrow. [Efua]

Almost all of the participants said that they were anxious about what the future would hold for them without biological children. They feared that they might not be supported socially if they were unable to have their own children:

I don't know what the future holds for me as a woman without a child. Right now, I feel anxious of who would take care of me when I am old without a child. [Asantewaa]

You can't rely on other people's children. Even now, getting someone's child to send on an errand is a problem, how much more the future? That is what gets me shaking all the time. [Seyram]

## Hopelessness

Marriage was seen as complete by the participants when the couple had children. Some participants indicated that their

expectation of having a child sometimes appeared very blurred. The feeling of hopelessness made them feel empty in their marriage:

I have come to a point in life that I feel hopeless. I have struggled for 15 years looking for a kid to make my home complete but no result. [Efua]

Furthermore, a number of participants felt that it was not worth being in a marriage for years and not bearing children, as they believed that a marriage is only complete after having children:

I sincerely wish I was single rather than being in marriage and not able to bear a child. I see myself as a failure in the marriage. I must confess that my expectation in marriage has not been met. [Joyce]

Some participants indicated that they felt hopeless because of what others told them, especially their mother in-law. Some mentioned that they had been ridiculed in public places, thus motivating them to have a child at all cost but to no avail. They considered their situation as hopeless:

The suffering I have gone through especially from the hands of my mother in-law because of this issue is a lot. I decided to get a result by every means, but I have not been successful. My friends sometimes say my case is 'hopeless'. [Efua]

## Suicidal ideations

Some participants felt that it would have been better for them to die than to be alive and go through the challenges of infertility. Some had attempted suicide as a result of the shame they experienced. This was sometimes aggravated by unfavourable utterances by family and friends.

A male client shared his experience of attempting suicide:

There was a time that I felt it would be better if I die ...even my own brother who comes after me has ever insulted me several times that I'm not a man. I actually planned to drink poison, and this was intervened by a friend. [Gabi]

According to some participants, the fact that they were known to be the cause of the infertility had affected their married life severely. One male participant recounted how he had been divorced multiple times after his wives learned that the problem was coming from him:

I marry, and the women leave me, and all the women have children. Sometimes I weep. Sometimes, I feel like committing suicide. [Issah]

Others have also reported instances where they were hearing voices telling them how worthless they were because of their childlessness. One female participant recounted how she nearly committed suicide by abusing antibiotics:

For me I usually hear voices saying I should kill myself because I am worthless as a woman without my child. One day I nearly took an overdose of amoxicillin to end it all. [Joyce]

## Social implications of infertility

In addition to psychological problems, some participants reported social challenges due to their childlessness, including pressure from family and friends, divorce and stigmatization.

### Pressure from family and friends

The majority of male participants indicated that they were under constant pressure from their parents to have a baby. The reason given by most parents, according to the participants, was that they want to see their grandchildren before they pass on. The demand for children extends beyond the parents to include the participant's siblings:

I do have a lot of pressure from my family and friends. I'm the only man in my family and my mum is worrying me that she needs her grandson or her grandchildren and that is the pressure I'm having. My siblings are also complaining, but I tell them I'm not God. [Baffour]

Some male participants added that there had been instances when their mother suggested that they should have another woman beside their wife if they did not want to divorce. One mother had even arranged for her son to have children with another woman from the village:

I have had my mum calling me and telling me that she can arrange a girl for me in the village so that I have kids with her and keep my wife in the city if I do not want to leave her. This has happened on several occasions. [Michael]

Other participants reported that their parents had never confronted them to discuss matters regarding their childlessness, but they had been asked questions by their siblings about the delay in having a baby, which they perceived to come from their parents:

My mother never talks about me not getting pregnant. But the kind of discussions that my sister has with me suggests that my mother has been taking to her about my issue behind me. [Aba]

### Divorce

Some of the male participants reported that they had married different women in their attempt to have children, but the marriages had ended in divorce. According to the participants, their wives attributed the cause of the childlessness to them because some of them had given birth previously and therefore believed themselves to be viable:

I have been married several times with no child. First, I married a woman who had given birth once and we were together for 8–9 years but no child... she divorced me. After her, I have married two different women before marrying the current one. [Issah]

One female participant narrated how her husband's previous marriages had ended in divorce because his wives were unable to give him a child. She recounted:

When he (husband) marries and the woman doesn't give birth, he divorces the woman, and he has done that to three women and I'm the fourth woman he is marrying. He initially went to a hospital and after treatment, he wasn't successful, so he had made up his mind not to marry again till he met me. So, after the marriage ceremony, I told him to let us take some steps towards giving birth. [Fafa]

### Stigmatization

The majority of participants reported some form of stigma due to their childlessness. According to them, they were ridiculed by others who were married and had children:

Some of my friends actually laugh at me sometimes because most of my friends are married and have kids and I have a wife for 2 years without kids. [Michael]

Other participants stated that people questioned whether their inability to have a biological child was due to their wife having had an abortion previously:

A friend visited us and wanted to know if the cause of our childlessness was due to abortions when my wife was young. [Emmanuel]

The question of abortion was not only directed at male participants but sometimes at female participants:

Some people say I had a lot of abortions and that is why I'm not giving birth. I have heard this over and over even from my very close friends and some Christian friends. Whenever I am around them, their attitude is different towards me as if I am very sinful. [Ami]

## Discussion

This study sought to explore beliefs about children and their implications on the psychosocial well-being of individuals in Ghana. Cultural beliefs focusing primarily on the benefits of children included societal recognition, inheritance, companionship and social support. Psychosocial challenges associated with infertility included anxiety, worry, hopelessness, stigma and suicidal ideations.

Regarding cultural beliefs, participants in this study viewed children as an important asset. Some of the benefits were underpinned by the belief that children are a source of happiness and companionship for couples. In Ghanaian culture, properties acquired by families are passed on to children as inheritance, so childbearing is considered important in making property acquisition worthwhile; this was widely professed by the participants. The recognition of children as gifts and the value that participants placed on children, as shown in this study, were similar to findings reported in other studies in Ghana (Donkor et al., 2017; Naab, 2014).

Despite the desire of many couples to have children, not all couples have their hopes met (Koert and Daniluk, 2017; Pedro and Andipatin, 2014). This was the situation for a number of the participants in this study. The delay in childbearing led to unpleasant reactions from their in-laws, neighbours and friends, as reported in other studies (Hess

et al., 2018). This demonstrates that the value placed on children extends beyond the couple to their immediate family members and neighbours. As a result, various degrees of pressure originating from in-laws were placed on couples to bear children. The role of in-laws in promoting childbearing has also been observed in other studies (Jamshidimanesh et al., 2012). A recent study revealed that individuals with infertility are stigmatized and criticized by their family and the local community (Hess et al., 2018).

The findings of this study revealed that individuals with infertility experience various psychosocial challenges such as anxiety, worry, hopelessness, stigma and suicidal thoughts. Other studies have found women with infertility to have suffered various degrees of grief, regret, shock, anger and sadness over their childlessness (Jamshidimanesh et al., 2012). Women with infertility face various forms of abuse including physical and psychological violence (Jamshidimanesh et al., 2012).

Other findings related to the psychosocial challenges experienced by infertile individuals in Ghana include anxiety, depression, worry, lack of concentration and reduced sexual satisfaction, as reported in other studies (Donkor et al., 2017). The present study supported previous findings in Ghana as the respondents felt worried and sad because of their inability to have children. Their worries were exacerbated any time they attended events that featured children. Similarly, conversations that made reference to children created an embarrassing situation for infertile couples in Jordan (Daibes et al., 2017). The negative consequences of infertility include suicidal thoughts (Fatoye et al., 2008), marital instability, divorce and social exclusion (Hess et al., 2018; Jamshidimanesh et al., 2012), as found in the present study.

With regards to social implications, individuals living with infertility sometimes suffer humiliation and public ridicule, and are excluded from social functions (Fledderjohann, 2012). This study found that they were stigmatized as their condition was attributed to past misdeeds such as abortions, which are known to lead to infertility as a result of damage to the womb. The perception that infertility is linked to previous abortions appears to define women with infertility as promiscuous, and paying for the consequences of their previous lifestyle (McGovern et al., 2017; Yao et al., 2018). Studies have revealed that women with infertility are still blamed as the cause of the problem in some parts of the world (Daibes et al., 2017).

These findings should be viewed in light of the strengths and limitations of this study. The exploration of beliefs about children in the Ghanaian context is rarely reported in the literature. As such, this study highlighted some of the beliefs that influence people's motivation to seek assisted fertilization in Ghana. The study was limited by the recruitment of participants from fertility treatment centres specializing in assisted fertilization, and may have excluded individuals who could not afford to pay for such intervention. Given that beliefs about childbearing are deeply engrained in most Ghanaian societies and cultures, as reflected in the participants' responses, it is recommended that periodic sensitization programmes on factors that determine fertility and childbearing should be made available on various media platforms. Further, non-governmental organizations should increase their advocacy

role for people with infertility. In addition, there is a need for the government to widen access to fertility treatment in the study area. People with infertility should be supported psychologically and emotionally by experts in the area of infertility.

## Conclusion

In Ghanaian society, having biological children is considered important by couples and individuals with infertility who are seeking assisted fertilization. The quest to have children was broadly centred on the associated benefits of being a parent, including societal recognition, the role of family inheritance, and support. The inability of participants to have biological children was found to have a negative effect on their psychological and social well-being. Anxiety, worry, hopelessness, stigma and suicidal ideations were some of the challenges identified. It is recommended that persons seeking assisted fertilization should be supported through counselling to minimize the potential negative effects of childlessness.

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## Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.rbms.2021.02.003>.

## References

- Baldur-Felskov, B., Kjaer, S.K., Albieri, V., Steding-Jensen, M., Kjaer, T., Johansen, C., Dalton, S.O., Jensen, A., 2013. Psychiatric disorders in women with fertility problems: results from a large Danish register-based cohort study. *Hum. Reprod.* 28, 683–690.
- Behjati-Ardakani, Z., Navabakhsh, M., Hosseini, S.H., 2017. Sociological study on the transformation of fertility and childbearing concept in Iran. *J. Reprod. Infertility* 18 (1).
- Braun, V., Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative Res. Psychol.* 3, 77–101.
- Bokaie, M., Simbar, M., Ardekani, S.M., Majd, H.A., 2016. Women's beliefs about infertility and sexual behaviors: a qualitative study. *Iranian J. Nursing Midwifery Res.* 21 (4), 379–384.
- Daibes, M.A., Safadi, R.R., Athamneh, T., Anees, I.F., Constantino, R.E., 2017. Half a woman, half a man; that is how they make me feel: a qualitative study of rural Jordanian women's experience of infertility. *Culture Health Sexuality* 20 (5), 516–530. <https://doi.org/10.1080/13691058>.
- Donkor, E.S., Naab, F., Kussiwaah, D.Y., 2017. "I am anxious and desperate": psychological experiences of women with infertility in The Greater Accra Region, Ghana. *Fertility Res. Practice* 3 (1).
- Dyer, S.J., 2002. Infertility in South Africa: women's reproductive health knowledge and treatment-seeking behaviour for involuntary childlessness. *Hum. Reprod.* 17 (6), 1657–1662.
- Fatoye, Owolabi, Eegunranti, Fatoye, 2008. Unfulfilled desire for pregnancy: gender and family differences in emotional burden among a Nigerian sample. *J. Obstetrics Gynaecol.* 28(4), 408–409.

- Fledderjohann, J.J., 2012. 'Zero is not good for me': implications of infertility in Ghana. *Hum. Reprod.* 27 (5), 1383–1390.
- Hasanpoor-azghdy, S.B., Simbar, M., Vedadhir, A., 2014. The emotional-psychological consequences of infertility among infertile women seeking treatment. *Results Qualitative Study* 12 (2), 131–138.
- Hess, R.F., Ross, R., Gililand Jr, J.L., 2018. Infertility, psychological distress, and coping strategies among women in Mali, West Africa: a mixed-methods study. *African J. Reprod. Health* 22 (1), 60–72.
- Hollos, M., 2003. Profiles of Infertility in Southern Nigeria: Women's Voices from Amakiri. *African J. Reprod. Health / La Revue Africaine de la Sante' Reproductive* 7 (2), 46–56.
- Jamshidimanesh, M., Astaraki, L., Moghadam, Z.B., Taghizadeh, Z., Haghani, H., 2012. Maternal-fetal attachment and its associated factors. *Hayat* 18 (5).
- Koert, E., Daniluk, J.C., 2017. When time runs out: reconciling permanent childlessness after delayed childbearing. *J. Reprod. Infant Psychol.* 35 (4), 342–352. <https://doi.org/10.1080/02646838.2017.1320363>.
- Liamputtong, P., Benza, S., 2018. 'Being able to bear a child': insights from Zimbabwean women in Melbourne. *Women Birth.* <https://doi.org/10.1016/j.wombi.2018.07.002>.
- McGovern, N., Shin, A., Low, G., Low, D., Duan, K., Yao, L.J., et al., 2017. Human fetal dendritic cells promote prenatal T-cell immune suppression through arginase-2. *Nature* 546 (7660), 662.
- Naab, F., Brown, R., Heidrich, S., 2013. Psychosocial health of infertile Ghanaian women and their infertility beliefs. *J. Nurs. Scholarsh.* 45 (2), 132–140.
- Naab, F., 2014. Every month becomes a funeral when they menstruate: African women's beliefs about couple infertility. *J. Infertility Reprod. Biol.* 2 (3), 92–100.
- Olusola, A.I., Ojo, M., 2012. Female infertility and patriarchy: a reflection on medical science and biblical position. *Tropical J. Obstetrics Gynaecol.* 29 (2), 77–80.
- Pandian, Z., Akande, V.A., Harrild, K., Bhattacharya, S., 2008. Surgery for tubal infertility. *Cochrane Database System. Rev.* 3.
- Pedro, A., Andipatin, M., 2014. A qualitative exploration of South African women's psychological and emotional experiences of infertility. *Open J. Preventive Med.* 4 (05), 327.
- Polis, C.B., Cox, C.M., Tunçalp, Ö., McLain, A.C., Thoma, M.E., 2017. Estimating infertility prevalence in low-to-middle-income countries: an application of a current duration approach to Demographic and Health Survey data. *Hum. Reprod.* 32 (5), 1064–1074. <https://doi.org/10.1093/humrep/dex025>.
- Polit, D.F., Beck, C.T., 2014. *Nursing research: principles and methods* (8th ed.). Lippincot William and Wilkins of research. *Human Reprod. Update* 13(1), 27–36.
- Sami, N., Ali, T.S., 2012. Domestic violence against infertile women in Karachi, Pakistan. *Asian Rev. Social Sci.* 1 (1), 15.
- Sharma, S., Mittal, S., Aggarwal, P., 2009. Management of infertility in low resource countries. *BJOGAn Int. J. Obstetrics Gynaecol.* 116 (SUPPL. 1), 71–76. <https://doi.org/10.1111/j.1471-0528.2009.02312.x>.
- Tabong, P.T.-N., Adongo, P.B., 2013. Understanding the social meaning of infertility and childbearing: a qualitative study of the perception of childbearing and childlessness in Northern Ghana. *PLoS ONE* 8 (1) e54429.
- Yao, H., Chan, C.H.Y., Chan, C.L.W., 2018. Childbearing importance: a qualitative study of women with infertility in China. *Res. Nurs. Health* 41 (1), 69–77. <https://doi.org/10.1002/nur.21846>.
- Yusuf, L., 2016. Depression, anxiety and stress among female patients of infertility; A case control study. *Pakistan J. Med. Sci.* 32 (6), 1340.
- Zegers-Hochschild, F., Adamson, G.D., Dyer, S., Racowsky, C., de Mouzon, J., Sokol, R., Rienzi, L., Sunde, A., Schmidt, L., Cooke, I.D., Simpson, J.L., van der Poel, S., 2017. The International Glossary on Infertility and Fertility Care. *Human Reprod.* (Oxford, England) 32 (9), 1786–1801. <https://doi.org/10.1093/humrep/dex234>.

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