**ORIGINAL RESEARCH ARTICLE**

# Explanations for infertility: The case of women in rural Ghana

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## Abstract

Infertility is a troubling condition for couples, especially for women, in pronatalist cultures. The ways in which infertility is explained have important effects on the stigma associated with childlessness and thus on the suffering it causes. This article explored the explanations for infertility among involuntarily childless women in the North-East and Ashanti regions of Ghana. Thirty infertile married women were interviewed, 15 from each region, by using a semi-structured interview protocol. A phenomenological study design and thematic analysis were used to explore the aetiological explanations of their infertility. The data from the Ashanti region was transcribed verbatim from Twi to English, coded, and analysed into themes unlike the data from the North-East which was already in English. Most of these infertile women attributed their condition to supernatural factors irrespective of their settings, level of education, and religion. They proffered such explanations for conditions for which they could not readily pinpoint causes or when these were for them beyond comprehension. Other explanations of infertility were medical, such as fluid in the ovaries and hormonal imbalance. Moreover, lifestyle factors such as the use of contraceptives or having had an abortion were mentioned. Some women mentioned that the cause of their infertility had not been found. Health professionals should educate women on reproductive health issues. Counsellors and therapists should educate would-be couples on the possible challenges in marriages, especially concerning childlessness and infertility. Moreover, to reduce stigma, it is essential that the communities are educated on the documented causes of infertility. *(Afr J Reprod Health 2021; 25[4]: 142-152).*

**Keywords:** Infertility, stigma, lived experience, culture, explanations

## Résumé

L'infertilité est une condition préoccupante pour les couples, surtout pour les femmes, et en particulier dans les cultures natalistes. La manière dont l'infertilité est expliquée a des effets importants dans la stigmatisation sur l'absence d'enfant et donc sur les souffrances qu'elle provoque. L'article rapport des explications de l'infertilité involontairement chez des femmes sans enfant dans les régions du Nord-est et d'Ashanti du Ghana. Trente femmes mariées infertiles ont été interrogées, 15 de chaque région, en utilisant un protocole d'entretien semi-structuré. Un plan d'étude phénoménologique et une analyse thématique ont été utilisés pour explorer les explications étiologiques de leur infertilité. Les données de la région d'Ashanti ont été transcrites textuellement du twi en anglais, codées et analysées en thèmes contrairement aux données du nord-est qui étaient déjà en anglais. La plupart de ces femmes infertiles attribuaient leur état à des facteurs surnaturels quelles que soient leur milieu, leur niveau d'éducation et leurs religions. Elles ont donné de telles explications pour des conditions pour lesquelles elles ne pouvaient facilement identifier les causes ou lorsque celles-ci étaient pour elles au-delà de la compréhension. D'autres explications de l'infertilité étaient médicales, telles que le liquide dans les ovaires et le déséquilibre hormonal. De plus, des facteurs liés au mode de vie tels que l'utilisation de contraceptifs ou l'avortement ont été mentionnés. Certaines femmes ont déclaré que la cause de leur infertilité n'avait pas été trouvée. Les professionnels de la santé devraient éduquer les femmes sur les questions de santé reproductive. Les conseillers et les thérapeutes devraient éduquer les futurs couples sur les défis possibles dans les mariages, en particulier en ce qui concerne l'absence d'enfant et l'infertilité. De plus, pour réduire la stigmatisation, il est essentiel que les communautés soient éduquées sur les causes documentées de l'infertilité. *(Afr J Reprod Health 2021; 25[4]: 142-152).*

**Mots-clés**: Infertilité, stigmatisation, expérience vécue, culture, explications

## Introduction

The prevalence of infertility is a worldwide challenge among married couples[1]. Irrespective of which spouse may have the infertility problem, infertility among couples is associated with divorce, mental health challenges, and even picking others´ children[2-4]. Several studies have documented how infertility challenges influence couples. According to some studies[3], infertility is a challenging situation for couples globally, exerting personal and societal pressures. For instance, in Ghana and the African society in general, community members start mounting pressure and calling couples names and

ascribing causes to the condition[5]. In a study by Barden-O´Fallon in Malawi, friends and community members put pressure on couples to have children immediately after marriage[6]. This comes as no surprise, due to the stigma and consequences associated with infertility or childlessness. In some traditions in Uganda, a marriage is considered incomplete until a child is born and grows throughout the infancy period[7].

Though infertility is a devastating condition to both spouses, women experience it more strongly because they are deemed responsible for reproduction[8,9]. Infertility is not only a medical condition; it is also a social, emotional, and psychological condition[2]. Unlike men, infertile women face abuse from their spouses, in-laws, and community members[10-12]. Mogobe[13] has indicated that, right from childhood, women are socialized into linking womanhood to motherhood. This is deemed the main reason for differences in stigmatization. Among sub-Saharan African women, about 30% have been found to experience infertility[14]. The main cause of infertility in sub-Saharan Africa has been found to be infections[7]. These infections include sexually transmitted infections (STIs), post-abortal, and puerperal sepsis. According to Dyer and colleagues, in sub-Saharan Africa, some women face these challenges because they fail to honestly disclose their condition to health providers, due to the secrecy they maintain regarding sexual and reproductive health conditions[12].

The major cause of subfertility differs between developing and developed countries. Causes of infertility associated with reproductive health conditions in developed countries are minimal because of the effective control of STIs and reproductive health care[15]. This outcome may be due to the willingness on the part of the women in developed countries to disclose their condition to health professionals, in addition to a better quality of care and increased constellation of services. Their attitudes differ culturally from those of sub-Saharan Africa, where issues concerning reproductive health and sex are difficult to openly disclose to or discuss with others. Unsurprisingly, infertility is considered challenging in most societies[15]. In addition, in some studies, infertility is assumed to be caused by a curse; it is, therefore, stigmatized, leading to divorce in many sub-Saharan African societies[8,1,6]. Due to immense stigmatization, to avoid social repercussions, some women pretend to have experienced miscarriages or pregnancies (phantom pregnancies) just to appear fertile; alternatively, they claim they have no intention of having children[12].

Due to the devastating negative consequences of infertility, particularly in sub-Saharan Africa, it is important that infertility is explored qualitatively to understand how the women themselves describe, explain, and treat, their condition. More detailed knowledge on the psychological and social aspects of the condition, and a more profound understanding of how women perceive their condition, could help health workers assist in reducing the emotional stress associated with infertility. Almost all studies in Ghana in this area have been quantitative and concentrated on the well-being of couples in cosmopolitan areas. An exception was the study by Tabong and Adongo[5], who explored couple's experiences of infertility in northern Ghana through qualitative research. However, this study explored the lived experiences of infertile women in northern and southern Ghana.

This article is a part of a larger study that focuses on the views and lived experiences of infertile Ghanaian women. The current article concentrates on how these women explain their condition. The study was conducted in two communities with different cultures and traditions. The idea was to capture how infertile women living in these regions construct meanings within their situations and compare their subjective realities as regards the causes of infertility in their social context.

## *Theoretical framework*

The theoretical framework of this study is derived from the idea that people, their ways of thinking and acting, are always embedded in the culture in which they live[17]. Bandura has claimed that the social environment has a personality just as individuals do, and these personalities are always in a constant relationship (reciprocal determinism)[18]. Hence, it is not surprising that culture is a central determinant of health[17]. Therefore, to analyse and understand a person, his or her context is paramount. Stigma originates from the socio-cultural environment.

What is devalued is dependent on the cultural norms and values of a people.

Stigma is a concept that refers to the negative cultural attitude toward persons with certain characteristics that are held as unwanted[19]. In many health conditions, physical or psychological, stigma significantly adds to the burden of the condition. Stigma often leads to discrimination, even ostracism. In the case of infertility, the stigma is often intense and has severe social consequences especially in countries of sub-Saharan Africa[5,20].

One of the factors that contribute to the experience of physical conditions, such as illness or childlessness, is the way in which the condition is explained, or attributed[21]. It is characteristic of human beings that they try to attribute causes to whatever happens, and these explanations may derive from various sources ranging from traditional beliefs and religions to everyday reasoning and scientific research. Whatever kind of explanation is used has profound consequences. Certain conditions are stigmatized based on the perceived or actual aetiology of those conditions. Individuals may be stigmatized because of the societal beliefs that are responsible for those conditions or resulting from certain unaccepted behaviours.

As Forsyth[22] states, attributions serve four main purposes. The most evident of them is the wish to understand what has happened, in other words, to gain intellectual control over the situations (explanation). The second function is to gain practical control of the situation (prediction). The third function of attribution is to protect one´s self, that is they serve the purposes of coping (the egocentric function). According to the attribution theory, explanations can act as ways of self-enhancing and thus coping. Explanations for negative events are sought from among factors that lie outside the individual´s control while positive events are seen as one´s accomplishments. And finally, attributions can also have a social function: when an individual is able to convince their social environment that the cause of an untoward condition lies outside themselves, they can present themselves as victims, but not guilty. In so doing, they aim to preserve their dignity or save face by blaming others[23,22]. In rendering their account of the issues, they tend to use socially acceptable and approved expressions to buttress their points[24], all to avoid shame, guilt, and stigma. However, even though individuals can have some power over which explanations they express and endorse, it is often the society that determines what is seen as the cause of the situation by providing the dominant ways of explanation. For example, in Africa, the childlessness of a couple is usually seen as the woman´s failure[4].

Explanations or attributions are drawn from different "belief systems" which are more or less interconnected. These are widely held sets of conceptions of the underlying causes of events and of our ways of getting to know these. They are also emotion and value laden[20]. A certain religion is one belief system, western science can be seen as another, and there are also more vague lay understandings of the nature of the world.

This study aims to gain an understanding of how childless Ghanaian women who visit herbalists for treatment explain their condition. Moreover, the cultural differences among Ghanaians are explored by comparing women living in rural, Christian areas on one hand and rural Muslim women on the other, we try to find out if these differ from each other.

# Method

## *Study design*

Since this phenomenon is very personal and sensitive, the need for a qualitative personal in-depth interaction was evident, to better reveal the lived experiences of involuntarily childless women. A phenomenological study design was employed to explore their experiences. The entire study used thematic analysis and interpretative phenomenological analysis aimed at exploring the descriptions, treatment, and explanations, of infertility among women and the meaning they constructed from their conditions. The current article focuses on the explanations which the women provide for their infertility.

## *Study location*

The study areas were the North-East and Ashanti regions of Ghana, specifically rural dwellings, to capture the traditional and cultural aspects of the phenomenon. The East and West Mamprusi Municipalities formed the northern location. East

Mamprusi is situated in the north-eastern part of the northern region, sharing its west boundary with West Mamprusi[25]. Kwabre East and Kumasi Metropolitan assembly formed the Ashanti region, the most densely populated in Ghana[26]. The people in the East and West Mamprusi Municipalities in the North-East region speak Mampruli. Polygyny is a common practice among members of the Islamic community and those who align themselves with African traditional religion[27]; they practise the patrilineal system of inheritance[28]. The people in the Ashanti region are a part of the Twi-speaking Akan ethnic group; they are mostly Christians and practise monogamy and a matrilineal system of inheritance. These two settings were chosen because of the difference in inheritance, culture, and traditions.

### *Ghanaian culture*

In the typical Ghanaian context, people mostly adhere strictly to customs and traditions. Ghanaians embrace both the nuclear and extended family systems because everyone is a member of the two[29]. In their communal living, problems and happiness are shared among people in the family and the community or society at large. A community member can question another about any issue of interest because they feel a sense of responsibility to cater for others, especially if they are older.

Reverence is given to the elderly in society[30]. Ghanaians, especially the Akans believe in deities and the attributes they possess[31]. For example, in the Akan culture, some days of the week are gendered due to the power and characteristics of their deities. For instance, Tuesdays, Thursdays, and Saturdays are labelled female because they are believed to carry the power of production[31]. Hence marriages are held on these days to promote long-lasting and fruitful marriages. It is therefore not surprising that they attribute everything beyond their comprehension or control to a deity. Ghana has two main family systems, matrilineal and patrilineal[29]. In the former, kinship is based on the mother's lineage while the latter is on the father's. Northern Ghanaians generally practise the patrilineal system while southerners usually practise the matrilineal. Women are mostly viewed as inferior to men, and in subordinate positions in the African context, with men viewed as the head of families or in control of affairs[32]. Interestingly, respect and dignity are accorded to females in the matrilineal family system because they have the power to nominate a king unlike those in the patrilineal system, where men oversee everything. Furthermore, the women are powerful because the children born to the couples belong to their family lineage[30].

### *Southern Ghana*

The Southern Ghanaian women in our sample are mostly partially or highly educated, Christians and in mostly monogamous marriages. Women are diverse in their views although they adhere to tradition and culture, and the maternal system of inheritance. Despite the husbands being responsible for the upkeep of their wives and children, most women are gainfully employed and, as such, mostly busy.

### *Northern Ghana*

The women adhere more to culture and tradition and are submissive to their husbands. The husbands are responsible for the upkeep of their family; as such, women stay at home and cater for their children and the sexual needs of their husbands. Therefore, childbirth is paramount, and men who have several children are respected and the rate of poverty is high. Because of the paternal system of inheritance, sons are more cherished.

### *Similarities among northern and southern Ghana*

Women in both regions can be in either monogamous or polygamous marriages; polygamy is dominant in the northern part. Both cultures view high numbers of children as a source of prestige. Men are valued more in both communities because of their role in society as leaders. Men are also expected to defend their states or territories and be industrious on farmlands. Most women in both regions are religious, adhering to doctrine and practices.

### *Herbalists as aids in recruitment*

The participants of this study were recruited via local herbalists. The herbalists are persons from

whom people with physical problems seek help, especially if they cannot afford allopathic medical treatment. The herbalists with whom I, (the first author) was in contact were all middle- to old-aged men. Their educational level ranged from no formal education to tertiary. Most had no formal education on herbs but had learned through their family members. The herbalists are usually known in their community due to their treatment efficacy. They openly communicate with their patients more freely than their allopathic counterparts. The herbalists were used because women patronised their services more in relation to infertility. Further, due to financial constraints, most women found their treatment cheaper[28].

### *Participant selection*

The researcher first established informal contact with key community stakeholders (such as sub-chiefs and family heads) to help identify herbalists in the locality and women who visited these herbalists for treatment. The study and purpose were discussed with the herbalists, who then informed their clients. The names and addresses of potential research participants were given by the herbalists, and these women were later contacted and interviewed in the comfort of their homes in the two areas. Some women provided the names of others with similar problems in the vicinity. In the West and East Mamprusi Municipalities, 15 Muslim women aged 19 to 41 were interviewed; they had been married for 4 to 16 years. In the Kwabre East and Kumasi Metropolitan Assembly in the Ashanti region, 15 women aged 21 to 43, 13 Christians, and 2 Muslims, who had been married for 1 to 10 years, participated.

### *Data Collection*

In-depth interviews were the main data collection method. Thirty women were interviewed, 15 in each of the two regions. The sample size was determined prior to the data collection, and it was considered sufficient. The principal investigator (first author) conducted all the interviews, with the help of an interpreter. The interpreter was both a native speaker of the Mampruli language and a graduate teacher. A considerable amount of time was spent in establishing rapport before the commencement of the interviews and this made the interviewees feel free to express their concerns and grievances. This helped dissipate tensions in terms of class and cultural differences. As a clinical psychologist, the first author was careful not to counsel or give therapy until after the interview and only when deemed necessary.

In the Ashanti Region, the interviews were made in Twi, and the researcher needed no translation since she is a native speaker and proficient in both Twi and English. In the North-East region, the interviews were conducted in English with the help of an interpreter. The interviews were tape-recorded with the permission of the participants. These notes covered the observations, demeanour, mood, and body language, of the participants—aspects the recorder failed to capture. The interviews lasted between 45 minutes to 60 minutes.

### *Data analysis*

After listening to the recordings repeatedly, the recorded interviews from the Ashanti region were transcribed verbatim from Twi to the English Language unlike the data from North-East which was already recorded in English. The final size of the data corpus was 386 pages. After repeated reading, the main themes were extracted from these transcripts. Themes were identified and coded by the interviewer. In establishing themes, statements with meanings that emerged in most transcripts were extracted. From the transcript, we extracted four main themes and proceeded to sub-themes. The main themes were supernatural, medical, lifestyle, and unknown causes. Nevertheless, those themes which emerged fewer times or merely once were also considered in the analysis. The circular analysis was time-consuming. For the purpose of this paper, the passages which dealt with the causes of infertility were selected for closer analysis.

## Results

### *Explanations of infertility*

Involuntarily childless women explained and attributed their condition to a supreme power or deity, hormonal imbalance, candidiasis, abortion, and some had no idea of the cause. The cause of

infertility was mostly unknown to the women, so they viewed their condition from the perspective of what their society has established to be the cause. If they failed to determine an underlying cause for their condition, they linked it to what society has ascribed it to be.

### *Supernatural causes*

Women sometimes resorted to explaining childlessness by the will of God when other explanations could not be found and all measures, including those based on traditional beliefs, to have a child had failed:

*"I have no idea...but I give everything to almighty God…so if God does not give……that is it...even in the hospital, the doctors never told me the cause, but they only prescribed medicines for me"* (Participant 28, North-East region)**.**

*"It's only God…because I have resorted to spiritual, physical help, etc…but to no avail….and they are all saying I will have…"* (Participant 3, Ashanti region).

Some women thought that they were currently childless because God saw that they were not ready to be mothers. Due to some challenges, the children might experience, God had not given them progeny yet. In this case, referring to God´s will can be seen as a way of coping: God knows better what is best for the mother. Paradoxically, these women were seeking treatment for their childlessness. Further, they say these appear fertile just to avoid stigma.

*"I think it´s God… because I see it´s God…. because of the work I do…I may go in for a nanny who may harm or even kill the baby…well...now thanks to CCT cameras, so at least it is giving us an idea of the things the house maids do. I feel God knows... that is why he has chalked some things"* (Participant 3, Ashanti region).

On the other hand, some women from the Ashanti region expressed the belief that God has made every woman capable of having children, which is why the cause must be somewhere outside of them. In this situation, they sometimes referred to another supernatural cause, witchcraft. The reason could be a family or generational curse; no other explanation was plausible since all women were created the same.

*"It can be curses emanating from families…that can also affect…it's only God who knows best…because God did not create a barren woman"* (Participant 10, Ashanti region).

The interviews revealed that traditional African beliefs prevailed alongside Christian or Muslim religion. Some women had visited traditional African priests or priestesses but, due to their religious beliefs in an affiliation (Christianity) and possible excommunication and stigma, they felt uncomfortable to share or disclose this information. Potential consequences prevented them from to seeking help or taking treatment.

*"The place didn't look hygienic to me…and…she looked like a witch doctor or a fetish priest or priestess. I have always feared having a fetish child, so I was uncomfortable taking the herbs. She told me she was going to pour libations and do some incantations, so whatever the ancestors will say…she needed schnapps…. I don't want a fetish baby …because if you are not careful…you may go in for something and regret it. I met someone else who told me the woman…(herbalist or priestess) is a witch, so when she gives you the treatment, it works…in fact...I didn't go there but my husband told me…and when he said it…I had already taken the concoction only twice and stopped…well…I feel it could have worked because I had a miscarriage after..."* (Participant 4, Ashanti region).

### *Medical causes*

Some women were able to give exact medical explanations of their childlessness, obtained from a medical doctor after medical tests. For example, one woman confirmed that a series of tests had revealed that her condition was caused by candidiasis:

*"I have gone through series of tests with my husband, and it has been confirmed the cause is from me…because I have a bit of sickness within me called whites (candidiasis)"* (Participant 20, North-East region)

Some women stated that the reason for their childlessness was hormonal:

*"Hmm…a lot of factors...this my condition is hormonal, some people too...have given birth and can´t have more…that´s secondary infertility…and I have a friend, everything is right …they have gone for check-ups as couples, and she ovulates every month, but she still cannot conceive, and the medical practitioners cannot also explain..."* (Participant 15, Ashanti region).

However, in many cases, the cause of infertility had not been firmly established by medical examinations. Some of the participants stated that had been told they had problems but not what they were:

*"Honestly, I do not know... however, we once visited the hospital and we were made to go for scans, and we were told we had problems and that we will struggle to have a child"* (Participant 6, Ashanti region).

In some cases, no medical cause was found, at least not from the wife. Some women told that, according to their physicians, nothing was wrong with them.

*"Nothing…everything is fine…the Dr…said it is fibroid; however, he says it is not causing the problem because it is not in the uterus....so I shouldn't be alarmed"* (Participant 7, Ashanti region).

### *Lifestyle causes*

One of the types of explanations given by the women was the use of contraceptives or having had an abortion before marriage. This kind of explanation, though seemingly medical, is not backed up by medical knowledge. Thus, it seems to be couched in the moral prohibition of premarital sex and a conception that infertility can be a punishment of moral transgression.

Some women saw as the cause of their infertility the fact that they had used contraceptives for preventing pregnancy before marriage. Some of them told they had been cautioned about their possible effects, which suggests that the use of contraceptives is believed to cause infertility:

*"When I met my husband, I was using a contraceptive to prevent pregnancy before we got married…someone told me to stop it because it was too strong and will affect me"* (Participant 9, Ashanti region).

*"I used to take family planning pills and that is what I guess or suspect is causing it"* (Participant 27, North-East region).

Also having had an abortion was mentioned as a possible cause. This was seen as a sin needing redemption, which suggests that abortion is seen more in moral than in medical terms. Abortion thus caused regret:

*"I committed abortion once, and I have asked for forgiveness. Why won't God be merciful and grant me a child…I did that when I was just 18 years…I was young"* (Participant 12, Ashanti region).

The following quotation suggests that the most salient explanation in the culture is abortion, but a religious explanation is resorted to if it does not apply:

*"To me…in the beginning, I thought it was abortion that caused it…I have not done that but have no child, so I think that's not it…so I see it as the…word of God!* (Participant 5, Ashanti region).

### *Unknown causes*

Some women expressed shock about their situation, which they had never envisaged. They had no idea about the cause of their condition:

*"To me…I have no idea about the causes, and I never knew that could ever happen to me before I got married...I only got married, and this happened to me…and I never predicted or even suspected such a thing will happen to me"* (Participant 25, North-East region).

Some of the interviewees sought to find the explanation from the belief system they held and became perplexed when that belief system could not give them the answer.

For example, the lifestyle explanation was explored and found inaccurate by one woman:

*"I have heard a lot of people talk about this issue of infertility or the inability for women to have children, which ranges from family planning measures, abortions…and all these things I have never been involved…in any…I have never taken any family planning measure, never gone for any abortion before...and I have never been pregnant, not talking of going in for abortion…so although these things are hearsay, it has never happened to me so I cannot confirm or deny that…since I am not a victim of any"* (Participant 18, North-East region).

Also, the medical belief system had left some of the participants without an answer. Some women stated that, together with their husbands, they had been to specialists. Though they underwent a series of tests, the conclusion was that they had no problems, so their condition remained inexplicable:

*"After we tried for about two years, we were not seeing any signs of pregnancy, so we started seeing specialists, and everywhere we went…we were all examined, and they kept telling us…we had no problem. They said ours is called unexplained…infertility"* (Participant 13, Ashanti region).

And finally, those who sought a religious explanation sometimes remained without one:
*"What do I even say because God did not create any barren woman…God says every woman should have children…or…I believe how he created you is the same way he created me...or did he change what he put in your womb…so why can´t I have…"* (Participant 4, Ashanti region).
As shown in the previous passages, it was also common that if one belief system failed, another system was resorted to.

As found in the study, participants resorted to the socio-cultural environment to find causes to their plight when they could not pinpoint any).

## Discussion

Overall, the women expressed four kinds of explanations for infertility - supernatural, medical, lifestyle, and unknown causes. The supernatural explanation in this study referred to God or a curse. Similar to previous studies[33], the participants of this study often attributed their childlessness to a negative influence of a deity. Supernatural causes were often mentioned in the study of Tabong and Abongo too, but the explanations were based on varying traditional beliefs, not Christian or Muslim religion. Our finding is also in line with those presented by Fido and Zahid, who found that illiterate Kuwaiti women associated infertility with supernatural forces[16]. The belief in curses and witchcraft as causes of adversity seems to be common in sub-Saharan Africa – for example in Nigeria, mental illness was often seen to be caused by such supernatural forces a bit more often than God [34]. It was interesting to see that among our interviewees, religious and traditional beliefs seemed not to be mutually exclusive, even though religious explanations were officially more accepted.

The medical explanation referred to medically diagnosed problems in the woman´s genital organs. Some women in the present study had been told that their condition was related to candidiasis, fluid in the ovaries, and hormonal challenges, these diagnoses also feature in the study of Roupa and colleagues[35]. Those who had sought help from allopathic healthcare did not always become the wiser: sometimes they were told that no cause could be found, and sometimes a woman was given medications without being informed or educated on their condition.

The women participating in this study were not asked whether the cause of the couple´s infertility could be found in the husband. Only two of them raised this possibility, which demonstrates that even those who "believe" in medicine have restricted knowledge of the possible medical causes. They may also feel it taboo to talk about the husband´s possible infertility. Also, Tabong and Adongo[36] tell in their study that the male factor in infertility was only mentioned when prompted. This suggests that the culturally dominant explanations frame the women as the one who is to blame for childlessness.

The third major group of explanations referred to the (pre-marital) lifestyle of the woman, especially to abortion and the use of contraceptives to prevent pre-marital pregnancy. These seemingly medical explanations are not backed up by medicine but are parts of the lay belief system. While the women in our study did not elaborate this further, it is plausible that the findings of previous studies apply here: women are believed to have a specific number of children in their womb, and abortions diminish this amount[28], and there are in Ghana plenty of misconceptions as regards the use of contraceptives[36]. The belief that infertility is caused by abortion and contraceptives seemed to be the most culturally salient belief, expressed in several interviews and several ways. This explanation was mentioned even if it didn´t apply to the interviewee. We feel that this kind of belief, obviously widely held in the Ghanaian communities, is the main factor in the stigmatization of infertile women. It blames the woman and leaves her unable to defend herself or do anything to remedy the state of infertility[4].

An interesting overall phenomenon was that women often switched belief systems if one of them proved not to be able to provide the answer. When

the medical health care could not help, religious belief seemed to be the last resort by which to make sense of the situation, while belief in traditional healing was held when still one means for solving the problem was sought.

### *Comparison of women from Northern and Southern regions*

From the data, no clear difference existed between women in the north and south, in terms of their explanations. The main difference was their socio-economic status, educational level, religion, and age.

Most women in the south were gainfully employed and could fend for themselves and search for treatment apart from herbalists. Due to financial constraints, Northern women sought treatment only with herbalists, which they could afford. According to some women, certain items required by some herbalists were very expensive, so they chose only those they could afford.

Almost all the women from the north were illiterate and hence more easily attributed their predicaments to spiritual causes and those causes projected by society. In contrast, most southerners could visit hospitals and had a medical idea about their condition.

In terms of age, the southerners were mostly middle-aged while some northerners were teenagers. Almost all the women interviewed in the south were Christians while those in the north were Muslims. Interestingly, they all held onto their traditions and culture; they had both religion (Christian or Islam) and traditional beliefs. Due to strict religious doctrines which put their 'God' above 'all' other deities, the women felt uncomfortable and ashamed to openly seek help from other deities and traditional priests or priestesses. Therefore, they secretly consulted these people for help and pretended to have no belief in them, due to stigma and possible ex-communication.

## Ethical approval

The Ethics Committees of the Universities of Eastern Finland and Ghana (Humanities section) granted approval. Verbal and written consent was obtained from the participants. Those who could not read opted for verbal consent; however, most of those who could were also more comfortable with this form. Although both written and oral consent were accepted by the committees, only two women gave written consent. The researcher translated the consent form into participants' preferred languages. A cover sheet containing demographic information except for names was coded differently to ensure confidentiality. The specific locations of the participants were unreported as this, otherwise, they could lead to easy identification.

The study was approved by Ethics Committees for the Humanities, the University of Ghana (ECH 015/ 17-18

University of Eastern Finland Committee on Research Ethics (statement 21/2017)

## Conclusion

Health professionals should try and educate women on their reproductive health status or issues, especially when they patronise their services. At least half of the women did not see a health professional and had no idea about the causes of their infertility. Therefore, they attributed their condition to what is usually perceived by their society or community. Therefore, public health workers should be tasked to educate the populace especially women on reproductive health issues. This will reduce the tension and stress associated with discussing reproductive health issues. Churches and other religious heads must be enlightened on the scientific causes of infertility and further, also educate their congregation on the causes of infertility and ignoring the malignant spiritual beliefs. They should encourage them to seek medical attention on reproductive health issues periodically at appropriate health facilities. Finally, therapists should educate would-be couples on the possible challenges in marriage (such as childlessness), and couples should have a plan on how they intend to resolve them. The interviewees of the study draw on several sources (belief systems) to find an explanation for their infertility. These explanations should be assessed not only on the basis of their "correctness" but more broadly based on the functions they serve. The medical explanation provides means to cognitively master

the situation and often also offers means for treatment, thus serving the practical control function of attributions. Seeing God as the cause could also give the feeling of understanding the cause of infertility as well as instills hope, while traditional beliefs give access to ways of trying to affect the situation. Lifestyle explanations could help make sense of the situation for those who had had an abortion or used contraceptives but do not serve a self-protective function. For those who had not, this kind of belief held by the community members only makes their situation worse.

## Authors' contributions

DOB conceived the idea and wrote the proposal. DOB and VH designed the study. DOB collected and analyzed the data and drafted the manuscript. VH read through and made corrections. All authors read and approved the final manuscript.

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## Availability of data and materials

The data are not publicly available due to their containing information that could compromise research participant privacy/consent. The data are available from the corresponding author on reasonable request.

## Competing interests

The authors declare that they have no competing interests.

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