UNIVERSITY OF CAPE COAST

# INFLUENCE OF PSYCHOLOGICAL DISTRESS ON SELF-ESTEEM OF WOMEN WITH INFERTILITY

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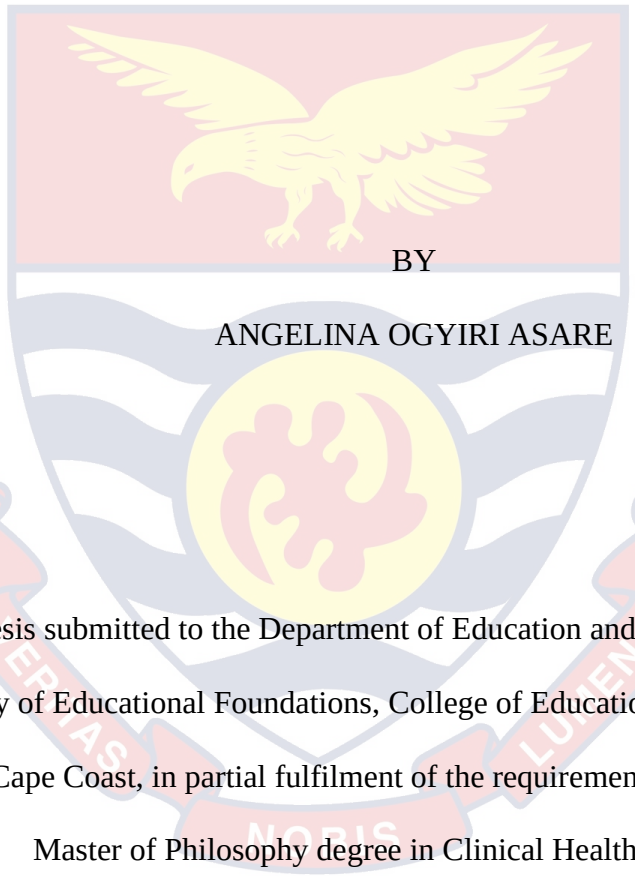

BY

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# DECLARATION

**Candidate's Declaration**

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature:……. …… Date:……..

Name:……

**Supervisors' Declaration**

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature…….. Date: ……..

Name:……...

Co-supervisor's Signature…… Date: …….

Name:……

## ABSTRACT

Many studies have explored the relation between psychological distress and self-esteem. However, the present study aimed at assessing the incidence of psychological distress (depression, anxiety and stress) among women with infertility and explore the relationship that exists between these two variables when duration in marriage in controlled. Finally, the study aimed at finding the predictive power of depression, anxiety and stress on self-esteem. The research was a correlational study and employed 99 infertile women from three different sites in Ghana. The Beck Depression Inventory, the Beck Anxiety Inventory, the Perceived Stress Scale and the Rosenberg Self Esteem Scale were used to collect data. The results indicated that there was a positive relationship between depression and anxiety, a negative relationship between depression and self-esteem and a significant negative relationship between psychological distress and self-esteem when duration of marriage is controlled. Furthermore, the results suggested that anxiety was a significant predictor of depression, it was also found that depression but not anxiety nor stress was a significant predictor of self-esteem. The study therefore recommended the need to treat infertility as a condition that requires psychological input in its treatment. Gynaecologists attending to women with infertility should refer these women to clinical health psychologists for professional assistance. Lastly, it was recommended that religious leaders, family and stakeholders in society need to be educated that infertility is not a condition of choice in order to reduce the stigma and consequently psychological distress associated with the condition.

KEYWORDS

Psychological distress

Depression

Anxiety

Stress

Self-esteem

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DEDICATION

To the Ogyiri Asare and Bobie Ansah families

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# CHAPTER ONE

# INTRODUCTION

## Background to the study

Childbirth is the desire of most married people anywhere around the globe. From the creation story of man in the bible, one notices the importance God places on childbirth when he instructed man to be fruitful and multiply (Lee & Kuo, 2000). It is probably against this background that most married and newlywed would go extents to have their children. The World Health Organisation (2011) estimated that about 8% – 12% of couples around the world suffer infertility with emphasis on the fact that the prevalence has remained unchanged for the past two decades. This statistic indicates that some couples would experience some form of challenge in their quest to conceive their own children. The estimate again depicts that infertility cannot be described as a localized problem but a condition that is inconsiderate of race or nationality, background or economic status.

Infertility is defined by World Health Organisation (2011) as the inability of a sexually active non contraceptive using, non-lactating woman to have live birth after twelve or more months of regular sexual intercourse. WHO (1991) put out figures which suggested that approximately one in five couples (20%) would experience infertility. In a critical review by Griel (1997) it was postulated that female factors account for 40% of infertility cases with 40% attributable to men and 20% explaining how the interaction between male and female factors can cause infertility with the same trend observed by Johnson and Everitt (2000). This clearly portrays that infertility is not solely a female condition. However, Dyer, Abrahams, Mokoena, Lombard and van de Spuy

(2005) reported that women are held solely responsible for this condition and suffer social and economic consequences for it.

According to United Nations Department of Economic and Social Affairs, Population Division (2017) more than 25 million European citizens are affected by infertility. It is estimated that 20% of couples in the Czech Republic are affected with infertility, with a fertility rate of 1.53, while 11% was recorded as the infertility rate of France with a fertility rate of 2.01. In Germany, the Audit report recorded that primary and secondary infertility rates cumulatively stood at 10% whiles fertility rate was 1.47%. Italy also had an infertility rate of 15% and fertility rate of 1.37 with Poland recording 20% as its infertility rate with fertility rate been 1.32. Finally, the report indicated that the infertility rate in the United Kingdom cumulatively (primary and secondary infertility) was 10.7% of the total population with the fertility rate been 1.81.

Apart from China, infertility has been indicated to affect about 186 million couples in the developed countries (Rutstein & Shah, 2004). In a study by Ericksen and Brunette (1996) high infertility rates of 16.7% - 21.4% were recorded in the Southern African countries while lower rates of prevalence of 9.8% - 12.2% were reported among the Eastern African countries. From the global estimates of the prevalence of infertility, Sub Saharan Africa has the highest prevalence of infertility at about 30% to 40% reported in some regions (Hammarberg & Kirkman, 2013). Despite this assertion prevalence is not assumed to be uniform as the rates vary from country to country with intra country variations as well.

The type of infertility varies in dominance from country to country, however in Sub-Saharan Africa, secondary infertility is the most prevalent.

Secondary infertility is the inability of a sexually active non-contraceptive using woman who has previously had a live birth to have a child despite cohabitation and the wish to become pregnant for at least 12 months and primary infertility is the inability of a woman to have a live birth after a year or more of being sexually active without using contraception (WHO, 2001). Whichever form of infertility a couple seem to experience has consequences especially for the woman (Inhorn, 2003) with primary infertility likely to have devastating consequences than the secondary infertility.

The issue of infertility is generally addressed through assisted reproductive technologies (ART). The commonest of these is the in vitro fertilisation (IVF). In ART sexual intercourse may not be needed to produce fertilisation of the female ovary. However, this fertilisation occurs in a laboratory environment as is typically done in IVF. In general terms, the process involve the removal of the female ovary and combining them with the male's sperms in the laboratory and returning them into the woman's body or the body of a surrogate mother. According to the National Centre for Chronic Disease Prevention and Health Promotion (CDC) ART does not include artificial insemination or procedures in which the woman takes prescribed drugs to stimulate the production of eggs without the retrieval of these eggs (National Centre for Chronic Disease Prevention and Health Promotion, 2014).

Gerrits (2016) conducted a research in Ghana and found that there are a few IVF clinics in Ghana and even these few are privately owned. In Africa, Nigeria is noted as the first to establish an IVF clinic in 1984. The first IVF produced in 1995 and that marked the beginning of the IVF story in Ghana. However, Gerrits found that all the health facilities providing IVF services were privately owned

with the public sector not undertaking any of such procedures. With the privatisation of this service, it is expected that the cost of these procedures could be enormous for the families involved as no financial aid nor support comes with it (Inhorn & Patrizio, 2015). This then makes infertility an expensive condition to deal with in Ghana.

The number of persons who sought IVF was documented to have peaked between 2005 -2008 in the first ever IVF clinic in Ghana, as a considerable number of over 800 IVF procedures were carried out on an annual basis. In 2012, the number then declined to about 630 IVF cases. This was explained to be due to the influx of IVF clinics at the time. As at 2016 the cost of an IVF procedure in Lister Clinic in Ghana was about 2500 euros. This excluded the cost of medication, hospitalisation and examination (Geritts, 2016). Again, this information describes how exorbitant it is to live in a pro-natal country with no child. This is being asserted because the cost of undergoing treatment procedures to fulfil the desire of a child especially in Ghana is rather costly.

The cost of undergoing an IVF procedure in Ghana remains one that could be afforded by the middle to upper economic class. Family coffers are drained as so much is spent in this quest for a child. The logic remains that the people within the lower socioeconomic class would have limited access to such procedures. The cost involved in such procedures could further be a source of psychological strain as family resources are channelled into medical procedures for which its success cannot be completely guaranteed.

Apart from the costs these women may have to battle with religious bodies have raised concerns on the acceptability of IVF procedures. They posit that natural sexual intercourse remains the God ordained method of conceiving

a child. The government at the other end is also concerned with the fact that people could capitalise on this medical process and engage in gamete selling which could have dire consequences for them later (Carsten, 2004). This is particularly the case because legislation for regulating these activities do not exist. The woman who wishes to undergo IVF as a buffer to infertility is then put in a state of dilemma.

Despite these financial and other burdens an infertile woman suffers, preference and premium is still placed on childbearing after marriage because children offer economic, social and cultural benefits for families (Alhasssan, Ziblim & Muntaka, 2014). These reasons render childbearing desirable for many couple and creates an uncomfortable experience for couple who seem not to bear any child. There are cultural, societal and individual expectation after being married. The enormous of these is to give birth and failure on this part is highly attributed to the woman (Dyer, 2007). Womanhood is equated to motherhood and so childlessness denies women their identity with some becoming vulnerable to physiological or psychological abuse (Mustapha, Adesiyun, Yusuf, Abdullahi & Lawal, 2015). The condition is especially attributed to a kind of lifestyle the woman may have led prior to marriage with unfavourable spiritual connotations implied in some instances.

Dyer, Abrahams, Mokoena, Lombard and van der Spuy (2005) stressed on the severity of the condition when they postulated that the stigma of childlessness is so profound to the extent that women in such situations are socially neglected and isolated. However, neglect and isolation have been used to describe symptoms of depression. To this extent treating these unfortunate women in inhumanely only makes them vulnerable to psychological conditions

which society may not care much about. The experience of being without a child can be considered a trauma which may have implications for the woman's marital, sexual and social life.

Studies conducted by Okonofua (2003) in neighbouring Nigeria suggests that estimates of women with infertility are soaring above the WHO 8% - 12% estimates. Okonofua (2003) described the infertility as the most important reproductive health concern among Nigerian women. This highlights the intensity of the condition and the kind of harm it makes such women vulnerable to in a context where so much value is placed on child birth. As far back as in the 1atter part of the 1980s, the condition was reported to account for about 60 – 70% of all gynaecological problems reported in tertiary health institutions in Nigeria (Megafu, 1988). It becomes justifiable to assert that infertility is not a modern-day problem but has coexisted with man for a long time.

Information on data and statistics in Ghana is rather scanty. However, Larsen (2000) have reported that primary and secondary infertility rates were 2% and 14% respectively. Other studies including Fledderjohann (2012) and Naab, Brown and Heidrich (2013) reported that Ghanaian women were subjected to psychological torture in their experience of psychological distress. Also, Osei (2016) postulates that the Ghanaian woman with infertility would rather shop for medical treatment as the last resort. This is because the condition of infertility has taken a spiritual tone with much time spent in prayer camps and churches consequently worsening the condition. Also, due to the economic challenges of the country, the government does not provide financial support to women accessing health facilities for the purpose of fertility while other

developed states bear such cost and provide refunds up to the sixth cycle. This is however absent in Ghana and Africa at large despite the continent being the worst affected in terms of infertility worldwide.

In a study by Nukunya (2003) Ghana was described as a pro-natal society with the ultimate purpose of marriage being the ability to procreate to carry on the family lineage (Osei, 2014). However, this desire is not always achieved. According to Larsen (2000) the rate of primary infertility is 2% while that of secondary infertility in Ghana is 14%. These estimates appear to be above the global estimates and a call for concern. These figures reflect the fate most women are suffering in a culture where their femininity is defined by childbearing with womanhood questioned on this grounds.

The psychological impact of infertility has been likened to a traumatic experience with patients experiencing similar emotions as that of the death of a loved one or chronic disease diagnosis (Burns, 1999). Patients experience series of emotions associated with mourning including denial, shock, fury, negotiation and depression. Being a parent is a normative assumption of adult life in any society and those who experience the otherwise of it consider it a major crises (Kubler-Ross, 1969). Infertile couples have been noted to have feelings of loss, disappointment, betrayal and sadness. This sadness could transform into sorrow especially as that experienced over the loss of a child (Ardenti, Campri, Agazzi & La Sala, 1999). These findings are no different from that reported by Fledderjohann (2012) who found that Ghanaian women suffer many psychological consequences for infertility such as worrying, crying, insomnia, marital instability and even suicidal ideations.

Due to the apprehension that most couple go through in their wait for a child, anxiety has been found by Sultan and Tahir (2011) to exist among infertile women. Smythe and Van Iddekinge (2003) reported that women continually face more and more signs of anxiety after each month of disappointment with the fate of infertility. They again assert that infertility disrupts the social acceptability of a woman, her legitimate role as a wife, marital stability and her role in the family and community. Her femininity is questioned and suffers a low self-worth which spins in a cycle of denial treatment, frustration and resignation which eventually leads to emotional strain (Galundia, 2016). These can be compounded by societal pressures and expectations of bearing a child. Cultures differ and individual preferences are also diverse but the pro-natal nature of the Ghanaian culture is what subject most infertile women to anxiety.

In addition to the emotional distress that infertility subjects its victims to, it has also been noted to cause disruption in family cohesion on both the nuclear and extended family systems. This is particularly the case because infertility is generally viewed and believed as a threat to generational continuity. (Alhasssan, Razak & Muntaka, 2014). This belief system affects the social status of the woman in such a condition both within her family and community. These women are sometimes threatened with divorce and could witness their husbands marry another woman in order to fulfil the purpose of childbirth.

There is stigmatization and labelling as well as isolation and neglect and all these does not auger well for the psychological health of the woman who may already be experiencing some form of anxiety over her dilemma (Omebelet, Cooke, Dyer, Serour & Devroey, 2008). Ombelet et al further describe labels such as ‘obaa berima’; meaning a man disguised as a woman

and 'obonii' meaning barren are among the many derogatory words used to describe infertile women. The stigma alone is likely to affect the way the individual functions in the family and community, the labelling as well may have consequences for interpersonal relationships with neglect and isolation impacting self-worth and self-value while triggering inferiority complex plus other psychological forms of distress (Dyer, Abrahams, Mokoena, Lombard & Van der Spuy 2005). This in some instances have implications on how a woman generally functions.

Studies have indicated that the duration of infertility could either lessen or exacerbate how psychological distress is experienced (Kazandi, Gunday, Mermer, Erturk & Ozkinay, 2011). They assert that the way psychological distress is felt in infertility could be explained using the bell-shaped phenomenon. Psychological distress is likely to be high at the beginning of marriage where the self and society expect a baby. This distressing feeling then peaks and rescind after the woman gets into treatment. However, Hunt and Monach (1997) observed that there is no relationship between psychological distress and duration of marriage. This notwithstanding, attention is being drawn to recent studies which suggests that the number of years a woman spends in marriage being infertile could take a toll on her psychology (Hassan, Hassan & Baraka, 2015).

The aforementioned seem to explain how the woman's self-esteem is threatened when she finds herself with such a condition. A lowered self-esteem implies a lowered self-value in response to an inability to execute defined gender role specialization. Infertile couples experience a decreased self-image with a diminished sense of femininity (Abbey, Andrews & Halman, 1992). In

addition to the above women in this dilemma are often unable to share their feelings with relatives mostly because of the stigma attached to infertility. On this basis the feeling of joy and competence of living life without a child is not a common phenomenon among women with infertility in Ghana.

Having mentioned these, it is also important to note that available data suggest that Ghana has little data to offer on the influence of psychological distress on self-esteem of women with infertility. Even though literature has established psychological distress to exist among women with infertility, how psychological distress impacts self-esteem among these women need to be investigated.

**Statement of the Problem**

The belief that infertility is not a problem in an area of dense population is easy to accept considering the high rates of fertility that such areas may have (Ombelet, 2009). Based on this, resources are channelled to family planning activities including contraception to restrict population growth (Dhont, van de Wijgert, Coene, Gasarabwe & Temmerman, 2011). Ghana's population growth renders it easy to concur that infertility may not be a problem that needs to be given much attention. For instance according to the United Nations Department of Economic and Social Affairs Population Division, the population of Ghana as at 13th February 2018 is 29,227,318 as against 22, 821,980 in 2008 with population expected to increase tremendously by 2018. The statistic shows the rate of childbirth is soaring. This notwithstanding, attention has to be paid to infertility as there are extreme instances where childlessness is experienced especially as continental estimates are as high as between 30% to 40% (Hammarberg & Kirkman, 2013).

Childlessness can be described not only as a personal problem for the victim but a problem for an entire family as well. There is so much less to be desired about the condition but it appears for Africa as a continent it is a worsening and deepening cancer that needs to be tackled from all angles. This assertion is made based on the evidence put up by Garenne (2008) who explained that infertility is growing in countries noted as belonging to the 'infertility belt' including Congo and Mozambique as well as countries where late marriages are dominant (Lesotho, Namibia and South Africa). However other countries like Rwanda, Senegal, Tanzania, Ethiopia and Ghana have not been left off the list.

Even though data on infertility statistics in Ghana is limited, infertility prevalence is estimated to be 7.4% (that is 1.5 million out of 20.76 million) according to US, UK, Australian and Canadian prevalence statistics extrapolated using the population of Ghana United Nations Department of Economic and Social Affairs, Population Division (2017). Donkor and Sandall (2009) also described infertility to be suffered by an estimated 15% of women of childbearing age in Ghana. Despite been very limited this statistic suggests that infertility is a growing problem in Ghana. However, the growing population appears to shield the problem of infertility.

With the high rates of infertility in Sub Saharan Africa and Ghana (Fledderjohann, 2012) for that matter, there is the tendency to believe that women particularly are suffering diverse forms of psychological problems owing to their inability to give birth. It is rather an unfortunate phenomenon especially in Africa that a woman's value and worth is tied to her ability to procreate (Hammarberg & Kirkman, 2013). The way a woman is treated in her

community, the respect she is accorded, and her invitation to join a public function is dependent on her motherhood (Fledderjohann, 2012). In addition these women described how the Ghanaian culture and context disproportionately attribute every case of infertility to them in marriage in Fledderjohann's study in Ghana.

The occurrence of depression and anxiety is well documented and the experience cannot be overemphasized. There is enormous interest and appeal in having a child to fulfil the meaning of being a 'woman'. However, the treatment meted out to women yet to live up to their 'womanhood' status is less to be desired (Dhaliwal, Gupta, Gopalan, Kulhara, 2004). The depressive experience if left unchecked has the propensity to generalize to other areas of life. Such women may communicate less, argue more with the spouse, and function poorly and being less productive with chances of sabotaging their own attempts to conceive so as to avoid disappointment of not conceiving each month by deliberately avoiding sexual relations mid-cycle (Galundia, 2016).

With the use of the biomedical approach to treating infertility in Ghana (Osei, 2016) it is unlikely that women with infertility receive some form of psychological service for their condition. These women may receive treatment for their physical health condition (infertility) with little attention to their psychological health even though literature has found infertility to be associated with psychological distress such as depression, anxiety and stress. However, research has provided evidence of the necessity of treating a client holistically considering the biological, psychological and social aspects of an illness (Hatala, 2012). This has become imperative as psychological health has been found to have immense influence on how physical illness or disease is

experienced (Gatchel, Bo Pang, Peters, Fuchs & Turk, 2007). Despite these discoveries the Ghana Health System gives little attention to the psychology of its citizenry while considerable efforts are geared towards addressing physical health conditions.

It is of little surprise that women with infertility describe with pain the kind of trauma they experience by virtue of their condition (Fledderjohann, 2012). Having mentioned this it is rather disappointing that little is done by experts who are perceived to have some level of insight into how vulnerable these women are to psychological distress. The culture and norms of the Ghanaian setting is noted to be strongly pro-natal and so women with infertility problems are very likely to isolate themselves especially from gatherings that would remind them of their condition. Obeisat , Gharaibeh, Oweis and Gharaibeh (2012) described four types of adversities the infertile woman suffers in the African setting which includes the feeling of incompleteness, the pressure to conceive from the social network, fear of husband marrying another woman to solve the infertility problem and marital relationship problems. Sexual intimacy becomes a conditioned experience with the sole intent of childbearing making performance anxiety probable and when this is not achieved overtime the desire to engage in love making gradually dwindles. These give an idea how the societal expectations and cultural demands of childbirth put a person at risk of anxiety even to the point of experiencing anxiety during sex between couples.

Unfortunately, in the Ghanaian setting, in-laws appear to have more interest in childbirth than the married couple. Since the predominant belief on infertility is female biased there is a distasteful harassment and pressure by in-laws exclusively exercised by the man's family (Dhont, et. al., 2011). There is

often verbal abuse and the advocacy of another wife especially when the marriage has gone on for some considerable duration of time. In-laws also encourage extra marital affair threatening the survival of the marriages of women with infertility. There is also denial of any property the woman may be duly entitled to in the marriage. This can be described as a major source of distress stemming from the value and importance attached to marriages. Also, it is particularly a problem to be infertile in Ghana as the condition takes a religious and traditional tone and the victims, usually women, are accused of witchcraft (Donkor & Sandall, 2007). This trend seems to be still in vogue as Osei (2016) reported that women with infertility are much likely to seek redress from supernatural sources including traditional healers and churches until their plight deteriorates before seeking medical attention.

The problems cannot be mentioned without reference to the denial of social security and basic needs such as food, clothing and even shelter since the woman is seen to be wasting away these resources (Dhont, et al., 2011). Accusation of witchcraft, being a bad omen, not receiving invitation to child naming ceremonies are but a few problems that are encountered. However, it should be emphasized that these women operate within a social context and derogatory remarks such as these are likely to affect how they even interact with others in the society. This has the ability to translate into their productivity in their respective work fields. Several hours that could possibly be used for productivity are spent at churches and prayer camps in the quest for a child and this has economic consequences as well. Osei (2016) indicated that the lack of adequate quality healthcare has pushed many infertile women to opt for traditional medicine and healing, religious and supernatural consultations as

well as witchcraft and spiritual mediation especially because the few fertility clinics charge exorbitant prices.

The economic, emotional, psychological and social consequences of being childless in Ghana is a devastating experience as it makes these women question their worth and self-value which has implications for their self-esteem. It is more of a problem as an inability to see one's worth and value can even make thoughts of terminating one's life possible. Buttressing these is the finding by Donkor and Sandall (2009) who reported that infertility poses serious psychological distress to its sufferers including the option of suicide.

The presence of psychological distress in women with infertility has being established by literature. However, in our Ghanaian context where little is done to help the psychological health of these women, there is a need to investigate if the psychological distress associated with infertility has an impact on their self-worth considering the duration these women may have being in marriage.

**Purpose of the Study**

The main purpose of the study is to investigate into the influence of psychological distress on the self-esteem of women with infertility. Specifically, the study seeks to:

1. Investigate relationship between depression and anxiety in women with infertility problems
2. Determine if stress and anxiety influence depression among women with infertility problems
3. Investigate the influence of depression on self-esteem
4. Find out if infertility related depression, anxiety and stress would predict self-esteem.

5. Investigate the relationship between duration of marriage and self-esteem while controlling duration of marriage.

**Hypotheses**

1. ***H1***: There is a significant positive relationship between depression and anxiety in women with infertility.

   ***Ho***: There is no significant relationship between depression and anxiety in women with infertility.

2. ***H1***: Stress and anxiety would predict depression in women with infertility.

   ***Ho***: Stress and anxiety would not predict depression in women with infertility.

3. ***H1***: There is a negative relationship between depression and self-esteem in women experiencing infertility.

   ***Ho***: There is no significant relationship between depression and self-esteem in women experiencing infertility.

4. ***H1***: Self-esteem would be predicted by psychological distress of women with infertility.

   ***Ho***: Self-esteem would not be predicted by psychological distress of women with infertility.

5. ***H1***: There is a significant relationship between psychological distress and self-esteem when duration of marriage is controlled.

   ***Ho***: There is no significant relationship between psychological distress and self-esteem when duration of marriage is controlled.

**Significance of the Study**

This study would enable government and its agencies understand that just as high population growth rate is a problem that needs to be addressed judging from its implication in the long run, infertility is also a condition that

comes along with psychological issues that can directly affect how productive its victims are. This knowledge would help government put in mechanisms that would address psychological health as well with a matter of urgency. Also, the study would help the health ministry and health workers including psychologists to know the deficits that exist in providing health related services to women with infertility problems. However, based on the findings of this research a call would be made, to of necessity attach a psychological unit to health facilities providing gynaecological services and further make gynaecologists and medical doctors refer women with this problem to psychologists.

Conducting a study on psychological distress among women with infertility is very essential. Studies exist in the area but this study would add to the volumes of work being done in the area while buttressing, supporting or refuting some facts already established by previous researchers. The study would further be a guide for future researchers who may want to know more about the phenomenon. Religious bodies are not spared as they would also be better informed on the diverse roles, they can also play in helping the situation. This is so because the findings would inform religious groups of the psychological impact of the condition and knowing the role of spirituality and religiosity in psychological health these bodies would be of tremendous assistance.

The findings of this research would also form the basis of psychoeducation on the psychological health of women with infertility problems and how these problems by themselves can impact the psychological health needed to carry a baby till delivery. Again, there would be the opportunity to diffuse the superstitious and reckless explanations offered to explain why

these women have such issues. Husbands would understand the place of social support and the victims of infertility would also know the psychological problems they may be vulnerable to and how to live life despite public resentments and reservations.

**Delimitation of the Study**

The study is delimited to Lister Hospital in Spintex – Accra, UQ Gynecological and Specialist Hospital and Effia Nkwanta Hospital in the Western region of Ghana. Two specialist hospital and one referral hospital respectively were used in the conduct of this study.

The study is also delimited to women who have been sexually active within the past one year and are not on contraceptives and have been clinically diagnosed of infertility. In addition to this the concept of psychological distress is delimited to depression, anxiety and stress.

**Limitation of the study**

The study did not reflect the entire population of women with infertility in Ghana. Only those clinically diagnosed, receiving treatment in particular institutions on outpatient basis were used in this study. The sample size used in this research limits the generalizability of the findings. This is also the case because the number of women receiving treatment in these hospitals may be fewer than those who would not, judging from the cost of the treatment procedure. Generalising the findings to these individuals would be impossible.

The non-probability sampling method specifically purposive sampling was used to collect data. This sampling technique did not afford each member of the population an equal chance of being part of the study, limiting the ability to make generalizations from the findings of the research. This notwithstanding,

the technique was used because participants had to meet an inclusion criterion to be part of the study and there was an exclusion criterion that made it impossible for every member to be part of the study.

Another limitation of the study was that, it was impossible to judge if the psychological distress experienced by these women was secondary or primary to their infertility. In view of this, even though psychological distress could be found among these women, the study did not provide details on whether the distress occurred before or after the diagnosis of infertility.

Although participants had been briefed about the purpose of the research, social desirability bias could possibly occur as the scales were self-report scales and were subject to participants influence. Infertility in Ghana has a tendency of stigmatisation, and so the participants in the study were likely to give responses that were contrary to their psychology and experiences. However, this limitation could not be completely done without as the scales for collecting data were self-report ones. Again, the three scales adopted in his study are all foreign and as such some of the English vocabulary may not have been fully understood by the participants who might have responded to it based on their personal understanding.

The sample size in used would best suit the use of a non-parametric test like spearman to test for correlations. However, the parametric versions of these were used as data was collected on continuous basis. Also, findings of the study may produce strong correlations among variables, a cause and effect relationship between variables cannot be interpreted. This limitation was due to the correlational research design used in conducting the study.

**Definition of Terms**

Psychological distress: this refers to the state of emotional suffering characterized by feelings of depression, anxiety and stress.

Depression: this condition refers to a mood disorder characterized by persistent feeling of sadness and loss of interest in previously pleasurable activities.

Anxiety: this is described as a feeling of worry, agitation and fear which a person experiences over a situation.

Stress: a series of symptoms characterized by feelings of tension and being overwhelmed which one undergoes when faced with a threatening situation or a perceived inability to cope with a situation.

Self Esteem: this is a person's subjective judgment of his or her overall sense of self-worth or self-value.

**Organisation of the Study**

This study was divided into five chapters. Chapter one introduced the study covering the background of the study, the problem statement, purpose of the study, hypotheses, significance of the study the limitation and delimitation of the study as well as defining key constructs. Chapter two was devoted to reviewing literature on infertility, depression, anxiety, stress and self-esteem. This chapter reviewed previous work in the area and provided a conceptual framework of the interaction of variables.

Chapter three detailed the research methodology. It described the research design, population, sampling and sampling procedure, instruments, data collection procedure and how data was analysed. The fourth chapter discussed the results and findings of the research and the final chapter presented the summary and conclusions from the research detailing out key and other

findings as well as recommendations based on the findings. It further suggested areas that could be researched in the future

# CHAPTER TWO

# LITERATURE REVIEW

This chapter would review the works of other authors and present explanations to concepts with theories relevant to this study.

## Theoretical Review

### Biopsychosocial(s) Model

The world Health Organisation (2004) defined health as a state of complete physical, mental and social well-being of a person and not merely the absence of a disease or infirmity. This definition meant that an individual must ensure that just as the biological or physiological makeup is well, other aspects of the being such as mental and social are also well in order to be declared as healthy. This also means that once an aspect of this component is dysfunctional, the individual could be impaired.

This definition could have been borne out of the understanding of the late George Engel. He believed there was a need to understand and respond adequately to the plight of a patient and posited that in order for this to be achieved clinicians must attend simultaneously to the biological, psychological and social dimensions of the illness (Borrell-Carrio, Suchman & Epstein, 2004). This advocacy was made at a time when the biomedical approach to health and illness was the predominant model in medicine. The biomedical model reduced health and illness solely to biological factors which narrowed the lens from which disease and health was conceptualised. He believed the biomedical model reduced humans to objects without any experience that could impact on their health or illness (Kiel & Elliot, 1996).

Engel (1977) sought to criticise certain strands in the practice of medicine. Firstly, he criticised the dual basis of the medical practice as viewing the body to be a separate entity from the mind. He rejected the fact in medicine that caused the body to be treated as a machine with no external influence. This he did with his research conducted into psychosomatics that found that fear, rage, neglect and attachment had physiological effects on the individual (Damasio, 1994). This meant that the human body did not operate in a mechanised manner but was susceptible to feelings and emotions which was product of the mind.

Also, Engel debunked the reductionist orientation of the biomedical model which believed that all disease and illness could be explained solely from cellular and molecular processes and as such when illness could not be subjected to these, it was ignored (Borrell-Carrio, Suchman & Epstein, 2004). This he believed was a neglect of humanity and suffering. It implied that any psychologically painful experience that was associated with a medical condition would be ignored.

Finally, Engel was outraged when in his seminal article in 1980 he described a case of a man with chest pain whose pain was triggered by a lack of care form the physician. This informed and buttressed his position that the mind and body mutually influenced each other. The projection of Engel was that the biological, psychological and social factors interact and affect each other to determine health or disease. The biopsychosocial model provided a framework that was a reminder that there may be important factors that extend beyond just the biological in determining health and illness (Dogar, 2007).

Similarly, over the years infertility was a condition that was handled by medics with a biomedical background. The causes of infertility were attributed to reproductive tract infections which damages the fallopian tube especially when left unattended to, unsafe abortions, ovarian dysfunctions, endocrine disorders, endometrisis, defective implantation and pelvic infections (Inhorn & Patrizio, 2015). All the enumerated point to the tremendous work using the biomedical model to outline these factors as responsible for infertility. However, it is observed that some professionals in the gynaecological practice limit their treatment to these physiological processes without considering the interplay of other factors such as the psychological or social.

Also, it is worth mentioning that, anxiety and depression has been found to be a common health condition among women with infertility (Ezell, 2016). The treatment for infertility in the Ghanaian context for instance is expensive with private health facilities offering most of the specialised services. In addition to this the treatment procedures are quite intrusive placing a lot of emotional and physical demands on the patients. It has been found that the more intrusive the procedures the higher symptoms of anxiety and depression are reported among patients (Covington, 2015). Thus, the treatment of the physiological aspect of infertility could spark psychological distress.

In tandem with the biopsychosocial model, psychological problems have been associated with infertility. However, there are mixed findings regarding whether the psychological problems give rise to infertility or these problems are the aftermath of infertility. Psychological problems like stress have being found to be associated with conception failure (Anderson, Nisenbelt and Norman, 2010). This is because stress has been found to lead to delayed

menarche, hypothalamic amenorrhea, ovarian dysfuntion or early onset on perimenopause (Nakamura, Sheps & Arch, 2008). Also, even in the application of medical procedures to assist the infertile women, stress, a psychological problem has again been found to limit and destruct the success of such procedures (Liminana-Gras, 2017).

Simbar, Hashemi, Shams and Alavimajd (2010) found how psychological health impacts infertility. In their study they reported that anxiety increases blood cortisol and prolactin concentrations which consequently leads to infertility. They further found that the rate of pregnancy in women undergoing assisted reproductive techniques (ART) who were also experiencing anxiety was low. The interactive role between physiological and psychological processes in the experience of infertility cannot be downplayed. Evidence from research has shown that both of these factors interact to produce health or illness.

To add to these, social concerns such as greater access to education has being implied as one of the major factors contributing to female infertility. Missmer, Abuseif, Barbieri and Goldman (2013) have reported that education have equipped women with training that have made them more qualified for skilled jobs. In order for childbirth not to destruct the process of education, the use of contraceptives have become common leading to delayed motherhood. This has increased the age within which these women seek for childbirth with the higher age decreasing the chances of producing a child because of the increase in reproductive problems with age (Llavona, 2008).

The importance of applying the biopsychosocial model to explaining health and illness cannot be overemphasized. Literature has supported its

usefulness even in the case of infertility. This points to the need to understand the condition not merely or solely from the biomedical perspective. The need for the psychological and social correlates cannot be underestimated. The WHO definition of health is seen to appreciate this as each of these factors could account for infertility in women.

In addition to the aforementioned, the role of spirituality and religion has gained ascendancy in recent times and has being considered as part of the biopsychosocial model expanding it further to be biopsychosocial(s) model. Evidence have shown that the belief system and religious doctrines of individuals could inform their actions and inactions towards health and illness (Dogar, 2007). Dogar have reported some religious acts found to impede medical care and so it has become necessary that health practitioners become spirituality competent in order to render help to their patients.

Infertility is a condition diagnosed mostly by gynaecologists who have being trained as medical doctors. As described by Engel (1977) the training of these doctors began long ago with the biomedical model. This model tends to concentrate attention on the biological aspect of the condition, explaining the condition from a purely biological or physiological angle. In reference to the definition of health and illness by the World Health Organisation, it is hoped that most medical schools' currently are adopting a biopsychosocial approach to the education and practice of medicine, so that infertility is conceptualised from multiple dimensions.

In the wake of the WHO definition as well, it is believed that just as any condition, infertility would involve an interplay of several factors. Thus, the biological, social and psychological facets. This demands that the condition be

tackled and handled from these dimensions which would require the collaboration of multiple professionals to offer treatment. This is asserted because the body and mind as posited by Engel (1977) has an influence on each other and as such these two need to be considered as factors that could be responsible for the onset of any condition. The role of the clinician is thus implied to seek to know which factors could be exacerbating or precipitating the onset of the condition and which social processes are also triggering or fuelling the condition. Finally, the model now advocates that religion and spirituality of a person to be incorporated in the quest to foster and achieve a state of health (Dogar, 1997).

**Theory of Social Stigma**

Social stigma has been defined by Durkheim (1895) as a disapproval of a person or group based on a social characteristic that is perceived and serve to distinguish these people from other members of the society. These individuals usually deviate from what has being accepted as the norm of a particular society. Durkheim further explains that stigmatizing is society's way of judging and punishing those who fall out from societal expectations. Consequently, standing out becomes less desirable in a social perspective. In the light of the explanation offered by Durkheim, it is evident that deviating from norm is less desirable and that attracts ill labels that seem to put the individual at a rather disadvantaged position. It also reveals how possible it is for the individual to feel inferior over his differing attributes and characteristics.

Goffman (1963) and his pioneering work on stigma is the conceptual framework upon which similar and modern works are based. He defined stigma is an attribute that extensively discredits an individual, reducing him or her

"from a whole and usual person to a tainted, discounted one." In 1963, Goffman traced his theory to the Greeks especially his concept of stigma. He stated that Greeks defined stigma as bodily signs designed to expose something bad about the moral status of the other. In Greece, these signs were burned into the body of an individual to identify the person as a criminal, slave or traitor. These identities often carry moral judgements with disgrace and shame communicating louder than the bodily evidence of the stigma. This meant that stigma served primarily to defame the carrier's morality or put the individual's morality in a questionable state despising other traits. Labelling, stereotyping, separation and status loss usually accompany the stigma irrespective of how the individual may feel about it (Link & Phelan, 2001).

It is thus interesting to note that Goffman (1963) essentially described stigma as a kind of gap that exist between the virtual and actual society as well as the virtual self (what society expects one to be) and the actual self (who one really is). Stigma is a process by which people's perceptions and reactions destroys identity. This is because when an individual falls short from society's many expectations, they are labelled in a discrediting fashion and are subjected to the repercussions of being different. This simply means that people would judge behaviours and attributes that appear different from the known and those that seem incomprehensible. However, since majority often wins in any case, a deviation from what is known by majority is a ground for stigma.

All over the world marriage is a norm and childbirth after marriage is expected with allowance from none of such. A deviation from this normative sequence tends to raise brows and leaves the individual in a state that invites some form of stigma. It is a major concern especially for married women

without children as childbirth is seen to be predominantly a female duty and is not treated lightly. Most societies globally subscribe so much to this tradition to the point of defining womanhood as the ability to give birth. An inability to meet the requirements of this definition exposes one to being discredited as a woman as one falls out of what is considered the 'normal' woman. The individual thus has to experience the repercussions that comes with failing to meet the defined criteria. The stigmatization process is meted out in a way that the women especially are seen as solely responsible for their state. Even though the physical mark of inability to give birth may not be carried along like in ancient Greece, the stigma is carries is no less.

According to Goffman (1963) both the stigmatized and 'normal' adjust their lives in a way that they avoid each other. For the stigmatized it is to avoid social contacts and interactions as well the anxiety of being rejected. This means that a stigmatized person could be likened to an individual with a contagious disease. As long as the disease has not been treated, your ability to mingle with other disease-free individuals is limited. Trying to exhibit one's social prowess only calls for further rejection. On the other hand, the 'normal' also experiences anxiety on how to avoid the stigmatized (Crocker, Major & Steele, 1998). This is the basis of marginalization that stigmatized people suffer. The perceived normal tries as much as he can to avoid contact with the stigmatized so that anything that may seem to identify them on common grounds is rejected. This is even worse if society begin to offer superstitious and supernatural explanations for one's condition. It simply means spiritual reasons could be implicated in being different.

Saddening as it is, especially in Africa, infertile women are treated as though they carry some form of contagious disease (Fledderjohann, 2012). They are ostracized and treated inhumanely as an out group and that is the punishment for being unable to have one's own child. Such woman is avoided as much as possible because they do not conform to what is accepted to be the norm. This whole experience has social and cultural connotations as the judgement and repercussions received is from one's society and not the incapability per se. Interestingly, people who are stigmatized based on a physical or mental condition use secrecy and withdrawal to cope (Stuenkel & Wong, 2009). However, since marriage ceremonies are communal activities especially in Africa, it is difficult to cover up for an inability to give birth as society helps one to tick the clock to pregnancy.

**Cognitive Theory**

The cognitive theory proposed by Beck (1976) explains that there are deep cognitive structures called schemas that enable us to process incoming information and interpret our experiences in a meaningful way. Symptoms of psychopathology result when pathological schemas are activated by stressful events. How a person behaves or reacts to any event or situation is based primarily on how that event or situation is appraised, thus the meaning we make of situations is what informs our reaction. Information processed in a positive manner would elicit a positive reaction and vice versa. Since schemas are responsible for processing information, faulty schemas are likely to produce faulty and distorted interpretation of our experiences and consequently maladaptive behaviours are exhibited.

The cognitive theory of psychopathology is based on the information processing model. This model posits that during psychological distress a person's thinking becomes rigid, judgements become distorted, overgeneralised and absolute and the person's basic belief about the self, others and the world become fixed (Weishaar, 1996). This implies that when distressed the thinking processes of a person becomes faulty and distorted as well as negatively biased thereby reinforcing the problem causing the distress. The model further postulates that distorted thinking underlies all psychological disturbances (Ledley, Huppert, Foa, Davidson, Keefe & Potts, 2005). The information processing model basically explains how our thoughts are primarily responsible for the kind of behaviours we put up. In other words, it is not a situation or event per se that results in a kind of reaction. What really informs our behaviour or reaction to an event is how that event is appraised, judged or interpreted.

Having stated the aforementioned, it is expedient to say that psychopathology developed in relation to any event is a consequence of the interpretation, judgement or appraisal of that event. Central to Beck's explanation of depression is that depression is a cognitive disorder characterized by three negative self-relevant beliefs. The first of these is the negative belief about the self which is usually centered on the firm notion of the individual being defective, deficient and worthless. The second belief is about the world being unfair and finally the future being bleak and being pessimistic about it. These beliefs Beck (1976) referred to as the cognitive triad and described it as being the key determinant of most depressive symptoms and disorders.

Oatley and Bolton (1985) gave a classic position on how depression develops and this position compliments that of Beck (1976). According to

Oatley and Bolton (1985) depression is developed from how one believes his identity is developed. He posited that one's social identity can make one susceptible to developing depression. First of all, self-worth is developed from one's social role and other people are needed to enact these roles. Consequently, the loss of a person necessary to enact these roles with little alternative ways to obtain self-worth makes depression occur. This position buttresses the stance of the cognitive theory which states that it is not an event per se that causes psychopathology but how the event is appraised.

Reasoning from the above, it is evident how susceptible infertile women are to depression. In a world where children are needed to define womanhood, the absence of a child deprives one of her womanhood identities. This is worsened by the thought pattern that usually occurs in the absence of this social identity. The infertile woman begins to question her womanhood and may see herself as worthless while seeing the world as unfair. This is particularly the case when she is being denied that social identity and the privileges that are attached to womanhood. These makes an infertile woman vulnerable to depression especially when the woman's own definition or appraisal of themselves is strongly defined by their social roles or status.

Not only is depression a common condition among infertile women, but the cognitive theory further explains how infertile women are prone to anxiety. Anxiety is defined as apprehension about some unknown phenomena with constant worry is the basic feature of anxiety (Beck, 2005). Cognitive theories posit that appraisal and interpretation given to events and situations as they occur is pivotal in determining the occurrence of anxiety (Beck, 1976). The premise of the cognitive theory is that events in themselves do not produce any

form of anxiety, however, how these events are interpreted is what gives rise to anxiety that may be experienced. The appraisal process is two stages process, thus, primary appraisal in which an individual evaluates a happening as a threat posed by the environment. Secondary appraisal is also based on the individual's evaluation or judgement of his or her ability to cope with the demands of environment). Beck and Emery (1985) suggest that maladaptive anxiety results from distortions in the appraisal process. People who suffer from chronic anxiety are those who misperceive benign situations as threatening.

Judging the consequences that come with infertility, it is in place to assert that the condition makes its victims vulnerable to experiencing anxiety. Whitford and Gonzalez (1995) found couples without children to receive comments that they perceive as unsupportive which could be a reason implicated in non-disclosure. This being said, it is evident that living with a condition that poses threat to one's social identity with little control over the condition itself subjects the sufferer to some form of anxiousness. Also, infertility places a barrier between couples and their ability to fit into gender roles prescribed by their culture which has the ability to create tension when in social situations. Greil (1997) found that differences in the way couples commonly view infertility can lead to tension and anger in marital relationships. Since childbirth has being culturally defined especially in Ghana to be a female responsibility, an inability to fulfil this responsibility could burden the infertile woman with thoughts of anxiety. The cognitive theory vividly explains how an infertile woman is highly susceptible to developing depression and anxiety.

**Transactional Model of Stress**

Lazarus (1991) posited in the transactional model of stress that stress is a relationship (transaction) between the individual and the environment. Psychological stress was explained to be a relationship with the environment that the person appraises as significant for his or her well-being and in which demand tax exceeds available coping resources (Lazarus & Folkman, 1984). The theory has two key themes that are important in defining stress. They assert that the level of stress that would be experienced depends on the individual's cognitive appraisal of the demands expected of him and the resources available for coping with the demands.

The transactional model of stress posits that there are two forms of evaluation that occurs for a situation to be judged as stressful. First of all, primary appraisal is carried out by an individual to judge how significant or relevant a situation is to him/her. The situation is evaluated for its harmfulness, challenge or the threat it poses. There is a secondary appraisal that occurs simultaneously with the primary appraisal, evaluating the resources that are available to cope with the stressor. The eventual outcome of the primary and secondary appraisal determines how stress is experienced (Krohne, 2001). The stress may be experienced as a harm, threat or challenge. When the situation is deemed harmful, it means that a psychological damage or loss that has occurred. A threatening situation refers to the anticipation that harm is likely to be caused while a challenge is experienced when demands on a person are such that the individual must make some form of efforts to master it (Lazarus, 1991).

Living with some form of stigma, prejudice and discrimination has being considered to be stressful (Miller & Major, 2000). Living with any form

of stigma means an individual possesses an attribute that communicates a devalued social identity within the social context (Crocker, Major & Steele, 1998). The devaluation can lead to stress as the individual is placed in a situation where the demand tax outweighs his coping abilities. Major and Miller (2000) posit that stigma imposes demands on a person and subjects that individual to stress. Belonging to a devalued social group due to stigma often carry those stigmatized attributes as their identifying attribute (Goffman, 1963) and this can excercebate how stress is felt.

Stigma as linked with social identity has the capacity to increase the vulnerability to stress because stigma comes with unfair treatment, evaluation and judgements (Miller & Kaiser, 2001). Infertility is a condition that attracts a lot of sigma as society especially attaches so much importance to child birth. Being an infertile woman categorises a person into a particular social group often discriminated against. The negative sentiments that belonging to a stigmatized group attracts can be stressful and has an impact on a person's ability to deal with the stigma (Steele & Aronson, 1995). This is often due to the fear that one's performance as a member of a disadvantaged group would confirm the negative stereotype.

It is worth noting that infertility could be considered a harm in the primary appraisal of stress since the individual is already diagnosed with the condition. This may require the search for resources to cope as is done in secondary appraisal. When the resources at one's disposal is unable to cater for the demands of the harm then the infertile woman is put into an episode of stress. However, if the infertile person is able to harness or gather the resources necessary to deal with the stressor, then stress is least likely to be experienced.

**Sociometer theory**

The sociometer theory proposed by Leary (1999) asserts that self-esteem evolved as a monitor of social acceptance. He believes that self-esteem motive functions not solely to maintain self-esteem but rather to avoid social devaluation and rejection. Leary further assert that the sociometer is a form of psychological gauge or meter that is much concerned with interpersonal relationships. This help individuals assess the quality of their relationships with others and to know whether they are able to identify with others or not. The sociometer theory can be described to offer simple explanation to self-esteem while perceiving it from relational lenses.

The sociometer theory is founded on the grounds that human beings possess the drive to maintain significant interpersonal relationships. This drive evolved because early human beings who belonged to social groups were found to be much likely to survive and reproduce than those who did not belong to any of such social groups (Baumeister & Leary, 1995). Given the unfortunate implications of being ostracized in that ancestral environment in which human evolution occurred, early human beings developed a psychological mechanism to tell the degree to which they were valued and accepted by others. This psychological mechanism is known as the sociometer and it monitors and informs the individual of cues in the social environment which reflects the degree of acceptance or rejection of the individual by others.

The sociometer theory explains that self-esteem is not solely about an individual's private self-judgements as have being defined. The theory believes that an individual is concerned about others opinions, perceptions and judgements of him (Baumeister & Leary, 1995). In other words, the theory holds

the view that events in a person's life that are known by others is weightier than those known by the individual only. This means a person's self-esteem is sensitive to events that consequently affects people's evaluation of him (Leary, Haupt, Strausser & Chokel, 1998). Having explained these, the sociometer theory suggests that one's self esteem is primarily based of others assessment or evaluation and not necessarily the value the person places on him or herself. Leary, Tambor, Terdal, and Downs (1995) posit that self-esteem is not immune to failure, criticism, rejection and other circumstances that pose threat to how the individual is likely to be evaluated by other people. A high self-esteem does emerge form attributes that makes an individual favoured in interpersonal relationships and social situations. Possessing a socially desirable character such as competence, physical attractiveness and personal likability comes with equally possessing a higher self-esteem based on the sociometer theory (Leary, 1999).

Infertility cannot be described as merely a private event because child birth is an event that has social and cultural implications. People share in the joy of a new born especially in an African society like Ghana where having children in marriage has being overemphasized. Experiencing infertility per explanations offered by the sociometer theory could have devastating consequences for the sufferer. In sociometer theory a person's appraisal of the self is tied to opinions and perceptions of others. This implies that the kind of opinions held by others although not always the fact or truth could harm one's self esteem.

Infertility is a condition marked with superstitious explanations especially in Africa, with the explanations posing the infertile woman as suffering the consequences of her own action. The condition which does not

allow a woman the chance to prove her womanhood also limits makes her vulnerable to being marginalised in certain contexts as the condition is being treated as though contagious. All these depicts the kind of assessment and judgement that infertility subjects a person's interpersonal relationship to. Once the condition is a socially tagged one, the social environment would not be favourable to women who suffer this fate.

Society places limits on extents it can accommodate an individual in such a socially distasteful situation. Interpersonal relationships are soured and as much as possible avoided. Once the judgements coming from society against an individual with infertility are resentful, the sociometer theory believes the person is likely to suffer self-esteem problems. It could be observed from the foregoing that the self-esteem is not merely the internal or private self-assessment but sensitive to societal views and judgements. Considering this theory, it becomes relevant to state that criticism and backlash that a woman may receive from being infertile is weightier in determining her value as a person than her own self beliefs.

**Conceptual framework**

Psychological Distress

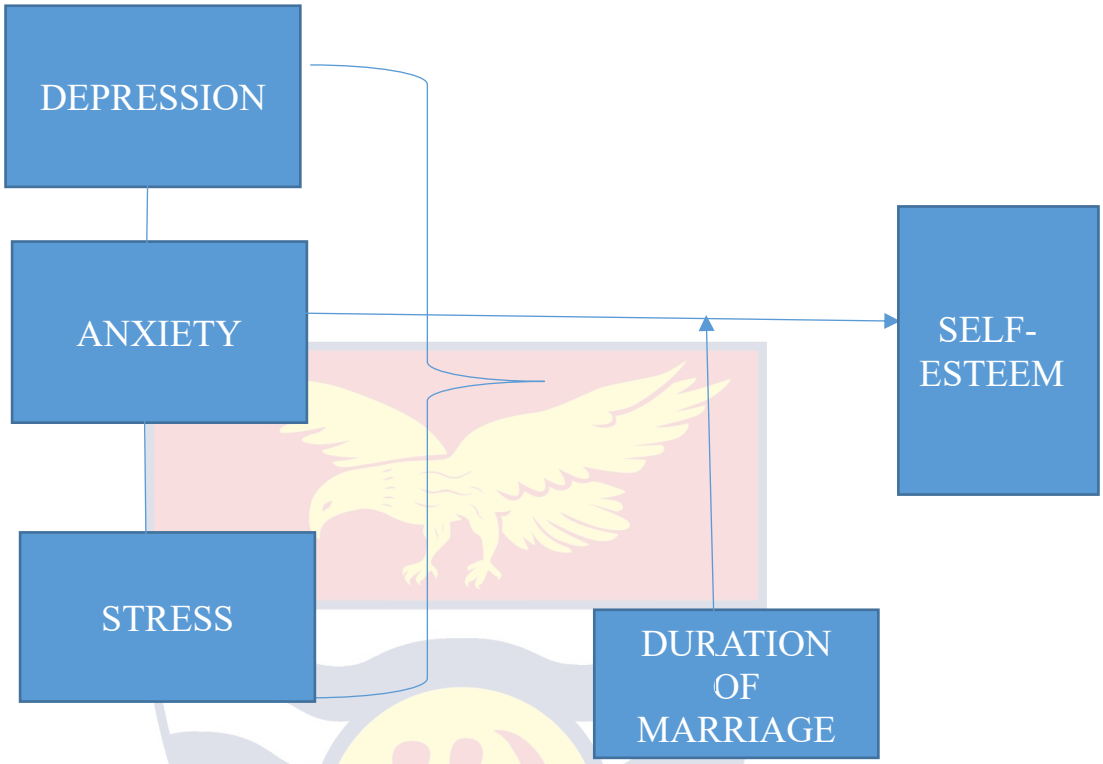


Fig 1 Psychological Distress, Duration of Marriage and Self-Esteem

Depression, anxiety and stress are a common condition which are comorbid among women with infertility (Obeisat, Gharaibeh, Oweis & Gharaibeh, 2012). However, Goffman (1963) explained that self-esteem is based primarily on society's assessment and evaluation of an individual. In infertility, society perceives a woman as less woman and as such a devaluation of the woman's sense of femininity.

The conceptual framework is a representation that the relationship between the psychological state of a woman with infertility and her self-esteem. The framework further represents the relationship between psychological distress and self-esteem when duration of marriage is controlled.

## Empirical Review

### Psychological distress in women with infertility

Depression is a common health problem in infertile women. Alhassan, Zublim and Muntaka (2014) reported that 62% of women with infertility in Ghana experienced depression. This means more than half the number of women with infertility suffer depression in Ghana, with the lifetime prevalence of major depression among women being approximately 14% to 21% (Farzadi & Ghasemzadeh, 2008). According to Verma and Baniya (2016) infertility and depression are both highly prevalent disorders that often co-occur in women of childbearing age. They also postulated that there are high levels of depression and anxiety among women with infertility. A study by Griel (1997) also found relationships between the occurrence of depression and anxiety among women with infertility. Infertility is then described as a stressful event in the life of any woman accompanied by the anxiety to bear a child and depression of not achieving this feat.

The psychological symptoms associated with infertility have being likened to the psychological symptoms of to cancer, hypertension and cardiac rehabilitation (Khademi, Alleyassin, Aghahosseini, Ramezanzadeh, & Abhari, 2011). This finding purport that just as depression and anxiety is comorbid most chronic medical conditions, women with infertility are also likely to experience the similar mental health issues.

In a study by Alhassan, Ziblim and Muntaka (2014) findings indicated that high levels of stress, stigma and depression were found among infertile women in Ghana. This was explained to be the case because polygamy is not a forbidden practice and therefore when other wives' have birthed children when

one has not increased the level of psychological distress. This is compounded when the infertile woman has no one to send on errands, support them, when ill or help with housework. They are in no way permitted to seek the assistance of other women's children (Hess, Ross, GilillandJr, 2018). This experience could in itself expose these women to psychological distress aside the condition.

A study conducted in Dakar by Alam, Rahman & Afsana (2018) reported a significant positive relationship to exist between stress, anxiety and depression. The study further reported high levels of anxiety and depression which is similar to that found in the Ghanaian context by Alhassan et al. (2014) and the finding of Demyttenaere, Nijs & Steeno (2008). Deka and Sarma (2010) have also reported a positive relationship between stress, anxiety and depression among infertile women in an assisted reproduction treatment (ART) clinic. These findings suggest that irrespective of the geographical location of the infertile women, there is an experience of stress, anxiety and depression which consistently have been positive.

Despite the above findings, Griel, McQuillan, Lowry and Sherffler (2011) found that women going for fertility treatment experienced elevated levels of anxiety and depression. However, explanation could not be offered to explain whether these elevated psychological distresses were due to the treatment procedure or the infertility. Due to the fact that few studies have examined infertile women who were not receiving treatment, Griel et al (2011) assert that the infertility treatment itself may have psychological effects on these women other than the infertility.

Infertility have also been found to produce stress which can consequently lead to anxiety and depression (Alam, Rahman & Afsana, 2018).

In a study Demyttenaere, Nijs and Steeno (2008) a relationship has been found to exist between anxiety and depression among infertile women. A similar finding was observed in a study by Matsubayashi, Hosaka, Izumi, Suzuki, Kondo and Makino (2004) who found a significant association between anxiety and depression in women with infertility. The anxiety usually develops from the couple's worry about being unable to conceive and whether they would be successful at conceiving while the depression comes as a result of their perception of their state (Galundia, 2016).

The stressful experience of nonfulfillment of a wish which is tied to one's status is usually accompanied by anxiety and depression (Alam, Rahman & Afsana, 2017). Despite this findings Hocaoglu (2018) also reported that most of these infertile couple choose to hide their condition as well as any psychological distress they are likely to suffer as a result of it. In a pronatal context like Ghana, the diagnosis of infertility could be a hard hit for its sufferers. This is especially worse because an entire family and even community expects a newly wed to show signs of pregnancy after months of pregnancy. Therefore, a woman's proof of fertility is being monitored by a whole community of people. Having this knowledge, it is difficult for such women to openly express their state for support.

**Psychological distress and self-esteem**

Studies have shown that the psychological consequences of infertility include depression, anxiety, guilt depression and low self-esteem (Griel, 1997). A literature review work undertaken by Zuraida (2010) indicated that over 100 quantitative studies and 26 qualitative studies carried out in the area of infertility and mental health have consistently found increased psychological distress for

persons with infertility. These include increased anxiety, depression and stress levels as well decreased self-esteem. However, Domar, Broome, Zuttermeister, Seibel and Friedman (1992) also indicated that the experience of psychological distress is belled shaped with the passage of time. During the first two years of marriage the severity of psychological distress increases and peaks during the third year. After six years, there is a decline in how these symptoms are then experienced by its victims.

Infertility has been associated with depressive symptoms such as feelings of hopelessness, isolation due to social stigma, withdrawal from social situations and grieve. This is then accompanied by reduced sense of competence and defectiveness as well as threat to one's self esteem (Zuraida, 2010). It could therefore be said that the experience of the depressive symptoms has an influence on how a woman with infertility is likely to assess herself in relation to others. Once others may have children which feat the infertile woman has not yet achieved, there is likely to be the thought of being inferior to those with children which could be self-defeating and negatively impact self-esteem.

However, one main critique from Griel (1997) is how literature and research in the area has concentrated much on clinical samples. According to this assertion, women in this context may want to seem undisturbed and normal. This is likely to impact on the responses given in a particular study. These women may report higher self-esteem and lower psychological distress especially when instruments used in data collection are self-report scales. This therefore increases the chances of social desirability and likability. It also limits the extent to which the findings of the research could be generalised. This notwithstanding, most women have consistently reported more psychological

distress and low self-esteem which is contrary to what would make them socially desirable.

Depression is a common health problem in infertile women which is closely associated with low self-esteem and lose of hope for the future (Verma, & Baniya, 2016). Infertile women showed more social dysfunctions, a higher level of guilt, lower self-esteem in addition to their depressive symptoms. Low self-esteem has been described by the American Psychiatric Association (APA) (2013) as a symptom of depression. In the same way, Thorn (2009) have described depressive reactions such as hopelessness, despair, feelings of failure and reduced self-esteem are typical and common in women suffering infertility. This could therefore account for the association or comorbidity of depression and low self-esteem. Also, it could be a basis to logically assert that depression and self-esteem could predict each other.

Infertility constitutes a devastating challenge for affected African families, thus, both nuclear and extended. The family is besieged with emotional, psychological, cultural and social burdens which deprives the affected woman of her self-belief and esteem. The uncalled for and often inpatient attitude of society in demanding and expecting children from a couple places unimaginable pressure and tension on the woman in question. This happens to the extent that these women may become isolated and neglected especially due to the kind of labelling and social stigmatization they may have to endure (Bolvin, 2003). Consequently, psychological reactions such as shock, grief, depression, anger, and frustration, as well as loss of self-esteem, self-confidence and a total loss of the sense of control over one's destiny may result (Owonikoko, Bobo, Tijani, Aramide & Atanda, 2018). This suggests that the

self-worth of the woman with infertility is not reduced without her experiencing other psychological problems such as depression and anxiety as a result of the stress she has to endure from the occurrence of her infertility.

Distress, anxiety and depression as well as low self-esteem have been found and recorded as general aftermath of infertility (Mert, Ozlem, Timuci, Nuray & Erdinc, 2010). Studies have found that women have reported higher psychological distress than men across several domains of mental health problems including anxiety, depression, and low self-esteem (Ying, Wu & Lock 2016). However, when these conditions are left unattended to, the anxiety and depressive disorders further contribute to barriers in seeking assisted reproductive technologies (Herbert, Lucke & Dobson, 2010; Crawford,

Hoff & Mersereau, 2017) and to the discontinuation of treatment prematurely when chances for achieving a pregnancy are still good (APA, 2019) especially because a low self-worth and inability to produce successful treatment is interpreted in the long run. In all these, stress may be a contributing factor for the onset of infertility as well as a consequence of infertility when one perceives the condition as too demanding and could bring on other psychiatric comorbidity including depression and low self-esteem (Lynch, Sundaram, Maisog, Sweeney & Buck Louis, 2014).

**Psychological distress, duration of marriage and self-esteem**

The psychological distress a person experiences due to infertility have been reported to have a relationship with self-esteem (Ying, Wu & Lock 2016). Several studies have been conducted in different contexts on this subject. One study by Owonikoko, Bobo, Tijani and Atanda (2018) reported that psychological distress in infertility had an association with the duration one has

being married. This finding was consistent with the findings of Fatameh, Malek, Nasrin, Farid, Navid, Mamak et al (2004) who also showed that anxiety and depression had a significant relationship duration of infertility.

Domer, Zuttermeister and Friedman (2003) found that anxiety levels were the highest in the second and third year of infertility and that these levels decreased after 6 years in contrast to what was found by study by Fatameh et al., (2004) who revealed that anxiety and depression were much common after 4-6 years of infertility. These findings attest to the logic that the duration of marriage can impact infertility associated psychological distress.

Another important assertion by the American Psychiatric Association (2013) is that low self-esteem is a symptom of depression. Having mentioned this, it is then not out of place to postulate that any variable that can affect one's depression level would consequently have an effect on the self-esteem. Due to associations found to exist between depression, anxiety and stress, there is a possibility that just as the duration in marriage could influence psychological distress such as depression and anxiety, self-esteem could also be influenced by the duration one spends in marriage while infertile.

Hassan, Hassan and Baraka (2015) conducted a survey on the relationship between duration of infertility and depression among infertile women in Beni Suef Governorate. As part of their literature review, they postulated that long duration of infertility increases stress and intensifies psychopathology. They further stressed that infertility during the first three years of marriage is often associated with anxiety, depression, stress and loss of self-esteem. After the three years period, the optimism of these women changes to despair and finally emotional changes would be made to make room for the

adoption of a child or to live without a child (Ramezanzadeh, Aghssa, Abedinia, Zayeri, Khanafshar & Shariat, 2004).

Duration of infertility in marriage had been found by Galliano and Pellicer (2015) as the most important prognostic factor in infertility. Bloch, Schmidt, Danaceau, Murphy, Nieman and Rubinow (2000) had also reported a positive association between duration of infertility in marriage and psychopathology. A similar finding was reported by Mc Quillan, Griel, White and Jaco (2003) in a population of infertile women. This suggests that indeed the duration of marriage in which a woman remains infertile do have an influence on the experience of psychological distress.

In a recent study by Shivaprasath, Kamalya and Kirubamani (2018) duration of infertility had an influence on women's psychological state. The women who had being 2 – 4 years infertile in marriage had a few participants who were severely depressed, 5 -7 years more women severely depressed, 8 – 10 years were most severely depressed but participants who suffered infertility for more than 10 years had much more women being severely depressed than those with lesser number of years. This statistic indicated that depression associated infertility increased with the number of years connoting a positive association with duration of infertility in marriage and depression.

For any pro-natal context, the pressure from family, friends and society at large to have a baby cannot be overemphasized. After marriage, the childbirth clock begins to tick for every couple. This pressure of childbirth sometimes comes from the couple's own expectation of a child especially for the wife and husband to prove their fertility and masculinity respectively. These couples sometimes time themselves on when to have a baby and so as long as they

remain in the marriage without a child, their self-esteem becomes affected. Xin, Pan, Du, Liang, Wang, and Wang (2013) observed that as this time lengthens the self-esteem and self-confidence of these couples is lost. On the contrary, Guz, Ozkan, Sarisoy, Yanik, & Yanik, 2003) suggested that the longer the duration, the infertile woman accepts her fate and adjusts to it in order to accommodate the anxiety and depression. This in turn which lessens anxiety and depression of these women.

However, demographic factors such as employment status, education level were buffer against low self-esteem in infertility (Cavdar & Coskun, 2018). They explained that women with lower education were more sensitive to social stigma and as such more prone to stress as well as increased depression and anxiety levels. Again, as education levels increase, the individual easily adapts to situations including infertility and as such does not base the evaluation and worth as a woman on her ability to procreate. This lessens her experience of psychological distress and low self-esteem.

The levels and anxiety and depression in women was also found to be lower among the employed infertile women. This was explained by Upkong and Orji (2006) to be the case because the employed women suffering infertility may have attained her self-actualization outside the demands of her home. This means her confidence is not based primarily on what she has achieved through procreation but outside the confines of her home. This exterior achievement enables her to better adapt to the state of being infertile. In addition to this, the employed infertile woman may have found a schedule that may take a considerable part of her time, preventing her to have so much time to brood over her inability.

Finally, one's involvement in religion and belief system could act as a buffer against psychological distress and low self-esteem in infertility. Oti-Boadi and Oppong (2017) found a positive correlation between negative religious coping and psychological distress in Ghana. Also, they found that for participants who were engaged in positive religious coping, they experienced proved otherwise. Infertility in Ghana has been associated with the supernatural, punishment form the gods, evil spirits, witchcraft and God's retribution (Fido & Zahid, 2004). This presupposes that Ghanaians have high religious beliefs and this may account for why they use religious coping to deal with infertility.

It is also worth stating that the kind of religious coping utilized by these women could either ease or exacerbate their psychological distress (Latifnejad & Allan, 2011). The use of negative coping strategies such as the belief that God is angry at them and the belief that they are receiving punishment for wrong doing increases psychological distress and lowers self-esteem (Ryan, 2012). Religious women are also prone to psychological distress because they believe children are gifts from God, and having none could be interpreted to mean denial of God's blessings. Religion plays a central part in the life of most Ghanaians especially when dealing with very stressful situations and the afore stated makes them equally vulnerable to psychological distress in infertility.

The practice of positive religious coping such as prayer and hopefulness and patience reduce psychological distresses and makes these women unperturbed by the turn of events in their lives (Oti-Boadi & Oppong, 2017). Women who practice positive religious coping often believe that irrespective of the number of years spent in marriage, at the right time, God would honour them

with a child. This hopefulness lowers psychological distress and makes them assume their worth as complete women despite their inability.

These stands to reason that irrespective of the duration of marriage and infertility, some demographics could act as a buffer or and exacerbation of the psychological distress a woman experiences in infertility. These could further explain the similarities or variations of the findings of this research from others.

**Summary of reviewed literature**

Literature reviewed consistently indicated that childbirth is the desire of most couples irrespective of their context. An inability to achieve this could trigger the onset of psychological distress (depression, anxiety, stress) and lower self-esteem. Literature further explained that the duration a couple spends in marriage while unable to conceive had a positive relationship with psychological distress and a negative relationship with self-esteem.

However, the few studies done in the area in Ghana revealed how religion could lessen or worsen psychological distress (depression, anxiety, stress) or act as a buffer against low self-esteem known to be suffered by most of these women.

# CHAPTER THREE

# RESEARCH METHODS

Chapter three of this work provides a description of the research design employed. It goes on further to provide details of the population, the sample and sampling technique used. Also detailed information on the inclusion and exclusion criteria are stipulated while the data collection procedure is systematically presented together with how data were analysed. A correlational research design was used in this research. This design was used to investigate the relationship, direction and strength of the relationships.

## Research Design

Gay, Mills and Airasian (2006) explained research design as the structure of the study. Research design is, thus, a plan or blue print that specifies how data relating to a given problem should be collected and analysed. A correlational research design would be used in this research. This design was used to investigate the relationship, direction and strength of the relationships.

Correlational research design is a type of research often used in psychology as a preliminary way to gather information about a topic or in situations where performing an experiment is not possible. The correlational method involves looking at relationships between two or more variables. While researchers can use correlations to see if a relationship exists, the variables themselves are not under the control of the researchers. According to Thompson, Diamond, McWilliam, Snyder and Snyder (2005), correlational research allows researchers to determine the strength and direction of a

particular relationship. This information is often used to further investigate the relationship through experimental studies. In other words, it serves as a good starting point for examining a relationship

In correlation research design, data is not typically collected in a lab and therefore, the test subjects are more likely to behave naturally and findings are more likely to be applicable to everyday life, thus increasing its validity and generality (Bordens & Abbott, 2002). This design was chosen because it helps researchers to investigate naturally occurring variables that may be unethical or impractical to investigate through other research methods

Irrespective of the strengths of correlational research design mentioned above, it has its limitations. Bordens and Abbott (2002) asserts that correlational studies do not help to establish causation. In other words, they cannot be used to determine a cause-effect relationship. Correlational studies look for relationships between variables and can only be used to examine whether or not a relationship exists and if it does, the researcher can gather information about the strength and direction of that relationship. Even with a very strong correlation between variables, it cannot be assumed that one variable causes change in the other variable. Mitchell (1985) touching on the weakness of the design stated that correlational relationships are mostly easily examined if the relationship is linear. If it non-linear, the strength of the relationship will be reduced in the calculation, however, the change in direction of the variables may still be due to a strong correlation. Fraenkel and Wallen (2000) identified the weakness of the correlation survey. This include difficulty in ensuring the questions to be answered are clear and not misleading, getting participants to

answer questions thoughtfully and honestly as well as getting sufficient number of questionnaires completed so that meaningful analysis could be made.

These shortfalls were minimised by ensuring that instruments are clear, not ambiguous and provided a signed consent form to ensure confidentiality on the responds.

**Study Area**

The study area for the study consisted of Effia-Nkwanta Hospital, Lister Hospital and UQ Obstetric and Gynaecological Specialist Hospital. Effia Nkwanta Hospital serves as the regional hospital for the Western Region of Ghana. It is situated at Secondi and serves both the physical and psychological health needs of its patrons. Also, Lister Hospital is also situated at Spintex, Accra and specialises in delivering specialist diagnostic and gynaecological services. UQ Obstetric and Gynaecological Specialist Hospital is also a privately owned ultra-modern specialist hospital located within the Secondi-Takoradi Metropolis that mainly provides gynaecological services.

**Population**

According to Burns and Grove (2003) population is the target group about which a research is interested in gaining information and drawing conclusions. It comprises of individuals who have one or more characteristics in common that are of interest to the researcher. The target population involved all women clinically diagnosed with infertility in Ghana. However, the accessible population was made up of 124 women clinically diagnosed of infertility and receiving gynaecological services from the Lister Hospital in Accra, Ghana, UQ Obstetric and Gynaecological Specialist Hospital and Effia Nkwanta Hospital both in the Takoradi metropolis of Western Region of Ghana.

The population is made up of women receiving treatment on an outpatient basis. These hospitals were chosen because they offer specialist gynaecological services for infertility. The population of Lister Hospital was made up of about 56 women clinically diagnosed with infertility. UQ Obstetric and Gynaecological Specialist Hospital had a population of 36 while Effia Nkwanta Hospital had a population of 32.

**Sample and Sampling Technique**

A sample denotes a small and representative proportion of the population. Sampling enables the research to study a relatively small number of units in a place of the target population and to obtain data that is representative of the whole population (Burns & Grove, 2003). Sampling involves the process of selecting a portion of the population to represent the entire population**.** According to Krejcie and Morgan (1970) a population of 124 is expected to have a sample size of 93.

The researcher used purposive and stratified proportionate sampling method. According to Fraenkel and Wallen (2000), in purposive sampling the researcher sample whoever is available, but uses their judgement to select a sample that they believe in based on prior information that needed data will be obtained. In support of this, Creswell (2005) states that in purposive sampling the research intentionally selects individuals and sites to learn or understand the central phenomenon.

Purposive sampling, which is a non-probability sampling technique, was used in getting the criteria for selection of participants. Although probability sampling techniques have been preferred in most research particularly because of its strong external validity, non-probability sampling is also utilized in

carrying out research in spite of its limited external validity. In non-probability sampling all members of a population do not have an equal chance of being part of the study because the chance that each person in the population would be selected is not known. This applies to purposive sampling technique that was used in this study where special interest exists in some particular characteristics of the participants which qualified them to be part of the study. These criteria or characteristics were clearly defined and so it was impossible for every member in the population to stand the same chance of being part of the research.

In addition to purposive sampling, stratified proportionate sampling was used to get members from each hospital to constitute the 93 members in the sampling frame to reflect their representation in the population. This ensured that each hospital was fairly represented in the sampling frame. In addition to this 5% of the population was considered to make up for attrition since the work involved a clinical sample. Six participants were thus allowed in addition to make a total of 99. Again, WHO (2001) postulates that a woman can only be considered to be infertile if she is non-lactating, have been sexually active for the past one year and is not on any contraceptive. This meant a criterion had to be developed in other to recruit qualified participants into the study. These criteria were therefore considered in selecting participants for the study.

**Inclusion Criteria**

1. The woman should be clinically diagnosed with infertility
2. The study participant has to be eighteen years old or more at the time of data collection
3. Being or been married is a necessary criterion to be recruited for the study

4. A participant should be sexually active for the past one year
5. A participant should willingly consent to being part of the study

**Exclusion Criteria**

1. Participants with chronic psychological or medical condition cannot be part of the study
2. Participants with a history of endogenous psychological distress would not be considered for the study
3. Women on contraceptives do not qualify to be part of the study

**Data Collection Instruments**

The first section of the instrument used to collect data was designed to obtain information on participants' demographics. For the purpose of the research, data was collected on participants' age, marital status, duration of marriage and type of infertility. This information constituted participants demographics in the study.

The researcher adopted three scales and adapted the Rosenberg Self-Esteem Scale for data collection. These were self-report and standardised scales. These scales were deemed to serve the purpose of the research because it they are screening instruments for clinical depression, anxiety and stress.

1. Beck Depression Inventory (BDI-II) was used to assess depression among participants.
2. Beck Anxiety Inventory (BAI) was used to assess depression among participants.
3. The Perceived Stress Scale was used to assess perceived stress.

4. Rosenberg Self Esteem Scale was used to assess the perceived self-esteem among participants. This scale was later adapted after its pretesting.

**Beck Depression Inventory II**

To measure depression, Beck Depression Inventory II (BDI II) was adopted. This is a 21-item standardised scale on a four-point likert scale ranging from 0 to 3 based on the severity of participant's symptoms over the last two weeks. The total score ranges from 0 – 63 with higher scores indicting more severe symptoms. The instrument was developed by Beck, Steer and Brown (1996) in response to the American Psychiatric Association's revision of the Diagnostic and Statistical Manual of Mental Disorders Version Three to Four. The original Cronbach alpha obtained by the developer was α = .89 (Lee, Lee, Hwang, Hong & Kim, 2017).

**Beck Anxiety Inventory**

In measuring anxiety, the Beck Anxiety Inventory (BAI) was adopted. This is a 21-item standardised scale by Beck, Epstein, Brown, and Steer (1988). The Cronbach alpha by the authors was α = .92-.94 for adults and test retest reliability of .75. The instrument is also on a four-point likert scale ranging from 0 – 3 with interpretation of not at all, mild, moderate and severe. It required participants to provide response to items in relation to how they applied to them in the past week including the day of responding to the items.

**Perceived Stress Scale**

The Perceived Stress Scale (Cohen & Williamson, 1988) was a ten-item scale with an original Cronbach alpha of α = .78. It is a 5-point likert scale that demands participants to respond to each item in relation to how these items

apply to them in the last month. The scale describes symptoms of participants how often it applied to them. These ranged from never to very often. Items 4, 5, 7 and 8 of the questionnaires required that they were reversed before scoring.

**Rosenberg Self-Esteem Scale**

The final scale that was adapted in this work was the Rosenberg Self Esteem Scale (Rosenberg, 1965). The scale was a 10-item scale with an original internal consistency of .77 and Cronbach alpha of $\alpha = .72\text{-}.87$ (Rosenberg 1965). It was a 4-point likert scale with values from 0 to 4, 0 indicating 'strongly disagree' and 5 indicating 'strongly agree'. The scale also had a total score between 0 and 30.

**Validity and Reliability of the Instrument**

The validity of a research instrument is the extent to which the instrument elicits the accurate response needed for the study. The reliability of a research instrument is the degree to which the instrument would measure consistently a characteristic when applied more than once to the same person(s) under similar conditions (Nitko & Brookhart, 2007).

Although four standardised scales were used for data collection in this study, these instruments were pretested on outpatients of the gynaecological unit of Ghana Ports and Harbours Authority (GhaPOHA) Hospital in Secondi-Takoradi. Seventeen participants took part in the pretesting. This hospital also provided infertility services on an out-patient basis like the facilities used in the main data collection for this research.

In order to collect data for the pre-test, a letter of introduction was obtained from the Department of Education and Psychology, University of Cape Coast. This letter was attached to a copy of the instruments to be used, a copy

of the research proposal, ethical clearance and an application letter for data collection and submitted at the general office of GhaPoHA Hospital to conduct pretesting. It was then forwarded to the Director of Health of the Hospital through the hospital administrator's office.

The letter was approved for data collection and a copy of the final work was requested after completion of the research. I introduced myself to the officer in charge at the gynaecological unit of the Hospital where people with infertility were receiving treatment. The officer in charge screened the instruments and permitted me to collect data from patients who had come for their weekly appointments. I introduced myself to the participants and briefed about them the purpose of the study while stressing that participation was at will. Seventeen participants met the inclusion criteria and partook in the pretesting

The data obtained from the pretesting were analysed with SPSS version 21 to determine the reliability of the instruments. A Cronbach alpha of $\alpha = .93$ was obtained for Beck Depression Inventory II. This indicated that the scale was good for the intended purpose and so it was adopted for further data collection. A Cronbach alpha of $\alpha = .91$ was also obtained for Beck Anxiety Inventory, which indicated that the scale was suitable and statistically reliable for use in this study and was therefore adopted for further data collection. For Perceived Stress Scale, a Cronbach alpha of $\alpha = .77$ was obtained from the analysis of data obtained from the seventeen participants who took part in the pretesting. This however informed the choice of adopting the scale to collect data for the study.

However, for Rosenberg Self-Esteem Scale, scoring the items required that the items 'At times I feel I am no good at all', 'I feel I do not have much to be proud of', 'I certainly feel useless at times', 'I wish I could have more respect

for myself' were reversed. It was again noted that participants had difficulty understanding some items on this scale during pretesting as most of them called my attention for further explanation. An initial Cronbach alpha of a = .43 was obtained after the analysis of the data. This necessitated the adaption of the scale to suit the vocabulary of participants, however, the meaning of the items was not changed in the adaption process. The first item, I feel I am a person of worth, at least on equal plane with others was adapted to I feel that I am a person of worth, just as any other person.

The third item all in all, I am inclined to feel I am a failure was changed to considering all things, I do feel that I am a failure. The fourth item, I am able to do things as well as most people was changed to, I am able to do things just as most people. The sixth item on the scale, I take a positive attitude toward myself was changed to I have a positive attitude toward myself. The seventh item, on the whole I am satisfied with myself was changed to considering all things, I am satisfied with myself. The eighth item, I wish I could have more respect for myself was changed to I wish I could respect myself better. Finally, the tenth item, I think that I am no good at all was changed to at times, I think that I am good for nothing.

This adapted scale was again pretested with fifteen participants after about two weeks at the GhaPoHA Hospital and the Cronbach alpha realized was α = .67. Although the value looked relatively low, it could be attributed to the smaller sample size or the fewer items on the scale. According to Field (2005) the number of items on a scale could have an impact of the alpha value, where less items are more likely to produce lower alpha values. Also, Field asserted that scales with reverse scored items are more likely to produce lower alpha

values. He postulated that in extreme cases these items could negate alpha values. It was against this background that an alpha value of α = .67 was deem relatively good for the scale to be used to collect further data.

The scales were pretested to enable the researcher to sharpen the instruments by way of rewording and restructuring the items; this was in line with Oppenhem's (1992) statement that pretesting helps to discover possible weakness, ambiguity and problems with the instrument, so that they can be corrected before actual data collection

**Data Collection Procedure**

After pretesting and determining the reliability of instruments, a letter of introduction was also presented to the Chief Executive Officer of Lister Hospital, Spintex – Accra to introduce me, attached to this letter was a copy of the research proposal, ethical clearance and instruments to be used to collect the data. Feedback of approval for data collection was communicated after a day. I was referred to the office of the midwives where I was assisted to gain access to the women with infertility. I introduced myself to the participants and briefed them about the purpose of the study. I also assured participants about the confidentiality of their data and explained to them that data would be collected anonymously. Forty-eight participants who met the inclusion criteria were willing to take part in the study, however, they required about a week to return the questionnaires. Participants in this facility could be described as predominantly elite and so required no assistance in understanding the items on the questionnaire. Forty-six questionnaires were returned after the week.

A letter of introduction was also sent to the General office of UQ Obstetric and Gynaecological Specialist Hospital with a copy of the research

proposal, ethical clearance and instruments to be used. Feedback for approval was given after two weeks. I was given a copy of the approved letter which I showed to the nursing officers in charge as I went to the gynaecological unit to meet participants for my research. Most of the women with infertility in this facility were booked on three months basis and so getting them to participate was a challenge. However, twenty-eight participants were willing to partake in the research. About twenty-one participants were able to respond to the items by reading the instructions on the instrument. However, the remaining few needed a little assistance in responding to the items. Data collection at this facility took three weeks and twenty-eight questionnaires were retrieved.

Effia Nkwanta Hospital, the Western regional hospital was the last facility visited during the conduct of this study. An introductory letter and copy of the research proposal, ethical clearance and instruments were submitted to the Director of Health of the facility. Feedback was provided after three days. I was directed to the head of the Gynaecological Department where I met the midwife in charge of the unit. I gave her the information on the purpose of my work. She then introduced me to other midwives who were to refer clients with infertility to me. I took the opportunity to brief the participants about the intent of the research. Twenty-six participants were willing to partake in the research. However, most of the participants in this facility required explanations to the items. I therefore gathered them and explained each section of the instrument to them. After that some participants requested for three days to complete the instrument. Twenty-five of the instruments given out were retrieved within a week. All data from the three facilities were collected within a month with the aid of no research assistant.

**Data Analysis**

Generally, data collected from participants was analysed using Statistical Product and Service Solution (SPSS) Version 21 for descriptive and inferential statistics. This was because it offers a full range of descriptive and inferential statistical methods, good editing, and labelling facilities as well as ability to produce output in both table formats and summary form. It is also capable in handling missing data with ease. The scales were first edited, coded and scored. Serial numbers were given to each scale for easy identification. The editing procedure was to check whether participants had followed directions correctly, and whether all items had been responded to.

Frequencies, cross tabulations, regression outputs were displayed using tables. Univariate analyses were conducted to show the proportion of participants and their varying characteristics. Bivariate analyses used Pearson product moment correlation to examine relationships and multiple linear regression was also conducted for prediction and while partial correlation was used in controlling one demographic factor against the independent and dependent variable.

The study adopted three scales thus the Beck Depression Inventory II (BDI II), Beck Anxiety Inventory (BAI) and the Perceived Stress Scale (PSS). In addition to these, one scale thus the Rosenberg Self Esteem Scale was adapted. This was to allow for simpler vocabulary and clarity of items without changing the meaning of each item in order to suit the context of the study. In all four scales with a total of 62 items were used in collecting data.

According to Beck, Steer and Brown (1996) scoring for the Beck Depression Inventory II is categorised as follows, 0 – 13 indicates minimal

depression, 14 – 19 suggests mild depression, 20 – 28 represents moderate depression and 29 – 63 is indicative of a severe depression. To score Beck Anxiety Inventory, Beck, Epstein, Brown, and Steer (1988) caterogised scores from response to represent a severity of the condition. Scores from the range of 0 – 9 represents minimal anxiety, 10 – 16 represents mild anxiety and 17 – 29 also indicates moderate anxiety while 30 – 63 suggests severe anxiety.

Cohen and Williamson (1988) also classified scores from the Perceived Self Esteem Scale at three levels. A score of 0 – 13 was considered low stress, 14 – 26 was also considered as moderate stress while 27 – 40 was considered as high stress level. Finally, the Self-Esteem Scale by Rosenberg (1965) scores within the range of 0 – 14 are considered below average, 15 – 25 as average and 26 – 30 as above average self-esteem.

Data collected from participants was analysed using Statistical Product and Service Solution (SPSS) Version 21 for descriptive and inferential statistics. Frequencies, cross tabulations, regression outputs were displayed using tables. Univariate analyses were conducted to show the proportion of participants and their varying characteristics. Bivariate analyses used Pearson product moment correlation to examine relationships, multiple linear regression was also conducted for prediction and partial correlation was done to control the effect of duration of marriage on the relationship between psychological distress and self-esteem.

Hypotheses 1 and 3 were analysed using Pearson Product Moment Correlation Coefficient. This statistical tool was deemed appropriate because these hypotheses sought to find the relationship, direction and strength of the relationship between variables. The use of this tool limits the interpretation of

causal relationship between variables even though strong relationships may be found.

Hypotheses 2 and 4 were analysed using multiple regression. This statistical was found as ideal for the above hypotheses because hypotheses 2 and 4 sought to predict the outcome variables from independent variables. Again, the study was interested in knowing the extent to which these outcome variables could be predicted by the independent variables. The fifth hypothesis however was concerned with investigating the relationship between psychological distress and self-esteem while controlling for duration of marriage and this was analysed using partial correlation.

# CHAPTER FOUR

## RESULTS AND DISCUSSIONS

This chapter sought to provide tabular, graphical and pictorial representation of the findings and results obtained from ninety-nine (99) participants. It provides interpretation of the values obtained. It further went on to elaborate on the findings discussing them in relation to previous findings of other researchers, theories and compares the variations in findings.

This research was undertaken purposely to investigate the influence of psychological distress on self - esteem of women with infertility. Four self-report psychological scales were used to collect data from participants for this intended purpose. Frequencies and percentages analysed demographic variables. Pearson Product Moment Correlation coefficient was used in finding the direction and strength of the relationships that existed between variables. Multiple linear regression was used for prediction and finally partial correlation was used to control relationship. A total sample size of $n = 99$ participants were involved in the study. These were women clinically diagnosed of infertility from two health facilities in Secondi-Takoradi Metropolis and one facility in Accra, Ghana. Again, the participants are women who have been actively engaged in sex at least for the past one year.

The instrument used to collect data was divided into five sections. Section A collected data on participants' demographic information. Section B was focused on collecting information on participants' depression, Section C on anxiety, Section D on stress and Section E on participants' self-esteem. The

demographic information was analysed and presented on Table 1 to 5. This was a presentation of the data obtained on age, marital status, duration of marriage, type of infertility and religion of participants. The frequencies of the various distributions as well as their corresponding percentages were provided.

**Section A: Demographic Information of Participants**

This section provided results from the analysis of demographic data of participants in the research. The results are presented in Table 1-5.

Information on item 1 of Section A of the research instrument evaluated the age ranges of participants. The analysis of these response is presented in Table 1.

***Table 1: Distribution of Ages of Participants***

| Age-range | Freq. | (%) |
|---|---|---|
| Below 25 | 4 | 4.0 |
| 25 – 30 | 17 | 17.2 |
| 31 – 35 | 24 | 24.2 |
| 36 – 40 | 25 | 25.3 |
| 41 – 45 | 12 | 12.1 |
| 46 – 50 | 7 | 7.1 |
| 51 – 55 | 6 | 6.1 |
| 56 and above | 4 | 4.0 |
| Total | 99 | 100.0 |

**Source: Field Survey, Ogyiri Asare (2019)**

Table 1 showed that 25 (25.3%) of the participants were within the ages of 36 – 40 years. This was followed by women within the ages of 31 -35 who were also 24 (24.2%) in number. However, least number of participants were

recorded for women who fell within the range of below 25 years and above 56 years as both of these groups had 4 (4%) participants each.

In all, about 50% of the participants were in the age range of 31 – 40 years and about 79% were between 25 and 45 years.

Item 2 of Section A of the questionnaire sought to know the marital status of the participants. The information obtained is reported in Table 2.

***Table 2: Distribution of Marital Status of Participants***

| Marital Status | Freq | (%) |
|---|---|---|
| Married | 90 | 90.9 |
| Divorced | 6 | 6.1 |
| Separated | 3 | 3.0 |
| Total | 99 | 100.0 |

**Source: Field Survey, Ogyiri Asare (2019)**

Majority of the women in the research were married with a handful being divorced or separated. The married women in the study were 90 (90.9%), the divorced were 6 (6.1%) and the separated from spouse were 3 (3%).

The third item of Section A of the research instrument was interested in the number of years (duration) participants have or had ever been married with infertility.

*Table 3: Distribution of Duration of Marriage of Participants*

| Years of Marriage | Freq | (%) |
|---|---|---|
| 1 – 5 | 49 | 49.5 |
| 6 -10 | 32 | 32.3 |
| 11 -15 | 10 | 10.1 |
| 16 – 20 | 4 | 4.1 |
| 20 – 25 | 3 | 3.0 |
| Above 25 | 1 | 1.0 |
| Total | 99 | 100.0 |

**Source: Field Survey, Ogyiri Asare (2019)**

The number of years a respondent has been in marriage was of interest in this study. The data obtained on the duration a respondent was or had spent in marriage indicated that about 49 (49.5%) of the women in the study were married from 1- 5 years. This statistic further implied that almost half of the women in the study were married for at least a year and at most five years. Also, 32 (32.3%) were married for 6 – 10 years and 10 (10.1%) were also married for 11- 15 years. However, only 1 (1%) respondent had been married for more than 25 years.

Table 4 is a representation of data obtained from the fourth item in Section A of the research instrument. This item was concerned with the type of infertility participants suffered.

***Table 4: Distribution of the Type of Infertility of Participants***

| Type of Infertility | Freq | (%) |
|---|---|---|
| Primary | 68 | 68.7 |
| Secondary | 31 | 31.3 |
| Total | 99 | 100 |

**Source: Field Survey, Ogyiri Asare (2019)**

There are two main categories of infertility, thus primary and secondary infertility. Primary infertility describes a woman who has not had a live birth despite having regular sexual intercourse for at least one year without any form of contraceptive while secondary infertility refers to a woman who had not been able to have a live birth after the first child despite being sexually active and not been on any contraceptive. More than two-thirds of the study participants were experiencing primary infertility. These group numbered 68 (68.7%) while the women who suffered secondary infertility numbered 31 (31.3%).

The final item in Section A of the questionnaire was concerned with the religion of participants. Participants had the options to choose from Christianity, Islamic and for those who belonged to neither of these indicate their other religion. The results are tabulated in Table 5.

***Table 5: Distribution of the Religion of Participants***

| Religion | Freq | (%) |
|---|---|---|
| Christianity | 92 | 92.9 |
| Islam | 7 | 7.1 |
| Other | - | - |
| Total | 99 | 100 |

**Source: Field Survey, Ogyiri Asare (2019)**

The religion of the participants was the last demographic factor to be considered in the study. As many as 92 (92.9%) out of 99 participants were Christians with the remaining 7 (7.1%) being Muslims. None of the participants belonged to some other religious group.

Data was collected to know the severity of depression, anxiety and stress suffered by participants as well how many participants were in each category of severity. The categorisation of participants' self-esteem was also presented in a figure to show the various levels of participants' self-esteem. This information is presented in Figure 2 – 5.

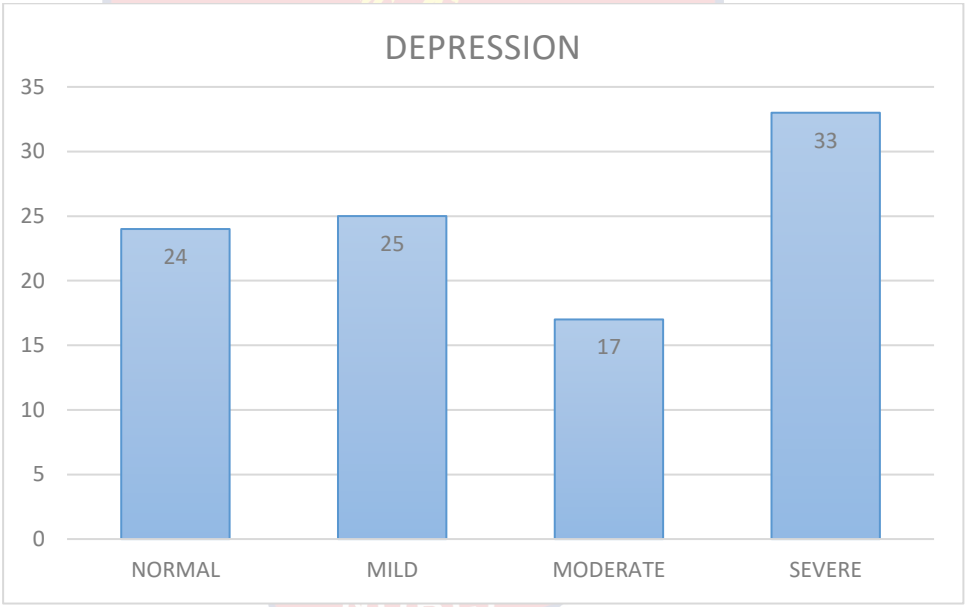


Fig 2 Categorisation of Severity of Depression

**Source: Field Study, Ogyiri Asare (2019)**

It was observed that majority, thus 33 out of the 99 participants had severe depression while the moderate category had 17 participants which was the category with the least number of participants. This meant that depression was severe among people with infertility.

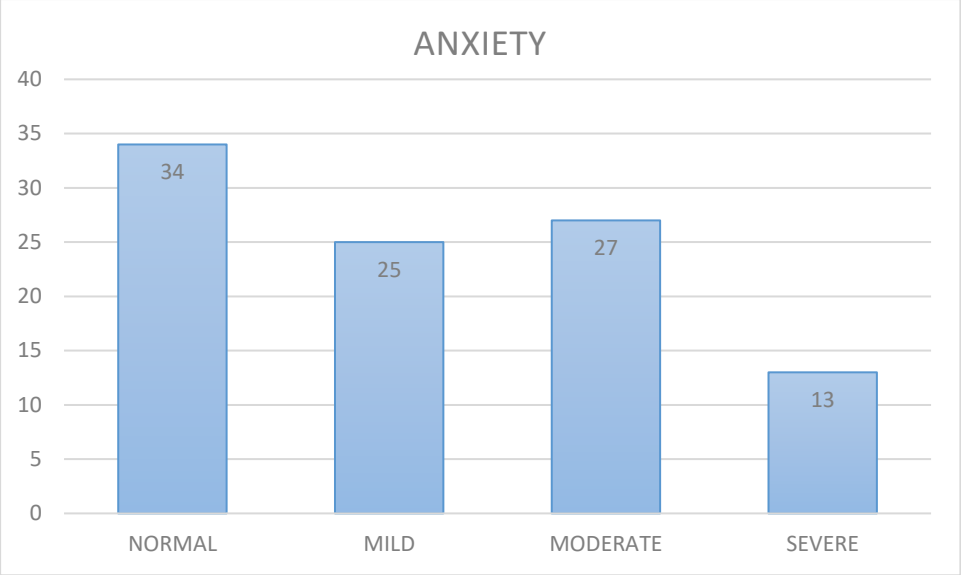


Fig 3: Categorisation of Severity of Anxiety

**Source: Field Study, Ogyiri Asare (2019)**

Figure 3 is a graphical representation of the distribution of the severity of anxiety among women with infertility in the study. It was observed that majority, thus 34 out of 99 of these women suffered normal anxiety while a few of the participants numbering 17 suffered severe anxiety. The majority of participants in the study could be within the range of normal anxiety probably because they were still young as depicted by the majority age bracket and as such had hope of conceiving and bearing a child.

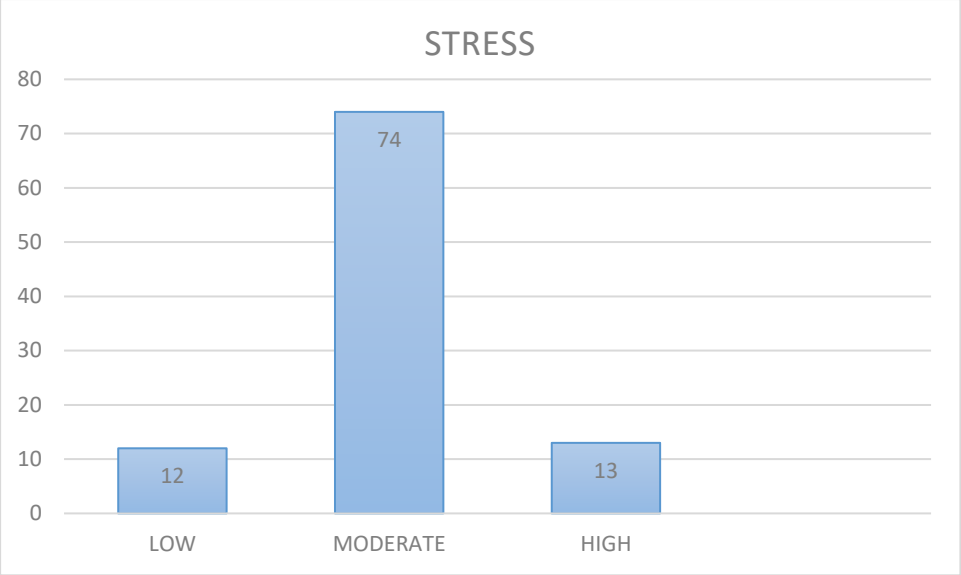


Fig 4: Categorisation of Severity of Stress

**Source: Field Study, Ogyiri Asare (2019)**

Figure 4 is a graphical representation of the distribution of participants' stress levels. It was noted that out of the 99 participants in the study, 74 experienced moderate stress with 12 and 13 participants suffering low and high stress respectively.

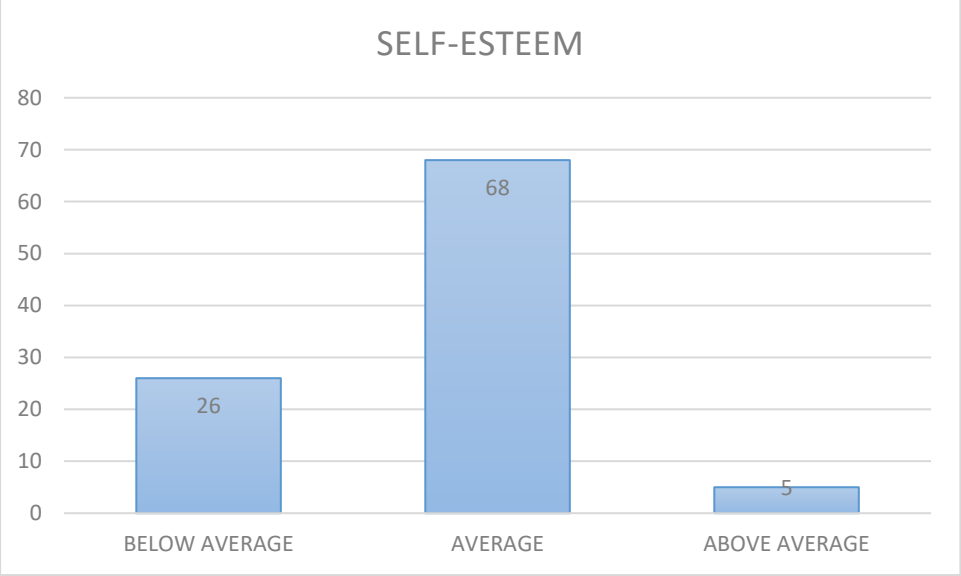


Fig 5: Categorisation of Participants' Self-esteem

**Source: Field Study, Ogyiri Asare (2019)**

The graphical representation of participants' levels of self-esteem is presented in Fig 5. It was observed that 68 participants' out of the total of 99 had an average self-esteem level while only 5 participants' self-esteem was above average**.** Self-esteem has been found to relate to depression. The APA (2013) describes low self-esteem as a symptom of depression, as a result, severe depression was expected to consequently severely affect self-esteem. However, the observation from the findings of the study points to the finding of Oti-Boadi and Oppong (2017) that healthy coping strategies could minimise psychological distress among women with infertility.

**Section 2: Analysis of Hypotheses**

This section analyses data obtained for each hypothesis in the study. The results of these hypotheses are presented in Table 6 -14.

**Hypothesis One: There is a significant positive relationship between depression and anxiety in women with infertility**

The sixth table is a presentation of the correlations that exist between depression and anxiety. It provides information on the direction of relationship that exist among these variables as well as the strength of these relationships.

***Table 6: Pearson Moment Correlation Matrix of Depression and Anxiety***

| Scale | Anxiety |
|---|---|
| Depression | .523** |

**Source: Field Survey, Ogyiri Asare (2019)**

**Correlation significant at $p < 0.01$ (1-tailed), $R^2 = .27$ (27.0%)

As shown on Table 6, the Pearson's product moment correlation was run to determine the relationship between depression and anxiety of women with infertility. The result shows that a mild statistically significant relationship

between depression and anxiety of women with infertility (r = 0.52; n = 99; $p$ < 0.01).

The result was significant therefore, the null hypothesis ($H_0$) was rejected. It was therefore concluded that there is a significant positive relationship between depression and anxiety in women with infertility. The correlation coefficient being positive means that as the depression level of the women with infertility increases their anxiety level will also increase and vice versa. In addition, the co-efficient of determination ($r^2$) of .27 implies that depression among women with infertility explains 27.0% of variation in their anxiety level.

**Hypothesis Two: Stress and anxiety would predict depression in women with infertility.**

In an attempt to answer this research hypothesis, the multiple regression analysis test was run to find out if stress and anxiety would predict depression in women with infertility.

Table 7 represents the results of multiple regression analysis.

***Table 7: Summary of Multiple Regression Analysis for Variables (Anxiety and Stress) predicting Depression***

| **Variables** | ***B*** | **SE B** | **B** | ***T*** | ***P*** |
|---|---|---|---|---|---|
| Constant | 11.58 | 3.86 | | 2.99 | .00 |
| BAI | .55 | .10 | .50 | 5.49 | .00 |
| PSS | .13 | .19 | .06 | .68 | .49 |
| **$R^2$** | | .28 | | | |
| **F** | | 18.19 | | | |

**Source: Field Study, Ogyiri Asare (2019)** **df** = 2, ****p** < 0.01.

Multiple regression analysis was used to test if anxiety and stress would predict depression. The results of the regression indicated the two predictors explained 28.0% of the variance ($R^2$ = .28, F(2, 96)=18.19, p < .01). It was found that anxiety significantly predicted depression among women with infertility (β =.50, p < .01) while stress insignificantly predicted depression (β =.06, p > .01).

**Hypothesis Three: There is a relationship between depression and self-esteem in women experiencing infertility.**

Table 8 is a presentation of the correlation that exists between depression and self-esteem. It provides information on the direction of relationship that exists among these variables as well as the strength of these relationships.

***Table 8: Pearson Correlation Matrix of Self-esteem and Depression***

| Scale | Depression |
|---|---|
| Self-esteem | -.475** |

**Source: Field Study, Ogyiri-Asare (2019)**

***p* < 0.01 (2- tailed), $R^2$=0.23(23.0%)

Table 8 shows Pearson product moment correlation coefficient of the relationship between self-esteem and depression among women with infertility. The results on the Table show mild negative statistically significant relationship between self-esteem and depression among women with infertility (r= -0.47; n=98; p<0.01). The result is significant, therefore the null hypothesis ($H_0$) was rejected. It can be concluded that there is a significant relationship between self-esteem and depression among women with infertility. The negative correlation coefficient implies that as self-esteem level (thus, positive self-esteem) increases their depression decreases and vice versa. The coefficient of

determination ($r^2$) of 0.23 implies that self-esteem among women with infertility explains 23.0% of variation in their depression level.

**Hypothesis Four: Self-esteem would be predicted by depression, anxiety and stress of women with infertility.**

In order to answer this research hypothesis, the multiple regression analysis test was run to find out if stress and anxiety would predict depression in women with infertility.

Table 9 represents the results of multiple regression analysis.

***Table 9: Summary of Multiple Regression Analysis for Variables (Anxiety, Depression and Stress) predicting Self-esteem***

| **Variables** | ***B*** | **SE B** | **B** | ***t*** | ***p*** |
|---|---|---|---|---|---|
| Constant | 19.91 | 1.29 | | 15.39 | .00 |
| Anxiety | -.067 | .037 | -.19 | -1.81 | .07 |
| Stress | -.039 | .062 | -.59 | -.63 | .23 |
| Depression | -.122 | .033 | -.39 | -3.72 | .00 |
| **$R^2$** | | .26 | | | |
| **F** | | 10.73 | | | |

**Source: Field Study, Ogyiri Asare (2019)** **df** = 3, ****p** < 0.01.

Multiple regression analysis was used to test if anxiety, depression and stress would predict self-esteem among women with infertility. The results on the Table 9 shows that the three predictors explained 26.0% of the variance ($R^2$ = .26, F (3, 96) =10.73, p < .01). It was found that only depression significantly predicted self-esteem among the women with infertility (β =.-.39, p < .01). Moreover, anxiety insignificantly predicted self-esteem among the women with infertility (β =-.19, p > .01). Finally, stress insignificantly predicted self-esteem

among the women with infertility (β =-.59, p > .01). The final predictive model was: 19.91 + (-.19*Anxiety) + (-.59*Stress) + (-.39* Depression).

**Hypothesis Five: There is a significant relationship between psychological distress and self-esteem when duration of marriage is controlled.**

Table 10 details out the relationship that exists between psychological distress and self-esteem when duration of marriage is controlled.

***Table 10: Partial correlation between Psychological Distress and Self-Esteem among women with infertility***

| Control variables | | Psychological distress |
|---|---|---|
| None | Self-esteem | -.462** |
| | Duration of marriage | -.161 |
| Duration | Self-esteem | -.443** |

**Source: Field Survey, Ogyiri Asare (2019)**

**Correlation significant at 0.01

A partial correlation was run to determine the relationship between psychological distress and self-esteem whilst controlling for the duration of marriage. A negative relationship of moderate strength and partially correlated was found to exist between psychological distress and self-esteem when duration of marriage was controlled. This relationship was found to be statistically significant with $r$ = -.443, $n$ = 99, $p$ < 0.01. However, the zero-order correlations showed that there was a statistically significant, moderate strength negative relationship between psychological distress and self-esteem $r$ = -.462, $n$ = 99, $p$ < 0.01.

These findings reveal that the researcher should reject the null hypothesis, which states that there is no significant relationship between

psychological distress and self-esteem when duration of marriage is controlled.

It was found that the alternate hypothesis that there is a significant relationship between psychological distress and esteem when duration of marriage is controlled was supported by the results obtained from this study.

**Discussion of research findings**

In this section of the fourth chapter, the findings of the study are discussed. The demographic information of participants in the study are discussed. In addition to it, the following hypotheses are also discussed:

1. $H_1$: There is a significant positive relationship between depression and anxiety in women with infertility.
2. $H_1$: Stress and anxiety would predict depression in women with infertility.
3. $H_1$: There is a positive relationship between depression and self-esteem in women experiencing infertility.
4. $H_1$: Self-esteem would be predicted by depression, anxiety and stress of women with infertility.
5. $H_1$: There is a significant relationship between psychological distress and self-esteem when duration of marriage is controlled.

**Age Ranges of Participants**

The American Society for Reproductive Health (2012) offers an explanation that could account for why majority of women in the study being were within the ages of 30 and 40 years. According to the study by the American Society for Reproductive Health (2012) fertility changes with age. Also, the number of eggs a woman produces declines with age especially for women within the ages of 35 – 40 years. The society further assert that fertility generally

starts declining in women from the age of 30 and by 35 to 40 the chances of giving birth reduces to 5%. This figure continues to decline until the onset of menopause which occurs at an average age of 50. Menopause they believe is equally occurring earlier and sooner in women recently than expected and with chances of giving birth during this time less because both the quality and quantity of ovaries released for fertilization during this time of their life decreases.

In relation to afore stated, it was also noted in this study that only about 4% of the women within this study were above the age of 56 years. This minimal number could be the case because many women within this age may have given up on the hope to be able to conceive a child. This is particularly because at that age, the experience of menopause may have begun and the chances of having a baby becomes very minimal. Women within this age may not see the need to seek professional solution to their infertility. It is also possible that these women have accepted their inability and have found ways to cope with it considering their age or the possibility of trying these treatments which may have proven futile.

It must be noted that participants in this study were obtained from a facility they had gone to seek treatment. Having mentioned this, it is not surprising to see women within the age range of 31 and 40 forming the majority of women seeking fertility treatment. This is being said because, it could be deduced from The American Society for Reproductive Health (2012) that within and beyond this age bracket, one's success of childbirth has an inverse relationship with age.

Also, the anxiety that comes with getting to the age of 40 years and consequently menopause could propel many of these women to seek treatment for their condition. This is especially the case in the context of the research where childbirth is not only desired by a married couple but also the extended family and society at large. This age bracket would therefore see many women with infertility seeking professional treatment for their unique condition. This could account for the predominance of women within this age bracket in the study.

**Marital Status**

In a cultural context where marriage is desired and its survival could be threatened by infertility, it was expected that there would be a reflection of this logic in the results obtained from the study. Another logical expectation was that close to half of the participants may have their marriages destroyed by infertility.

The findings as presented on Table 2 contradict the logic aforementioned. It also appears the results contradict the assertion by Donkor & Sandall (2007) who stated that in the Ghanaian setting the marriage of women with infertility is threatened. Reasoning from their assertion, one would expect that quite a number of women would be divorced or separated from their spouses due to their inability to bear children, however, this was not the case.

Even though the finding on Table 2 indicated that most of these women were married, the study did not in any way find out how well these marriages are doing. Also, the study did not investigate whether indeed the marriages in question were being threatened as not all threatened marriages resulted in divorce. Due to this, it was quite challenging to completely diffuse the findings

that have been derived by other researchers on this subject. However, per the findings of this particular study, cumulatively the results from about 9.1% of the participants reflected the consequence of a threatened marriage (divorced and separated). Having stated the above, it is also worth noting that marriage is a socially desirable status and people may not disclose their failure in order to reserve that status for themselves.

**Duration of Marriage of Participants**

Most of the participants in the study were quite young in marriage which could possibly mean they had hoped for child birth and hence the urge to seek fertility procedures. This could account for the majority of these women found at the health facilities where data for the study was collected. This is asserted because right after marriage the expectation of childbirth from family and society becomes enormous and this can drive these women to these facilities where treatment was sought.

This is also the possible reason why from Table 2, about 90.9% of the participants in the study were still married despite their infertility while contrary logical expectation of infertility was a divorce or separation. It is again worth stressing that the sample for this study was derived from various health facilities where treatment for infertility was been sought. In reference to this, the few of the participants noted to have been married for more than 25 years implied that with the passage of time, hence the stability of marriage could be negatively impacted with less of these women remaining in their marriages.

A study by Alhassan, Razak and Muntaka (2014) have described infertility as a threat to the lineage and continuity of families. Due to this, the issue of infertility becomes not only the affair of husband and wife but also of

the extended family. Mothers in law especially in the Ghanaian context are known to mount enormous pressure as they expect to see their grandchildren and be assured of the continuity of their families before they transit to death. In the wake of this, other women are suggested to the husbands of these infertile women which seem to threaten the longevity of the marriage and situation worsens with the passage of time one seems infertile. Infertility is therefore a legitimate basis of shortening the length of marriage by a husband (European Collaborative Study, 1992).

It is not out of place then to have 1% representing only one participant in this study had been married for more than 25 years. This is being asserted because it is expected that with this indigenous cultural practice, a marriage will be dissolved with the length of time one remains infertile. Thus, the longer a married woman remains infertile, the more likely it is for the marriage to suffer dissolution. Once there is the dissolution of marriage, most women may not see the need to seek treatment for their condition and as such less of them would frequent health facilities for treatment.

**Type of Infertility**

The type of infertility suffered by participants is tabulated in Table 4. It was observed that 68.7% of the sample size suffered from primary infertility while the remaining 31.3% suffered secondary infertility. Primary infertility is the inability of a woman to have a live birth even after actively engaging in sexual intercourse for at least one year while secondary infertility describes the situation where a woman who have had a previous live birth is unable to bear another even though she engaged in active sexual intercourse without the use of contraceptives (Landers & Sweet, 1996).

Worldwide, primary infertility is known to be more prevalent, however, Sub Saharan Africa, within which Ghana is situated has been described a hot spot for secondary infertility, affecting about 10% of women within the reproductive age probably due the prominence of unsafe abortions and reproductive tract infections within the region (Mascarhenas, Flaxman, Boerma, Vanderpoel & Stevens (2012). As advances in technological and medicine are being made, the incidence of these reproductive problems appears to be declining and this has called a decline in the prevalence of secondary infertility within the Sub Saharan region (Sedgh, Singh, Shah, Ahman, Henshaw & Bankole, 2012). Despite this encouraging trend, the region still suffers prominently from secondary infertility in contrast to primary infertility (Inhorn & Patrizio, 2015).

Contrary to studies reporting higher incidence of secondary infertility in Sub Saharan Africa and consequently Ghana, this study found that the prevalence of primary infertility was higher than secondary infertility. It was observed that more than two-thirds of the participants (68.7%) were suffering from primary infertility. The study is consistent with the findings of Sedgh, Singh, Shah, Ahman, Henshaw and Bankole (2012) that advances in technology and medicine could account for the decline in secondary infertility. This is being said because, Ghana has seen a gradual upsurge in the provision and access to healthcare in recent years despite the fact that there are still a few untouched areas. This could have led to a decline in the causes of secondary infertility such as unsafe abortion, reproductive illness and sexually transmitted diseases (Ombelet, Cooke, Dyer, Serour & Devroey, 2008). Primary infertility is

therefore the predominant type of infertility in the research finding, meaning majority of the women have not yet had a live birth following marriage.

**Religion**

Religion has been associated with norms and practices that would demand that these women be in the company of other women. These other women could be pregnant or having their own children. Participation in such women's group could exacerbate the women's experience of psychological distress as it would be a continual reminder of one's infertile status and reinforce one's desire for a child (Jennings, 2010).

On the other hand, religion could also provide a supportive environment for one to cope with this condition in a prenatal environment. These religious groups tend to offer prayer and a refreshed hope for these women when they are psychologically distressed. Also, most of these women tend to capitalize on their religion to gather strength as well as devote their time in activities that fosters spiritual growth and acceptance of fate (Becker, 2000). Religion could thus be a buffer or exacerbation of psychological distress depending on the individual's personal experience.

Even though majority of the participants in the research suffered severe depression, majority also suffered normal anxiety and moderate stress levels. The practice of religion could explain this phenomenon, this is asserted because majority of the participants were Christians: From the creation story of man in the bible, one notices the importance God places on childbirth when he instructed man to be fruitful and multiply (Lee & Kuo, 2000). An inability to give birth could possibly mean one has not been able to fulfil the plans of God to this effect and could lead to depression.

However, the practice of religious norms and virtues like prayer and patience outlined in the bible could also explain the reason for the normal and moderate anxiety and stress respectively found in this study.

**There is a significant positive relationship between depression and anxiety in women with infertility.**

The first hypothesis postulated a positive relationship to exist between depression and anxiety. This hypothesis was supported by the findings of the research. Like many studies done in this area, the study used participants who were visiting various facilities in the country on an outpatient basis.

This finding is also consistent with the finding of Zuraida (2010) who found a relationship to exist between anxiety and depression in their study of outpatients seeking fertility treatment. He stated that psychological distress which include depression and anxiety was generally severe among women suffering from infertility. Verma and Baniya (2016) also had a similar finding when they investigated the relationship between depression and anxiety. Depression and anxiety are comorbid disorders that have been investigated considerably. Most of these findings reviewed for this work have found a similar positive relationship between the two variables.

A similar study has been carried out in Ghana by Alhassan, Ziblim and Muntaka (2014). Their finding was no different from that found in this study. However, they explained this to be the case because polygamy is not forbidden in Ghana. Therefore, when a woman fails to give birth after marriage, the marriage is threatened. The marriage is threatened because the husband may engage another woman in order to bear children. Also, the respect and status

accorded to such women is threatened sparking a feeling of anxiety and depression.

In addition to this, from Table 3, majority of the women in this study had been married from the range of 1 – 5 years. This could explain the heightened anxiety and depression levels as found by Domar, Broome, Zuttermeister, Seibel and Friedman (1992). They explained this using a bell shape to assert that the experience of psychological distress (anxiety, stress and depression) increases, peaks and subsides with the passage of time among infertile women. It is no surprising therefore, that both depression and anxiety are positively related in this study, considering the number of years majority of the participants had been in marriage.

Again, depression and anxiety could be positively related because of the experience of the women. Waking up to the disappointment of no child who could possibly be heir to the family could be a saddening and depressing experience for these women. In addition to the disappointment of these women, is the witnessing of other women give birth to children. Undeniably, the anxiety and apprehension that comes in the wait of a child could not be downplayed. Most of these women live their lives in the hope of carrying their own children someday. However, the time that exist between this hope and reality could possibly be filled with apprehension and anxiety. It is obvious that these two psychological issues could coexist with women experiencing infertility.

**Stress and anxiety would predict depression in women with infertility**

The second hypothesis stated that stress and anxiety would predict depression in women with infertility. Unexpectedly, stress did not significantly predict while anxiety significantly predicted depression. Anxiety and stress

were able to explain 26% of the variance that occurred in depression in this study.

The results of the research did not confirm the finding of Domar (2004) who stated that stress could lead to depression and anxiety in women and men with infertility. Domar's finding meant that one could predict anxiety and depression from the infertile woman's experience of stress. He asserted that infertility was a stressful condition and as such the stressful experience could lead to the experience of anxiety and depression. This finding was not supported by this study as results depicted otherwise.

Alhassan, Ziblim and Muntaka (2014) also conducted a similar study in Ghana. As part of their results, they found that high levels of stress, stigma and depression existed among infertile women in Ghana. This they explained to be the case because infertility is an opportunity for the practice of polygamy in Ghana especially because of the Ghanaian belief in the continuation of family lineage. The threat of dealing with rivals in polygamy give rise to stress in infertile women as their marriages as well become threatened and consequently depression occurs. From this assertion, it was expected that stress could predict depression among women with infertility, however, this current study found no such result.

However, anxiety was a significant predictor of depression with $p < 0.01$. This was consistent with the results of other similar studies done in the area. Herbert, Lucke & Dobson, 2010; Crawford, Hoff and Mersereau (2017) asserted that anxiety and depression are comorbid conditions in infertility. They indicated that both anxiety and depression have been found to exist among infertile women in most similar studies. The American Psychiatric Association

(2019) also stated that anxiety and depression were a decider in the continuation of treatment procedures in women with infertility. These two conditions are highly comorbid especially in conditions that were chronic in nature including infertility. It is then no surprising that anxiety could predict depression in the findings of this study.

Stress was unable to predict depression from the findings in this study. It is speculated that this could result from factors such as partner support, family support, religion and spirituality, the age of the participant as well as the duration of marriage of participants acting as buffer to against stress and consequently depression. As participants are shielded from stress it is possible, they may have developed mechanisms that protected them from depression as well.

**There is a negative relationship between depression and self-esteem in women experiencing infertility**

The third hypothesis articulated that there would be a negative relationship between depression and self-esteem among women experiencing infertility. This hypothesis was supported by results of the study. This implied that among infertile women depression and self-esteem had an inverse relationship, so that as depression soars high self-esteem declines. This result is consistent with a study by Rauf, Liaqat & Fatima (2015) who found that there was an inverse relationship between depression and self-esteem among a group of infertile women.

Infertility is usually associated with some depressive symptoms such as feelings of hopelessness, isolation due to social stigma and grief. This is then accompanied by reduced sense of competence and defectiveness as well as a

threat to one's self-esteem. (Zuriada 2010). Consequently, it can be asserted that the experience of depressive symptoms by participants had an influence on how they are likely to assess, evaluate or consider their worth. Depression according to the cognitive theory (Beck, 1997) could be as a result of clouded thoughts that are self-defeating which could negatively influence self-worth.

Infertility, for a Ghanaian couple, is considered a havoc due to cultural and family connotation. Having children is every couple's dream and for some families, this is of the highest importance of marriage. For a married female, being childless can be disastrous especially because this gives males a reason to go for second (or more) wife because childlessness is a good ground for polygamy. However, this practice is rather a nightmare for the woman with infertility. This socio-cultural practice may lead to development of depressive symptoms and likely to lead to the women have self-defeating thoughts which significantly impairs their self-esteem.

The cognitive theory proposed by Beck (1976) simply postulates that there are cognitive structures that are responsible for how we think and behave. The onset of a psychopathology is an indication of a pathological or faulty thought process. Based on this assertion, depression is a psychological problem which arises as a result of the faulty or problematic way of thinking about events. In considering Beck's explanation of depression one notes that the experience of depression is a cognitive disorder characterized by three negative self-relevant beliefs. The first of these is the negative belief about the self which is usually centred on the firm notion of the individual being defective, deficient and worthless.

However, the main theme of self-esteem is the evaluation of the worth of a person. Based on this, it is obvious that once depression sets in, the self is evaluated as defective and consequently a lower self-worth is interpreted. This then justifies the inverse relationship found between depression and self-esteem as when depression occurs, self-esteem (self-worth) becomes negated.

In addition to this, the biopsychosocial theory also lends itself to explain the relationship between depression and self-esteem. According to Engel (1977) the biomedical model to illness and health appreciates the mind and body as separate entities. This means, these two entities could have little to no influence on each other. However, the biopsychosocial model explains that the aetiology of disease involves an interplay of biological, psychological and social factors. Hence, the mind and the body are not one and as such has enormous influence on each other.

In this regard, the diagnosis of infertility which is a physical health disease could also impact one's psychology. This is especially because social factors such as societal pressure and stigma also comes to bear to compound the condition. Depression is a mental health problem that has bodily manifestations (APA, 2013) including crying, sadness and loss of appetite. It also involves non-physical manifestations such as impaired self-esteem. Thus, self-esteem is expected to be impaired in the face of a depressive mood.

**Self-esteem would be predicted by anxiety, stress and depression of women with infertility**

It was hypothesised that self-esteem would be predicted by anxiety, stress and depression, however, depression was the only significant predictor of

self-esteem. The predictor variables explained 26% of the variance that occurred in self-esteem.

The ability of depression to be a significant predictor of self-esteem could be explained by the description by APA (2013) as low self-esteem being a symptom of depression. Based on this description, it is possible that depression could be an indication that one's self-esteem has been tempered with. Hence, we could predict a certain level of self-esteem from how depressed one is. This could be the basis upon which depression could significantly predict self-esteem in women with infertility.

Depression is a common health problem in infertile women which is closely associated with low self-esteem and loss of hope for the future (Verma, & Baniya, 2016). The finding is similar to that of Owonikoko, Bobo, Tijani Aramide and Atanda (2018). They suggested that the self-worth of the woman with infertility is not reduced without her experiencing other psychological problems such as depression. Studies in the area of depression and self-esteem have suggested an inseparable comorbid relationship to exist between depression and self-esteem. Based on these observations, it is obvious that depression as a significant predictor of self-esteem is expected.

On the contrary, anxiety and stress could not significantly predict self-esteem from the results of the current study as observed in Table 12. These results were rather unexpected especially due to the known association that exist between anxiety, stress and depression (Kazandi, Gunday, Mermer, Erturk & Ozkinay, 2011). However, this association was no justification that anxiety and stress could also predict self-esteem just as depression.

This could possibly mean that one's anxiety or feeling of stress was no marker of his level of self-evaluation or self-worth. It could also mean that being anxious, worried, tensed or stressed about one's infertility could not infer one's self-worth. Another logical observation made over this finding is that even though the women with infertility may have been anxious and stressed, there was a buffer which prevented their self-esteem to become vulnerable for prediction by anxiety nor stress. Demographic factors such as religion, employment status and educational level have been documented by Cavdar and Coskun (2018) to act as a buffer for self-esteem and self-confidence against psychological distress in women with infertility.

Also, judging from the religious nature of Ghanaians, they may have adopted a coping strategy to help prevent their self-esteem from being influenced by psychological problems such as anxiety and stress. Oti-Boadi and Oppong (2017) explained how religiosity helped infertile women in Ghana cope with their infertility. They asserted that those who practiced negative coping strategies such as the belief that they are being punished by God or paying for their sins by being infertile are more prone to suffering psychological distress and a low self-esteem.

Despite this finding and assertion, severe depression was found among participants in the study. This could possibly be the case because of the skewed religious affiliations found in the study. Almost all but a few participants were Christians. However, the 'manual' which governs Christian practice explicitly declares women to be blessed and be fruitful and multiply (Lee & Kuo, 2000). This meant an inability to do so was likely to have interpretations and implications. Firstly, as discussed by Oti-Boadi and Oppong (2017) an inability

to bear a child could mean one was being punished by God for their sins or past lifestyles such as promiscuity. Also, the inability to procreate is meant that the woman in question has been unable to fulfil the divine purpose of God. These two interpretations could have delirious effects on the psychological experience of the woman with infertility.

On this note, it is possible that although the participants in the study could be anxious and stressed, they may probably be engaging in positive religious practices such as praying, hopefulness and patience (Oti-Boadi & Oppong, 2017) which kept their self-esteem from being predicted by anxiety or stress. This could be the background against which the self-esteem of infertile women in this study could not be predicted from their anxiety and stress.

**There is a significant relationship between psychological distress and self-esteem when duration of marriage is controlled.**

Studies have shown how the length of marriage without a child could impact the experience of psychological distress and also self-esteem. Owonikoko, Bobo, Tijani and Atanda (2018) reported that psychological distress in infertility had an association with the duration one has been married. This finding was consistent with the findings of Fatameh, Malek, Nasrin, Farid, Navid, Mamak et al (2004) who also showed that anxiety and depression had a significant relationship with duration of infertility in marriage. This implied that the length or duration of infertility in marriage could either reduce or increase both psychological distress and self-esteem.

Not only these but also, Hassan, Hassan and Baraka (2015) conducted a survey on the relationship between duration of infertility and depression among infertile women in Beni Suef Governorate. As part of their literature review,

they postulated that long duration of infertility increases stress and intensifies psychopathology. This stands to reason that duration of marriage while being infertile has a significant role to play on psychological distress and even self-esteem. This also means that there is a positive relationship between duration in marriage and the infertile woman's experience of psychopathology.

A study undertaken by Shivaprasath, Kamalya and Kirubamani (2018) also found duration of infertility had an influence on women's psychological state. The women who had been 2 – 4 years infertile in marriage had a few of them who were severely depressed, 5 – 7 years had more women severely depressed, 8 – 10 years had women most severely depressed but participants who suffered infertility for more than 10 years had much more women being severely depressed than those with lesser number of years. Consistency is therefore found in how duration of infertility had a significant impact on either psychological distress or self-esteem.

Noteworthy is the finding of this study, which controlled the influence duration in marriage could have on psychological distress and self-esteem. It was found that a relationship of moderate strength existed between psychological distress and self-esteem at an *r* value of $r = -.443$. The zero-order correlation computed for these variables also produced an $r = -.462$. This value also indicated a relationship of moderate strength. The observation is that whether or not duration in marriage is controlled, the relationship existing between the two variables is of moderate strength. There is a possibility that other factors could account for the similarity in strength of these relationships.

First of all, Oti-Boadi and Oppong (2017) have provided us with findings in literature to explain how positive religious coping can reduce

psychological distress especially in Ghana, the context of this study. They believe when infertile women engage in acts of positive religiosity, they experience less psychological distress and consequently their self-esteem is less impaired. This explanation could account for the insignificant difference in the strength of the controlled and uncontrolled relationship between psychological distress and self-esteem.

Also, Cavdar and Coskun (2018) explained that women with lower education were more sensitive to social stigma and as such more prone to stress as well as increased depression and anxiety levels. Again, as education levels increase, the individual easily adapts to situations including infertility and as such does not base the evaluation and worth as a woman on her ability to procreate. This lessens her experience of psychological distress and low self-esteem. Since data was not collected on this demographic factor it is quite impossible to state if indeed this variable accounted for the insignificant difference in strength of the relationships.

**Summary**

In this chapter, the results of the analysis were discussed by considering each hypothesis. The relationships between pairs of variables studied were interpreted and discussed. These relationships ranged from significant to insignificant.

In addition, predictions were also carried out in this study. It was however noted that anxiety but not stress was a significant predictor of depression and among the components of psychological distress (depression, anxiety, stress), only depression significantly predicted self-esteem of women with infertility.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## Summary

### Overview of the Study

This study examined the influence of psychological distress on self-esteem of women with infertility. This was a correlational study that employed purposive sampling in obtaining its participants as the research sought infertile women with some attributes to be part of the study. Aside the purposive sampling technique, the research also employed the stratified proportionate sampling technique. This technique was adopted because the study utilized three hospital facilities and each of these hospitals had have a fair representation in the sampling frame, while four standardized psychological tests were used as instruments for data collection.

Frequencies and percentages were used to analyse demographic data while Pearson product correlation coefficient was used to analyse the relationships that existed among variables. Multiple linear regression was used for prediction and partial correlation was also used to analyse relationship between psychological distress and self-esteem while controlling duration of marriage among infertile women.

The univariate analyses revealed that the participants in the study were predominantly, between the age ranges of 36 – 40 years and married. It was also observed that most of the participants were married from 1-5 years and majority

suffered from primary infertility. The analysis finally revealed that almost all the participants were Christians.

**Key Findings**

1. There was a significant positive relationship between depression and anxiety in women with infertility.
2. Anxiety but not stress was a significant predictor of depression among women with infertility.
3. There was a significant negative relationship between depression and self-esteem among women experiencing infertility.
4. Depression but not anxiety or stress was a significant predictor of self-esteem.
5. There was a significant relationship between psychological distress and self-esteem when duration in marriage is controlled.

**Other Findings**

1. Majority of the participants suffered severe depression
2. Most of the study participants had normal levels of anxiety
3. Moderate stress was highly prevalent among participants
4. The self-esteem of participants was predominantly average

**Conclusions**

Depression, anxiety and stress (psychological distress) are conditions that have being found in most studies to comorbid infertility and was similarly observed in this study. Unexpectedly, unlike depression, anxiety and stress were not significant predictors of the self-esteem of a woman with infertility. Based on this, it would be erroneous to judge the self-esteem of such woman by the presence of anxiety or stress in their lives.

Religion and its associated practices and norms have been found to act as a buffer against the experience of psychological distress in infertility. All participants in the study were also affiliated to a religious group. Participants however did not reflect this assertion especially as high levels of some form of psychological distress (depression) was found among participants. However, anxiety and stress levels of participants were observed to be normal and moderate respectively.

In addition to this, it was obvious from the observations in this study that, the duration a woman had being in marriage being infertile had little impact on the relationship that existed between their psychological distress and self-esteem. The study thus produced interesting results that explained the influence of psychological distress on the self-esteem of woman with infertility when duration of marriage was controlled. The findings of the study revealed that there was a relationship between psychological distress and self-esteem of women with infertility irrespective of the duration of marriage.

Findings of the study also suggested that there was a need for infertility and psychological distress to be addressed as comorbid conditions. This is asserted especially because of the high prevalence of severe depression that existed among participants. Even though the findings reveal most participants reported having normal levels of anxiety and moderate levels of stress, these conditions also need to be addressed in order to avoid its exacerbation.

**Recommendations**

In order to seek the psychological wellbeing of women with infertility based on the findings of this study, it is recommended that:

1. There is a need for the Ghana Health System to treat infertility as a condition that requires psychological input in the treatment procedure of infertility based on the biopsychosocial model.
2. It was observed during data collection that women with infertility do not have access to psychological services. It is therefore recommended that gynaecologists attending to these women should refer them to clinical health psychologists for professional assistance.
3. Religious leaders, family and stakeholders in society need to be educated that infertility is not a condition of choice in order to reduce the stigma and consequently psychological distress associated with the condition.
4. Women with infertility should also be educated by their healthcare providers to seek psychotherapy early enough to prevent them from experiencing severe psychological distress which could cripple their efficiency and even chances of childbirth.

**Suggestions for Future Research**

To extend literature on the topic of infertility and its psychological correlates, the following recommendations are made:

1. Researchers could explore this same study but with a qualitative approach.
2. Social support in infertility could also be researched by others.

3. The role of religion in infertility treatment could also be investigated.
4. The influence of partner support on self-esteem could be undertaken as a research topic by future researchers.

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# APPENDICES

## APPENDIX A

## CONSENT FORM

Dear Participant,

I would be very grateful to have you participate in this research. The research is on self-esteem and psychological distress in women with infertility. The research forms part of an MPhil project with the purpose of examining the self-esteem of women with infertility and also investigating the psychological distress that accompany infertility.

The questionnaire would require about 20 minutes of your time for completion and participation is at will. However, all information provided would remain confidential and third parties would not have access to it. Also the information gathered would not be used for purposes other than stated in the consent form. Your anonymity is highly assured so no one can link your identity to the information provided.

Thank you for opting to be part of this study

…….

Initials/Signature

**APPENDIX B**

UNIVERSITY OF CAPE COAST

COLLEGE OF EDUCATION STUDIES

DEPARTMENT OF EDUCATION AND PSYCHOLOGY

**QUESTIONNAIRE FOR WOMEN WITH INFERTILITY**

Dear Participant,

Kindly indicate by ticking **(√)** which response applies to you in each pf the following statements. Your honest and candid response would be deeply appreciated.

SECTION A

**DEMOGRAPHIC DATA**

| | | |
|---|---|---|
| AGE | Below 25 yrs. | [ ] |
| | 26 – 30 years | [ ] |
| | 31 – 35 years | [ ] |
| | 36 – 40 years | [ ] |
| | 41 – 45 years | [ ] |
| | 46 – 50 years | [ ] |
| | 51 – 55 years | [ ] |
| | 56 and above | [ ] |
| MARITAL STATUS | Married | [ ] |
| | Divorced | [ ] |
| | Separated | [ ] |
| DURATION IN MARRIAGE | ……. | |
| RELIGION | Christian | [ ] |
| | Muslim | [ ] |

Traditionalist [ ]

Other, pls specify

……..

TYPE OF INFERTILITY Primary [ ]

Secondary [ ]

**SECTION B**

**BDI II**

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statement carefully and then pick out the one statement in each group that best describes the way you have being feeling during the past weeks including today. Circle the number beside the statement you have picked. If several statements in a group seem to apply equally well, circle the highest number for that group. Please do not choose more than one statement in each group.

1. Sadness

   0 I do not feel sad.

   1 I feel sad

   2 I am sad all the time and I can't snap out of it.

   3 I am so sad and unhappy that I can't stand it.

2. Pessimism

   0 I am not discouraged about my future.

   1 I feel more discouraged about my future than l used to be.

   2 I do not expect things to work out for me.

   3 I feel my future is hopeless and will only get worse.

3. Past Failure

   0 I do not feel like a failure.

   1 I feel I have failed more than I should have.

   2 As I look back, I see a lot of failures.

   3 I feel I am a total failure as a person.

4. Loss of Pleasure

   0 I get as much as much pleasure as I ever did from the things I enjoy.

   1 I don't enjoy things as much as I used to.

   2 I get very little pleasure from the things I used to enjoy.

   3 I can't get any pleasure from the things I used to enjoy

5. Guilty Feelings

   0 I don't feel particularly guilty

   1 I feel over many things I have done or should have done.

   2 I feel quite guilty most of the time.

   3 I feel guilty all of the time.

6. Punishment Feelings

   0 I don't feel I am being punished.

   1 I feel I may be punished.

   2 I expect to be punished.

   3 I feel I am being punished.

7. Self - Dislike

   0 I don't feel the same about myself as ever.

   1 I am have lost confidence in myself.

2 I am disappointed in myself.

3 I dislike myself.

8. Self - Criticalness

0 I don't criticize or blame myself more than usual.

1 I am more critical of myself than I used to be.

2 I criticize myself for all of my faults.

3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

0 I don't have any thoughts of killing myself.

1 I have thoughts of killing myself, but I would not carry them out.

2 I would like to kill myself.

3 I would kill myself if I had the chance.

10. Crying

0 I don't cry any more than I used to.

1 I cry more than I used to.

2 I cry over every little thing.

3 I feel like crying, but I can't.

11. Agitation

0 I am no more restless or wound up than usual.

1 I am feel more restless or wound up than usual.

2 I am so restless or agitated that it's hard to stay still.

3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest

0 I have not lost interest in other people or activities.

1 I am less interested in other people or things than before.

2 I have lost most of my interest in other people or things.

3 It's hard to get interested in anything.

13. Indecisiveness

0 I make decisions as well as I ever.

1 I find it more difficult to make decisions than usual.

2 I have greater difficulty in making decisions than I used to.

3 I have trouble making any decisions.

14. Worthlessness

0 I do not feel I am worthless.

1 I don't consider myself as worthwhile and useful as I used to.

2 I feel more worthless as compared to other people

3 I feel utterly worthless.

15. Loss of Energy

0 I have as much energy as ever.

1 I have less energy than I used to have.

2 I don't have enough energy to do very much.

3 I don't have enough energy to do anything.

16 Changes in Sleeping Pattern.

0 I have not experienced any change in my sleeping pattern.

1a I sleep somewhat more than usual.

1b I sleep somewhat less than usual.

2a I sleep a lot more than usual

2b I sleep a lot less than usual

3a. I sleep most of the day

3b. I wake up 1 – 2 hours early and can't get back to sleep

17. Irritability

0 I no more irritable than usual.

1 I am more irritable than usual.

2 I am much more irritable than usual.

3 I am irritable all the time.

18. Changes in Appetite

0 I have not experienced any change in my appetite.

1a My appetite is somewhat less than usual.

1b My appetite is somewhat greater than usual.

2a My appetite is much less than before.

2b My appetite is much greater than usual

3a I have no appetite at all

3b I carve for food all the time

19. Concentration Difficulty

0 I can concentrate as well as ever.

1 I can't concentrate as well as usual.

2 It's hard to keep my mind on anything for very long.

3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

0 I am no more tired or fatigued than usual.

1 I get more tired or fatigued than usual.

2 I am too tired or fatigued to do a lot of the things I used to do

3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

0…… I have not noticed any recent change in my interest in sex.

1…… I am less interested in sex than I used to be.

2…… I am much less interested in sex.

3…… I have lost interest in sex completely.

**BAI**

**Instructions**: Below is a list of symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by each symptom during the PAST WEEK, INCLUDING TODAY by ticking the corresponding space in the column next to each symptom.

| | **NOT AT ALL** | **MILDLY It did not bother me much** | **MODERATELY, It was very unpleasant but I could stand it** | **SEVERELY, I could barely stand it** |
|---|---|---|---|---|
| Numbness or tingling | | | | |
| Feeling hot | | | | |
| Wobbliness in legs | | | | |
| Unable to relax | | | | |
| Fear of worst happening | | | | |
| Dizziness or lightheaded | | | | |

| | | | | |
|---|---|---|---|---|
| Heart pounding or racing | | | | |
| Unsteady | | | | |
| Terrified | | | | |
| Nervous | | | | |
| Feeling of choking | | | | |
| Hands trembling | | | | |
| Shaky | | | | |
| Fear of losing control | | | | |
| Difficulty in breathing | | | | |
| Fear of dying | | | | |
| Scared | | | | |
| Indigestion or discomfort in abdomen | | | | |
| Faint | | | | |
| Face flushed | | | | |
| Sweating (not due to heat) | | | | |

**PSS**

**Please respond to each question by marking (√) one box per each question as it applies to you in the LAST MONTH.**

| | NEVER | ALMOST NEVER | SOMETIMES | OFTEN | VERY OFTEN |
|---|---|---|---|---|---|
| How often have you being upset because of something that | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| happened unexpectedly | | | | | |
| How often have you felt you were unable to control the important things of your life | | | | | |
| How often have you felt nervous and stressed | | | | | |
| How often have you felt confident of your ability to handle your personal problems | | | | | |
| How often have you felt that things were going your way | | | | | |
| How often have you found that you could not cope with all the things that you had to do | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| How often have you being able to control irritations in your life | | | | | |
| How often have you felt that you were on top of things | | | | | |
| How often have you being angered by the things that were outside of your control | | | | | |
| How often have you felt that difficulties were piling up so high that you could not overcome them | | | | | |

**SES**

Please read each statement carefully. Tick the box that indicates how much the statement applied to you over the **PAST TWO WEEKS**. There are no right or wrong answers**.**

| | **Strongly Disagree** | **Disagree** | **Agree** | **Strongly Agree** |
|---|---|---|---|---|
| I feel that I am a person of worth, just as any other person | | | | |
| I feel that I have some of good qualities | | | | |
| Considering all things, I do feel that I am a failure | | | | |
| I am able to do things just as most people | | | | |
| I feel I do not have much to be proud of | | | | |
| I have a positive attitude toward myself | | | | |
| Considering all things, I am satisfied with myself | | | | |
| I wish I could respect myself better | | | | |
| I certainly feel useless at times | | | | |
| At times, I think that I am good for nothing | | | | |

## APPENDIX C

## SELF-ESTEEM SCALE

Please read each statement and record a number 0, 1, 2 or 3 by the statement which of them indicates how much the statement applied to you over the **PAST TWO WEEKS**. There are no right or wrong answers**.**

**0 = Strongly disagree**

**1 = Disagree**

**2 = Agree**

**3 = Strongly agree**

1. I feel that I am a person of worth, at least on an equal plane with others……
2. I feel that I have a number of good qualities …….
3. All in all, I am inclined to feel that I am a failure (R) ……
4. I am able to do things as well as most people ……
5. I feel I do not have much to be proud of (R) ……..
6. I take a positive attitude toward myself ……
7. On the whole, I am satisfied with myself ……..
8. I wish I could have more respect for myself (R)……...
9. I certainly feel useless at times (R)……..….
10. At times I think that I am no good at all (R) …….

## APPENDIX D

## ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
*ETHICAL REVIEW BOARD*

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: CES-ERB/ucc.edu/13/19-32

Your Ref: .....

Date: March 4, 2019

**Dear Sir/Madam,**

**ETHICAL REQUIREMENTS CLEARANCE FOR RESEARCH STUDY**

The bearer, Angelina Oggiri Asare, Reg. No. EF/CHP/17/0006 is an M.Phil. / ~~Ph.D.~~ student in the Department of Education and Psychology in the College of Education Studies, University of Cape Coast, Cape Coast, Ghana. ~~He /~~ She wishes to undertake a research study on the topic:

The influence of psychological distress on self esteem of women with infertility

The Ethical Review Board (ERB) of the College of Education Studies (CES) has assessed ~~his/~~her proposal and confirm that the proposal satisfies the College's ethical requirements for the conduct of the study.

In view of the above, the researcher has been cleared and given approval to commence ~~his/~~her study. The ERB would be grateful if you would give ~~him/~~her the necessary assistance to facilitate the conduct of the said research.

Thank you.
Yours faithfully,

Prof. Linda Dzama Forde
(Secretary, CES-ERB)

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