IMPACT OF INFERTILITY ON WOMEN'S QUALITY OF LIFE: A CASE STUDY OF CAPE WINDHOEK FERTILITY CLINIC, NAMIBIA

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ABSTRACT

Infertility is a global phenomenon that affects many people world-wide. The study looked at the impact of infertility on women's quality of life at the Cape Windhoek Fertility Clinic in Windhoek, Namibia. With a focus on both primary and secondary infertility cases, the researcher examined the impact of infertility on the domains of life, namely, the physical, emotional, social, and psychological domain respectively. The aim of the study was to investigate the impact of infertility on the quality of life of the affected women. The objectives of study were to assess the impact of infertility on women's quality of life among the participants who visited Cape Windhoek Facility Clinic; description of factors that affect quality of life of the affected women; ascertain difference between the effects of primary and secondary infertility on quality of life and lastly to explore strategies that can be employed to enhance the quality of life among infertile women. Quantitative research design was adopted in the study, and data was collected from a total number of 65 participants who were chosen due to their demographic similarities. A questionnaire was used as a data collection instrument. The study revealed that infertility affected the quality of life of the women. Findings revealed that 62% of the participants had primary infertility whilst 38% had secondary infertility. The data shows that about 50% of the participants rated their health to be poor simply because they are infertile. Additionally,57% of the participants have negative view about their quality of life due to infertility, and 28% were of the view that their quality of life is good while 3% stated that it is very good. The data shows general negative views about infertility on quality of life. Several factors that are affecting the women are such as emotional, social, and psychological stress due to infertility. The results also discovered that the participants experienced

dissatisfaction with their bodies, sexual life and relationship with their partners as well as fear of socializing because of infertility. There was a noted difference in the quality of life between participants with primary and secondary infertility. The study recommends the need for a public fertility clinic that is affordable and accessible to everyone, as well as the establishment of a low- cost in-vitro fertilization program, that trains the practitioners in the field of reproduction. This can help infertile women access medical services that assist them in conceiving. The study also recommends psychological counselling for women who are affected by infertility to improve their quality of life.

KEYWORDS: Reproductive health, fertility, childlessness, in-vitro fertilization, psychological distress, life satisfaction, emotional support, coping strategies, social functioning.

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LIST OF ABBREVIATIONS AND/OR ACRONYMS

AIDS:	Acquired Immune Deficiency Syndrome
ART:	Assisted Reproductive Therapy
HIV:	Human Immune-deficiency Virus
IVF:	In- vitro Fertilization
NSA:	Namibia Statistic Agency
QoL:	Quality of life
RTI:	Reproductive Tract Infections
SADC:	Southern African Development Community
SONP:	School of Nursing and Public Health
SPSS:	Statistical Package for Social Sciences
UREC:	University of Namibia Research Ethics Committee
WHO:	World Health Organisation
WHOQoL:	World Health Organisation Quality of Life

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I would like to thank the almighty God for his unfailing love towards me and for giving me an enablement to complete this study. It is all by his grace.

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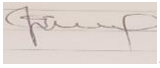
DEDICATION

This study is dedicated to all women out there, who are affected by infertility in one way or another. A special dedication to the women diagnosed with infertility, who took time and courage to participate in this study, despite the peculiar dimension they are facing in life, regarding fertility and reproductive health.

DECLARATION

I, Apollonia Imalwa, hereby declare that **Impact of Infertility on Women's Quality of Life**: **A case study of Cape Windhoek Fertility Clinic** is a true reflection of my own study and has not been submitted for any other degree at another university.



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CHAPTER 1. INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction

Infertility is a fast-growing worldwide health concern that may cause a great deal of psychosocial impairment. A study by Verma, Thapa, Bhat et al (2021) indicated that infertility is a fast-growing complication in all the cultures around the world, affecting about 80 million people. It is a growing problem affecting10 – 15 % of couples of reproductive ages from all the cultures and societies all over the world. (Verma et al 2021). The study also found out that infertility in females is growing rapidly throughout the world, being the fifth most serious disability in the world. The same authors also revealed that infertility is a serious condition which not only affects the physical health of a woman but also influences a woman psychologically.

According to the World Health Organization (2020) (a), infertility can be defined as "a disease of the reproductive system characterised by the failure to achieve a clinical pregnancy after 12 months or more of regular, unprotected sexual intercourse and in the absence of birth control methods''. It is associated with negative health outcomes that include chronic health conditions, poor mental health, and a poor quality of life. Among women, 21.9% suffer from primary infertility, while 10.5% experience secondary infertility (Cui et al., 2021). Primary infertility is defined by World Health Organisation (2020) (a) as the inability to have successful conception in couples who have never conceived, and secondary infertility is the inability to have a pregnancy after previous successful conception. Infertility sometimes is classified as a disability, and as an impairment of function generated by a disease, because it is highly tabooed and rarely discussed. (Gentile, Ferreccio, Scaruffi, Massarotti, Remorgida, &Anserini, 2019).

The World Health Organisation (2020) (c) defines Quality of Life as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, values, and concerns incorporating physical health, psychological state, level of independence, social relations, personal beliefs, and their relationship to salient features of the environment. Quality of life (hence referred to as QoL) is an all-encompassing term with numerous philosophical, and medical connotations." Thus, according to the definitions, "Quality of Life" refers to a subjective evaluation that is deeply rooted in the ethnic, societal, and environmental milieu. Quality of life refers to the degree to which an individual is healthy, comfortable, and able to participate in or enjoy life events (Jenkinson, 2020). For this reason, to understand the severity of patients' psychological and social problems in fertility care, it is of paramount importance that the effect of infertility on infertile patients' QoL be studied in detail with particular attention to the context.

A statistical report by the World Health Organization (WHO) (2018 (d)revealed that infertility is the fifth most serious condition worldwide amongst other chronic conditions including cancer, heart disease, stroke, diabetes, and HIV/AIDS. In some circumstances infertility is classified as a disability and as an impairment of function generated by a disease since it is highly taboo and rarely discussed (Gentile et al, 2019).

Since pregnancy and childbirth are valued roles for women in many developed and developing countries, infertility may be a painful experience (Namdar, Naghizadeh, Zamani, and Yaghmaei, 2017). It causes several psychological problems, including stress, worry, depression, low self-esteem, decreased sexual satisfaction, and diminished quality of life (Bakhtiyar et al., 2019). Bakhtiyar et al.,

(2019) further explains that infertility may work as a painful experience because it causes a lot of psychological issues including stress, anxiety, depression, diminished self-esteem, declined sexual satisfaction, and reduced quality of life. If the wish for childbearing is not fulfilled in women, they might experience psychological distress and suffer from an impaired health-related quality of life (QOL).

The implications of infertility especially in the African context results into polygamous relationship and therefore, the risk of Human Immunodeficiency Virus (HIV) acquisition, divorce, domestic abuse or maltreatment is very high. Infertility also put women at risk of loss of social security, lack of domestic support in the home, poverty or high dependency among elderly people, lack of respect and status in society, social isolation and humiliation, just to mention a few (Afolabi & Ibisomi, 2017).

A study by Withers (2021), revealed that infertility is a global health issue that affect millions of women with significant physical, emotional, social, and psychological consequences. The study further stated that Infertility can result from various medical, genetic or environmental factors. While medical advancements have improved fertility treatments, many women around the globe still experience profound psychological distress, strained relationships and societal stigma. A study by Temitope (2022) found out that in many African countries, the burden of infertility is usually associated with economic, psychological and socio-cultural factors. In many African countries such as Ghana, there is a belief that couple especially who are married should give birth within the first few years of marriage. It was found out that women constantly blame themselves for the inability to conceive. Since having children was a necessity, the ability to fulfil this basic requirement made the women to feel inferior and unworthy. (Temitope,2022).

The study further found out that social pressure, stigma from family and community members and financial constraints led to psychological distress. Another cause of distress in women's inability to conceive was that people such as family and community members, and sometimes their spouses, blame them for the inability to conceive or have children. In addition, social stigma also led to marital problems, which led to significant psychological distress and low self-worth especially on women. Another form of social stigma was insults and comments from family members and relatives about infertility, which had seemed to be disloyal and disrespectful, and thereby putting these women in constant feelings of psychological distress. Temitope (2022) further stated that infertile women in Ghana were seen as useless and respect was given to those who had a child, even if their children have died. This put an immense pressure on their mental health, self-esteem and self-worth.

Temitope (2022) ascertains that infertility is a reproductive problem that affects people of all genders, races, religion and social class. The author further stated that the desire to have children has been part of humanity because most women were brought up to believe that they will have children. Therefore, when the infertility happens couple experience disappointment and shock at the inability to have children they desire. A study by Atake and Gnakou (2019) revealed that women who are infertile had to isolate themselves from social activities and interactions because of the burden of infertility and its associated pressure from the family, relatives and the community. Some women also said that they to relocate to the other communities or other places to avoid stigma and the shame of being infertile. (Atake &gnakou 2019). In addition, the same study stated that women in Africa were also assumed to have caused their own childlessness or inability to conceive.

Temitope (2022) also maintained that cultural beliefs and assumptions of infertility on women in Africa led to significant psychological distress and poor quality of life because the women were regarded as outcasts and were shown no consideration in issues pertaining to life and well-being. Infertile women experienced marital problems such as emotional and physical violence, which have put a strain on their marriages, thereby resulting in negative consequences on women's mental health and quality of life. (Temitope,2022).

A similar study by Bayoumi, Koert and Boivin (2021) indicated that globally, childlessness has severe negative psycho-social consequences such as depression, anxiety, social isolation, family instability, divorce and intimate partner violence. The study further stated that infertility has been reported to impact quality of life negatively, leading to the development of fertility quality of life tool which provides a standardized measure of this impact. Furthermore, the same study revealed that in Sudan, there are strong gender norms regarding reproductive health that place the blame of infertility and the burden of help-seeking on women who bear the social stigma of childlessness and are obliged to accept divorce or polygamy, because of infertility. Additionally, the same study also there are shortcoming in the type and quality of services available such as minimal specialized training and fertility care, limited privacy and counselling services. Bauyomi et al (2021) stated that to this end, there are limitations in the publications about infertility in Sudan.

Previous studies with a focus on the clinical and biomedical models and synthesized evidence on the experiences of African infertile women from a holistic approach, including quality of life are non-existent. A study by John (2024) indicated that, in India, women with infertility experience depression, anxiety and poor quality of life, and

employ maladaptive coping supportive relationships with one's family and spouse. The study also added that childbearing is considered necessary in the Indian society, and as a result, social pressure may add to the existing stress, as this is causing the infertile women to feel baren and incomplete. Even though infertility is not a mortal condition, being diagnosed as infertile in India can be a nerve-racking experience for couples (John 2024). The same study concluded that, although both men and women can contribute to infertility in India, women are exclusively held responsible, leading to more significant stress, while undergoing infertility treatment.

According to Makama (2022) childlessness is a very serious problem in marriages in Lesotho, and it causes instability in Basotho marriages. It was discovered that childless married women in Lesotho bear the pain and burden of the problem of childlessness to the extent that their lives become meaningless as Sesotho culture and society put emphasis on childbearing. (Makama 2022). The study further revealed that the problem of childlessness lies with women and not men. In most circumstances, if the wish for childbearing is not fulfilled in women, they might experience psychological distress and suffer from an impaired health-related quality of life. (Namdar et al.2017). Namdar et al (2017) further stated that the implications of infertility are vast, especially in the African context; it may result in polygamous relationships and an increased risk of Human Immunodeficiency Virus (HIV) acquisition, divorce, domestic abuse, or maltreatment. According to Verna, et al (2021) the woman's inability to get pregnant leads to many problems such as sadness, anger, low self-esteem, anxiety, loss of social status, and poor Quality of Life. (QoL). These authors further stated that there is a tremendous increase in infertility and its treatment which highlights the psychological aspect of infertility. Given these projections, it is evident that infertility has a

major impact on the quality of life of a person faced with infertility, hence the need for more empirical studies to further investigate the impact of infertility on women ‘s QoL in an African context.

1.2 BACKGROUND OF THE STUDY

This section presents a general overview of the study from a broader perspective to establish the context of the current study. Here, findings about the research topic and research findings from the previous studies are presented. The next sub-headings present a general overview on infertility in general, in various contexts namely, the global, African, SADC and the Namibian context respectively.

1.2.1 Infertility in the global context

Infertility is recognized as a global social and public health issue that has an impact on quality of life, mental health, marital happiness, and family relationships (Bakhtiyar et al., 2019). It is estimated that annually 60–80 million couples around the world suffer from infertility (Deyhou, Mohamaddoost, and Hosseini, 2017), and the number of couples affected by infertility has risen to around 10–12 percent (Hubens, Arons, and Krol, 2018). According to Bakhtiyar et al. (2019), absolute numbers show that millions of couples fail to have the children they desire (defined as failing to conceive over a period of five years), and of these, 19.2 million couples fail to have their first child and 29.3 million fail to have their second. Research findings have reported that fertility problems affect individuals in high-income countries as well as those in middle- and low-income countries (Hubens et al., 2018).

According to estimates 25%–30% of cases, the man is infertile, and women are infertile in 35%–40% of cases. About 21.9% of women suffer from primary infertility, while 10.5% experience secondary

infertility (Cui et al., 2021). Furthermore, infertility rates among women aged 25 to 44 in developed countries range from 3.5 to 16.7%, whereas rates in developing countries are quite higher and range from 6.9% to 9.3%. From 1990 to 2017, the age-standardized prevalence rate of infertility grew by 0.37 percent for females and 0.29 percent for men (Hubens et al., 2018). In China, the rate of infertility among couples of reproductive ages was as high as 25% (Cui et al., 2021). According to the reports of the International Committee for Monitoring Assisted Reproductive Technology, infertility is a global problem affecting people around the world, whose cause and importance may vary according to the geographical location and socio-economic condition (Cui et al., 2021).

Seyyed et al. (2015) further inform us that the average incidence rate of infertility in first world nations is 3.5–16%, while in third world nations, 6.9–9.3%. Kalima-Munalula, Ahmed, and Vwatika (2017) report that giving birth and having a family are some of the main individual expectations. Verma, et al (2021) stated that, parenthood is the most important event of a human life, especially a woman, hence the stress of not bearing a child is very depressing for a woman. This leads to many psychological and emotional problems, such as marital problems, feeling of worthlessness, and depression among others. Infertile women reported poor marital life, compared to fertile women. Verma et al (2021) further stated that there is a dramatic increase in infertility treatment, which sheds the light on the psychological aspect of infertility. In addition, Verma et al (2021) reported that of the 48.5 million couples experiencing infertility, approximately 27.5 million couple are from India. With the development of clinical medicine around the globe, infertility is now understood to be caused by abnormalities in the reproductive systems of both men and women. The

World Health Organization (2020) (a) classified infertility as a medical condition that requires treatment.

In Indonesia, a study by Harzif, Santawi, and Wijaya (2019) explains that the QoL of people with infertility problems is hindered greatly as they fail to meet some life dimensions or milestones they expected to achieve. Infertility produces infertility-related stress in both members of infertile couples, which has an adverse effect on the couple's quality of life and relationship with the family. Meanwhile, a recent study by Luo, You, Lei, and Ren (2021) in China reflects that the incidence of infertility was up to 25% among couples of reproductive ages. The same study showed that the level of infertility-related stress was negatively related to infertility treatment success, while another study reported that infertility treatment failure causes psychological stress. Accordingly, studying the quality of life of infertile women might alarm the health authorities and, subsequently, let them spend more effort to help the infertile couples. This study aims to investigate the impact of infertility on women’s quality of life.

1.2.2 Infertility in Africa

Although infertility is a global phenomenon, many of its causes are reported in countries in the third world. It is a practical concern for Africans due to the high social stigma (Abebe, Afework, and Abaynew, 2020). Chiware (2021) observes that infertility in Africa is more than a health problem; it is a social issue and a public health matter that continues to be ignored and neglected. Chiware (2021), further stated that infertility in Africa is known to cause significant psychological and social effects on quality of life, such as fear, guilt, depression, self-blame, marital stress, emotional abuse, divorce, and loss of social status.

In the same line of thought, several empirical studies on infertility report that women in many parts of Africa carry the main burden of infertility since they are held responsible for their inability to conceive, and rural societies are more inclined than urban ones to blame women for infertility problems (Harzif, Santawi, and Wijaya, 2019). Furthermore, according to Kalima-Munalula, Ahmed, and Vwalika (2017), in African customs, women were expected to bear children as soon as they entered the maternal stage, and the pressure of childbearing solely rested on their shoulders, while men were mostly excluded from infertility discourse. Hence, studies have demonstrated that women are more likely than men to experience poor quality of life because of infertility. (Chiware, 2021; Harzif et al., 2019).

In a study by Elhussein, Ahmed, and Suliman (2019), in Sudan, investigations show that there is a high rate of primary infertility of 68%, and secondary infertility only 37.6%, contrary to what has been reported in Nigeria, and Tanzania, where the secondary infertility was as high as 62.9%. Existing studies report that, although there is high infertility prevalence in Africa, there is lack of proper infertility statistics in some African countries.

In another study by Ofosu-Budu and Hanninen (2020) reported that, in a Ghanaian society, children are a source of wealth and prestige to parents especially older parents. As a result, infertile women are highly stigmatized, especially in Northern and Southern Ghana, and are not recognized by the society. (Ofosu-Budu & Hanninen 2020). The study findings also revealed that infertile women are denied of their social status, by which 23%of women were criticized by their in-laws, threatening them to throw them out of their matrimonial homes. However, the main challenge with fertility treatment in Africa is that infertility and assisted reproductive therapy are not considered priorities, and the most common argument against assisted

reproductive therapy (ART) is overpopulation, other than health priorities, because of limited government budgets and the limited experience of providers (Chiware, 2021).

According to a study by Ombelet (2020) the estimates of worldwide infertile couples are 186 million, and half of these couples are living in the Sub-Saharan Africa. (Ombelet, 2020) further explains that consequences of infertility are usually more dramatic in Sub-Saharan Africa, compared to the Western societies, particularly for women, because childless women are frequently stigmatised, isolated, disinherited, and neglected by the entire family and the local community. This may result in physical and psychological violence, and polygamy, because families in Sub-Saharan Africa are completely dependent on children for economic survival.

Ombelet (2020), further observes that, despite the high prevalence of infertility, due to the cultural values associated with childbearing, infertility care remains a low priority area for local health care providers and community leaders in Sub-Saharan Africa, because the most common arguments they use in addressing infertility is overpopulation and limited resources. For this reason, the lack of infertility treatment is mostly justified as a form of population control and it may be used as a solution to overpopulation in high fertility settings such as in Sub-Saharan Africa, (Ombelet, 2020). In Sub-Saharan Africa, medical practitioners discovered that women infertility was mainly caused by infectious diseases, while for their counterparts (men) it had its origin in sexually transmitted diseases (Abebe et al., 2020). Subsequently, traditional and cultural beliefs have not gone into extinct with regards to infertility. Failure to have children has led to ridicule, name calling and exclusion of victims which has in turn led to insurmountable pressure causing psychological, mental and physical pain. (Abebe et al., 2020).

A study by August and Fernandes (2023) revealed that infertility in most African countries results in discriminatory practices with infertile people, most especially women. The study further stated that the similar pressure also occurs in the Brazilian context, lead context, leading women to seek specialized fertility treatment first before their husbands. Aspects such as disruption in self-esteem, dignity, meaning of life and relevance to society emerged from research data as associated to the impact of infertility on women. (August &Fernandes 2023). For this reason, the problem of infertility causes suffering for infertile women, demanding practices to improve the quality of life.

A study by Temitope (2022) indicated that infertility has been regarded as one of the most important reproductive health concerning Nigerian women. The study same study also added that, based on the importance placed on offspring in Africa, infertile women experience high levels of psychological distress, relationship conflict, and hazardous sexual behaviours. Since infertility has been recognised as potentially serious, costly and burdensome issue for families in the Nigerian society, the discovery that one cannot become pregnant is often unforeseen and results in invasive and demanding medical tests and procedures for both men and women. (Temitope, 2022).

A similar study by Taebi, Kariman and Majd (2021) stated that in many cultures in Uganda, infertility is the reason for divorce, and in some cultures, childlessness is significantly more common among divorced women, whether as a cause or as an effect. The study further explained that many traditional cultures in Uganda place a high value on fertility, particularly as a sign of marriage completion and as one manifestation of couple's social role. Moreover, there are some factors contributing to the possibility of divorce among infertile couple in Uganda, high social pressure for remarriage of the husband by his relatives. (Taebi et al 2021). lack of proper understanding by the husband of the social and

psychological pressure experienced by their wives. Despite this fact, literature revealed that infertility in the developing world is still poorly researched and an ignored subject.

1.2.3 The Southern Africa Development Community (SADC) view on Infertility

A study by Awan (2022) concluded that, infertility can be considered as a life crisis and a serious private and public problem in the world for a variety of reasons including the stigma it brings to the infertile women, tense relationships, and lack of resources. Infertile women also experience problems such as threats of a second marriage, couple divorce, polygamy and no biological preservation. (Awan 2022).

A study by Baakeleng, Pienaar and Mashego (2022) revealed that in South Africa, women are the ones to bear the blame of infertility and seek help first to be recognised as mothers, even if the infertility is a couple's problem. These finding further divulged that women with infertility suffer social isolation and are emotionally abused by husbands and relatives. This makes them to seek the infertility treatment first. Despite availability of western treatments to manage infertility, women frequently consult indigenous healthcare practitioners for healthcare, because it is cheap and easily accessible and available in their communities. (Baakeleng et al 2022).

While most study findings suggest that gender inequities and kinship relations intersect to produce infertility related stigma, which exacerbates the socio-cultural consequences of being infertile in the community, a study by Elwell (2022) indicated that infertility was prevalent among rural Malawian women, but women with a history of infertility were not significantly more likely to report poor self-related health, rather, they reported poor quality of life and low self-esteem. A Study by Howe, Zulu, Boivin and Gerrits (2020) found out that, in

Zambia, infertility remains a taboo and on the other hand, under-researched, and only a few biomedical treatment options available. The study further pointed out that infertility challenges people's understanding of their purpose tin social life relationship.

A study by Bonstein, Gipson, and Failing (2020) revealed that, women who were perceived as infertile were unable to follow a normative path to achieving adult status, presumed to be sexually transgressive and considered useless. Consequently, women identities as well as social positions within relationships and communities were threatened by perception of infertility. Bonstein et al (2020) stated that particularly in Malawi, the manifestation of infertility -related stigma contributed to an environment wherein the risk of being perceived as infertile was highly consequential and unrelenting. Apart from this, pervasive stigma at the community level impacts decision around contraceptive use and childbearing timing, because women and men did not only want to avoid infertility, but also the appearance of infertility. (Bonstein et al 2022).

Another study by Mashaah, Gomo, Maradzika, Madziyire and January (2024) revealed that in Zimbabwe, the presence of children was crucial for aiding in old age, and the prospect of becoming old without children was extremely distressing to women. For this reason, there was profound anguish, grief and self-reproach in women resulting from inability to conceive. To add to this, the study also revealed that there are certain health conditions they considered preferable to infertility, given the suffering the infertile women encountered. The study further indicated that, women experience psychological anguish and socio-cultural experience of infertility are complex and closely connected to societal standards and cultural beliefs, even though there were challenges infertile women encountered with both their immediate families and the broader community.

A similar study by Madziyire, Magwali, Chikwasha and Mlanga (2021) revealed that in Zimbabwe, women experiencing infertility experience psychological and socio-cultural encounters within their family units and the broader community and have explained their encounters as agonizing, emotionally difficult, disheartening and humiliating. Infertile women were despised and subjected to mistreatment to the point where it was proposed that their marriages be terminated, and some were expected to have sexual relationship with a relative chosen by the husband's relatives. (Madziyire et al, 2021). The study further indicated that infertile women experience social exclusion and marginalization with labelling and name-calling, very common amongst the women. The study also added that some of the women thought that the community did not appreciate their contribution and held a negative opinion of them due to their childlessness. Consequently, they experienced a sense of inadequacy, diminished self-worth and self -isolation.

Therefore, this study might give hindsight to the health policy makers in the SADC region and other bodies of authority to establish inclusive policies that are concerned and favourable with the problem at hand.

1.2.4 Infertility in the Namibian perspective

In the Namibian context and according to the statistical data generated from the study by Mungongolo, Kouame and Aboua (2021) it is apparent that hormonal imbalance that may cause infertility among Namibian women is of great concern. The study further indicates that, there is a high prevalence (21.1 %) of hormonal imbalance among Namibian women which causes infertility. An average of 47% of the patients experienced critically high or low thyroid hormone values. The prevalence of imbalanced reproductive hormones was 21.1% of which approximately 20% was contributed by progesterone.

Meanwhile, Mungongolo et al. (2021) state that, given the social and medical implications of imbalanced hormones and infertility, affected women ought to be educated, supported and treated accordingly. Furthermore, the Namibian Statistics Agency (NSA) (2014) highlighted that there was no proven reason why almost half of women between the ages of 20-24, had not given birth while for those between the ages of 40-49, approximately 10% had also not produced any off springs. Despite the availability of data on hormonal imbalances as a possible cause for infertility amongst Namibian women, much needs to be explored about the impact the infertility might have on the quality of life of affected women. Hence, this study might inform the Namibian society for them to understand and be sensitive about infertility in women as well as its impact on their quality of life.

1.3 STATEMENT OF THE PROBLEM

To ensure quality of life, every human being has a right to the enjoyment of the highest attainable standard of physical, mental, and reproductive health (WHO, 2018) (d). Infertility can negatively affect the quality of life (QoL) and the realisation of essential human rights of women. Consequently, as previously mentioned infertility is also a social phenomenon that affects different people in the society and it is regarded as a global burden which requires attention (WHO 2020, Gerritz et al., 2019)

Namibia is no exception when it comes to infertility associated challenges, as it remains a major concern (Lucas et al., 2021). These authors further stated that there is a high infertility prevalence rate in Namibia, accounting for 66.9% of the Namibian women. Lucas et al, (2021) explains that the primary infertility rate in Namibia stands at 53.9% among women, thus, it can be concluded that the severity of

infertility in Namibia is worrisome. This phenomenon therefore triggered the researcher to ask the following research question:

"*To what extent does infertility impact women's quality of life at the Cape Windhoek Fertility Clinic in Windhoek, Namibia?*

This question resulted as it was reported that infertility can have serious social and economic impacts on the lives of those implicated (Lucas et al., 2021). For example, even though infertility can result from both the male and/or the female, often women are mostly the first to be blamed if couples are unable to have children, because from childhood, they are culturally raised to accept responsibility for reproduction and infertility. (Ofosu-Budu & Hanninen 2020). However, studies on impact of infertility on women's quality of life in Namibia are limited. Thus, there is a gap in literature, as most studies have only focused on the causes of infertility, hormonal imbalances, and did not explore the possible impact of infertility on women's quality of life. It is accordingly that this study was undertaken to assess the impact of infertility on women's quality of life, because addressing infertility is an important part of realizing the right of individuals and couples.

1.4 AIM OF THE STUDY

The aim of the study was to determine the impact of infertility on women's quality of life at the Cape Windhoek Fertility Clinic in Windhoek, Namibia.

1.5 RESEARCH OBJECTIVES

The objectives of the study are to:

- Assess the impact of infertility on women's quality of life on all women who visits the Cape Windhoek Fertility Clinic.

- Describe the quality of life in women affected by infertility based on the findings.
- Analyse the relationship between the participant demographic characteristics and their quality of life.

1.6 RESEARCH QUESTIONS

1) To what extent does infertility impact women's quality of life at the Cape Windhoek Fertility Clinic in Windhoek, Namibia?

2) What factors affect quality of life in women affected by infertility?

3) Are there any differences between the effects of primary infertility and those of secondary infertility on the participant's quality of life at the Cape Windhoek Fertility Clinic?

4) What strategies can be employed to enhance the quality of life among infertile women in Namibia?

1.7 SIGNIFICANCE OF THE STUDY

A comprehensive investigation of the effect of infertility on the woman 's QoL is necessary to gain more meaningful insights regarding areas where individuals are more likely to be affected as well as how they can improve quality of life among infertile individuals. Hence, the greater need for extensive research which seeks to find ways to improve quality of life among infertile women in Namibia.

Thus, the present study may contribute to research on infertility in the following aspects:

1) The study might inform public health practitioners, the Ministry of Health and Social Services, (MOHSS) and other stakeholders on the impact of infertility among women in Namibia.

2) This study might also be an information piece for the Namibian society for them to understand and be sensitive about infertility in women as well as its impact on their quality of life.

3) The research might also give hindsight to the policy makers and other bodies of authority to establish inclusive policies and reforms that are concerned with and favourable to the problem at hand.

4) The study might present effective information that may mitigate the problem at hand and contribute to the body of knowledge available with regards to the effects of infertility among women. Finally, the gaps that may be left by this research will be fertile ground for further research by other scholars in the future.

1.8 DELIMITATIONS OF THE STUDY

The study has only assessed the impact of infertility on women 's quality of life among those who visit the Cape Windhoek Fertility Clinic and did not include other infertility clinics in Namibia. The choice of one fertility clinic in Namibia is drawn from the fact that it is the only fertility clinic available in Windhoek at this stage.

1.9 OPERATIONAL DEFINITIONS

1.9.1 Assisted Reproductive Technology

Refers to the fertility treatment and procedures that can help with difficulties or an inability to conceive children. (Kallen & Davis,2021) In this study, it refers to the procedures to help women diagnosed with infertility to conceive. In this study, Assisted Reproductive Technology

(ART) refers to the treatment that the women affected by infertility go through to conceive

1.9.2 Diagnosis:

The making of a judgement about the exact character of a disease or other problems after an examination or a judgement. In this study the researcher refers to the diagnosis of infertility and which may impact women's quality of life. (English Cambridge Dictionary, 2023)

1.9.3 Fertility care

Fertility care refers to the prevention, diagnosis and treatment of infertility. (WHO 2020) In this study, fertility care entails the management of infertility on women of reproductive age, who are being investigated on impact of infertility on women's quality of life.

1.9.4 Health

WHO defines health as a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity. (WHO 2020). To this study, the researcher refers to the health of women whose quality of life is impacted by infertility.

1.9.5 Impact

Impact refers to the strong effect or influence that something has on a situation or a person. (English Cambridge Dictionary,2023). For this study, impact refers to the effect that infertility has on women whose quality of life is being investigated.

1.9.6 Infertility

A disease of the male and female reproductive system, defined by the failure to achieve a pregnancy, after 12 months or more of regular unprotected sexual intercourse, and in the absence of birth control methods. (WHO 2020). For this study, infertility refers to the condition experienced by women of reproductive age, whose quality of life is being investigated.

1.9.7 In-Vitro Fertilization

A set of process of fertilizing an ovary outside the body in a laboratory dish and then implants it in a woman's uterus. (English Cambridge Dictionary, 2023). In this study, it refers to the process and procedures that the women diagnosed with infertility go through, to treat the condition.

1.9.8 Isolation

The condition of being alone, especially when this makes you feel unhappy. (English Cambridge Dictionary, 2023). In this study, isolation refers to the condition experienced by women diagnosed with infertility.

1.9.9 Quality of life

According to Teoli and Bhardwaj (2023) Quality of Life is a concept which aims to capture the well-being of individual or population, regarding both positive and negative elements within the entirety of their existence at a specific point in time. For this study, the researcher refers to the Quality of Life of women affected by infertility.

1.9.10 Reproductive age

According to WHO (2020) Reproductive age refers to the *de* facto population of all women aged 15 – 49 years in a country, area or region. In this study, reproductive age refers to the women of reproductive age, whose quality of life is affected by infertility.

1.9.11 Reproductive Health

Reproductive Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity in all matters relating to the reproductive system and to its functions and processes. (WHO 2020) In this study, reproductive health implies that women of reproductive age can have a satisfying and safe sex life, and they have the capability to reproduce.

1.9.12 Stigma

Stigma refers to a strong lack of respect for a person or a group of people or bad opinion of them because they have done something the society does not approve. (Oxford English Dictionary, 2022). In this study, stigma refers to the experience the women with infertility go through in their communities.

1.9.13 Treatment

Treatment is the use of drugs, to cure a disease or to improve the condition of an ill or injured person. (English Cambridge Dictionary, 2023). In this study, it refers to the process of treatment used to treat women with infertility, whose quality of life is being investigated.

1.9.14 Violence

Violence refers to the extremely forceful actions that are intended to hurt people or are likely to cause damage. (Oxford English Dictionary, 2022). In this study, it refers to the forceful actions that the women with infertility, whose quality of life is being investigated, go through at the hands of their spouses or relatives.

1.9.15 Women

A female between the reproductive age of 15 to 49 years, that produces eggs and later gives birth to the young. (WHO 2020) In this study, women refer to all female of reproductive age, whose quality of life is being investigated.

1.10 STRUCTURE OF THE STUDY

Chapter one outlined the overview of the study, problem statement, aims and objectives of the study, research questions, significance of the study, delimitations of the study, and the definition of key concepts.

Chapter two presents the review of literature to explore the existing knowledge on the topic of interest. The theoretical and conceptual framework were also discussed.

Chapter three presents the research design and methods, research setting, population of study, sampling methods, data collection procedures, data analysis, research instrument, pilot study, validity and reliability. Ethical principles and their application to the current study were also discussed.

Chapter four presents the study findings.

Chapter five delineates the discussion of study findings with literature control, and conclusion.

Chapter six presents the summary of findings, conclusion, limitation of study, and recommendations. Areas of further study were also discussed.

1.11 CHAPTER SUMMARY

This chapter presented the overview of the study, as it outlined the introduction, background of the study, problem statement, aims and objectives of the study, research questions, significance of the study, delimitations of the study, and the definition of key concepts. The next chapter presents the review of literature in relation to the current study.

CHAPTER 2. LITERATURE REVIEW

This chapter introduces a review of the related literature to provide a comprehensive understanding of impact of infertility on the quality of life from a global perspective. To this end, this chapter is divided into appropriate sub-headings namely: Infertility and types of infertility, Impact of infertility on quality of life, the social relationship, emotional health and psychological health. For emphasis in this chapter, the researcher discusses the impact of infertility on various domains of women's lives, such as the psychological, emotional and social life. Theoretical foundation upon which the study was established is also discussed.

2.1 Introduction

Literature review refers to the activities a researcher gets involved in, in searching for information on the topic and developing a comprehensive picture of the existing body of knowledge on that topic (Bakhtiyar *et al*., 2019).

According to Krauss et al (2022) Literature review refers to a systematic and explicit approach to the identification, retrieval, and bibliographical studies from the published sources for the purpose of locating information, on a topic of interest, synthesizing conclusions, identifying areas of further studies and developing guidelines for clinical practice. Literature review provides a researcher with information on what has been done and what has not been done about the topic. In literature review, the researcher determines the need for replication or refinement of the study and generates useful research questions and hypothesis. This chapter focuses on the knowledge of facts and literature that has been explored by other authors and

researchers assessing the impact of infertility on women`s quality of life.

Infertility is an international phenomenon, which has affected most couples worldwide. A study by Ullah, Ashraf, Tarig and Zubar (2021) revealed that in Pakistan, one fifth of married couples experience infertility. However, infertility among women grew by 14.962% in an almost three- decade period, rising from 13666.85 per 100 000 t0 1571.35 per hundred thousand in 2017 in Pakistan (Ullah et al, 2021). The study further revealed that Pakistan, being a patriarchal society, men had a misconception about infertility, believing it is a woman's problem. The study further added that in most Pakistan cultures, childbearing is directly associated with femininity and womanhood, and infertility is an unanticipated life crisis for women, resulting in adverse societal disruptions and personal grief.

Ullah et al (2021) further revealed that, infertility in Pakistan brings terrible consequences including domestic violence, a husband's re-marriage, and separation. Moreover, it can also contribute to social stigmatization, in a society where infertility is viewed as a role failure with socially unwelcome consequences, both on family and societal levels. For this reason, infertility negatively influences a woman's life, including her marital life, social relations and quality of life. Childless women were stigmatized due to patriarchal mindset and inflexible cultural values. Infertility stressors occur in the existential, physical, mental, emotional, and interpersonal spheres and may be beyond the usual coping mechanism of an individual. (Ullah et al, 2021).

A study by Whithers (2021) indicated that infertility rate is disproportionately high in the low and middle-income countries. The study further stated that the main cause of infertility in the low and middle-income countries include biological factors, such as infections

resulting from pregnancy, unsafe abortions, and sexually transmitted diseases. Infertility is associated with multitude of negative psychological and social consequences for women, including stigma, mental instability, abuse and financial hardship. (Withers, 2021). Additionally, the study further revealed that numerous traditional beliefs and practices in low and middle-income countries relating to the cause of infertility, also indicating that infertility is often managed through traditional healing methods which may be more easily accessible, affordable and culturally appropriate, than formal healthcare services. While the formidable barriers exist to providing Assisted Reproductive Treatment (ART) in the low and middle-income countries, the devastating impact of infertility warrants the expansion of low cost Assisted Reproductive Technology (ART).

Motherhood is considered as the central and defining role of a woman. Fertility as a natural way to produce offspring is highly valued in most of the cultures and the wish for having children is one of the most basic of all human motivations. A study by Saif, Rohail and Aqeel (2021) stated that, infertility can represent a life event that leads women to question their life meaning as they experience feelings of helplessness, isolation and guilt. Women suffering from infertility undergo severe psychological distress, use various coping mechanism such as coping strategies to improve their overall quality of life. (Saif, et al, 2021). In addition, the study further revealed that infertility has a greater impact on relationship in the world and can have a devastating effect on women's mental health and leading to poor quality of life.

The same study further stated that women with infertility have been reported to have poor psychological status in terms of traits, anxiety and depressive symptoms, compared to women without infertility. While having children and being a parent is a normative assumption of

an adult life in any society, stress affects fertility as well as the pregnancy success rate.

In a similar study, Kumar (2022) stated that infertile couples experience emotional and physical violence, marital conflict, emotional violence and separation or divorce. The study further mentioned that there was a strong pressure on African women to have children because it was regarded as a necessity. In Africa, women from high socio-economic status experienced a high position to cope with social pressure, compared to women from lower socio-economic status, who experience harsher consequences of a social stigma, because they are less valued and more stigmatized. (Kumar, 2022).

A study by Davis (2020) found out that infertility can impose a social harm on individuals and families, with unique consequences to everyone and vary based on social circumstances. Moreover, the study has also identified that polygamy is the by-product of infertility, leading to financial and emotional difficulties for many women. In some instances, infertility remains poorly understood, creating an environment for stigma, and discriminations against infertile individuals (Davis, 2020).

Howe, et al (2020) additionally stated that, this is because women with high socio-economic power tend to use their available resources to provide a safe space and undertake fertility treatments which are very expensive but offer a chance of a successful pregnancy and childbirth. A study by Wang, Xiao, Qi (2024) demonstrated that the social setting affects how infertility affects marital relationship. This implies that, in cultures where having children is more closely associated with women's role, and where having children is viewed as a major responsibility of a woman, and where marriage is defined in terms of having children, infertility is most likely to have detrimental effects on couple relationships. (Wang, et al, 2024). Kumar (2022) maintained

that, although infertile women are more likely to suffer psychological discomfort than the comparable groups, they are not necessarily more likely to display psychopathology.

A study by Taebi, Kariman and Majd (2021) stated that in developing societies, infertility can be a real social problem, with couple facing stigma, and experiences that lead to shame, and marginalization. This is because of the emphasis on various values especially those related to family life, social pressure to have children as soon as possible after marriage, portrayal of a child in the form of a supreme achievement that brings pride and prestige. A study by Obeaagu, Njar and Obeagu (2023) reveals that in developing countries like Iran, women with infertility issues seeking treatment face several social problems that could have devastating effects on the quality of their lives. Furthermore, infertility may prevent couples from achieving a desired social role and leads to some social and psychological problems. Infertile women may suffer from social pressures in addition to the direct impact of infertility, because, in some Iranian communities, child-bearing inability is only attributed to women, hence there is a generalized bias when it comes to a couple's infertility. (Obeagu et al, 2023).

Existing research has suggested that infertility affects women more deeply than men. A similar study by Makama (2022) revealed that in Lesotho culture, children were believed to give joy, and are more valuable than money, as they bring honour, and it was believed that if one has a child, the family lineage will not close. For this reason, Makama (2022) added that childless women are faced with consequences in life such as low self-esteem, divorce, polygamous marriages and alcoholism. The study further revealed that infertile women are described as being empty, hollow and useless, and were seen as disgrace and ill-treated by both family and society. Madziyire,

Magwali, Chikwasha and Mlanga (2021) indicated that, the conversation about children in social settings such as workplaces and community spaces evoked distressing emotions because the discussion facilitated a continuation of social stigma. Therefore, infertile women had the tendency to socially withdraw from social environments.

2.2 Infertility in Perspective

As previously mentioned, infertility is a global health issue, affecting millions of people of reproductive age worldwide. Available data suggests that globally, between 48 million couples and 186 million individuals have infertility (World Health Organisation 2020) (A). Infertility is one of life's most stressful experiences, causing economic and psychological discomfort, and can have negative psychological effects as well as a worse quality of life and well-being (Bakhtiyar et al., 2019). Women are often identified with their ability to give birth, and both men and women are supposed to reproduce, given the normal circumstances (Mukherjee, Khastgir and Basau, 2018). According to Kalima-Munalula et al. (2017), infertility among women in Africa is a concern and has affected many couples, and their quality of life.

A study by Ofosu -Budu and Hanninen (2020) indicated that infertility is detrimental to the health of married couples, especially women. Despite the consequences associated with the condition, little is done to reduce the repercussion. In a similar study by Awan (2022), infertile females face extreme stigmatization because of their inability to bear children, because it is assumed by the society that they have a body that is incapable of reproduction. Tremendous efforts have been made in dealing with this relatively common condition; infertility is now better understood in the 21st century (Chiware, 2021). Couples have become more open to seek help, and the society is more sympathetic to their plight.

Mukherjee et al. (2018) further adds that, to this day, infertility remains difficult to understand in some cases, despite advances in its management. Thus, it is the responsibility of every gynaecologist to properly handle these with care and effective counselling and advise meticulous investigations, so that the goal of parenthood can be achieved by the couples. According to Wolters (2019), availability and quality of interventions to address infertility remains a challenge in most countries, because prevention, diagnosis, and treatment of infertility are often not prioritized in national policies and are rarely covered through public health financing.

A study by Jabeen, khadija and Daud (2022) indicated that infertility is a growing problem and a source of pressure for Saudi Arabian women, which demands proper guidance. For several spouses, an inability to conceive becomes a shocking tragedy that results in several physical, psychological and emotional difficulties. The same study further revealed that infertility prevalence was high in the Saudi Arabia, with the primary infertility as extremely higher as 56.25%, with the excessive number of female factors, including some unexplained reasons and secondary infertility at 43.2%. The causes of infertility can be dysfunction of the reproductive system of both male and female. (Jabeen et al, 2022). According to the WHO (2023), in Asia the burden of infertility is particularly significant wit prevalence rates estimated to 10% and 15% among the reproductive aged couples. This rise has been associated with various factors, including delayed childbearing, environmental toxins, stress, obesity and sexually transmitted infections.

In a similar study by Tome and Zwahlen (2023), revealed that infertility is increasing largely due to people starting families later, a decrease in the quality of sperm due to environmental and lifestyle factors and rising rates of obesity in both men and women. The same study added

that approximately 5% of children born in Australia are born because of assisted reproductive treatment. Discussion Infertility and fertility treatment can have a significant impact on the psychological wellbeing of both men and women, and their relationships with one another, their family and friends as well as their quality of life.

2.3 Primary Infertility and Secondary Infertility

Infertility is classified as primary or secondary. Primary infertility denotes those individuals who have never been successful in getting pregnant. According to Abebe et al. (2020), "Primary infertility" is a term used to describe a couple who, despite at least a year of trying unprotected sexual activity, have never been successful in getting pregnant. Many medical and psychological issues, such as hormonal or ovulatory irregularities, chromosomal problems, anatomical conditions, and unexplained infertility are among the basic reasons for primary infertility. A study by Bagade, Thapaliya and Breuer (2022) reported that that effects of infertility are not limited to short -term impacts only but can affect long term mental health and well-being of couples. Although infertility can also result in poor mental health outcomes and poor quality of life among men, women often experience more psychological distress over time. (Bagade et al 2022). Consequently, infertility affects a woman's overall self-esteem, confidence and performance.

A study by Zegers-Hochschild, Adamson, Dyer et al (2017) reported that primary infertility is known generally to have a high burden of the disease, while secondary infertility may or may not carry a similar burden for a woman, depending on their personal or societal circumstances, including that there is a child from a previous relationship. Additionally, secondary infertility applies to women who

have become pregnant and delivered but subsequently suffered a pregnancy loss or death of a child.

On the other hand, in secondary infertility, there is at least one conception that fails to repeat. Reproductive tract infections (RTIs), which, if untreated, harm a woman's fallopian tubes and result in irreversible tubal obstructions, are typically the cause of secondary infertility (Abebe et al., 2020). A study conducted in East Africa reported common risk factors for infertility as: STI, history of abortion and complications during labour, inadequate health services, misuse of antibiotics and antimicrobial resistance (Abebe 2020).Thus, the main causes of secondary infertility were observed mostly among women; such causes include hormonal disturbances, medical complications, polycystic ovary syndrome, tubal dysfunction, genital infections, uterine anomalies, endometriosis and adhesions without significant difference. Existing research further reports that secondary infertility is most common in regions of the world with high rates of unsafe abortion and inadequate maternity services, leading to post-abortive and postpartum infections (Abebe et al; 2020).

According to the World Health Organization (2020) (b) the epidemiology of secondary infertility is not always properly understood. In developing nations, infections are the leading motive for secondary infertility among women. Of those, sexually transmitted infections (STIs), unsafe termination of pregnancy and dangerous birthing practices were identified as reasons for secondary infertility in women.

2.4 IMPACT OF INFERTILITY

Teklemichael, Kossa and Weldetensaye, (2022) Infertility can lead to psychological stress, that may arise from personal stress, emotional

stress, and social relationship pressure. The study further indicated that, according to personality theories, failure to achieve the goal of parenthood, a favourite personal identity is believed to be the major cause of psychological stress. This section hence discusses the impact of infertility on the various domains of life, such as the Quality of Life, social relationship, emotional health as well as the psychological health.

2.4.1 Impact of infertility on women's quality of life

According to the World Health Organisation (2020), (c) "quality of life" is a concept used to describe an individual's perceptions of their position in life, in the context of the culture and value system in which they live and in relation to their goals, expectation, values and concerns, incorporating physical health, psychological state, level of independence, social relations, personal beliefs and their relationship. Bakhtiyar et al., (2019) explain that infertility may be a painful experience because it causes a lot of psychological issues including stress and anxiety, depression, diminished self-esteem, declined sexual satisfaction, and reduced quality of life. Infertile couples might experience psychological distress and suffer from an impaired health-related quality of life.

It has been reported that infertility affects 10–15% of couples in industrialized countries in the age range of 18–45 years, many of whom are under excessive stress (Namdar et al., 2017). Bakhtiyar et al., (2019) added that infertility can lead to stigma, shame and feelings of guilt, and that while there are now many options to treat infertility, many still cannot access it due to the cost of treatment and lack of services, which leave them vulnerable to abuse and exploitation.

2.4.2 Impact of infertility on social relationship

Women, especially in sub-Saharan Africa, desire children to extend the family line, for marital stability, emotional and social security, and for the honour and prestige of motherhood. Namdar et al. (2017) state that infertile women suffer considerable social distress, accompanied by numerous social problems such as anxiety, social isolation, high levels of frustration, and anger, which affect their relationships with family friends and even their spouses. It has been reported that infertility affects 10–15% of couples in developed countries in the age range of 18–45 years, many of whom are under excessive stress (Namdar et al., 2017). However, it is still unclear whether the elevated levels of stress occur in all infertile couples or whether it is only in certain groups that may have more problems (Namdar et al., 2017).

Dadhwal, Choudhary, Perumal, and Bhattacharya (2021) indicated that infertility can be highly devastating because it us perceived as a complete role failure for both partners, because every man takes a wife to have children, to preserve the family name and for social approval. To add to this, this authors further stated that in Nigeria, the social stigma of childlessness still leads to social isolation and abandonment, because infertility is considered a socially unacceptable condition, leading to most couples on relentless quest for conception.

A similar study by Dierickx, Jarju and Longman (2019) indicated that infertility is a condition that attracts stigma in the Nigerian society, where childbearing is considered the distinguishing character for womanhood, and being unable to bear children makes the society to see the infertile women as incomplete. The same study further added that, infertility may put a strain on couple's relationship, causing feelings of shame, anger, low self-esteem and suicidal ideation. Most couple who are dealing with the challenges of infertility also battle with

helplessness, frustration, and social segregation. Most individuals seek medical assistance as a treatment for infertility; however, some couple pursue religious practices alongside with medical treatment while others visit traditional healers. (Dierickx et al,2019).

A study by Xie, Niu, Zheng, Yu and Li (2023) revealed that infertile women avoid participating in family gatherings that involve mothers, because of public questioning of their infertility. The same study also reported that most of the time, women's infertility contributed to their social marginalization, exclusions and stigmatization. Xie et al (2023) further stated that the stigma for not giving birth to children affects approximately 53%- 64% of female infertility worldwide, which also affect their quality of life, making the women bear the adverse social consequences such as domestic violence, marriage breakdown or even delay in receiving infertility treatment. The study further revealed that infertility triggers numerous biological, mental health and societal implications, including social isolation, anxiety, and humiliation, which inversely associated with female infertility.

A study by Hussain, Hazlina, Norhayati, and Buhari (2021) stated that, in Gambia, the experience and decision-making power of women with infertility, when it comes to polygamous marriages were found to be closely related to their socio-cultural position and standing. The study also indicated that polygamy aggravated negative life circumstances of women with infertility with respect to their health and social well-being. To conclude, the same study has found that most infertile women have faced severe marital conflicts and were abused physically and verbally by their husbands and their husband's relatives. Infertility threatens the extended family expectations and hinders the enhancement of bonding, believed to bind the spousal unit.

Another study by Atake and Gnakou (2021) indicated that, infertility stigma is a phenomenon associated with psychological and social tensions as well as feeling of shame and secrecy especially for women. Infertile women face social and self- stigma which threatens their psychological well-being and quality of life. (Atake &Gnakou, 2021).

2.4.3 Impact of infertility on emotional health

A study by Mukherjee et al. (2018) stated that failure to conceive is a major life stressor, causing severe mental and emotional stress in otherwise well-adjusted couples. Women who struggle to conceive are twice as likely to suffer from emotional distress compared to fertile women. Stress-induced reproductive dysfunction has a negative impact on fertility by stimulating inadequate regulation of reproductive hormones (Mukherjee et al., 2018). Mukherjee et al. (2018) further state that infertility is a major life crisis that causes serious mental problems and is a stressful experience for infertile women. A study by Zayed and El-hadidy (2020) found that most wives show a marked decrease in frequency, quality, and satisfaction of their sexual life, including performance and practice, after being diagnosed with infertility.

It is suggested that the incidence of emotional distress in women with infertility is about 10 percent to 15 percent among couples at reproductive age, and one out of every six or seven couples has an emotional problem. Zayed and El-hadidy (2020) further state that emotional reactions such as anger, desperation, embarrassment, obsessive thoughts, and exhaustion are some of the painful emotional experiences experienced by infertile women. Data shows that there is a significant association between infertility and loss of self-esteem, guilt, frustration, and marital problems. (Zayed and El-hadidy, 2020).

Hussain, Hazlina, Norhayati, and Buhari (2021) stated that emotional effects of being infertile can have a significant effect on the individual couple and support network. These authors further added that since infertility contributes to severe marital problems, childless women avoid interaction with others. Infertile women are primarily blamed for the couple infertility, due to cultural values, even if the problem is not from her side. Existential stressors indicated that infertility significantly influences individual self -esteem, self-image and identity. (Hussain et al, 2021).

2.4.4 Impact of infertility on psychological health

Swanson and Braverman (2021), describe infertility as a worldwide problem that is experienced as psychologically stressful, because communication about infertility by an individual varies, depending on clinical aspects, personal relationships and culture. If the couples wish for childbearing is not fulfilled, it leads to reduced self-esteem, hopelessness, and feelings of guilt, self-criticism, dependency, depression and marital discord. Ozan and Duman, (2020) stated that infertility and treatment for infertility affect women biologically, psychologically and socially, and those women are more affected than men, because many societies place the blame on women, even if the reason for infertility is related to a male factor.

Ozan and Duman (2020) further explain that many women are wrongly labelled as infertile, when in fact the cause of infertility arises from the expectation that they protect and support their infertile husbands. The same study compared how women and men are affected by infertility, but no study was available comparing women's distress levels and quality of life outcomes in terms of whether the infertility was related to a male or female factor (Ozan & Duman, 2020). There is therefore a gap in scientific research, regarding the different causes of infertility

and the level of distress based on infertility causes and based on gender. A study by Gentile, Ferreccio, and Scaruffi (2019), found that there are significantly higher levels of anxiety and general distress among infertile women, when the cause of infertility is entirely female related.

A study by Hussain et al (2021) reveal that worldwide, the risk of psychological distress among female with infertility is 60% higher than the general population. Furthermore, the risk of anxiety and depression are 60% and 40% times higher. These results highlighted an important and increasing mental disorder among females that may be overlooked. Vioreanu (2021) stated that the level of stress caused by infertility treatment is the second highest of a stressor after the death of a family member or divorce. The study further revealed that the feeling of weakened coping mechanisms, social isolation, guilt, which may lead to depression, anxiety is the most common psychopathologic condition in infertile couple for several reasons such as uncertainty in duration of treatment, treatment success, financial difficulties and social pressure.

2. 5 Approaches to improve the quality of life in infertile women

According to the World Health Organization (2020) (c) "Quality of Life" is a concept used to describe development, growth, and well-being that reflects an individual's perception of their position in the community, as well as their goals, expectations, standards and priorities. Considering the importance of women's health, preventative care in the form of educational awareness and intervention at the community level should be a priority to establish the cost-effectiveness of interventions coupled with a reduced burden at the level of the clinical health care system.

Ideally, there should be a public fertility clinic that is affordable and accessible to everyone, as well as the establishment of a low- cost in-

vitro fertilization program, that trains the practitioners in the field of reproduction. Health policy makers and the government should focus on the provision and advancement of infertility clinics. The researcher wants to emphasize the educational efforts to improve knowledge of the problems of infertility that could help in prevention and early referral to address fertility problems. Infertility affects women psychologically, and adequate psychological support through counselling could help those affected by infertility.

2.6 Theoretical basis of the study.

This study was based on Watson's Theory of Human Caring, which aims to promote a balance and harmony between health and illness experience of a person. (Watson, 2014). Watson's theory of human caring is a nursing theory that was developed by Jean Watson in the 1970s, and it emphasizes the importance of the nurse-patient relationship and the role of caring in nursing practice (Gonzalo, 2023). Regarding a person's experiences of health and disease, Watson's theory asserts that a human being cannot be healed as an object, he/she is part of the environment, nature and the larger universe (Alharbi a& Baker 2020)

According to Watson's theory of human caring, a human being should be treated holistically by many aspects of the mind, body, and spirit that show how the whole is diverse as they reflect the full of his or her sub- dimensions. (Watson (2014) This theory further stated that, in a holistic approach to caring for humans, there are mind-body-spirit sub dimensions, all of which reflect the whole. Watson further states that, in a holistic approach to caring for a human there are mind-body-spirit sub-dimensions, all of which reflect the whole.

According to Alharbi and Baker (2020), Watson's theory of human caring enhances human health and healing in stressful life events, such as the moment when a woman realizes her inability to conceive a desired child, even in the presence of medical treatments. For this study, application of Watson's caring science- based interventions decreased patient's emotional strains, increase patient's self -esteem and emotional wellbeing in women with infertility.

Application of Watson's theory of human caring to the study helped to decrease anxiety and stress levels among women with infertility and increased the coping strategies among women especially when the fertility treatment was unsuccessful. Nursing care based on Watson's theory had a positive effect on distress, emotional stress, and psychological well-being among women with infertility. This approach fosters healing, even in the absence of a cure, by promoting dignity, meaning and emotional support. For this reason, it is very essential for a clinic to have an environment of support, peace and harmony. There is a need to develop compassion-focussed care and advocate for holistic fertility care that include mental health and spiritual support. This theoretical framework was used by the researcher to guide the research design of the study, and to structure the conclusion based on research findings.

2.7 CHAPTER SUMMARY

This chapter presented findings, understanding and forming conclusions about the published research and theory. It also involved presenting data in a well organised manner, to determine what is already known about the topic, to identify the research problem. Literature review helps to retrieve ideas, replicate studies or fill the gap for issues and theories that extant has done or has not been investigated.

CHAPTER 3. RESEARCH DESIGN AND METHODS

The previous chapters stressed the importance of a clear review of literature, conceptual and theoretical framework. How the researcher structures, implements, or designs a study influences the result of the study and its application thereof. This chapter presents an overview of the meaning, purpose, and issues related to the quantitative research design. This chapter also presents how the data was handled, which in a quantitative study are statistical analysis and graphical illustrations of completed questionnaires. Finally, in the last section, the fundamental ethical principles that are based on the human rights that need to be protected are then discussed.

3.1 Introduction

Research design is the logical and systematic planning and directing the research, that undergoes many changes and modifications as the study progresses and insights into it deepen. (Nayak &Singh 2021). The purpose of the research design is to ensure that the researcher has collected enough data and analysed the findings so that the initial research questions can be addressed. (Sileyew 2019). The author further stated that research design is intended to provide an appropriate framework for a study. This chapter delineates the implementation of the research in detail, including the research design, population, sample, and sampling techniques that were employed for this study.

3.2 Research design

Research design entails various ways adopted to systematically and theoretically analyse the methods applied to a study (Sileyew 2019). According to Babbie and Edgerton (2023) Quantitative research emphasizes precise measurements and statistical analysis, making it

easier to draw an objective conclusion. In contrast, qualitative design focuses on subjective meaning and understanding of the context rather than numerical measurements. (Babbie & Edgerton 2023).

In other words, quantitative approach ensures generation of descriptive statistics that allows precise measurement of numerical data, to obtain a detailed analysis of outcome. Mehrand and Zangeneh (2019) stated that quantitative research requires the investigator to carefully describe variables that may be counted with numbers, whereas qualitative research is assumed as involved in a complete perspective which includes the context as a part of the phenomena. This study has chosen the quantitative approach to provide reliable results and to ensure data is interpreted consistently.

Although infertility is a highly sensitive topic, quantitative approach was used because the aim of the study was to measure the impact oof infertility on women's quality of life using a standardized instrument. This required structural data that could be statistically analysed to identify correlations and the extent of the impact of infertility across various domains of life. To address the sensitivity of the topic, the researcher used a self-administered questionnaire, which allowed participants to respond privately and anonymously, and this helped most of the participants to feel more comfortable to share honest responses. The quality of life used for data collection is a validated and carefully selected for its appropriateness in assessing emotional, psychosocial wellbeing in a respectful way. Therefore, the method allowed the researcher to balance rigorous data collection with ethical sensitivity. This study has adopted a quantitative approach with a descriptive, and analytic design since the researcher adapted the World Health Organization data collection tool, which is quantitative in nature. The use of quantitative design has enabled the researcher to

determine the association between infertility and its impact on quality of life.

The results were presented in numerical form, quantified, hence the use of statistics to analyse the data collected. A descriptive correlation co-efficient was used to determine and describe the relationship between the variables: Infertility and Quality of life.

3.3 Population

Pandey and Pandey (2021) defined a population as the entire mass of observation, which is the parent group from which a sample is to be formed. Pandey and Pandey (2021) further stated that the target population is a set of people, services, elements and groups of things or households or characteristics of a specific group that are being investigated. Gray and Grove (2020) stated that population refers to the total number of respondents involved in the provision of information required in research. From these definitions, there should be similar traceable characteristics among the population of interest to the researcher. In this study, the population consisted of all women of reproductive age, or all women who could be potentially studied, while the target population was specifically women diagnosed with infertility and are going through fertility assessment and treatment at the Fertility Clinic under study. This contrast was necessary because this study's actual focus was on women experiencing infertility and its direct impact on their quality of life.

In this study, data were acquired from 65 consenting women at the Cape Windhoek Fertility Clinic in Namibia. Aged from 25 to 49, the subjects of this study were drawn from the population of women who visited the fertility clinic in Windhoek.

3.4 Research setting

Gray and Grove (2020) define research setting as a physical, social, specific location or experimental context within which the intervention is put into practice. Research setting refers to the setting or environment where the research study was conducted (Botma, et al 2022). In this study, data were collected at one private fertility clinic in Windhoek, providing fertility care services, such as In-vitro Fertilization (IVF), and Assisted Reproductive Technology (ART), among others.

The researcher selected this specific fertility clinic for the research study because it is the only Fertility clinic available in Windhoek, making it a crucial healthcare provider for women facing infertility. The clinic also serves a diverse patient population relevant to this study, allowing for a comprehensive understanding of how infertility impacts the quality of life of women in this specific context. Additionally, conducting research at this clinic provided valuable insights into the emotional, physical, psycho-social and economic challenges faced by women undergoing fertility care and treatment. Furthermore, this clinic was chosen for its strong reputation in reproductive medicine and access to specialized fertility treatments. Their willingness to support ethical research and provide valuable data made it an ideal setting for this study's investigations.

Data obtained from the clinic's register revealed that the clinic may consult 20 clients or more per month and the annual consultation per year was approximately 255 clients. Participants comprised of women of reproductive age between 25 and 49 years, seeking for fertility assessment and treatment.

3.5. Sample and Sampling

Pandey and Pandey (2021) defined a sample as a small proportion of a population selected for observation and analysis. It is a collection of a part or a subset of the objects or individuals of population which is selected for the express purpose of representing the entire population. Pandey and Pandey (2021) further defined sampling method is a process of selecting a given number of subjects from a defined representative of that population. In other words, sampling is a process of selecting a sample from the population of study. A sample is a group of people, objects or items that are taken from a larger population for measurements. (Nayak& Singh, 2021).

A convenience sampling method was followed as both the population, and the sample of this study were the same to ensure the adequate sample size required in quantitative research. The convenience sampling technique is a non-probability sampling type that is most effective when one needs to select research subjects based on their availability (Nayak &Singh, 2021).

Furthermore, convenience sampling makes it easy for researchers to collect data from readily available participants rather than making appointments and waiting for approval for a long time to secure interviews. In this case, a convenience sampling technique was chosen because of some difficulties in the collection of data from sensitive people, as some might refuse to answer the questions because of how they feel about their condition. The target population for this study comprised of women attending a private clinic, which consults approximately 255 clients annually. From this population, 65 women completed the questionnaire, forming a sample of this study. Participants were selected using convenience sampling, based on their

availability and willingness to participate during data collection period. Sample calculation was done using the Slovin's formula:

N = Population=255

n= 65 actual sample

e= 0.05 Margin of error

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$$n = \frac{255}{1+255(0.05)^{2}}$$

$$= \frac{255}{1+255(0.0025)}$$

$$= \frac{255}{1+0.6375} = \frac{255}{1.6375}$$ n ≈155.7

Using Slovin's formula, with the 5% margin of error and a population of 255, the minimum required sample size was calculated to be approximately 156 participants. However, due to time constraints and participant availability, the study obtained 65 completed questionnaires which formed the final sample. While this is below the ideal sample size, it still offers valuable insight into the impact of infertility on women's quality of life.

3.6 DATA COLLECTION

According to Nayak and Singh, (2021), data collection is a process that involves direct or indirect interaction with the respondents, which is carefully planned and implemented to collect relevant information by using pre-planned methods, techniques, and tools of data collection to gather the information pertaining to the topic under study. Therefore, the respondent's convenience and availability were determined by the researcher's relationship with the patients coming for consultation and treatment. The researcher has established an objective, neutral relationship, which was ethical and trust -based, ensuring informed consent, confidentiality and respect. Rapport- building was essential due to the sensitivity of the topic. Firstly, the researcher started with

an introductory letter from the University which was used to seek permission from the Ministry of Health to conduct research. The researcher then approached Cape- Windhoek Fertility Clinic, to carry out the research at the clinic and then identified prospective participants and carried out sampling.

3.6.1 Research instrument

This study used a self-administered questionnaire with close-ended questions to collect data. The advantage of using questionnaires is that they are easy to use when collecting data because they are less time consuming, straight-forward, and can be collected back immediately after completion. Questionnaire was designed as a self-administered questionnaire, which was administered by the researcher. The researcher was present at the facility to answer and clarify questions raised by the respondents. Questionnaire was developed in English language, and no translation into other languages was undertaken. This decision was since the participants had proficiency in English language to respond to the questions accurately. Additionally, the study setting uses English as a medium of communication, and this eliminated the need for translation of the research instrument.

The World Health Organization Quality of Life Questionnaire is a general quality of life assessment tool that is widely used and internationally recognised. It has been tested and proven as valid and reliable in assessing health-related quality of life, in both clinical and non- clinical populations. The WHOQoL assessment tool was adapted to be suitable for the study purpose of assessing the quality of life of infertile women. Permission to use the questionnaire was obtained from the World Health Organization headquarters in Geneva, Switzerland, through an email.

The questionnaire consisted of two sections. Section 1 covered the socio-demographic and background information of the participants (such as age, occupational status, educational levels, employment status, and clinical information, such as the type, sources, causes, and duration of infertility). Section 2 consisted of the World Health Organisation Quality of Life General Assessment which asked about the individual's overall perception of their quality of life and the domains of life, (such as social relationships, psychological health and emotional health respectively). Quality of life was measured by the domains of life, such as psychological life, emotional life and social life as reviewed in the literature review section and assessed in the questionnaire. A research instrument was attached to this study as **Annexure 6.**

The WHOQoL was not used as a pre and post-test because the study aimed to assess the impact of infertility on women's quality of life at a single point in time. Also, a cross- sectional study was used which is appropriate in exploring existing conditions and association and not necessarily changes over time. Administering the data collection tool once allowed for ethical considerations, because repeated assessment might increase respondents fatigue or raise emotional sensitivity in a population of study.

3.6.2 Participant recruitment procedure

Prior to conducting the study, ethical clearance was obtained from the University of Namibia, **Ethical clearance Reference Number: HREC-H 4/8/2023 SONPH** to ensure that all procedures met ethical standards. Initial contact with the clinic was made through an introductory letter, outlining the purpose and significance of the study. Access to the research setting was gained through formal approval from the private fertility clinic's manager in Windhoek, attached as

annexure 10. A meeting was held with the clinic's manager to explain the research process and discuss how participants would be approached in a manner that protects their privacy and emotional well-being.

Women attending the fertility clinic for infertility related consultations were informed about the study by the researcher at the waiting area. However, women exhibited anticipatory reactivity, expressing discomfort with the study topic and a desire not to be selected, leading them to withdraw and avoid participation in the study. For this reason, women attending the clinic were informed about the study by the clinic's manager during consultations. Those who expressed interest were referred to the researcher directly in a private consultation room within the clinic, to ensure comfort and confidentiality. Each participant received an information sheet explaining the purpose of the study, procedures, and confidentiality assurance. Written informed consent was obtained prior to participation. Questionnaire took about 30 minutes to complete and were placed in a box after completion. All participants were informed of their rights to withdraw from the study at any time without any consequences to their care at the clinic.

3.6.3 Inclusion and Exclusion criteria

Participants were selected using convenience sampling, based on their availability and willingness to participate in the study. The inclusion criteria included women of reproductive age, over the age of 25 years, diagnosed with infertility, seeking for fertility assessment and treatment, and able to understand and complete the self-administered questionnaire in English. The exclusion criteria comprised of women who had not been clinically diagnosed with infertility to ensure consistency in the study population, women who were attending the clinic for gynaecological issues not related to fertility, women who were currently pregnant as this may alter their perception of impact of

infertility, women who declined to provide informed consent or who chose not to complete the questionnaire as well as women who are unable to read and understand English.

3.6.4 Data collection procedure

Data collection was done after approval from the UNAM Research Ethics Committee and the Ministry of Health and Social Services. Data collection was done by researcher, and many of the questionnaires were distributed. The researcher explained the aims and objectives of the study to the respondents. The researcher also introduced and explained the contents of the consent form to the respondents, emphasising their right to participation, and that participation is entirely voluntary. The researcher further explained the rights of the respondents to withdraw from the study at any time without penalties or punishment.

The researcher distributed the consent form to each respondent first for signature. Questionnaires were only distributed to the respondents after they had signed the consent form. Babbie (2020) emphasizes the ethical importance of protecting participant's anonymity in research. To maintain anonymity in this study, the respondents' real names, birth dates, addresses, or any other identifying details were not collected or used on the questionnaires; instead, a code was assigned, to ensure anonymity. The researcher explained to the respondents that the information collected would not be shared or accessed by any other person except the researcher and would only be used for the purpose of the study. Data collected was stored in a secured database, with restricted access.

A consent form was explained to the respondents by the researcher, that by signing, one agrees to voluntary participation. Questionnaires were only handed out to volunteered respondents to complete after

signing the informed consent. The language that was used during the data collection was English language. The researcher requested the respondents to complete the questionnaires by answering all questions and indicate their level of agreement with a statement using a five level Lickert scale rating and socio-demographical questions by means of ticking. Only one choice per question was allowed. A total number of 65 questionnaires were completed. Each filled questionnaire was checked for completeness after collection.

Questionnaires were self-administered to the participants by the researcher at the Cape Windhoek Fertility Clinic and collected immediately after completion. The questionnaires took about 30 minutes to complete. This data collection was conducted for eight weeks, between 06 September 20203 to 30th October 2023. The population of the study was determined based on convenience sampling system. Quantitative data was assessed for completeness and cleaned before data entry.

To ensure confidentiality in the study, the questionnaires were only used for this study and were stored well in a lockable cupboard, which was accessed by the researcher only. The purpose of addressing the principle of confidentiality was to obtain a trusted relationship between the researcher and the respondents, and to motivate them to provide sufficient information freely. The data were saved on a password-protected computer. After data entry, questionnaires will be kept safely and shredded for disposal at least 5 years after the researcher's graduation.

3.6.5 Pilot study

According to Lowe (2019) a pilot study is a small feasibility and preparatory study designed to test various aspect of the methods

planned for a larger investigation and the performance characteristics and capabilities of study designs, measures, and procedures that are under consideration for use in a subsequent study. It is a preliminary, small-scale "rehearsal" in which the researcher tests the methods he/she plans to use for the research project. (Sileyew 2019).

Preliminary investigations are crucial as they enable researchers to detect potential problems that could hinder their primary research, while also allowing them to refine their methods to reduce unexpected challenges. (Gray & Grove 2020). By conducting a pilot study beforehand, researcher would be able to design and execute a large-scale project in a methodologically rigorous way and can save time and costs by reducing the risk of errors or problems. (Sileyew 2019). The researcher conducted a pilot study and pre-tested the data collection instrument to determine the feasibility of the proposed study.

The researcher has used the results of the pilot study to guide the methodology of the large-scale investigation. Thus, researchers use the pilot study to evaluate the adequacy of their planned procedures and methods as well as to determine whether the research design is practical and manageable, and whether the data needs are a representative of the target study population. (Lowe 2019).

The researcher explained the aims and objectives of the study to the participants, and informed consent was explained and obtained in the form of writing. Before taking part in the study, informed consent was explained, emphasising that, by signing, one agrees to voluntary participation, and that participants have the right to withdraw from the study at any time, should they deem it necessary, without penalties or prejudices.

To ensure anonymity, respondents were informed that their names were not going to be indicated on the questionnaires, instead, name

codes were used. Researcher explained that data collected will be kept confidential in a researcher's locked cabinet and only the researcher would have access to it. Questionnaires were handed out to the volunteered respondents to complete.

In this study, the researcher conducted a pilot study with 5 infertile women respondents at the Cape Windhoek Fertility Clinic, in Windhoek. These participants did not take part in the final research process. The purpose of conducting the pilot study was to check the efficacy of the questions and then make necessary adjustments where possible. The results of the pilot study were used by the researcher to refine some of the questions in the questionnaire as follows:

1) It was noted that the respondents wanted to remain anonymous, and they wanted their information to be kept confidential. Therefore, to respect the confidentiality and privacy of study participants, the researcher assigned unique alphabetical letters to each respondent. This way, their responses can be analysed without revealing their identities.

2) The concept of ***Quality of Life*** was not well understood. Most of the respondents regarded the question as being vague. They were failing to understand what was really needed by the question. Henceforth, a brief definition of quality of life at the beginning of section 2 was given and the researcher had to refine the question into a simple, understandable language so that the respondents may understand well.

3) It was also discovered the participants were confused on what the score allocation meant since there were no instructions on what the scores meant, and this was corrected. Instructions were provided in section 2, and under each domain of life assessed.

4) Moreover, responses and scores to Number 3 on (Impact on Psychological health) were not in an appropriate order and this was

corrected. The responses from the pilot study helped the researcher in identifying this and then corrected it. In Domain 4 (Emotional Health) Question 3 "***How often do you have negative feelings such blue mood, despair, anxiety.*** The question was not relevant in that section, and was removed and replaced with question 7 from Domain 3: ***Are you satisfied with the support you get from family and friends regarding your fertility problems?***

5) From the pilot study results, the researcher also identified the similarities between the two questions: ***"How satisfied are you with the support you get from your friends?"*** from Domain 4, (Emotional Health) as it seemed to be similar to question 7 in Domain 3, (Psychological Health) ***"Are you satisfied with the support you get from family and friends with regard to your fertility?"*** As a result, the researcher removed question 7, leading to a considerable reduction in question in Domain 4.

3.7 VALIDITY AND RELIABILITY

This section presents an introduction to validity and reliability of the research instrument. The types of validity such as Content validity, Face validity, and Construct validity were also discussed.

Validity and reliability are among the most important fundamental domains in the assessment of any measuring methodology for data collection in research. Ahmed and Ishtiaq (2021) defined validity as how accurately a methodology measures a variable that it intends to measure, whereas reliability concerns the truthfulness in the data obtained and the degree to which any measuring tool controls random error. Reliability of measurements specifies the amount to which it is

without bias and hence ensures consistent measurement across time and across the various items in the instrument. (Sileyew 2019). Sileyew (2019) further states that in reliability analysis, the measurements fulfil the requirements of reliability when it produces consistent results during data analysis procedure.

3.7.1 VALIDITY

According to Sileyew (2019) defines validity as the state of being well grounded or justifiable, relevant, meaningful according to acceptable principles, or having the quality of being sound, just, and well founded. According to Nayak and Singh (2021), validity refers to the accuracy and trustworthiness of instruments, data and findings in research, given the context in which it is applied. Nayak and Singh (2021) further stated that the validity of data is tied to the validity of instruments.

(i) Content validity

Content validity is an assessment of how well an instrument represents all components of the variable to be measured (Nayak & Singh 2021). In other words, content validity looks at whether the instrument covers all the content as it should, with respect to the variable it should measure. Content validity was applied by establishing an accurate data collection instrument that measured all aspects of a construct, and the entire domains related to the variable it was designed to measure.

(ii) Face validity

Brink et al. (2018) defined face validity as a measure of what the instrument is intended to measure and that is essentially based on intuitive judgement made by experts. Sileyew (2019) stated that, face validity is an indicator that makes it seem a reasonable measure of some variables, and it is the subjective judgement that the instrument

measures what it intends to measure in terms of relevance. In this study, the researcher ensured that in the development of research instrument, uncertainties were eliminated by using appropriate words and concepts to enhance clarity and general suitability.

In addition, the researcher has submitted the research instrument to the research supervisor and research coordinators in the field of nursing, who are both experts in health research, to ensure validity of the research instruments and to determine whether the instrument could be considered on face value. Furthermore, the pre-test study that was conducted prior to the main study assisted the researcher to avoid uncertainties of the contents in the data collection instrument.

(iii) Construct validity

Construct validity measures the relationship between the instrument and the related theory (Nayak & Singh 2021). This study has used a formal, standardized questionnaire constructed based on the literature review, which represented the components of the variables to be measured. The researcher conducted a pilot study to pre-test the research instrument that was used to collect data to ensure feasibility and validity and to ascertain whether the instrument measures the essential aspect of the relevant variable.

3.7.2 RELIABILITY

According to Nayak and Singh (2021), reliability refers to whether you get the same answers by using an instrument to measure something, more than once. In other words, reliability is the extent to which measurements can be replicated. In simplest terms, it is a repeated measure of the same phenomenon. To ensure reliability in this study, the researcher has conducted a pilot study to test and correct the

vagueness of questions, to determine the consistency of data collection instrument. The pilot study ensured the reliability of data collection instrument.

The researcher has judged whether the data were reliable and consistent across the sample population, and the questionnaire was updated to ensure that it collected data to answer the research objectives. The Cronbach alpha test of internal consistency, which is commonly used to test the reliability of research instruments, was used. Gray and Grove (2020) confirm that the Cronbach ‘s alpha coefficient should have a minimum of 0.7 to suggest that the scale has good internal consistency.

3.8 Data analysis

Data analysis is the examining, tabulating and recombining the evidence collected during the data collection to address the initial proposition of the study. (Nayak &Singh 2021). Data collected were entered into a Microsoft Excel database before being imported into the Statistical Package for Social Sciences (SPSS) version 29.1 for analysis. This was done to identify the statistical figures. One-way ANOVAs were conducted to see whether there were significant differences in the test scores among the two groups so that the second question could be answered. The responses were captured on the software and cleaned first before they were coded into appropriate variables guided by the research tool. The researcher analysed data with the assistance of a statistician.

In this study, the researcher has used descriptive statistics to analyse the data by organizing it in the form of tables and graphs to show the frequencies and percentages of the respondents' responses. Then, for the sake of the second question, the post-hoc multiple comparison Scheffe test was adopted to examine the significant differences

between the group participants and collected by the researcher after completion. A correlation coefficient was also conducted to determine the relationship between the participant's demographic characteristics and the responses. The output of the analysis was imported into Microsoft Excel for graphical illustrations.

3.9 RESEARCH ETHICS

This section delineates the three fundamental ethical principles that guide the researcher during the research process and are based on the human rights that need to be protected, namely: The principle of respect for person, the principle of beneficence and non-maleficence, and the principle of justice.

According to Suri (2021) Ethics refers to the fundamental values and beliefs of the research community which guides the researcher on what is right and wrong in a research study and forms a basis for the protection of research subjects. Nayak and Singh (2021), stated that, ethics in nursing research can be defined as an act of following moral principles that the researcher must follow while conducting nursing research to ensure the protection of the rights and welfare of individuals, groups, or communities under study.

3.9.1 Ethical considerations

The researcher obtained access to the research institution through its manager. Respondents were accessed at the waiting area, and in the office of the consultant as they sought for various fertility care services. A consulting room was used at the research facility for the respondents who chose to participate voluntarily to complete the questionnaire.

Permission and informed consent were sought from directors of relevant institutions and from the participants, prior to undertaking

research. In this study, a research proposal was submitted and reviewed by the High-Risk Ethical Committee, (HREC) of the University of Namibia (UNAM). To add to this, a detailed application was submitted to the Research Ethics Committee of the University of Namibia for approval to conduct the research. Approval was granted and an ethical clearance certificate: Ethical clearance **Reference Number: HREC-H 4/8/2023 SONPH** was granted. The researcher also applied to the Ministry of Health and Social Services, requesting the ethical approval and permission to conduct the study, and received an approval to conduct the study at the Cape Windhoek Fertility Clinic. Furthermore, permission was also obtained from the Cape Windhoek Fertility Clinic for the researcher to collect data from infertility patients, through a letter directed to the Medical Officer responsible for managing the clinic. Ethical approval and permission letters obtained from relevant authorities were provided and attached to this study as Annexures 7, 8, 9, and 10 respectively. The following ethical principles according to Suri (2021), were observed during this study.

3.9.2 Principle of Respect for Persons

According to Bitter, Ngabirano, Simon and Taylor (2020), respect for persons requires that the research subjects freely participate in research after an informed consent was obtained. Participants were informed that they have the right to choose to participate in and withdraw from the study at any time, should they deem it necessary, without any penalties or prejudice. In this study, the rights of the research participants were respected and fully protected. Research participants were informed that participation in this study is entirely voluntary.

Participants were provided with an information sheet explaining the research topic under study, stating the purpose of the study, as well as the procedures to be followed. Respondent were informed that

information they provided was kept confidential, and that their identities would not be revealed in association with the information they provided. Participants made a free voluntary independent and informed decision to participate in the study. An informed consent was structured in a simple language, explained to the participants, and was secured from each participant. Anonymity of participants, right to privacy during data collection, and confidentiality of information were preserved to such an extent that no information collected from the study participants was not used for any purpose other than the research purpose. In addition, respondent privacy and their responses were not analysed individually. To ensure the anonymity of the information collected, research questionnaires were distributed and returned without any identifying details of the participant.

3.9.3 The Principle of Beneficence and Non-Maleficence

Beneficence requires that researchers obtain scientifically valid data with useful applications while minimizing the risks within the study, and protecting subjects from harm, be it psychological, physical and emotional harm during the research study. (Bitter et al, 2020). This ethical principle entails that the researcher needs to secure the wellbeing of the participants. To prevent undue discomfort or distress, this study was conducted by a scientifically qualified expert who monitored the research participants for consequences caused by the research study, such as emotional distress and psychological harm caused by self-disclosure, interacting with a stranger, and fear of the unknown. However, in the event of psychological harm, participants were to be referred to a psychologist for counselling. The well-being of the participants was secured.

This study ensured that the questionnaire was well organized and consisted of questions that are less sensitive to women regarding their

reproductive health. Questions were well standardized to exclude potential harm to the participants. To add to this, the researcher presumed that the respondents might feel uncomfortable sharing information about their fertility and reproductive health in general, and other aspects relating to their private life. The researcher had arranged with the psychologist at the research clinic to conduct counselling for the respondents who might experience emotional or psychological harm because of the study. The researcher has also given the participants the opportunity to ask questions to minimize distress and misconceptions about the research study.

The researcher has taken extreme care to promote participants' wellbeing, to prevent any possible harm and discomfort, be it physical, emotional, social, spiritual, or psychological harm, and to ensure non-maleficence and beneficence. There was no compensation that was made to the respondents for participating in the study because the study was conducted for academic purposes only. Although the participants could not benefit directly from this study, it was emphasised that the study might provide valuable information to women and the general community and to inform the healthcare setting to establish public fertility care services that would benefit all people in terms of financial status. This study might contribute to the individual benefit of improved knowledge. Findings of the study will be of high value to society and the Ministry of Health and Social Services, and they might lead to remarkable improvements in health care and the management of infertility.

3.9.4 Principles of Justice

Bitter et al, (2020) stated that, justice requires that the costs and benefits of the research study are distributed fairly within the research population. To adhere to this principle, the researcher had to abide by

the participants right to fair selection, non-discriminatory treatment, and the maintenance of privacy and confidentiality. In this study, women seeking for fertility assessment and treatment were included in the study, regardless of their tribe, race, social status, financial status, and not based on their vulnerability. Selection of the respondents were based on the study requirements.

For this study, the population was selected to determine the impact of infertility on women's quality of life at the clinic, and the selection was based on the inclusion criteria of the study. Convenient sampling was applied to select the research participants in a fair and equitable way, based on the research requirement, and to ensure inclusivity of the participants. All persons who met the criteria were selected to the study.

3.9.5 Maintenance of scientific integrity

In this study, scientific integrity was maintained by adhering to the ethical, professional and methodological standards. Ethical approval to conduct the study was obtained from the University of Namibia Research Ethics Committee, as well as from the clinic under study, and informed consent was obtained from all participants prior to data collection. Data was collected by the researcher personally, using a validated, data collection tool to ensure accuracy and honesty in recording responses. Participants confidentiality and anonymity were protected, and all data were securely stored in a password protected computer. Objectivity during data analysis was maintained, and results were reported with transparency. In addition, all sources were properly cited to avoid plagiarism, and the methodology was documented clearly to ensure the study could be reproduced and verified by other researchers.

3.10 Chapter summary

This chapter started with a detailed description of the research design, followed by data collection procedures and analysis. Sampling methods employed in this study were also discussed. Validity and Reliability, which are crucial concepts used in enhancing precision and accuracy of research instrument were also discussed. The chapter also presented the need for professional ethical guidelines in conducting health research, namely: The principle of respect for persons, Beneficence and non- Maleficence, and the principle of justice.

CHAPTER 4: PRESENTATION OF STUDY FINDINGS

4.1 Introduction

The prior chapter focused on the research methods that were used in the collection of data. This chapter will cover the demographic information of the participants, presentation of the findings, discussion of the findings and the summary. The researcher used quantitative approach to obtain data from participants using data collection methods of questionnaires. The presentation of the data is done in a descriptive way and there is also analytical of the socio-demographic data

4.2 Demographic information

This section presents the demographic information such as age, place of residence, level of education, marital status, occupation, type of infertility, duration of infertility, causes of infertility and years when the participants were diagnosed with infertility of the participants in the research process.

4.2.1 Age of participants

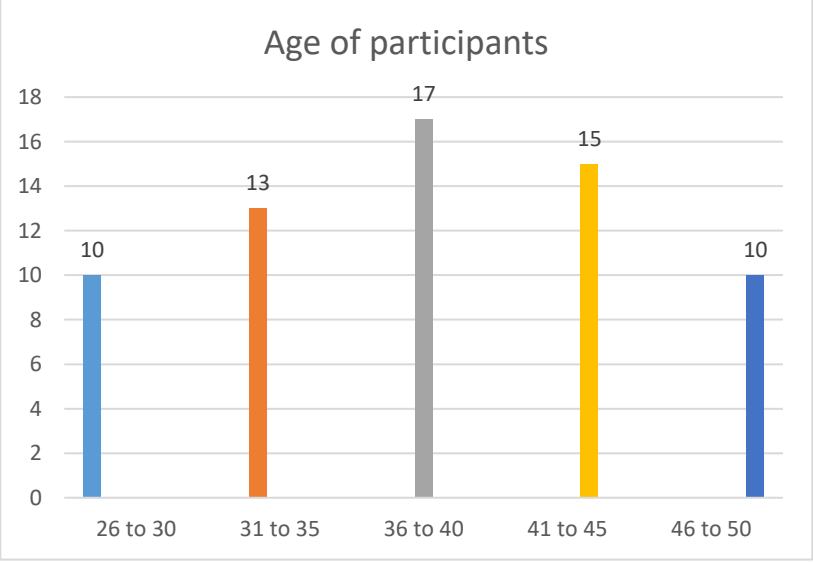

Figure 1. Age of participants

From the above figure, the researcher interviewed the participant from the different age groups. It can be noted that 26% of the participants were aged 36 to 40 years, while 23% were aged 41 to 45. The researcher made use of the different age groups so that different views can be obtained from the different age groups. The average age of people with secondary infertility is 42.32 years and the average age of people with primary infertility is 41.1 years. This indicates that people with primary infertility are slightly younger. However, the use of an Anova test showed that there is no significant difference between the two groups.

4.2.2 Place of residence

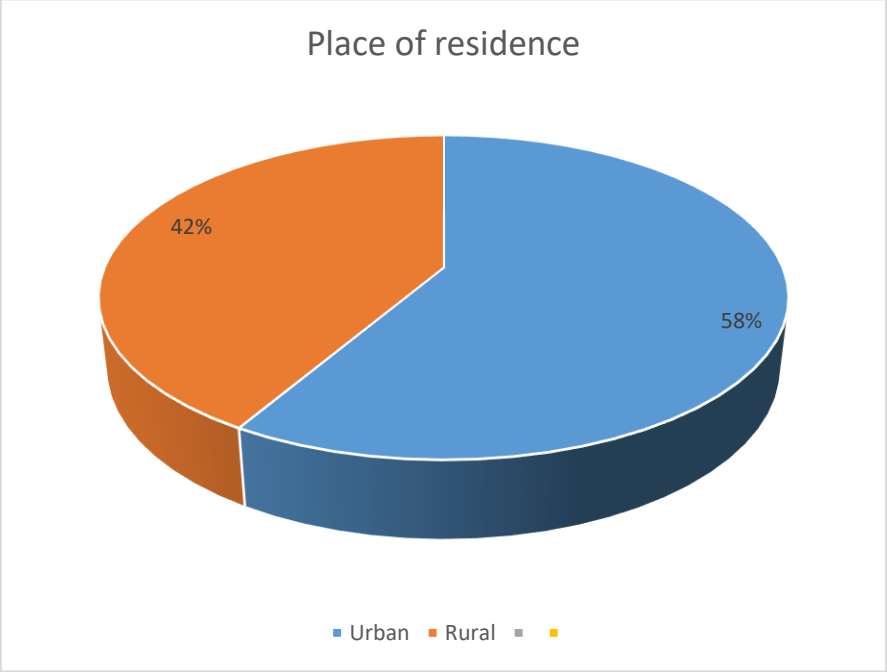

Figure 2. Place of residence

From the figure above, it can be noted that the researcher made use of participants from different residence. 58% of the participants lived in the urban areas whilst 42% of the participants lived in the rural areas. Both the primary and secondary infertility participants had more people who live in urban areas as compared to the rural areas. This shows that most of the women who visit the infertility clinic are from urban areas. Primary infertility has slightly more people who reside in urban area than secondary fertility.

4.2.3. Level of education

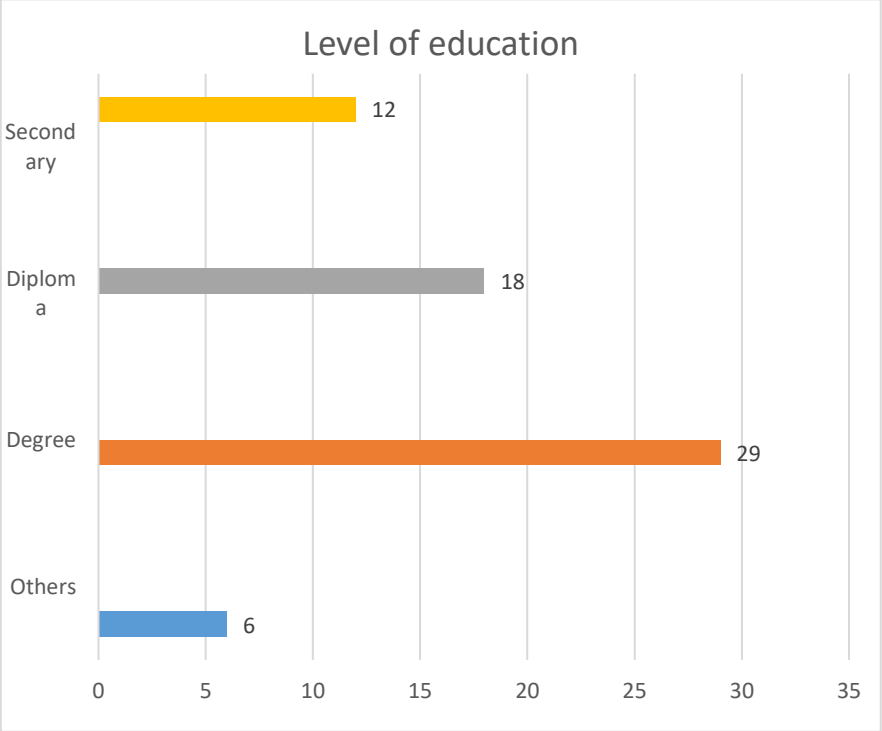

Figure 3. Level of education

From the figure above, it can be noted that 18% were having secondary education, 28% were holders of diploma, 45% were degree holders and

9% were under the others category. This shows that most of the participants are educated. Secondary infertility had slightly more participants with degrees as compared to primary infertility. However, the educational level of the two groups is relatively the same.

4. 2.4 Marital status

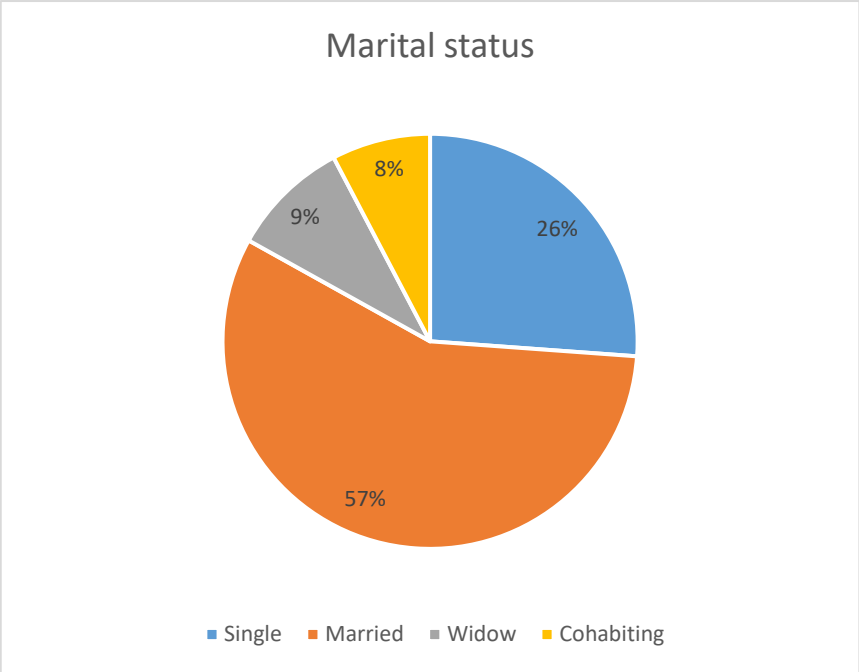

Figure 4. Marital status

More than half of the participants are married. 57% of the participants were married, while 26% were single, 9% were widows and 8% were cohabiting. The participants made use of the different participants who have different marital status so that the researcher can have different views. The two demographics had almost the same percentage of people who are married, since primary infertility had 56% while secondary infertility had 58% percentage. This shows that the two groups have relatively the same percentage of marriage.

4.2.5 Occupation

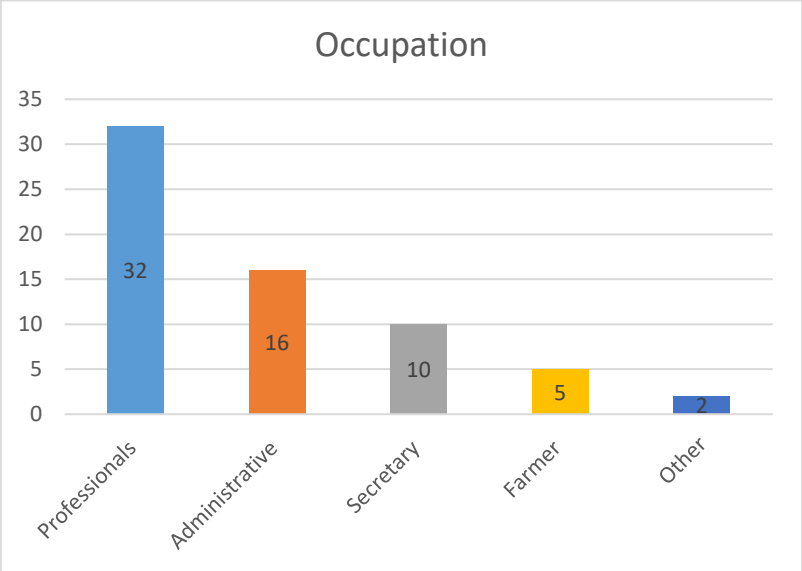

Figure 5. Occupation

49% of the participants were professionals, 25% were administrators, 15 % were farmers, 8% were unemployed whilst 3% ticked on others. The researcher made use of the different participants who had different occupations so that diverse ideas can be raised. The data shows that most of the participants have formal employment. Primary infertility had 45% professionals and secondary infertility had 53% who are professionals. Farmer and other were mainly occupied by participants with primary infertility.

4.2.6 Type of infertility

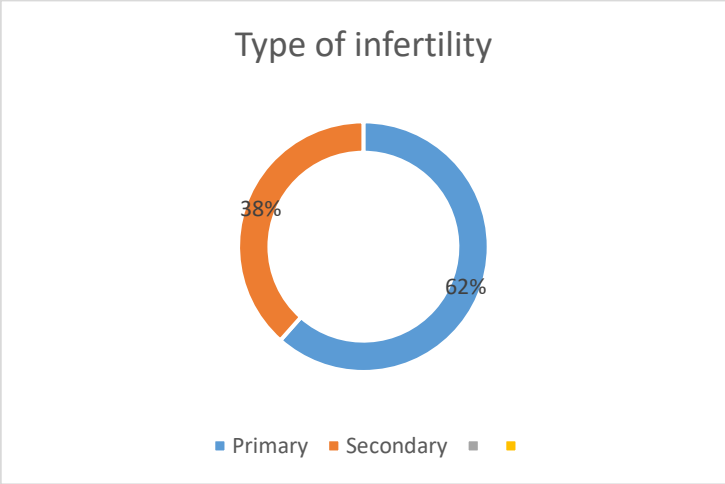

Figure 6. Type of infertility

Most of the participants have primary infertility. Figure 6 shows that 62% of the participants had primary infertility (they had never fallen pregnant before) whilst 38% had secondary infertility (have fallen pregnant before). The participants with primary infertility were higher than those with secondary infertility. This shows that infertility mainly affects people who never fall pregnant.

4.2.7 Duration of infertility

Years	No. of participants	Percentages
1 – 5 Years	13	20%
6 – 10 Years	25	38%
11 -15 Years	18	28%
More than 15 Years	9	14%

Table 1. Duration of infertility

From the table above, 20% had 1-5 years of infertility, 38% have 6-10 years of infertility, 28% have 11-15 years of infertility and 14% had

more than 15 years of infertility. This shows that most of the participants have infertility for a long time. The duration of infertility between participants with primary and secondary infertility are almost similar between the different year categories as indicated by their means.

4.2.8 Causes of infertility

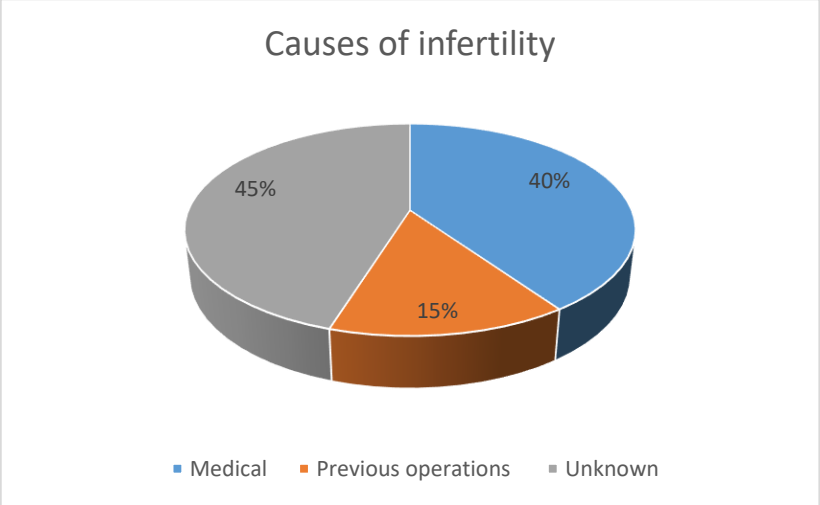

Figure 7. Causes of infertility

The data shows that 45% of the participants have infertility due to unknown reasons. 40% of the participants have infertility due to medical issues. Only 15% of the participants stated that they have infertility due to previous operations. An Anova test showed that there was no significant different between the cause of infertility of primary and secondary infertility participants. A P-value of 0.36 was obtained on a test that had 0.05 alpha value. therefore, the participants had similar causes of infertility.

4.2.9 The year when infertility was diagnosed

Years	No. of participants	Percentage
1- 2 Years	17	26%
3-4Years	19	29%
5 years or more	29	45%

Table 2. The year when infertility was diagnosed

The table shows that 45% of the participants had infertility diagnosed 5 or more years ago. This shows that they have been aware about their infertility for quite some time. 29% were diagnosed with infertility 3 – 4 years ago while 26% were diagnosed 1 – 2 years ago. The Anova test showed that there was a null hypothesis between primary and secondary infertility participants' years of infertility diagnosis. An alpha value of 0.05 was used and a P- value of 0.29 was obtained from the test.

4.3 Presentation of findings

The following is the presentation of the data. Graphs were used to present the data that was collected using questionnaires.

4.3.1 Impact of infertility on quality of life

The data gives the impact of infertility on quality of life. It aims to show the relationship between infertility and the quality of life that one will be having.

4.3.1.1: Rating of health

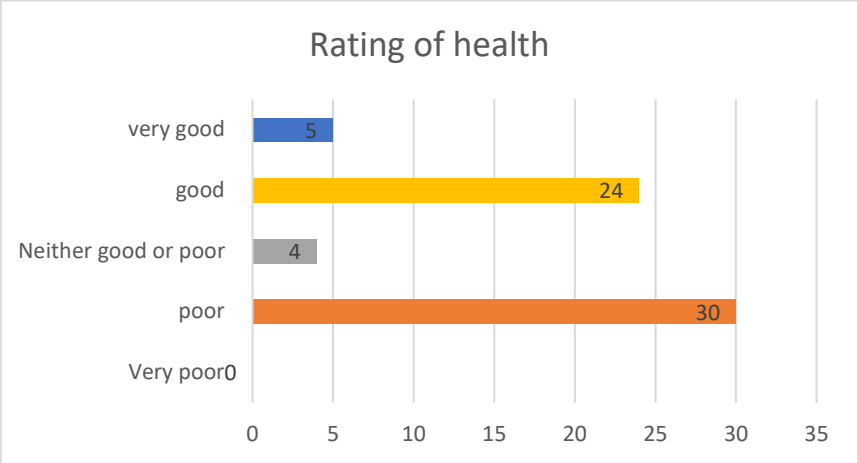

Figure 8: Rate of health

The data shows mixed views from the participants about their how they rate their health due to infertility. 46% stated that they rate their health to be poor due to infertility while 40% stated that they rate their health to be good. 11% were neutral since they did not rate their health to be neither good nor poor due to infertility. An Anova one- way test showed that there is no significant different between primary and secondary infertility groups. The alpha level was set at 0.05 but the test produced a P-value of 0.37. This shows that the rate of health between the two groups has no significant difference.

4.3.1.2: Rating of quality of life

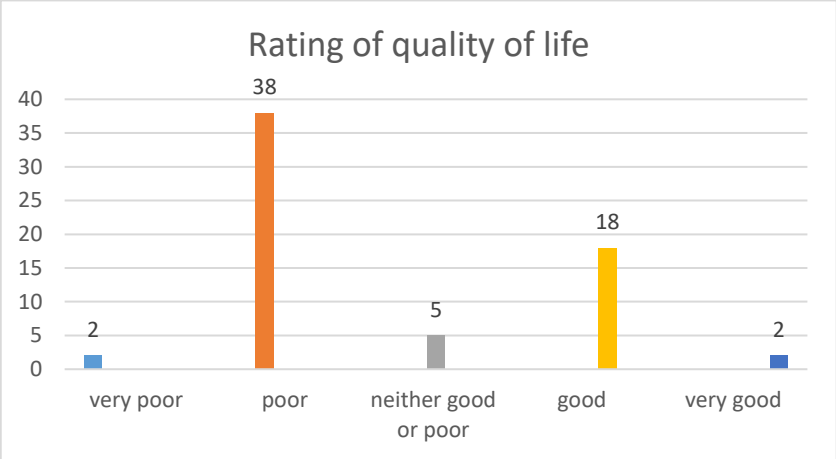

Figure 9: Rating quality of life

The data shows that most of the participants rate their quality of life as poor simply because they have infertility. This is shown by 54% who rate their quality of life to be poor due to infertility. 3% were even of the view that their quality of life is very poor due to infertility, which makes a total of 57% of the participants who have negative view about their quality of life due to infertility. 28% were of the view that their quality of life is good while 3% stated that it is very good. The data shows general negative views about quality of life. An analysis of the data was done by calculating the mean of the data as well as the mean of primary and secondary participants separately. A one-way Anova test was run. The alpha level was set at 0.05 and the test found a P-value of 0.34. Therefore, a null hypothesis was the answer, and this indicates that there is no significant difference between primary and secondary infertility on quality of life. The two group have the same quality of life even though those with primary infertility never had children.

4.3.1.3 One- way ANOVA Result -Type of Infertility and Quality of life

Variables	Sum of Squares	df	Mean Square	F- Value	Sig. (P-Value
Between groups	1.783	1	1.783	0.901	0.344
Within groups	107.184	54	1.984		
Total	**108.967**	**55**			

4.3.1.4 Current thoughts and feelings of participants

Most of the participants indicated that they do not have medical attention to function daily life. This was shown by 45% of the participants who stated not at all, while 48% stated a little. Only 6% stated very much. This shows that participants do not often need medication for essential daily functions. In terms of safety, there were mixed views among the participants as almost half indicated that they have safety concerns as indicated by 15% not all implying, they do not feel safe and 30% who stated a little, respectively. Another 15% indicated that they feel moderately safe, and only 28% stated that they feel very safe.

The data indicates that infertility affects the level of safety of women. Most of the participants indicated that they do not have a positive view about the meaningfulness of their life due to infertility. This was indicated by 21% who said not at all, and 48% who indicated that they felt a little. 15% were moderate, while 12% indicated that they feel very much safe. The data also showed that the participants are not affected by pain or discomfort due to infertility. Only 3% indicated that they feel extremely pain and discomfort as well as 5% who stated very

much. 48% stated not at all and 34% stated a little. The Anova tests conducted on the answers given by the two groups did not show any difference between participants who had primary and secondary infertility. The Anova tests had p-values of 0.33 to 0.37 while the alpha was set at 0.05. This shows that the two groups basically live the same kind of life.

4.3.2 Impact of infertility on social life

The data show how infertility is affecting the social life of the participants. It aims to show how infertility affect the social life of an individual

4.3.2.1 Uncomfortable attending social events due to infertility

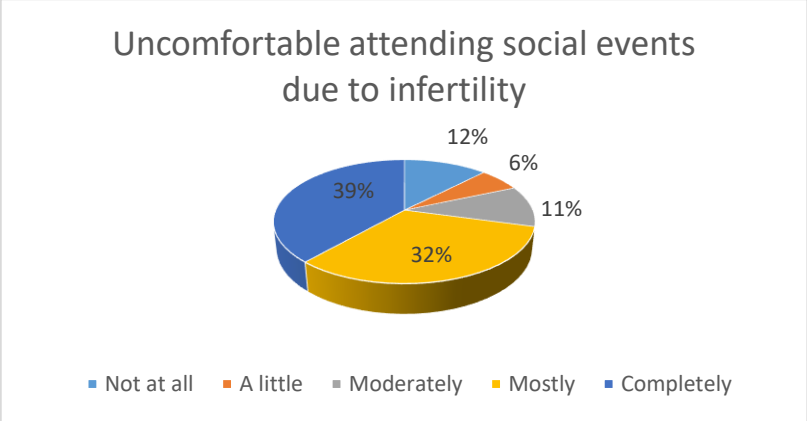

Figure 10. Uncomfortable attending social events due to infertility

From the figure above, 12% of the participants said that infertility is not at all affecting their social life, 6% % said that they are affected a little, 11% said that they are moderately affected, 32% said that they are mostly affected and 39% said that they are completely affected by the fact. This shows infertility is negatively impacting their social life.

4.3.2.2. Acceptance of bodily appearance due to infertility

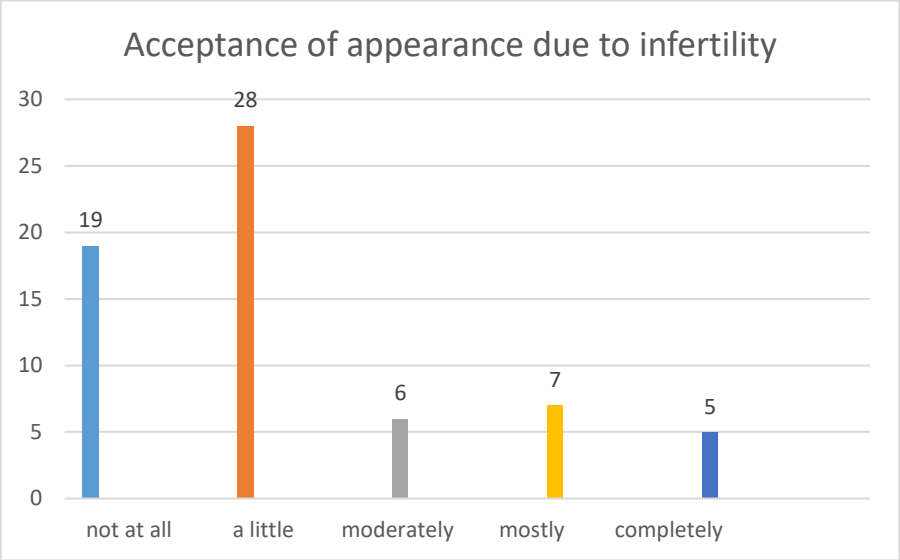

Figure 11: Acceptance of bodily appearance due to infertility

The data show that infertility is affecting how the women accept their bodily appearance. Most of the women seem to have a negative view. This was show by 29% who stated not at all and 45% who state a little. Only 8% stated completely. This shows lack of body appreciation.

4.3.2.3 Availability of information relating to fertility

Response	No of participants	Percentage
Not at all	12	18%
A little	27	42%

Modera tely	13	20%
Mostly	6	9%
Comple tely	7	11%
Total	65	100%

Table 3. Availability of information relating to fertility

The data show that information about fertility is not easily available. 18% stated that the not at all, indicating that the information is not easy to access. 42% indicated that there is a little information available while 11% stated completely. The larger percentages show that information about fertility is not easily available.

4.3.2.4 Social pressure to have children

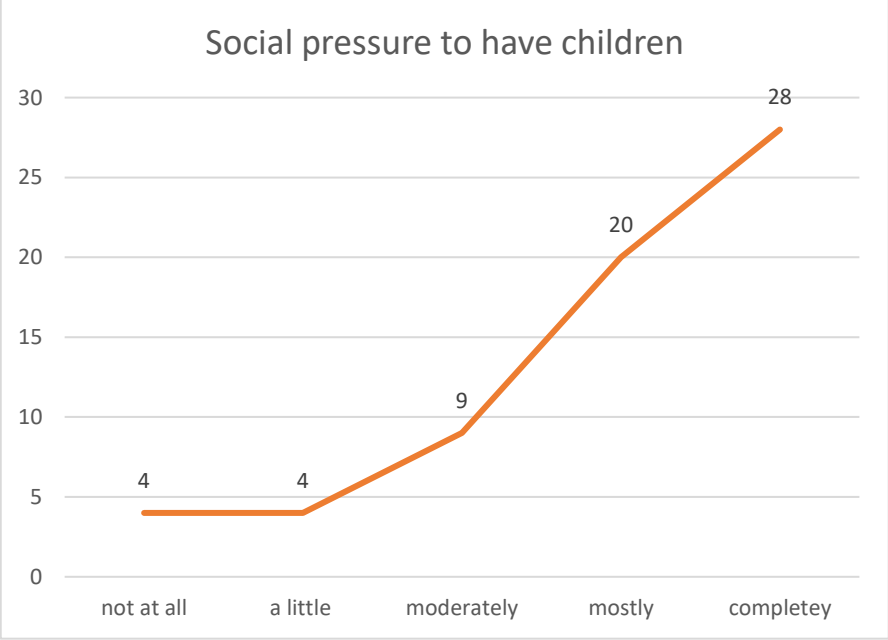

Figure 12. Social pressure to have children

The data shows that the participants are having social pressure to have children. This was evidenced by 43% who stated completely and 31% who state mostly. This shows that most of the participants are having pressure to have children. Only 6% stated not at all and the same percentage stated a little.

4.3.2.5 Infertility and relationship with partner

The data showed that the participants are rarely abused by their partners due to infertility. When asked about abuse, 35% indicated not at all and 49% stated a little. 8% stated moderately, and there is not any participant who indicated completely. This showed that infertility is not a well-articulated cause of partner abuse in relationships. On domestic violence due to infertility, 52% indicated not at all, and 42% stated a little. 6% stated moderately, and there were no participants who stated mostly or completely. This indicates that infertility is rarely causing domestic violence. However, on infertility causing partner to be unfaithful, the participants had mixed views. 26% stated not at all 22% stated a little. 15% of the stated completely and 14% stated mostly on the issue of infertility causing their partners to be unfaithful.

4.3.3 Impact of infertility on psychological health

The section shows the impact of infertility on the psychological health of the participants. The data shows how the women are being affected psychologically due to infertility.

4.3.3.1 Attention or concentration impaired by thoughts of infertility

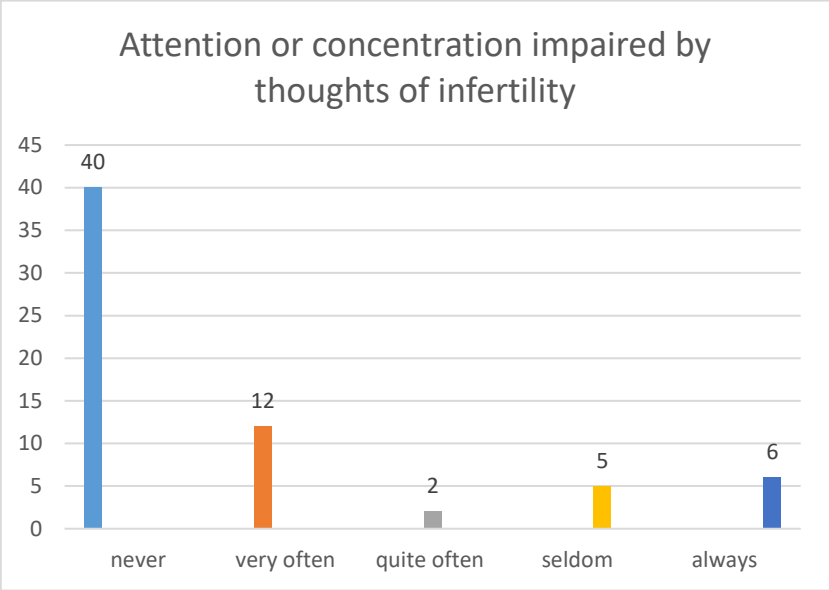

Figure 13. Attention or concentration impaired by thoughts of infertility

The data indicates that infertility rarely affects the attention or concentration of the participants. Specifically, 62% of the participants reported never being affected, 18% reported being affected very often, 8% reported rarely being affected, and only 9% reported always being affected. Additionally, 3% stated that they are affected quite often. This suggests that infertility does not significantly impair the participants' ability to concentrate.

4.3.3.2 Feeling sad or depressed due to fertility

Impact	**No of participants**	**Percentage**

Never	10	15%
Very often	35	54%
Quite often	9	14%
Seldom	7	11%
Always	4	6%
Total	65	100%

Table 4. Feeling sad or depressed due to fertility

The data from the table show that many of the participants feel sad or depressed due to infertility. This is indicated by 54% who stated very often and 14% who stated quite often. However, only 6% stated always. 15% stated never while 11% stated seldom. This shows that those who indicated little to no effect only made up 26% of the participants.

4.3.3.3. Feeling unable to cope with fertility problem

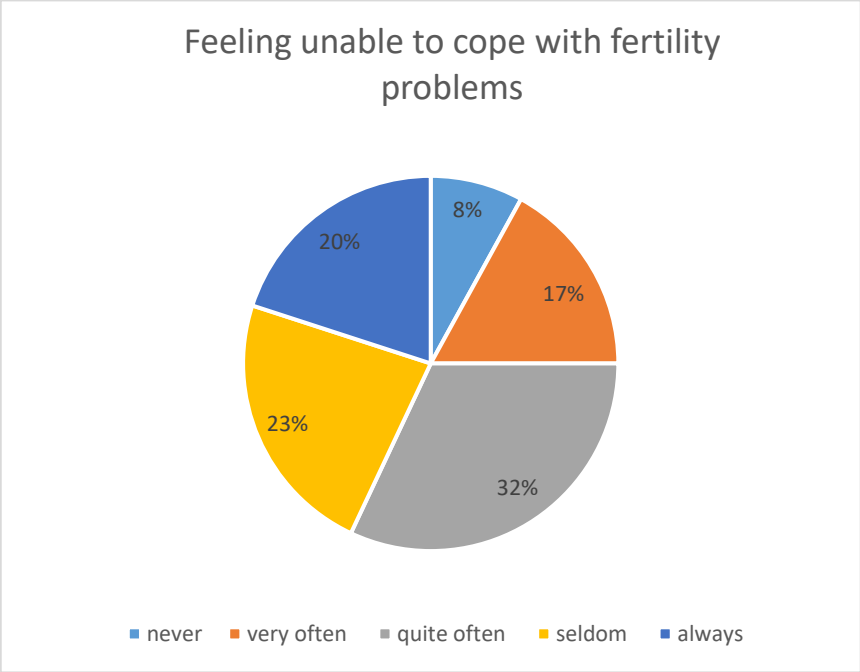

Figure 14. Feeling unable to cope with fertility problem

The data indicates that the participants are feeling overwhelmed due to infertility. 20% stated that they always feel unable to cope with infertility problem while 32% quite often and 17% stated very often. Only a paltry 8% stated never while 23% stated seldom. The data shows that majority of people are struggling to cope with infertility.

4.3.3.4 Unable to sleep adequately due to infertility

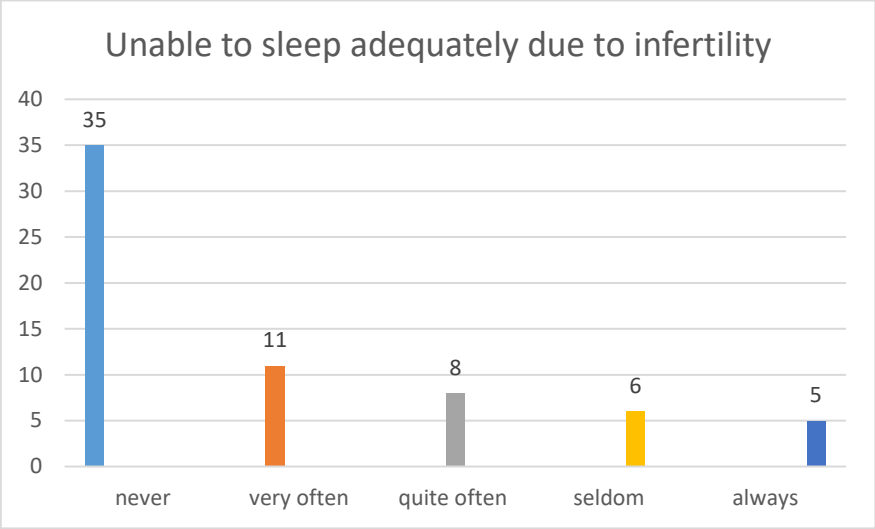

Figure 15. Unable to sleep adequately due to infertility

The data shows that more than half of the participants' sleeping patterns are not significantly affected by infertility. Specifically,54% stated never being affected, while 9% stated being affected seldom. However, 12% reported being affected quite often, while 17% stated very often and 8% reported being always affected. This suggests that some participants cannot sleep adequately due to infertility but more than 50% do not have their sleeping patterns or ability affected by infertility.

4.3.3.5 Family understanding problems due to infertility

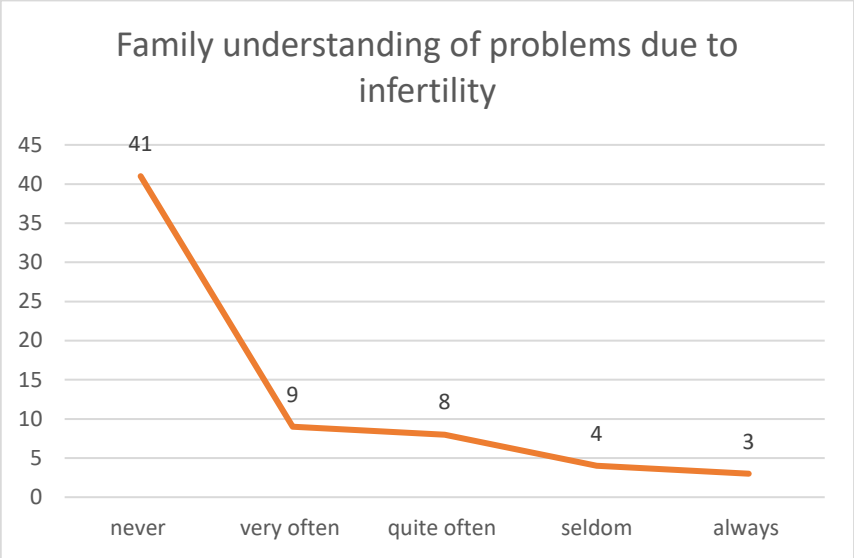

Figure 16. Family understanding problems due to infertility

Data shows that the problems that the participants face due to infertility are not well understood by family. This was shown by 63% of the participants who stated never while 6% stated seldom. 14% stated very often while 5% stated always. This shows that there is general lack of understanding of the problem that participants experience due to infertility.

4.3.3.6 Impact of infertility on relationship with partner

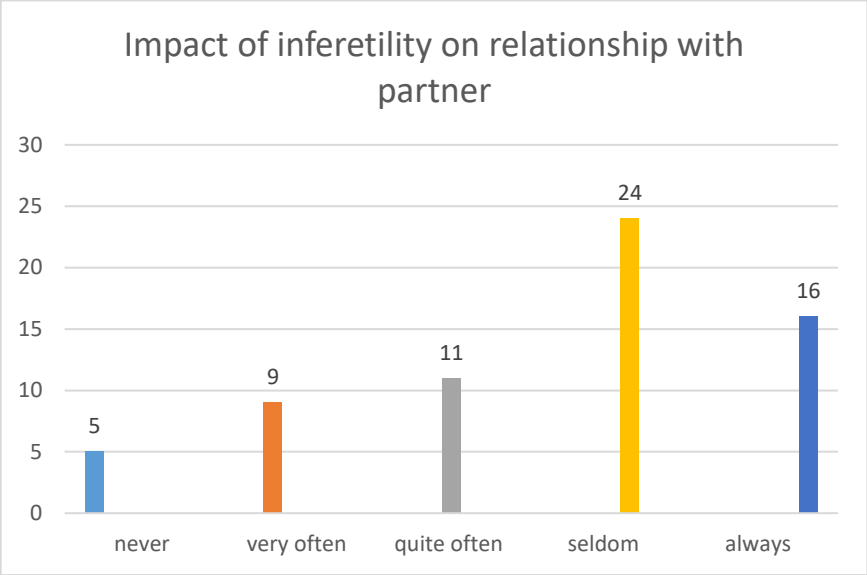

Figure 17. Impact of infertility on relationship with partner

The data shows that 37% of the participants are of the view that infertility seldom affects their relationship with their partners while 8% stated never. 25% stated that it always affects the relationship they have with partners while 17% stated quite often. The data shows mixed views.

4.3.3.7 Negative feeling such as blue mood, despair and anxiety

Impact	**No of participants**	**Percentage**
Never	14	22 %
Very often	37	57 %

Quite often	8	12%
Seldom	6	9%
Always	0	0%
Total	65	100%

Table 5. Negative feeling such as blue mood, despair and anxiety

The data indicates that 57% of the participants develop negative feelings like blue mood, despair and anxiety. 12% stated very often while 9% stated that they seldom feel those feelings. The data show that majority of the participants get to feel negative feelings due to infertility.

4.3.3.8 Difficulties of talking to partner about feelings related to infertility

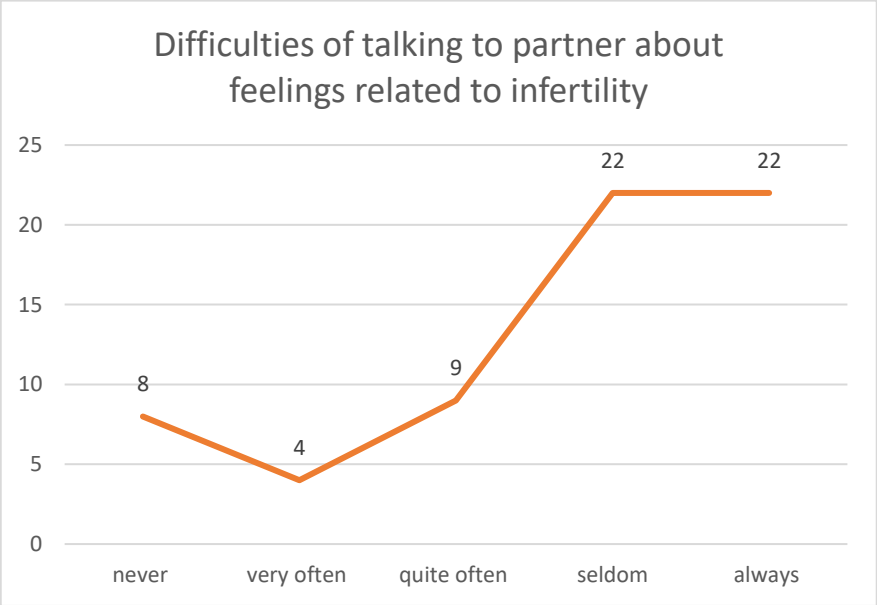

Figure 18. Difficulties of talking to partner about feelings related to infertility

The data shows mixed views from the participants. 34% state that they seldom find it difficult to talk to partner about feelings and the same percentage state that they always find it difficult. Only 12% indicated that they never find it difficult to talk to their partner about feelings relating to infertility. The data indicates that most of the participants do show hesitation to talk to their partner on feelings related to fertility.

4.3.4. Impact of infertility on emotional health

The section shows the data on the impact infertility on emotional health of affected individuals.

4.3.4.1 Satisfaction with sex life

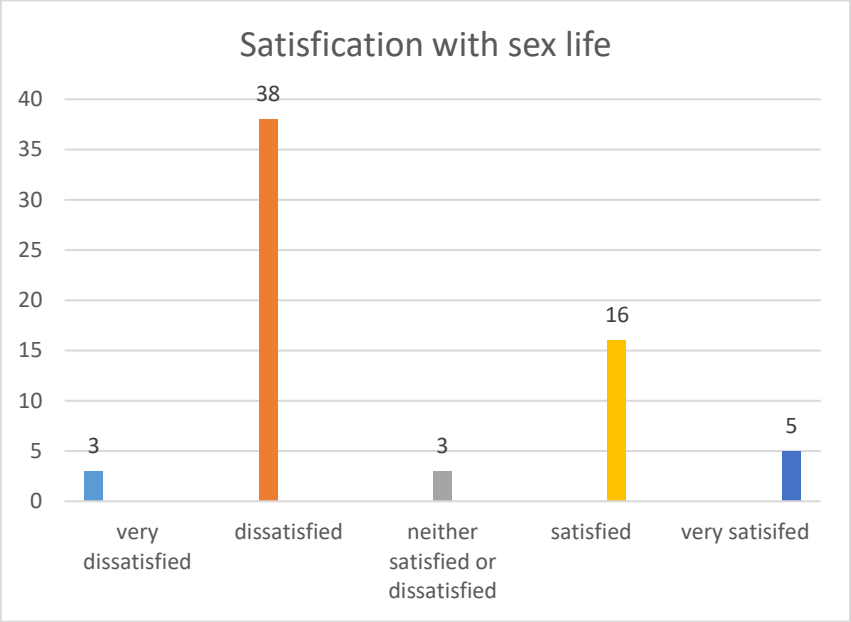

Figure 19. Satisfaction with sex life

The data shows that more than half of the participants are dissatisfied with sex life due to infertility. 58% stated that they were dissatisfied and 5% stated that they were very dissatisfied. A mere 8% indicated that they were very satisfied while 25% stated that they were satisfied. The data indicates that infertility has a negative impact on sex life of the affected individual.

4.3.4.2 Satisfaction with the ability to perform daily activities

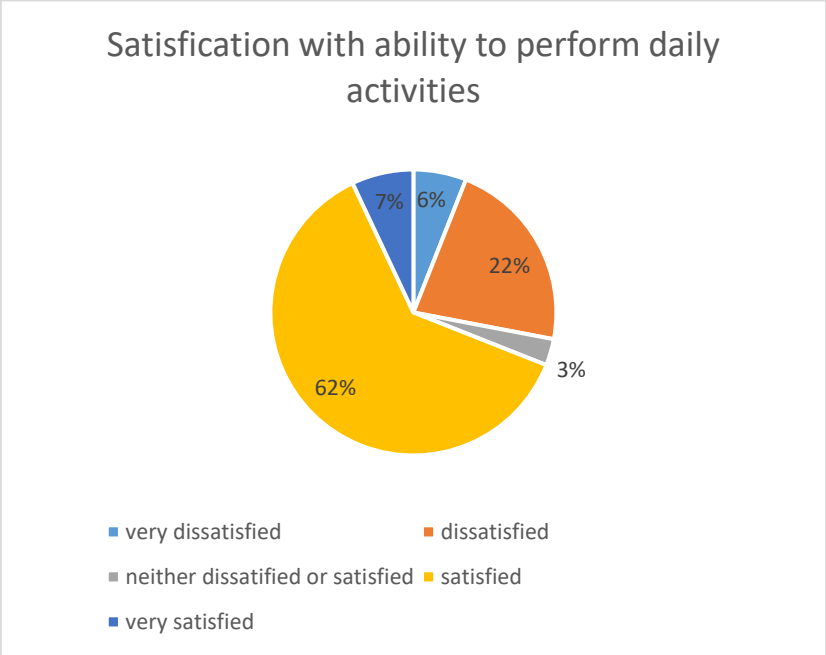

Figure 20. Satisfaction with the ability to perform daily activities

The data show that 62% of the participants are satisfied with their ability to perform daily activities while 7% indicated that they are very satisfied. 3% were neither dissatisfied nor satisfied while 6% were very dissatisfied. The data show that many of the participants are satisfied with their ability perform daily living activities.

4.3.4.3 Satisfaction with support from family and friends on fertility problems

Impact	**No of participants**	**Percentage**
Very dissa	9	14%

tisfied		
Dissatisfied	35	53%
Neither satisfied nor dissatisfied	11	17%
Satisfied	7	11%
Very satisfied	3	5%
Total	65	100%

Table 6. Satisfaction with support from family and friends on fertility problems

More than half of the participants are not satisfied with the support there are getting from family and friends' concerning infertility. 53% are dissatisfied and 14% are very dissatisfied, which are much higher percentages as compared to 5% for very satisfied and 11% for satisfied. 17% of the participants were neither dissatisfied nor satisfied.

4.3.4.4 Satisfaction with personal self

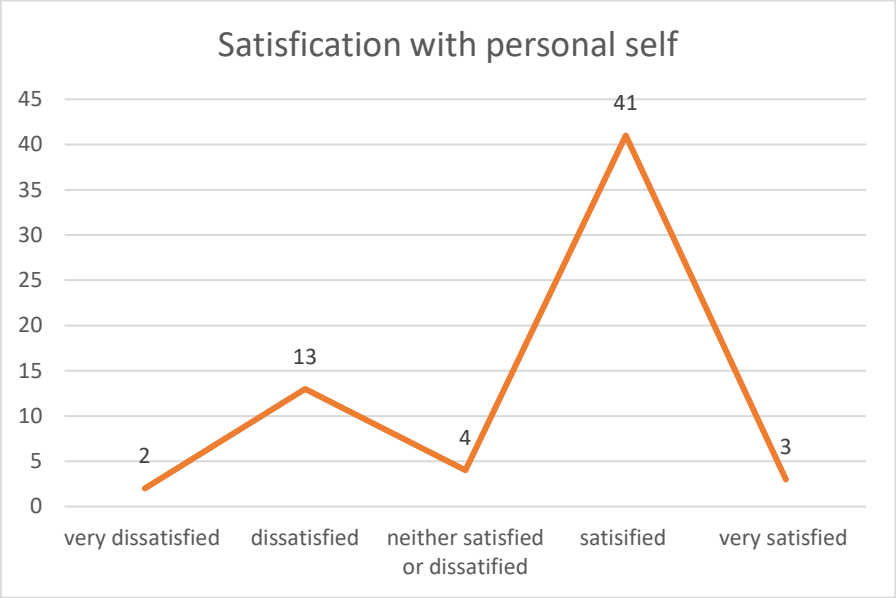

Figure 21. Satisfaction with personal self

The data shows that the participants are generally satisfied with themselves. Only 3% stated that they were very dissatisfied while 20% stated that they were dissatisfied. 63% were satisfied and 5% were very satisfied. This shows a general positive view about themselves.

4.3.4.5 Satisfaction with personal relationships

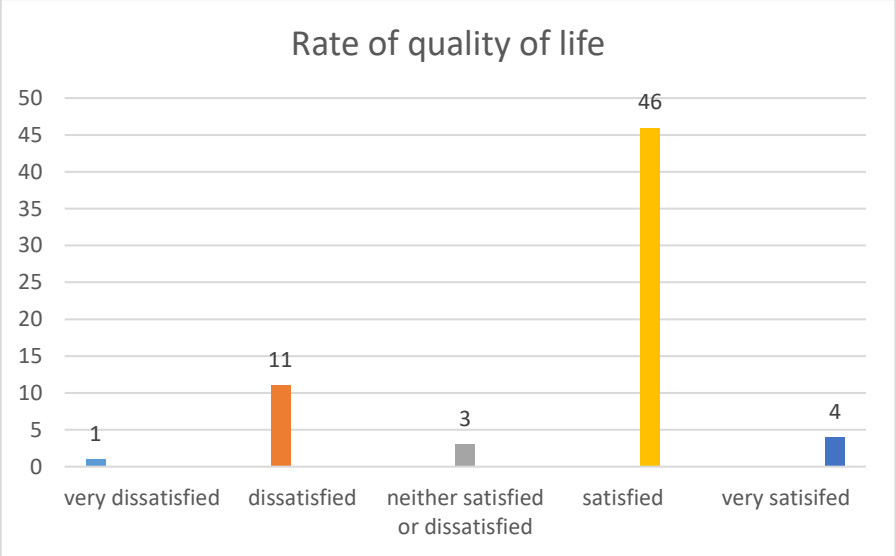

Figure 22. Satisfaction with personal relationships

The data shows that majority of the participants are satisfied with personal relationships. This was indicated by 71% who stated that they were satisfied while 6% were very satisfied. Only 2 percent stated that they were very dissatisfied while 17% were dissatisfied.

4.3.4.6 Satisfaction with affection towards partner while infertile

Impact	**No of participants**	**Percentage**
Very dissatisfied	14	21%
Dissatisfied	33	51%
Neither satisfied nor dissatisfied	4	6%
Satisfied	11	17%
Very satisfied	3	5%
Total	65	100 %

Table 7. Satisfaction with affection towards partner while infertile

Data from the table show that the participants are not generally satisfied with affection that they have towards their partners due to infertility. 51% and 21% indicates dissatisfied and very dissatisfied respectively. These are the biggest percentages in the table, and they make a combined 72%. Only 5% are very satisfied while 17% are satisfied. There are 6% who are neither satisfied nor dissatisfied. The data indicates that infertility affects the level of affection that the participants have towards their partners.

4.3.4.7 Satisfaction with sexual relationship while having infertility

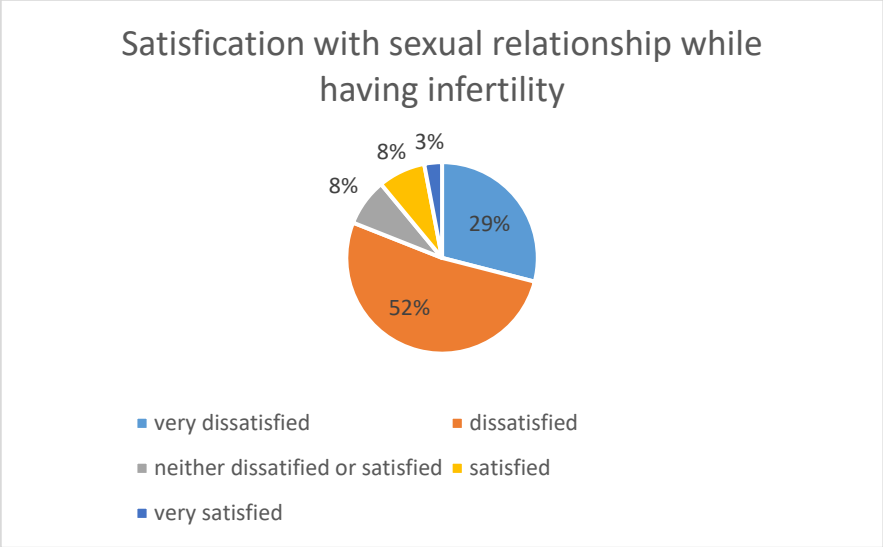

Figure 23. Satisfaction with sexual relationship while having infertility

Majority of the participants indicated that they were not satisfied with sexual relationship due to being infertile. 52% indicated that they are dissatisfied and 29% indicated that they are very dissatisfied. This makes a combined total of 81% who are discontent with their sexual relationships due to infertility. Only 8% were satisfied and 3 were very satisfied. The percentages of satisfaction are low as compared to dissatisfaction.

4.3.4.8 Satisfaction with commitment of partner

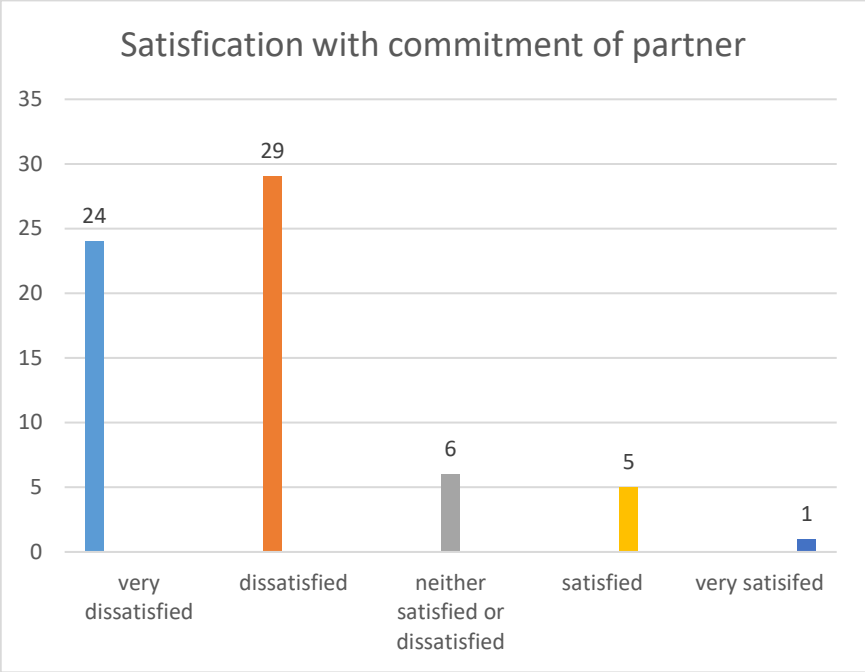

Figure 24. Satisfaction with commitment of partner

The data show that there is a high percentage of participants who are dissatisfied with their partner's commitment due to infertility. 45% are dissatisfied and 37% are very dissatisfied making a combined total of 82% of participants who were not happy with their partner's commitment due to infertility. 9% were neither satisfied or dissatisfied while 2% and 8% were very satisfied and satisfied, respectively. An Anova test was conducted between participants with primary and secondary infertility. The alpha was 0.05 and there was no significance difference found between the two groups as the test got a P- value of 0.29. This entails that the two groups face the same challenges in terms of satisfaction with partner's commitment.

4.4 Chapter summary

The chapter presented the research findings. It gave the demographic information about the participants which included age, occupation and

place of residence. The presentation of research findings was done using graphs, tables and pie charts.

CHAPTER 5: DISCUSSION OF FINDINGS

5.1 Introduction

The chapter presents a discussion of the research findings. The research findings are discussed in detail to ascertain the meaning of data. The views of various authors shall be incorporated into the discussion as well as the views of the researcher.

5.2 Impact on infertility on women's quality of life

Data was collected to assess the impact of infertility on women's quality of life among the participants who visited Cape Windhoek Fertility Clinic. The data shows that about 50% of the participants rated their health to be poor simply because they are infertile. The rating is influenced by the inability to have children even though the person might not have any other health related issues. This concurs with the views of Awan (2021) who stated that infertility can be a chronic illness. Thus, infertility is seen or perceived as a disease even though the person might not be feeling any pain or complications. These findings concur with Saif, Rohail and Aqeel (2021 revealed that infertility has a greater impact on relationship in the world and can have a devastating effect on women's mental health and leading to poor quality of life. Therefore, it is alright for the participants to rate their health as poor because they are infertile. However also another section of the participants was of the view that their health is either good or very good despite having infertility.

The study showed that infertility negatively affect the quality of life of women. The data showed that more than 50% of the participants rate their quality of life to be poor because they are infertile. According to Bakhtiyar et al (2019), infertility brings psychological issues such as stress and anxiety. This shows that infertility is affecting how the

participants perceive life. This contradicts the premise of the Human Caring theory which guides this study which focuses on holistic living. The fact that infertility negatively affects the quality of life for many people shows that it is a challenge that needs to be solved. Quality of life is said to be an individual's perception of their position in life in terms of goals, values, expectations in a cultural and societal context (WHO, 2020). This entails that quality of life can be a subjective experience which explains why some participants indicated that they have a good quality of life despite being infertile.

Being infertile means one can fail to achieve certain objectives in life, which affects how they perceive their lives. It is the objective of many women to be mothers, so if they fail to achieve that through primary secondary infertility, they get affected. This can cause them to have different forms of distress such as emotional and psychological stress, which negatively affect their quality of life. Most of the women who were participants are professionals and have jobs. However, despite having a source of income, they still state their quality of life to poor because motherhood is one of the main aims of most women. Most of the participants had primary infertility, which means they have never fallen pregnant before, which therefore exacerbate their need or desperation for a child. This could be the reason why there is a good number of women who stated that their quality of life is poor. The quality of life being poor solely due to infertility was further shown by the fact that most of the participants do not have any medical attention that they need to function in life due to infertility.

The study also showed that most of the participants are not affected by any form of pain or discomfort due to infertility. This correlates with the views of Harzif et al (2019) who stated that quality of life is achieved through attainment of certain milestones such as having children. The fact that the participants are not sick implies that

infertility is not giving them medical problems or any physical challenges on their bodies. If there is infertility in a woman's life who wants to have a child, it affects how the perceive life, despite having little or no other the complications in life in terms of medical or financial issues. Therefore, quality of life related to infertility can solely be since one can does not have a child despite the availability of other factors that are considered essential for good quality of life. The data also indicated that infertility affect how women feel safe. The issue of safety was not raised by many womenas an area of concern, but the fact that it was stated by some members it shows that infertility can affect how some feel. Thus, it can be concluded that a lack of ability to have children brings vulnerability.

5.3 Factors affecting quality of life in women affected by infertility

The data showed that there are many factors that affect the quality of life of women who are affected by infertility. The study showed women who are infertile have their social life affected by the predicament. They feel uncomfortable in attending social events. This was indicated by an overwhelming majority of the participants as much as 71% of the participants. This is in line with the views of Bakhtiyar et al (2019) who stated that there is stigma associated with infertility. Therefore, this causes infertile women to feel shy to attend social events because their fertility problem can be a subject of discussion. This issue can be more pronounced when they are visiting social events where kids are present. The study showed that women face social pressure to have children. This is in line with the views of Ombelet (2020) who stated that childbearing is prioritized in many cultures, especially in Sub-Saharan Africa.

These findings are also in line with Madziyire et al (2021) who stated that there was a lot of stigmas from family and community, surrounding

female infertility, thus infertile women were looked down upon, undervalued and mocked. The study further added that, in Zimbabwe, the community mocked women who had assets and lacked children to inherit them. To add to this, the same study also stated that there were tensions within the families, particularly involving the in-laws and from a cultural perspective, where families addressed infertility by discretely arranging for the woman to engage in sexual relationship with a carefully selected family member. (Madziyire et al 2021).

In addition, a high desired family size is widely observed in Sub-Saharan Africa. For this reason, infertile couples reported poor marital adjustments and quality of life, compared to fertile women. Furthermore, these findings are in consistence with Bongaarts (2020) who confirmed that the level of psychological distress and quality of life seems to be affected more in women rather than their husbands and may require psychological interventions. Thus, inability to have children is seen as a weakness or disability. This limits the will of infertile women to be social since it can make them feel more exposed to their vulnerability. This is in line with the views of Namdar et al (2017) who stated that infertile women suffer considerable social distress. The study also showed that infertility causes women to lack of acceptance of bodily appearance.

The fact that one's body will be failing to conceive can cause a person to have a negative attitude about the body. This concurs with Vioreanu (2021) who stated that, women suffering from infertility are at risk for developing feelings of lack of self- worth, decreased self- esteem and the perception that there is something wrong with them as an individual or family. Vioreanu (2020) further elaborated that when women are unable to have children, they are unable to achieve their social roles defined by their own cultures. Hence, inability to give birth to a child comes with a breakdown of a woman’s economic insecurity, caused by

various consequences such as divorce, alienation from family members, withholding of any financial resources provided by the partner or husband.

However, the study showed that infertility is not causing women to have abuse or violence from their partners. The number of people who indicated violence due to infertility is low as compared to those who did not indicate any reasonable form of violence. The study showed that there is a good rate of partners who are unfaithful in relationships because their spouse or primary partner is infertile. The cheating can be exacerbated by the need to try to have a child with another person outside the relationship.

The study also showed that women who are infertile are affected psychologically. It was shown that about 74% of the participants feel sad or depressed due to infertility and many struggles to cope. They also get to have negative feelings such as blue mood and despair. This concurs with the views of Swanson and Bravermen (2021), who stated that psychological stress affects many women who are infertile. These findings are also in consistent with Mehra, Boyd and Magripels (2020) who indicated that infertility is a psycho-social crisis which can cause psychological distress in the form of depression and anxiety, which may impair quality of life.

Earlier study by Sharma and Shrivasta (2022) also indicated that in Nigeria, a societal construct that does not support couples facing infertility, infertile couples are presented with a psychological burden for Nigerian women and their partners, affecting them in many spheres of life. Sharma et al (2022) further revealed that, infertility can cause psychological distress, emotional stress and financial difficulties for both partners. Also, couple may feel emotions such as anger, guilt, sadness, depression, loss of self-confidence and self-esteem. Similarly,

Ozan and Duman (2020) stated that women are generally blamed for infertility, which puts psychological pressure on them from society.

The result from the study as well as the views of the authors show that infertility takes a tore on women and most of the times it is about how they will be thinking and feeling. It was also shown in the study that women with infertility rarely received any form of help or understanding from family. This can cause them to be in a predicament that enhances psychological stress which is in line with the views of Gentile et al (2019) who stated that there is a higher level of anxiety and general distress among infertile women. This can be because there are many ways that the women get anxious due to being infertile. The study further showed that infertility has a negative impact on the relationship with their partners. Therefore, women who are infertile tend to be affected in so many ways. This concurs with Hussain et al (2021) who stated that infertility is a multidimensional stressor, requiring several kinds of emotional adjustment, which is associated with dysfunctional sexual relationship, anxiety, depression, difficulties in marital life and identity problems.

However, the study also showed that most women who are infertile are not affected in terms of poor attention or concentration due to psychological issues relating to infertility. The data also showed that many women's sleeping patterns are not affected due to infertility. This is important as having enough sleep and being able to concentrate without destruction is important in life.

The study revealed that the emotional health of women is negatively affected by infertility. Results indicated that women who are infertile are not satisfied with many things, such as their sexual life, relationship with the partner, support they receive on fertility problems. 81% showed that they were either dissatisfied or very dissatisfied with

sexual relationships while infertile, 82% where dissatisfied and very dissatisfied about partner's commitment due to infertility and 63% are not dissatisfied or very dissatisfied with their sex life. This shows a high level of discontentment. The study findings correlate with Mukherjee et al (2018) who stated that failure to conceive causes mental and emotional stress on many women.

To add to this, Taebi, Kariman and Majd (2021) stated that childlessness is associated with severe social, emotional and health consequences, given that studies have revealed higher rates of psychological distress such as depression and anxiety among infertile women. Another study by August and Fernandes (2023) also indicated that women who cannot have children may encounter issues including rejection, infidelity, divorce and being threatened by their husbands with a second or a fellow wife. Therefore, in Mozambique, childlessness may result in significant psychological symptoms such as anxiety, guilt, grief, rage and bitterness.

Furthermore, Zayed and El-hadidy (2020) stated that most women showed a marked decrease in frequency and quality of sex life after being diagnosed with infertility. This shows that infertility affects the emotional state of a person. Zayed and El-hadidy (2020) stated that infertility brings guilt, frustration and low self-esteem among other things. This concurs with Obeagu, Njar and Obeagu (2023) who indicated that most often, infertility takes a form of a crisis, putting the psychological wellbeing of an individual in danger, life satisfaction and other aspects of mental health, as well as quality of life.

Vioreanu (2021) also stated that, stress levels were much higher among infertile women for various reasons, for which one of the most important reasons is the status of being a mother, which is a fundamental role in the life of a woman. For many of the women, being

a mother is considered defining and therefore is an essential purpose in life. (Vioreanu 2021). The study further stated that the inability to achieve the goal of a mother comes with many emotional imbalances and can be a crisis that threatens the psychological well-being of a woman. This shows that a person will be affected emotionally. Therefore, all these factors that comes along with infertility contribute to a poor quality of life

5.4 The relationship between the participants' demographic characteristics and their quality of life

The research also wanted to find out the relationship between the demographic characteristics of the participants and their quality of life. Different aspects of the demographic characteristics of the participants were investigated, such as their place of residence, type of infertility, and level of education. The different aspects were put into groups, and one-way Anova tests were used to assess whether there was a significant difference between the demographic characteristics of participants and their quality of life. All the tests that were carried out showed a null hypothesis between demographic characteristics of the participants and their quality of life. This showed that the quality of life of the participants was not necessarily a result of their demographic characteristics as no specific group showed a particular view about the quality of life due to their demographic characteristic.

This indicates that the perceived quality of life is more subjective than objective as there was no significant difference in the quality of life between participants living in rural or urban areas, level of education as well as primary and secondary infertility participants. This concurs with a view of Namdar et al (2017) who stated that there is no evidence that a group of infertile people have a higher life of stress compared to others. The data also showed that people from rural and urban areas did not necessarily have different levels of quality of life because of

their place of residence. The same applies to education. This is in line with the definition of quality of life, as described by the World Health Organization (2020), which stated that it is an individual's perception of their position in the community as well as their goals and priorities. Therefore, some in rural

Participants from rural areas can claim to have a certain level of quality of life, which will be like someone in urban areas. Also, some people are content with their level of education, which might be deemed by others as inadequate. Furthermore, the fact that there was no difference between the demographic characteristics of the participants and the quality of life might have been caused by the fact that all the participants have infertility, either primary or secondary, which might have a general impact on how they perceive life in general. The subtle differences between the demographics might all be due to personal opinions about life, which makes demographic characteristic not to be the key determining factor of what people perceive to be a quality life.

5.5 The extent to which infertility impact women's quality of life at the Cape Windhoek Fertility Clinic in Windhoek, Namibia

The research also wanted to find out the extent to which infertility impacts the quality of life of the women who visit Cape Windhoek Fertility Clinic, Namibia. The women were asked how they rate their quality of life. The averages of the answers that were given by the women were showing that they rate the quality of their lives as poor due to infertility. This correlates with the views of various authors such as Mukherjee et al. (2018), Namdar et al. (2017) and Zayed and El-hadidy, 2020) who all stated that infertility negatively affects the wellbeing of the affected women. The authors stated that infertility causes the affected women to have stress, mental breakdowns and dissatisfaction with their sexual lives, among other problems. The

abovementioned factors cause women to have a life that is generally difficult as compared to women who are fertile. The answers given by participants were similar between women with primary and secondary infertility as an Anova test showed that there was no significant difference between their answers. The participant's views show that infertility was causing a debilitating effect on the quality of life of women, making them not to enjoy life.

5.6 Differences in quality of life between secondary infertility and primary infertility

The research also wanted to find out whether there is a difference between the quality of life between participants who have secondary infertility and primary infertility. The research discovered that those with secondary infertility had a better quality of life as compared to those with primary infertility as shown by the mean of the two groups. The mean of participants with secondary infertility who are more towards a positive scale as compared to the one for primary infertility. However, there was a slight difference between the mean averages of the two sets of numbers which can be because the quality of life is influenced by subjective views. Also, primary infertility had more participants than secondary infertility, which might have influenced the outcome. Abebe et al. (2020) describe primary infertility as failure by a couple to conceive despite having a prolonged period of unprotected sex that lasts for at least a year. Secondary infertility happens when a woman gets pregnant once but fails to conceive again (Abebe et al, 2020). Generally, a person who has one child can be in a better situation than a person whenever managed to conceive. Therefore, it can be assumed that people with secondary infertility can feel better or have a better quality of life as compared to people with primary infertility. However, some people with secondary infertility can feel that they have poor or a very poor quality of life, maybe due to their desire to

have a bigger family such as 3 or 4 children. The quality of life is compromised when one does not achieve the milestones that they were aiming for.

5.7 Strategies to enhance quality of life among infertile women

The study showed that infertility causes a lot of problems to women who are affected. There are many issues that they face relating to social, emotional and psychological stress (Abebe et al, 2020; Chiware, 2021; Ombelet, 2020). The study showed that the issues related with infertility makes the affected women to have a negative view about life. The participants in the research generally described their quality of life to be poor even though most of them are professionals, well -educated and are currently working. This shows that their quality of life is tied up to the inability to have a child. WHO (2020) stated that the quality of life can be attained through ensuring that every human attains the highest attainable standard of physical, mental, and reproductive health. Therefore, the formulation of a solution for women for people who will be facing infertility is important.

There is need to find ways through which women can attend fertility with medication where possible. The use of in-vitro fertilization is important, especially if it is made readily available at a low cost, more so in developing countries. There is also a need for the public to be educated about infertility and possible mechanisms that can be used to deal with. This study was guided by Watson's theory of Human Caring, which promotes balance and harmony between the health and illness experience of a person (Watson, 2014). The theory promotes the holistic treatment of human beings. This is fundamental in dealing with infertility as it will enhance the ability to find out solutions. If women who have infertility issues are not stressed, it enhances their ability to solve the challenges. There is also need for comprehensive counselling

services that must be offered to women with infertility challenges. Counselling will help them to understand their situation better and to be aware of how to deal with it.

5.8 Originality of the study

This thesis fills a gap in literature by exploring the lived experiences of women receiving infertility care in a private health setting, which is often underrepresented in academic studies. While there is a growing body of global literature on the psychological and social effects of infertility, there are very few studies that have focused specifically on women's quality of life within the context of private fertility clinics in Namibia. The use of a standardized, validated quality of life assessment tool was adapted to reflect the socio-cultural representation of the study population and was used to generate a context -specific insights that are relevant and applicable to local healthcare practice.

To add to this, the study has collected primary data on a topic mostly dominated by secondary and international data, and findings of this study highlight the emotional, and psycho-social impact of infertility, as well as the marital dynamics in shaping the women's quality of life. Therefore, this study's area of focus, method and context make the study a valuable contribution to both academic literature and to informing better psychosocial support for women undergoing fertility treatment.

5.9 Application of the Theoretical Framework

This study was guided by Watson's Theory of Human Caring which aims to promote balance and harmony between health and illness experience of a person. In this study, Watson's Theory of Human Caring guided the understanding of how infertility impacts women's quality of life. Infertility is not just a biomedical issue, but deeply a

human experience. Watson's theory provided a framework for understanding the woman, and not only her reproductive capacity.

The study findings support the theory's emphasis on holistic, compassionate care, showing that emotional support, empathy, and dignity in treatment play a crucial role in how women cope with infertility. Findings also revealed that women expressed the need for emotional, social and psychological support, in addition to treatment, which is in consistence with the theory's principle that caring is central to healing and human experience. Therefore, applying Watson's theory of human caring to this study was an applicable approach because this theory is people-oriented and accepts the peculiar dimension of human integrity without compromising its mind-body-spirit while cultivating sensitivity to oneself and others.

5.10 Chapter Summary

The chapter presented discussion of data from the previous chapter. The data was discussed according to the research questions and objectives that guided the study. The discussion incorporated the views of various authors from the literature review as well as viewpoints of the researcher.

CHAPTER 6. SUMMARY, CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

6.1 Introduction

The preceding chapter focused on findings that were obtained from the research that was undertaken and these were analyzed, interpreted and presented. A comprehensive and analytical understanding of the research findings were highlighted in the preceding chapter, thereby giving insights into the research problem that was under study and appropriate recommendations will be given. The conclusion is based on research findings. The main aim of the research was to investigate impact of infertility on women's quality of life using a case study of Cape Windhoek Fertility Clinic, Namibia.

6.2 Conclusions

6.2.1 Impact of infertility on women's quality of life

The attainment of quality of life is important for someone to live in an environment where they are mentally and physically stable. Infertility has an impact on the quality of life of the affected women. This negatively impacts how they perceive themselves as well as how they are perceived by society. There is a high level of social stigma associated with infertility for women in Sub-Saharan Africa. The challenge that women with infertility face ought to be addressed for them to have a better life. The study reviewed that the main source of challenges that women with infertility face in life is linked to how infertility is perceived in society. Therefore, if the perception of the society on infertility changes, it also helps the women who are affected to be more accepted. This can lead to a decrease in psychological and emotional stress which has an overall positive impact on their quality of life. This will make it possible for people who are infertile to live

without feeling vulnerable. There is also need for counselling services. Given the fact that the quality of life among women of reproductive age affects the long-term health of each family member, health policy makers, family counsellors, and psychologists are required to pay special attention to physical, mental, and environmental health dimensions of a woman's life which adversely affects her quality of life. This can be addressed by making counselling easily available in many ways, be it in the community ore through specialists. Furthermore, addressing or identifying the root cause of infertility is also important on helping the affected individuals.

6.2.2 Factors affecting quality of life in women affected by infertility

The study shows that there are many factors that affect the quality of life of women who have infertility. The factors include social factors whereby the women are no longer comfortable with being socially active due to labels they get due to infertility. The women also struggle psychologically as sometimes they struggle to cope with the burden of being infertile as well as the pressure they get from the society. The emotional well-being of women is also affected. The study indicated that most of the pressure comes from the way society perceives women who are infertile. This shows that society needs to be educated about how to deal and interact with women who are infertile. If they are accepted for who they are in the society, some of the factors that are negatively impacting their life can change. There is no reliable cure for infertility now, and therefore, infertility might be a continuous problem in the future. Therefore, its acceptance by society will help women who are affected to live with others without any challenges. This will enable them to improve their quality of life.

6.2.3 Relationship between the participants' demographic characteristics and their quality of life

The study showed that there was no significant difference between the participants' democratic characteristics and their quality of life. This is even though they all generally rated their quality of life as poor. The participants who had primary and secondary infertility had basically the same answers on the quality of life. This also included the participants from rural and urban areas as well as the participants with different levels of education. This showed that the quality of life of people is determined by their opinion not necessary from the objective of others or the society norms. These findings are very important on helping women with infertility to improve their quality of life. They should know that the quality of life is determined by their individual perceptions. Therefore, it is important for them to accept their situation and become positive about life. If they accept their situation, they have a better positive view.

6.3 RECOMMENDATIONS

6.3.1 Recommendations for women seeking fertility assessment and treatment

The following were the recommendations made from the findings:

- This study proposes that positive coping mechanism could help to minimise mental health issues and improve Quality of Life of infertile women.

- Seeking psychological counselling or support groups to cope with the emotional and social stress of infertility. Counselling can help infertile women to express their feelings, identify their strengths, and

develop coping skills. Support groups can provide a sense of belonging, empathy, and mutual understanding among infertile women.

- Improving the quality of the marital relationship and sexual intimacy with the partner. Therefore, it is important for infertile women to communicate openly with their partners, share their feelings and expectations, and seek mutual support and understanding. Sexual intimacy can also be enhanced by focusing on pleasure rather than procreation, exploring different ways of expressing love and affection, and avoiding timed intercourse based on ovulation cycles.

- Seeking educational opportunities and improving economic status. Infertility can affect the social and economic status of women, especially in low-resource settings where childbearing is highly valued. Therefore, infertile women can benefit from pursuing higher education and finding employment opportunities that can improve their self-esteem, financial security, and social recognition.

- Frequent female routine check-ups to detect infertility and get treated as early as possible.

- Ideally, psychological counselling should begin before patients start any medical interventions to help with infertility treatment readiness.

- Encourage open discussions about infertility to minimise the chances of stigmatization.

- Advocacy and community mobilization and education by healthcare professionals aimed at minimizing stigma among infertile women in Namibia

- Educate couples on how to provide emotional support to their partners during fertility assessment process and during treatment.

- Offer lifestyle modification programmes focused on adequate and proper nutrition, exercise, rest and sleep.

6.3.2 Recommendations for the Ministry of Health and Social Services

- Being informed about the causes and treatments of infertility and making informed decisions about their reproductive options. Infertility can be caused by various factors such as age, lifestyle, medical conditions, or genetic factors that affect either the woman or the man or both partners. Infertility treatments can include medication, surgery, Assisted Reproductive Technologies (ART), or alternative therapies that vary in their effectiveness, cost, and side effects. Infertile women should consult with their health care providers about the diagnosis and prognosis of their infertility condition and the available treatment options that suit their needs and preferences.

- There should be a public fertility clinic that is affordable and accessible to everyone, as well as the establishment of a low- cost in-vitro fertilization program, that trains the practitioners in the field of reproductive health. Health policy makers and the government should focus on the provision and advancement of fertility clinics.

- The researcher wants to emphasize the educational efforts to improve knowledge of the problems of infertility that could help in prevention and early referral to address fertility problems. Infertility affects women psychologically, and adequate psychological support through psycho-social counselling could help those affected by infertility.

- Incorporating fertility awareness in national comprehensive sexual and reproductive education programmes, promoting healthy lifestyles to reduce behavioural risks.

- Establishment and implementation of policies on prevention, diagnosis and early treatment of STI's, preventing complications of unsafe abortions, post-partum sepsis and addressing environmental toxins associated with infertility.

- Enabling laws and policies that regulates access to ART are essential to ensure universal access without discrimination, and to promote the human rights of all people involved to ensure implementation of policies is monitored and the quality of service is continually improved.

- There is a need to develop compassion-focussed care and advocate for holistic fertility care that include mental health and spiritual support.

6.3.3 Recommendations for the Nursing Research

This study achieved its purpose that is to investigate the impact of infertility on women's quality of life using a case study of Cape Windhoek Fertility Clinic, Namibia. This study found out that Quality of life of women affected by infertility in Namibia has been understudied. It has therefore opened the following avenues for further research by the other scholars:

- The study was confined to Cape Windhoek Fertility Clinic in Windhoek only. Therefore, future research could be directed towards conducting the similar study in the other fertility clinics in Namibia to assess whether the study would yield similar results regarding the impact of infertility on women's quality of life.

- Study recommends further research with a larger sample size to investigate the impact of infertility on women's quality of life at a larger context.

- A thorough study of the social consequences of infertility in Namibia is of utmost importance where a woman's social status, her dignity and self-esteem are taken into consideration.

- Despite the availability of data on hormonal imbalances as a possible cause for infertility amongst Namibian women, much needs to be explored about the impact the infertility might have on the quality of life of affected women.

6.4 IMPLICATION FOR PRACTICE

The researcher strongly believes this study can be taken up on the context of improving care and psychosocial support for women undergoing fertility treatment. Study findings highlighted that women experience emotional and psychosocial challenges, which can guide fertility clinics, counsellors and nursing staff to tailor a more holistic patient-centred interventions. In addition, data can inform training programmes for the healthcare providers to increase their awareness of the psychosocial impact of infertility on women. Furthermore, there is a potential for the research to form a foundation for further studies and to be adapted for different populations or settings.

6.5 LIMITATIONS OF THE STUDY

- Since infertility does not only affect individuals but relationships, excluding males limited the study's ability to present a complete picture of how infertility affects couple as a unit, marital satisfaction as well as mutual emotional support.

- In addition, the fact that the study did not include males diagnosed with infertility because literature has proved that females are more at risk of stigmatization, might contribute to the misconception that infertility is solely a female issue, despite the medical evidence showing male-factor infertility in some cases.

- Furthermore, the sensitivity of the topic at hand was a hindrance to a smooth data collection process as some participants were resistant to complete the questionnaires and were not at liberty to share information which may be of greater help in mitigating the problem at hand.

6.6 SUMMARY OF THE FINDINGS

The research has 65 participants, 40 of them had primary infertility and 25 had secondary infertility. The study found out that infertility is affecting the quality of life of the affected individuals. The women who were part of the study were well-educated and employed, and most of them were married. However, the research found out that the women were of the views that their quality of life was poor because they are infertile. Despite having certain essential elements in other areas of life, the women opined their quality of life was poor because they cannot have children. Infertility affects women in many spheres of life, such as emotional, psychological, and social. It results in psychological problems such as stress and low self-esteem depression. The study found out that women get to be affected in the way that they think and perceive themselves when they are infertile. This also limited support for them from family and friends. This affected their social lives as they tend to limit their involvement due to stigma, guilt, and anxiety associated with infertility. The study also discovered that women who are infertile get to be emotionally affected, which affects how they relate with their partners as well as how they feel about their sexual

life. Comparison between the quality of life of participants with primary and secondary infertility was done. There was a slight difference between the averages of the women with secondary infertility and primary infertility. However, those with secondary infertility had an average that indicated that they have a slightly better quality of life. The study also suggested measures that can be taken to enhance the quality of life of women who are infertile, which include the use of in-vitro fertilization as well as being accepted in the community with stigmatization.

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ANNEXURE 1: ETHICAL CLEARANCE CERTIFICATE FROM THE UNIVERSITY OF NAMIBIA

ETHICAL CLEARANCE CERTIFICATE

Ethical Clearance Reference Number: HREC-H 4/8/2023
SONPH Date: 18/08/2023

This Ethical Clearance Certificate is issued by the University of Namibia Research Ethics Committee (UREC) in accordance with the University of Namibia's Research Ethics Policy and Guidelines. Ethical approval is given in respect of undertakings contained in the Research Project outlined below. This Certificate is issued on the recommendations of the ethical evaluation done by the Faculty/Centre/Campus Research & Publications Committee sitting with the Postgraduate Studies Committee.

Title of Project: Impact of Infertility on Women's Quality of Life: A Case Study of Cape Windhoek Fertility Clinic, Namibia.

Nature/Level of Project: MASTER OF NURSING SCIENCES

Researcher: **APOLLONIA IMALWA**

Student Number: 9994939

Faculty: Health Sciences and Veterinary Medicine

Supervisors: DR. OLIVIA EMVULA

Take note of the following:

(a) Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the HREC-H. An application to make amendments may be necessary.

(b) Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the HREC-H.

(c) The Principal Researcher must report issues of ethical compliance to the HREC-H (through the Chairperson of the Faculty/Centre/Campus Research & Publications Committee) at the end of the Project or as may be requested by HREC-H.

(d) The HREC-H retains the right to:

(i) Withdraw or amend this Ethical Clearance if any unethical practices (as outlined in the Research Ethics Policy) have been detected or suspected,

(ii) Request for an ethical compliance report at any point during the research.

HREC-H wishes you the best in your research.

Prof CJ Wilders HRECH Chairperson

ANNEXURE 2: ETHICAL CLEARANCE FROM THE MINISTRY OF HEALTH AND SOCIAL SERVICES

REPUBLIC OF NAMIBIA

MINISTRY OF HEALTH AND SOCIAL SERVICES

Ministerial Building
OFFICE OF THE EXECUTIVE DIRECTOR Tel: No: 061 -203 2507
Harvey Street Fax No: 061-222 558
PrivateBag13198 Andreas.Shipanga@mhss.gov.na
Windhoek
Ref: 22/4/2/3
Enquiries: Mr. A. Shipanga Date: 30 August 2023

Ms. Apollonia Imalwa
PO Box 50081
Bachbrecht
Windhoek

Dear Ms Imalwa

Re: Impact of Infertility on Women's Quality of life: A Case Study of Cape Windhoek Fertility Clinic, Namibia.

Reference is made to your application to conduct the above-mentioned study. The proposal has been evaluated and found to have merit.

Kindly be informed that permission to conduct the study has been granted under the following conditions:

2. The data to be collected must only be used for academic purpose.

3. No other data should be collected other than the data stated in the proposal.

3.1 Stipulated ethical considerations in the protocol related to the protection of Human Subjects should be observed and adhered to, any violation thereof will lead to termination of the study at any stage.

3.2 A quarterly report to be submitted to the Ministry's Research Unit.

3.3 Preliminary findings to be submitted upon completion of the study.

3.4 Final report to be submitted upon completion of the study.

3.5 Separate permission should be sought from the Ministry for the publication of the findings.

4. All the cost implications that will result from this study will be the responsibility of the applicant and not of the MoHSS.

Yours sincerely,

BEN NANGOMBE
EXECUTIVE DIRECTOR

All official corresnondence must be addressed to the Executive Director.

ANNEXURE 3: PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT: Impact of infertility on women's quality of life

REFERENCE NUMBER: HREC-H 4/8/2023 SONPH

PRINCIPAL INVESTIGATOR: Apollonia Imalwa

ADDRESS: P. O. Box 50081, Bachbrecht, Windhoek

CONTACT DETAILS: +264813858925

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the study staff or doctor any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary,** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the Research Ethics Committee at The University of Namibia and will be conducted according to the ethical guidelines and principles of

the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and Namibian National Research Ethics Guidelines.

1. What is this research study all about?

a) *Where will the study be conducted; are there other sites; total number of participants to be recruited at your site and altogether.*

The study will be conducted at the Cape Windhoek Fertility Clinic only, as it is the only fertility clinic available in Windhoek. The total number of study population will be 65 altogether.

b) Explain in participant friendly language what your project aims to do and why you are doing it?

This project aims to assess the quality of life of infertile women and estimate how infertility affects the women in their aspects of life such as emotional, social and psychological aspects. Studying quality of life may give hindsight to the policy makers and other bodies of authority in the health sector to establish inclusive policies that are concerned and favourable with the problem at hand.

c) Explain all procedures.

Participants will be selected to the study, where every member of the population will have an equal chance of being selected for a study. An information sheet, containing the information about the study will be issued to the participants. An informed consent to participate in the study will be obtained from the participants in the form of writing. Questionnaires will be distributed and collected after completion.

d) Explain any randomization process that may occur. **There will be no randomization.**

e) *Explain the use of any medication, if applicable.* **Not applicable**

1. Why have you been invited to participate?

a) Explain this question clearly.

You are invited to participate in this study that will be assessing the quality of life of women who are unable to conceive. This study might also be an information piece to the Namibian society for them to understand and be sensitive about infertility in women as well as its impact on their quality of life.

2. What will your responsibilities be?

a) *Explain this question clearly.*

As part of invitation to this study, you are expected to read the information leaflet about this study and make sure you understand what is expected of you. You are required to complete an informed consent for the participation in this study. However, participation in this study is entirely voluntary. You will then be completing a questionnaire, which consists of 25 questions. Answer all questions. Kindly return the questionnaire after completion as instructed.

b) Explain the duration the participant is expected to participate in the study (i.e. 2 hours, 4 days, etc.) **The total duration of time the participant is expected to spend in this study is about 30 minutes.**

3. Will you benefit from taking part in this research?

a) Explain all benefits objectively. If there are no personal benefits, then indicate who is likely to benefit from this research e.g. future patients.

There are no personal benefits in participating in this study. The study may enhance self-esteem in the subjects of study, because of special attention that they have been given. The study may provide valuable information for the women and the general community.

4. Are there in risks involved in your taking part in this research?

a) Identify any risks objectively.

Participants may feel uncomfortable, may feel depressed or guilty or to some, the study may cause loss of self-confidence. If these occurs, participants may be allowed to withdraw from the study at any point, and an informative debriefing period may be offered.

5. If you do not agree to take part, what alternatives do you have?

No alternatives are available for people not willing to take part in the study.

b) Clearly indicate in broad terms what alternative treatment is available and where it can be accessed, if applicable.

6. Who will have access to your medical records? (Where applicable)

No medical records will be accessed or used.

a) Explain that the information collected will be treated as confidential and protected. If it is used in a publication or

thesis, the identity of the participant will remain anonymous. Clearly indicate who will have access to the information.

Information collected in this study will be treated with high level of privacy, and confidentiality will be always maintained. Information will only be accessed by the researcher. Anonymity will be ensured in a way that no identifying information of the participant will be written ion the questionnaire.

What will happen in the unlikely event of some form injury occurring as a direct result of your taking part in this research study?

7. **There is no potential risk for any injuries because of taking part in this study**.

a) *Clarify issues related to insurance cover if applicable. If any pharmaceutical agents are involved will compensation be according to ABPI guidelines? (Association of British Pharmaceutical Industry compensation guidelines for research related injury which is regarded as the international gold standard). If yes, please include the details here. If no, then explain what compensation will be available and under what conditions.* **There will be no compensation available as part of taking part in this study. The study will be self-funded by the student, for academic purpose.**

8. Will you be paid to take part in this study and are there any costs involved?

There will be no payments or costs involved in taking part in this study

Is there anything else that you should know or do? **No**

a) *You should inform your family practitioner or usual doctor that you are taking part in a research study. (Include if applicable)*

b) *You should also inform your medical insurance company that you are participating in a research study. (Include if applicable)*

c) *You can contact Dr ……N/A…… ….. at tel ……N/A…… if you have any further queries or encounter any problems.*

d) *You can contact the Centre for Research and Publications* **at +264 061 2063061; pclaassen@unam.na***if you have any concerns or complaints that have not been adequately addressed by the investigator.*

e) *You will receive a copy of this information and consent form for your own records.*

Declaration by participant

By signing below, I ……. agree to take part in a research study entitled: Impact of infertility on women's quality of life: A case study of Cape Windhoek Fertility Clinic *(insert title of study)*.

I declare that:

a) I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.

b) I have had a chance to ask questions, and all my questions have been adequately answered.

c) I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.

d) I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

e) I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*). Windhoek.....…..... on (*date*) ……...……. 2022

....

Signature of participant Signature of witness

Declaration by investigator

I *(name)* Apollonia Imalwa declare that:

- I explained the information in this document to …….
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter. (*If an interpreter is used then the interpreter must sign the declaration below.*

Signed at (*place*) .... Windhoek.....…..... on (*date*) ……...……. 2005.

……. .....

Signature of investigator Signature of witness

Declaration by interpreter

I *(name)*declare that I assisted the investigator (*name*) ……. to explain the information in this document to (*name of participant*) …….……. using the language medium of (Oshiwambo, Oshiherero, Afrikaans, etc

ANNEXURE 4: PARTICIPANT'S QUESTIONNAIRE

This questionnaire consists of two sections, Section 1 to 2

Before you begin, I would like you to answer a few general questions about yourself, by ticking the correct answer or by filling in the space provided. This questionnaire will take you 10 to 20 minutes to complete. Please complete all sections.

SECTION 1. SOCIO-DEMOGRAPHICAL INFORMATION

1.What is your age?

……

2.What is your place of residence?

Urban area	
Rural area	

3. What is your highest level of education?

Primary Education	
Secondary Education	
Diploma	
Degree	
Others (specify)	

4. What is your occupation?

Professional	
Administrative	
Farmer	
Unemployed	
Others (specify)	

5. What is your marital status?

Single	
Married	
Widow	
Cohabitating	

6. Type of infertility

Primary Infertility (Have never fallen pregnant before)	
Secondary Infertility (Have fallen pregnant before)	

7. Duration of infertility

1- 5 Years	
6- 10years	
11-15years	
More than 15years (specify)	

8. Causes of infertility

Medical (Sickness or Diseases	
Previous operations	
Injuries	
Unknown (Of unidentifiable cause)	

9. When were you diagnosed with infertility?

1 – 2years	
3 - 4years	
5 years or more (specify)	

SECTION 2: IMPACT OF INFERTILITY ON QUALITY OF LIFE

1. QUALITY OF LIFE ASSESSMENT

Definition: Quality of Life (QoL) is defined as the degree to which an individual is healthy, comfortable, and able to participate in or enjoy life events. (Jenkinson, 2020)

This assessment asks how you feel about your health, quality of life and other areas of your life. Please answer all questions by choosing the answer that appears most appropriate. Questions were arranged on a 1- 5 points scale, where1 represents "Not at all" (the least), and 5 represents "completely agree or extremely (the most).

	Very poor	Poor	Neither good nor Poor	Good	Very good
1.How do you rate your health?	1	2	3	4	5
2. How would you rate your quality of life? **(Your daily life and well-being)**	1	2	3	4	5

For each question, choose the response that is closest to your current thoughts and feelings.

	Not at all	A little	Moderately	Very much	Extremely
3. How often do you need medical treatment for functioning in your daily life?	1	2	3	4	5
4. How safe do you feel in your daily life?	1	2	3	4	5
5. To what extent do you feel your life to be meaningful?	1	2	3	4	5
6. Do you feel pain and discomfort because of your infertility?	1	2	3	4	5

b) IMPACT OF INFERTILITY ON SOCIAL LIFE

The following questions ask about how you experienced or were able to do certain things in your life. Please keep in mind your standards, hopes, pleasures and concerns.

	Not at all	A little	Moderately	Mostly	Completely
1. Do you feel uncomfortable attending a social event because of your fertility problems?	1	2	3	4	5
2. Are you able to accept your bodily appearance because of fertility problems?	1	2	3	4	5
3. How available to you is the information that you need in life relating to infertility?	1	2	3	4	5
4. Do you feel social pressure from your family to have children?	1	2	3	4	5
5. Does your partner abuse you because of your fertility problems?	1	2	3	4	5
6. Do you experience domestic violence in your relationship with your partner because of your infertility?	1	2	3	4	5
7. Have fertility problems cause your partner to be unfaithful to you or to have extramarital relationship?	1	2	3	4	5

c) IMPACT OF INFERTILITY ON PSYCHOLOGICAL HEALTH

The following questions refer to how often you have felt or experienced certain aspects of your life. Assess your feelings and circle the number on the scale that gives the best answer.

	Never	Very often	Quite often	Seldom	Always
Is your attention and concentration impaired by thoughts of infertility?	1	2	3	4	5
Do you feel sad and depressed about your fertility problems?	1	2	3	4	5
Do you feel unable to cope with your fertility problems?	1	2	3	4	5
Are you unable to sleep adequately because of infertility?	1	2	3	4	5
Do you feel your family can understand what you are going through due to your fertility problems?	1	2	3	4	5

Have fertility problems had a negative impact on your relationship with your partner?	1	2	3	4	5
How often do you have negative feelings such as blue mood, despair, anxiety?	1	2	3	4	5
Do you find it difficult to talk to your partner about your feelings related to infertility?	1	2	3	4	5

4. IMPACT OF INFERTILITY ON EMOTIONAL HEALTH

The following questions ask you to say how good or satisfied you have felt about certain aspects of your life. Assess your feelings and circle the number on the scale for each question that gives you the best answer.

	Very Dissatisfied	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied
1. How satisfied are you with your sex life?	1	2	3	4	5
2. How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
3. Are you satisfied with the support you get from family and friends regarding your fertility problems?	1	2	3	4	5
4. How satisfied are you with yourself?	1	2	3	4	5

5. How satisfied are you with your personal relationship?	1	2	3	4	5
6. How satisfied are you with your affection towards your partner even though you have fertility problems?	1	2	3	4	5
7. Are you satisfied with your sexual relationship even though you have fertility problems?	1	2	3	4	5
8. How satisfied are you with the commitment your partner has towards you?	1	2	3	4	5

THANK YOU FOR YOUR TIME

ANNEXURE 5: PERMISSION FOR THE QUESTIONNAIRE

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27 Apr 2022, 09:41 (12 days ago)

Dear Ms. Imalwa,

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Kind regards,

Dolores

WHO Permissions Team

ANNEXURE 6: LANGUAGE EDITTING LETTER

Jeffrou's Language Consultancy
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+264 81 2315307

21 January 2025

To Whom It May Concern,

Language Editing – Apollonia Imalwa

This letter serves as confirmation that a master's in nursing science thesis titled: *Impact of Infertility on Women's Quality of Life: A Case Study of Cape Windhoek Fertility Clinic, Namibia*, authored by Apollonia Imalwa, was submitted to me for language editing.

Professional editing of the thesis was done with track changes applied throughout the document. Please note that the research content and the author's original intentions were not altered by the editor during the editing process. The author retains the authority to accept or reject my suggestions.

Yours faithfully

Frieda Ndeutala Mukufa
MA in English and Applied Linguistics
Hons: Communication