

Fertility Management through the Billings Ovulation Method (BOM): A Study of Perceptions of its Use among Adults from Pietermaritzburg, South Africa.

By

SinelisoThabethe

982199980

Thesis submitted in partial fulfilment of the requirements for the award of Degree of Master of Social Science (Counselling Psychology), of the School of Applied Human Sciences, College of Humanities, University of KwaZulu-Natal, Pietermaritzburg, South Africa.

Supervisor: Professor Augustine Nwoye

February, 2022

DECLARATION

This thesis is submitted in partial fulfilment of the requirements for the Degree of Master of Social Sciences (Counselling Psychology), in the School of Applied Human Sciences, University of KwaZulu-Natal, Pietermaritzburg, South Africa.

I, **Sineliso Thabethe**, declare that:

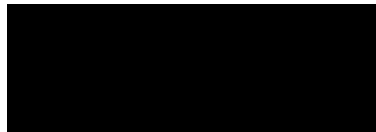
This thesis is my original work.

All references and citations have been acknowledged.

This thesis has never been submitted for any degree or at any other university.

Student's Name: **Sineliso Thabethe**

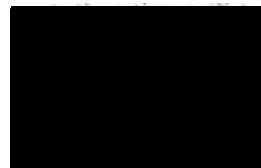
Student's Signature:



Date: 11 February 2022

I confirm that this research was carried out by the above-named student under my supervision.

Professor Augustine Nwoye: _____



Discipline of psychology

University of KwaZulu-Natal

Date: 14 February, 2022

ACKNOWLEDGEMENTS

I would like to give all the glory to God and ancestry for giving me life and strength to pursue the programme. My sincere and heartfelt gratitude also goes to the following people for their support and understanding:

- I would like to first convey my deepest gratitude to my supervisor, Professor Augustine Nwoye, for his guidance, knowledge and his support.
- Secondly, I would like to give thanks to my family. My wife, Zamokuhle, for loving and having faith in me even when I have lost faith in myself. My daughter, Phiwokuhle, my son Philasande, my daughter, Philiswa and my lastborn son, Phikelela for giving me the reason to undertake and complete the programme and for believing in me.
- Lastly, to all those who supported me especially my in-laws, the St. Mary's Catholic Church and Northdale hospital in Pietermaritzburg.

ABSTRACT

This study sought to determine how the users of the Billings Ovulation Method (BOM) perceive their experiences of using it as a natural method of fertility management; whether they are satisfied or dissatisfied with it as a method; their views of the benefits and challenges associated with it and their opinion of why many people do not seem to use it. A qualitative approach was applied in implementing the study. The study was done in two purposively selected settings in Pietermaritzburg, KwaZulu-Natal province; namely, Northdale hospital and St. Marry Catholic Church. The study used purposive sampling to recruit six (6) study participants. Oppong (2013) and Patton (1999) agree that purposive sampling is a technique that is utilized in in-depth studies whereby the researcher co-opts the participants with information-rich cases or experience of an issue of interest in the study. Participants were co-opted on the criterion of their experience of using or having used BOM within the past twelve months; and, in addition, were above the age of eighteen. The study adopted the in-depth interview as the research instrument. The in-depth interview included ten questions for individual interviews aimed at gathering relevant data for answering the main questions investigated in the study.

The study established that majority of the participants who use BOM are satisfied with it as a fertility management device; preferring it to other methods available due to its naturalness and lack of harmful side effects. The study also established that although some participants highlighted the problem of, at times, struggling to identify the cervix mucus that is central in the successful use of BOM. Yet they persist in using it on account of its safety and its effectiveness in helping them to monitor and interpret the changes in their bodies that guide them as to when they could become or not become pregnant. And, to the question of how to explain why some people do not seem to prefer to adopt it as a fertility management strategy, the participants speculated that it is possible that people who do not prefer to adopt BOM are those who are ignorant of it as a fertility management device; or those who even though they know about it, have not achieved sufficient mastery of how to use it.

The implications of these findings are drawn and the suggestion was made of the need to popularize the use of BOM as a fertility management strategy in South Africa. Some limitations of the study were also noted and suggestions for further studies along the lines of the present research were made.

Table of Contents

DECLARATION.....	2
ACKNOWLEDGEMENTS	3
ABSTRACT	4
CHAPTER ONE.....	8
INTRODUCTION.....	8
1.1. Background of the study.....	8
1.2. Statement of the problem.....	9
1.3. Purpose of the study	9
1.4. Objectives of the Study	10
1.5. Research questions	10
1.6. Significance of the study	10
1.9. Operational definition of terms	12
1.9.1. Billings Ovulation Method (BOM)	12
1.9.2. Natural Family Planning method (NFP).....	12
1.9.3. Cervical Mucus.....	12
1.9.4. Fertility awareness method (FAM)	12
1.10. Summary and Overview of the Study.....	12
CHAPTER TWO.....	14
LITERATURE REVIEW	14
2. 1. Introduction	14
2.2. History of the Billings Ovulation Method.....	14
2.3. Key tenets and terms of the Billings Ovulation Method	16
2.4. Theoretical Review of the Literature (foreign and local)	17
2.5. Review of Foreign Empirical Studies.....	22
2.6 Review of Local Empirical Studies.....	28
2.7Concluding Summary	29
2.8 Theoretical framework	30
2.8.1. The Health Belief Model.....	30
2.9 Skinner’s theory of operant conditioning.....	31
2.9.1. Neutral Operant	32
2.9.2. Reinforcement	32
2.9.3. Punishment	32
2.10 Summary	33
CHAPTER THREE.....	34
METHODOLOGY	34

3.1. Introduction	34
3.2 Research Paradigm, Approach and Design	34
3.3 Research Location and Population	35
3.4. Sampling.....	35
3.4.1. Purposive sampling	36
3.4.2 Snowball sampling	36
3.5. Research instruments.....	37
3.6. Validity, Reliability and Rigor	37
3.7. Data Collection.....	38
3.9. Ethical considerations.....	41
3.10. Dissemination of results	42
3.11. Conclusion.....	42
CHAPTER FOUR	43
FINDINGS OF THE STUDY	43
4.1. Introduction	43
4.2. Descriptive Analysis of Distribution of Respondents.....	43
Table 4.2.1 Summary of characteristics of participants in Northdale hospital and the Roman Catholic Parish	44
4.3. Findings of the Study Research Question by Research Question.....	45
4.3.1. Research Question One	45
4.3.2. Research Question Two:.....	48
4.3.3. Research Question Three.....	51
4.3.4. Research Question Four	52
4.4 Conclusion.....	53
CHAPTER FIVE.....	55
DISCUSSION AND CONCLUSION	55
5.1 Introduction	55
5.2.1 Research Question One	55
5.2.2. Research Question Two:.....	57
5.2.3. Research Question Three:.....	58
5.2.4 Research Question Four.....	61
5.3. Summary and Implications of the Study	62
5.4 Recommendations for Policy and Practice	63
5.5 Limitations of the study.....	64
5.6 Recommendations for Further Research	64
REFERENCES	65

APPENDICES	71
APPENDIX 1	71
Gatekeeper Approval.....	71
APPENDIX 1A	72
Gatekeeper Approval.....	72
APPENDIX 2	73
Gatekeeper Approval.....	73
APPENDIX 3	74
Ethics Approval.....	74
APPENDIX 4	75
Advert.....	75
APPENDIX 5	76
Interview Questions.....	76
APPENDIX 6	77
Information sheet.....	77
APPENDIX 7	79
CFC Permission.....	79
APPENDIX 8	80
Consent form for interviews.....	80
APPENDIX 9	81
Consent for audio	81

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Many countries in the world face challenges of population growth and control (Wang et al., 2012). This has resulted into a worldwide focus on fertility management in an attempt to address these problems. The global rate of pregnancies in 2012 was estimated at 213 million, and 40% were unplanned (Sedgh et al., 2014). In South Africa, the annual incidences of unplanned pregnancies among young women have been on the rise in the past years; at 68,000 in 2011; 81,000 in 2013; and 99,000 in 2013 (Statistics South Africa, 2014).

According to statistics, in 2010 there were 68736 legal abortions reported in South Africa (Johnston, 2012). This number does not include illegal abortions because the nature of illegal abortions makes it very difficult to collect data on its prevalence (Osman & Thompson, 2012). Even legal abortions are not guaranteed success, abortion can fail sometimes; hence, it is a risky and undesirable practice and may result to not having fertility or death (Nsubuga et al., 2016). Thus, in order to avoid unnecessary deaths, the world is promoting family planning as a mechanism to address the reproductive health of people and the crucial challenges of rapid population growth (Nakiboneka & Maniple, 2008).

In sub-Saharan Africa, rapid population growth among developing countries slows down social and economic growth. Challenges of population growth have led countries such as South Africa to invest in family planning (FP) methods (Wang et al., 2012). In South Africa, various contraceptive methods are used to address these challenges. Such contraceptive methods include hormonal contraceptive practices, traditional family planning practices, and Barrier methods of family planning, Chemical methods of family planning and Natural family planning methods (Department of Health, 2012). These methods are discussed in the following chapter when the study reviews the literature. Although women in South Africa use modern contraceptives, many women still don't have access to them. In this regard, Indongo (2007) noted that it is important to increase access to contraceptives and use to deal with problems of unwanted pregnancy among young women who are not married. Furthermore, many women who

rely on artificial contraceptives fail to use these methods correctly and consistently (Silverman et al., 1987) Artificial methods of family planning are unsafe and interfere with fertility. Secondly, the promotion of contraceptive use and abortions goes against the Roman Catholic Church (RCC) (Nakiboneka & Maniple, 2008). According to Nakiboneka and Maniple (2008), the Catholic Church is against the use of artificial family planning on the basis of essential grounds such as the objectives of sexual union and the definition of the advent of life.

Therefore, there is an extreme need for natural, safe and cost-effective family planning method, such as the Billings Ovulation Method (BOM) in managing fertility (Nakiboneka & Maniple, 2008). Despite negative aversion, women who use natural means of fertility management, such as BOM, have recently reported finding the method successful. Studies in many parts of the world, such as China and Australia have attested to the effectiveness and success of the BOM, in particular with intention to conceive and other studies from Nigeria have shown some challenges.

1.2. Statement of the problem

There is little or no local literature on the perceptions of effectiveness of natural family planning through the Billings Ovulation Method in South Africa. However, studies on the BOM have been conducted in other African, Asian and Western countries and have been reviewed in the next chapter. Considering that the extant literature does not explore the challenges and success of the Billings Ovulation Method from the users' experience and point of view; it was important to determine the reasons for its difficulties or effectiveness, as the case may be, from the present study's participants' experience. In this regard, the paramount questions that needed to be explored include: To what extent are women participants satisfied or dissatisfied with their use of BOM? What, in the view of the participants, are the benefits accruing from their use of BOM? What, in the view of the participants, are the challenges that they face in using the method?

1.3. Purpose of the study.

The purpose of the study was to establish the reasons why people feel satisfied or otherwise, with the use of BOM and the factors contributing to a low use and less preference of the BOM as a natural fertility management tool within Pietermaritzburg users in South Africa.

1.4. Objectives of the Study

The key objectives of the study among others were to:

- Examine the perceptions of experiences of married and unmarried adults who use BOM as a fertility management method.
- Examine the participants perceptions of the benefits of their use of BOM as a fertility management method.
- Explore the challenges which participants face in their use of BOM as a fertility management method.
- Explore from users some of the reasons why many people do not seem to adopt BOM as a fertility management method

1.5. Research questions

In terms of addressing the problem, the following main research question was asked: How satisfactory do selected couples in Pietermaritzburg, South Africa, perceive their use of the Billings Ovulation Method as a fertility management strategy?

In order to respond to the question above, various sub-questions were formulated and explored:

1. To what extent are study participants satisfied or dissatisfied with their use of the BOM as a fertility management method?
2. What are the major benefits accruing from their use of BOM as a fertility management method?
3. What challenges do participants face in their use of BOM as a fertility management method?
4. What do participants give as some of the reasons why many people do not make use of BOM as a fertility management method?

1.6. Significance of the study

The significance of the study derives from the present researcher's belief that its findings would benefit and inform the public and private health care system on the challenges and the benefits of using the Billings Ovulation Method as a fertility

management device. It is also expected that the study would help government to promote natural family planning methods; in particular, the BOM, through policy formulation and health promotion, should it be found by means of this study to be a satisfactory fertility management method with no harmful side effects.

1.7. Assumptions of the study

The researcher made the following assumptions when implementing the study:

- Majority of couples who use BOM are satisfied with the effects they derive in using it.
- Majority of couples who use BOM perceive it as an effective method of fertility management.
- Many couples experience some challenges in their use of the BOM as a natural family planning method.
- Participants, who use BOM as a fertility management device and are satisfied with doing so, will be able to speculate on reasons why many people do not seem to be interested in using it.

1.8. Scope and Delimitations of the study

The study was confined to the exploration of the extent of users' satisfaction with the Billings Ovulation Method as a fertility management device. The geography of the study was limited to a public hospital (Northdale hospital) and the St Mary's Catholic parish, both in Pietermaritzburg. Private health sectors around Pietermaritzburg such as St. Anne's hospital, Midlands hospital, Mediclinic etc.) and private fertility clinics were not included in this study as settings for recruitment of participants. In order to get more experience-near information on the users' perception of the value and challenges of the BOM, focus was not given to inclusion of couple participants from private health system. South African past still shapes resource, health and service inequalities. Socio-economic, racial, and differentials in rural-urban areas in health outcome, and between private and public health domains is still a challenge (Harris et al., 2011).

The study focused on people who practice natural family planning methods in the public health and the Roman Catholic Church (RCC). The RCC upholds natural family planning as the only legitimate, genuine and recommendable practice (Nakiboneka & Maniple, 2008). The study chose Northdale hospital because public health system promotes family planning. The church decrees its members to use natural family planning practices, in particular the Billings Ovulation Method. Based on the above, the study envisaged that participants would be found in the public hospital and the Catholic Church.

1.9. Operational definition of terms

1.9.1. Billings Ovulation Method (BOM)

Meng and Cho (1989) define the Billings Ovulation Method (BOM) as a natural or fertility awareness-based method (FABM) of family planning that is based on a woman's determination of the fertile period of the cycle through observation of changes in the quantity and quality of cervical mucus.

1.9.2. Natural Family Planning method (NFP)

According to the World Health Organization (1981) natural family planning is a practice for avoiding or planning pregnancies by observing natural signs and symptoms of infertile and fertile window of the menstrual period.

1.9.3. Cervical Mucus

Odeblad (1994) notes that cervical mucus is a product of the biosynthetic movement of the secretory cells of the cervix that has three significant aspects: water, mucus molecules and chemical compounds (enzymes, protein chains, sodium chloride etc.).

1.9.4. Fertility awareness method (FAM)

A family planning method that is based on identifying fertile window by observing physical signs of fertile or infertile window of menstrual cycle.

1.9.5 In this study the criterion for effectiveness of BOM is determined by the extent to which users are satisfied with what they achieve in using it.

1.10. Summary and Overview of the Study

The study examined the benefits and the challenges of using the BOM, from the testimonial narrative point of view. The background to, and rationale for the study and

the principal questions investigated have been highlighted in the present chapter. Chapter 2 of the study explored the local and international literature on the effectiveness and challenges of the Billings Ovulation Method as a natural method. This was followed by a review of relevant theoretical framework. Chapter 3 presents the methodology that was followed in the study, beginning with the design of the research, participants' selection, collection of data and data analysis. Chapter 4 outlines the findings of the study in relation to the research questions investigated. Chapter 5 presents the discussion of the findings and the summary and implications of these findings and suggestions for future research.

CHAPTER TWO

LITERATURE REVIEW

2. 1. Introduction

This chapter presents a review of the local and international literature on Natural Family Planning (NFP) methods, with a particular focus on the Billings Ovulation Method as a natural method of fertility management. The review encompasses references on History of BOM and the benefits of its practice as testified by its users from certain parts of Africa, Asia and Europe. Unfortunately, however, until quite recently (Ruhukwa, 2016) there is little or no literature and research on Billings Ovulation Method in South Africa. The chapter looks into different methods of family planning practices with a particular focus on factors that promote the effectiveness of the Billings Ovulation Method, as a natural practice of fertility management.

2.2. History of the Billings Ovulation Method

Billings and Westmore (1994), attest that the Billings Ovulation Method was developed by Doctors John and Evelyn Billings of Australia in 1960. Davies (2012) argues that the essential argument of the Billings Ovulation Method is that irrespective of the length or irregularity of a woman's menstrual cycle, a woman can be able to tell her fertile window through observation of her cervical mucus. Billings and Westmore (1994) mentioned that the BOM has been researched scientifically and has been endorsed by other researchers around the world and has been used in many countries. Smith and Smith (2014) also noted that the ovulation method can be applied in various situations of a woman's procreative life, despite the length or irregularity of her cycle. This knowledge allows women from all walks of life to be able to delay pregnancy or fall pregnant if they find it necessary.

Popovici (2010) mentioned that nature has given the BOM so that couples can plan their fertility without using artificial methods which might be harmful. The first study of the BOM was conducted in 1960s by its founders, J. Billings and E. Billings in Australia. Other regions around the world, such as Africa, Asia and America conducted their studies of the Billings Ovulation Method. In different studies it was established that the BOM had a 100% pregnancy rate if used accordingly, meaning that only one person out of 100 would fall pregnant (Billings & Billings, 1990). This implies that this

method is extremely effective as a method for pregnancy prevention. Furthermore, Davies (2012) argues that the method is also popular as it is recommended by the Churches, in particular, the Roman Catholic Church; because the BOM is natural and free from dangerous side effects when compared to artificial contraceptives. Since BOM is a natural family planning method, it does not involve artificial practices or use of invasive techniques that can adversely affect the reproductive organ.

Studies conducted by Karim & Karim, 2010; Van der Riet, 2012; and Phyfer, 2012 have depicted that there are difficulties, which particular women, face when utilizing artificial methods. Karim and Karim (2010) attest that some of these difficulties include the stigma that is related to using contraceptives and stocking inconsistency of condoms and 10 pills to uphold contraception. Likewise, studies conducted by Phyfer (2012) and Nondabula (2013) at the University of KwaZulu-Natal have shown that students experienced problems when using various methods of family planning. Nondabula (2013) mentioned that study participants described artificial methods of family planning as untrustworthy. Nondabula (2013) further noted that contraceptives that were said to be reliable often come with side effects such as gaining weight. Studies by these authors suggest that there is a profound need for a reliable and safe method of family planning, such as the BOM.

The BOM simply empowers women to learn to identify natural signs of fertility; and with this to know whether to conceive or impede pregnancy. There are different teaching practices (Ruhukwa, 2016) that have been applied in many regions of the world to improve the knowledge and how to use the Billings Ovulation Method. Billings (2002) argued that it takes only few days during the woman's menstrual cycle to become fertile. But most women might not be aware of natural indicators that show that they are fertile or not. According to Ot wombe et al (2014) the method is recommended for partners to jointly recognize their fertility window, and thus provides much needed knowledge for them to decide whether or not they wish to have a baby. Learning to understand fertile and infertile window is significant for couples in support of each other (Ruhukwa, 2016).

The World Health Organization Multi-Centre Trial of teaching women how to utilize the Billings Ovulation Method produced some proof that after the first teaching stage more than 90% of females were able to identify the fertile mucus accurately. According

to the World Health Organization (2009) the amount rose to more than 95% after three more teaching stages. Many programs have been established around the world to improve the use of the Billings Ovulation Method. This has been done through workshops, websites, conferences and teaching programs. In relation to the use of the teaching programme, the findings from Ruhukwa's (2016) study showed that teaching BOM with a lecture method produces a higher performance when compared to teaching it by assigning homework. That study showed that participants that engaged in self-directed learning perform better in comparison with those that were not exposed to any teaching method. It was therefore concluded that the results of that study concurred with the findings of existing literature which underscored that for people to adopt the use of BOM, they require active teaching on an ongoing basis until they are competent to continue independently. Furthermore, the results of Ruhukwa's (2016) study revealed that assigning homework can be used for those people who are not able to attend classes due to time factors.

One of the implications the above report is that people cannot make effective use of BOM without the benefit of informed guidance.

2.3. Key tenets and terms of the Billings Ovulation Method

The Billings Ovulation Method is a cost-effective, safe and natural fertility management method grounded in observations of cervical mucus. Despite the variation in the woman's menstrual cycle, through observation of the vaginal secretions a woman can be able to detect vaginal dryness or wetness based on what they feel and see (Billings et al. (1990). According to Kearns and Marie (2010) these observations are done during the day especially when a woman goes to a bathroom and they are done on the exterior of the Vagina between the fingers. Observation of the cervical mucus is done at the vulva level where the appearance of moisture and the initial sensation should be acknowledged as a fertility day. Observations also help women to be aware of their menstrual cycle and the rules to observe should they wish to conceive or avoid pregnancy. A woman's recognition of the vaginal wetness or dryness creates a basic and simple principle for understanding fertility management through the Billings Ovulation Method.

Once a woman has observed the dryness or wetness of her cervical mucus, the next step is to create a chart of it across the months. McSweeney (2011) argued that charting is

the important process because it is a fundamental step in the mastery of managing fertility through BOM. It involves capturing or recording of what the user of the BOM sees or feels. Charting is the process of observing the dryness or wetness and whether or not it is seen, felt or light. When the mucus is slippery or wet it is considered a marker for high fertility. It is said that a woman might get pregnant if she is not keeping the chart and the chart should be kept as long as the couple utilize the method. Abstinence is another pivotal part of using the BOM. Abstinence is a significant aspect of the BOM, in particular, when the couple is learning to use the method (Kearns & Marie (2010).

Learning about the ovulation (peak day) is another significant element of understanding the Billings Ovulation Method. According to Billings (2002) the crucial day is the last day of wetness sensed at the vulva. Learning about the key day takes almost three cycles. The variation of the quality and texture of the cervical mucus is a marker for ovulation. Billings (1990) posit that observation of the mucus can be a marker for the start or the end of the fertile phase. The mucus gets increasingly clear, stretchy, or slippery when oestrogen level increases. According to Billings and Westmore (1994), the peak is the final day in which mucus with rich or fertile features such as clear, slippery, or stretchy comes from the vulva. The day prior to the peak has the greatest amount of mucus and the largest elasticity. Abstinence is crucial during fertile windows and it is among the important guidelines that need to be observed by couples (Billings & Westmore, 1994). Abstinence during the alteration from dry to wet phases is crucial; plus avoiding intercourse during menstruation and having intercourse at night are important principles of the BOM. In conclusion, the important principle of the BOM is to identify ovulation through charting the cervical mucus. Furthermore, guidelines of the BOM need to be observed for the successful use of the method.

2.4. Theoretical Review of the Literature (foreign and local)

There are various natural family planning methods that are available locally and internationally. According to the Department of Health (2012), Natural family planning methods include abstinence, non-penetrative sex, fertility awareness methods, withdrawal and lactational amenorrhea. The commonly used fertility awareness practices in South Africa are the Billing's Ovulation Method, the sympto-thermal method and the rhythm method (Department of Health, 2012). Klaus (1982) argued that natural family planning methods provides a practical alternative to other methods of controlling fertility for women and couples, especially for those who have religious,

ethno-cultural or health beliefs which prevent the practice of other methods, who have experienced or fear physical side effects from the usage of other means, or who desire to evade the use of drugs and devices; and prefer the practice of self-responsibility.

Nakiboneka and Maniple (2008) argue that couples can practice natural family planning or artificial family planning but there is no method that is 100% successful. Studies in most countries have looked into the effectiveness of BOM as a fertility awareness method, some studies found it to be successful whilst others found it to be less effective in fertility management. Brosens and Brosens (2006) argued that there are many benefits of fertility awareness methods, including assessment of cervical mucus. According to Brosens and Brosens (2006) couples who wished to become pregnant have been reported to be practicing BOM as a fertility awareness method. According to the authors, this method allows women to self-determine their cervical mucus or vaginal humidity as markers for peak fertility day and fertile window. Betts (1984) also argued that the Billings Ovulation Method is effective and successful. International success of natural family planning method, in particular the BOM, can be derived from two unique causes; the institutional support given by the Roman Catholic Church and the anxiety over chemical and mechanical birth control devices with side effects (Betts, 1994).

Betts (1984) asserts that the effectiveness of the BOM is determined by the exploration of mucus symptoms as efficient predictor of fertility and infertility; and the challenge of abstinence. Thus, differentiating between the biological basis of the practice and the people's problems in using it is important (Betts, 1984). According to McSweeney (2011) studies have been done in regions such as China, South Korea and Nigeria to determine the BOM's effectiveness. A study that was conducted in China to establish the effectiveness of the Billings Ovulation Method to conceive, showed that the BOM was 99% successful (Shao-Zhan, 2003).

The trend of these findings revealed that the BOM can be effective if used correctly. Shao-Zhan (2003), notes that the BOM in China was widely used by women of different ethnic groups and various socio-economic backgrounds. Another study was conducted by Billings and Billings (1990) in most parts of the world such as Africa and Australia. The findings of the study also showed that the BOM has a 100% success rate if used correctly. This means that the method is extremely effective when used in the proper

way. A research conducted to determine contraceptive use in South-Western Nigeria showed that only 6.7% of women of child-bearing age used natural methods to avoid conception (Olugbonga-Bello et al., 2011). This was interpreted to mean that women who were practicing natural method of family planning were few.

According to Olugbonga-Bello et al.(2011) one of the reasons why the percentage was so low was because natural family planning methods were associated with high failure rates. Unfortunately, these authors did not highlight the factors related to these methods associated with high failure rates. Yet it is the interest of the present study to explore such a theme.

Also, a study conducted by the World Health Organization (1979) found the ovulation method and symptom-thermal method to be relatively ineffective in avoiding pregnancy.

In the South African context, despite its acclaimed successes elsewhere in managing fertility, BOM is regrettably not yet a popular method of fertility management here in South Africa and it would be interesting in the course of this study to find out why this is the case. However, according to the Department of Health (2012) natural contraceptive practices such as lactational amenorrhea, fertility awareness practices, non-penetrative sex, and withdrawal seem unreliable in preventing pregnancy and need some skills to effectively use them. As a result, the Department of Health does not promote natural methods of family planning although it accepts it as another method that can be practiced.

On the whole, however, studies on the effectiveness of BOM were unable to make profound investigation into the reasons for the success or failure of BOM from the testimonial narrative point of view of its users. Thus, this is the gap that the current study wished to address.

Fertility awareness methods are based on observation of the naturally occurring signs of fertile and infertile phases of the menstrual cycle. The Billing's Ovulation method and the sympto-thermal method are based on observation of the signs and symptoms of ovulation, while the rhythm method is based on keeping a trajectory of days in a woman's menstrual cycle (Department of Health, 2012). According to Hubacher et al.(1996) and White (1999) the Catholic Church encourages fertility awareness methods for those who are married.

According to Brosens and Brosens (2006) fertility awareness methods have benefits for couples that are trying to get pregnant, such as assessing the peak fertile times by examining the cervical mucus. This has less stress to couples than having regular sex to try and coincide with ovulation. Brosens and Brosens(2006) further argued that studies have also shown that having sex on days when the mucus is at its peak enhance spontaneous rate of pregnancy among couples with problems of fertility. According to Sinai, Lundgren, Arevalo and Jennings (2006) fertility awareness-based methods uses the Standard Days Method and the Two-Day Method. Standard Days Method can be utilized by women with normal menstrual cycles ranging from 26-32 days. This practice needs women to evade unsafe sex on days 8-9 of their cycle to avoid pregnancy (Sinai et al.2006).

In Two-Day Method, users look for the occurrence or absence of the secretion of cervical mucus by assessing its deposit on the underwear, toilet paper or monitoring physical sensations (Sinai et al.,2006). Bresons and Bresons (2006) argued that even if fertility awareness methods do not achieve pregnancy but they offer significant information on sexual, cervical and ovulatory functioning. Despite auspicious outcomes of fertility awareness methods as highlighted by its proponents; the effectiveness of these methods across different cultural groups in South Africa is not well documented (Department of Health, 2012). Indeed, there are little or no local studies on challenges and effectiveness of the Billings Ovulation Method.

Foreign studies, such as the one by McSweeney (2011) have shown that the Billings Ovulation Method can be used to conceive, prevent, postpone pregnancy and pre-select the sex of the child. The child's sex predetermination can be extremely useful in countries where male children are important or in countries with a 'boy syndrome'. According to McSweeney (2011), countries where there is a "boy-syndrome" and a boy child is needed at all costs, there is an imbalance of the sexes, with a majority of females; couples with only females conceive as many as possible until a male child is attained.

A study was conducted in Nigeria to determine the success rate of using the BOM to pre-determine the sex of the baby. The study was conducted by McSweeney (2011) on 99 couples in Nigeria who wished to select the sex of their children. The participants

used the Post-Peak of Billings method if they wanted male children and the Pre-Peak method if they wanted female children. According to the Peak method, by timing sexual intercourse in relation to the day a woman ovulates, a couple can pre-determine the sex of her child (McSweeney, 2011). Findings by McSweeney (2011) showed that if sex takes place prior to ovulation and conception takes place it is more likely that the child will be female. If the sex takes place during ovulation, it is more likely that the child will be male. The study showed that the Peak method has a 94.9% success rate (McSweeney, 2011). Findings show that the Billings Method can help couples to have a child with a sex of their choice and is highly effective.

The essential argument of the BOM is that regardless of the length or irregularity of a woman's menstrual cycle, it is possible to recognize a window of fertility by observing her cervical mucus break (Davies, 2012). With this breakthrough information, all women should be able to postpone pregnancy or if they wish to fall pregnant, know the optimal period within which to do so (Davies, 2012). A study conducted by Billings and Billings (1960) in Australia, Africa, Asia, America and Pacific Island communities found that if BOM is used correctly; the BOM has 100% pregnancy rate.

In China, the BOM is said to be widely used by women of different ethnic and socio-economic backgrounds and in a study to determine the success of the method it was found to be 99% successful (Shao-Zhan, 2003). In communities like China, BOM has been proven to be very effective and has been hailed as a breakthrough in fertility management (Fryer, 2001).

As effective as it might be, the BOM is not the preferred method of family planning in some countries. Studies to determine contraceptive use in Nigeria showed that only 6.7% of women in South-Western Nigeria used natural family planning practices (Olugbonga-Bello et al., 2011). This was explained to be so because natural family planning is associated with high failure rates. A study conducted by Weissman, Foliaki, Billings and Billings (1972) which took place in the island of Tonga on the effectiveness of the cervix mucus as a marker for fertility. The study showed that the Billings Ovulation Method was not effective. Urrutia et al. (2018) compared the BOM's effectiveness to symptom-thermal method. According to the findings, the Billings Ovulation method was much less

effective than symptom-thermal method. Among the reasons for Billings's lack of effectiveness was absolute inadequacy of the mucus symptoms (Betts, 1984).

Catholic Church Support for Billings Ovulation Method

Despite these negative outcomes, natural family planning practices, in particular the BOM enjoys a lot of support from the Roman Catholic Church.

According to Fehring and McGraw (2003) natural family planning is strongly influenced by religion and beliefs. Before the 1960s, according to Catholic teachings, married couples were only allowed to use the rhythm-method as a family planning method. In a study by Crowley in America and Canada to determine how the rhythm method affected married couples; the study found that 74% of married couples had negative feelings towards the rhythm method (Fehring & McGraw, 2003). Pope Paul VI released a letter (*Humane Vitae*) in 1968 appealing to scientists to establish a firm and secure basis for the natural regulation of birth, of which the BOM was one of the natural methods (Davies, 2012).

In many African regions there are strong religious beliefs systems and leaders that forbid the use of modern contraceptives even in places where contraceptive methods are available (White, 1999). For instance, the Roman Catholic Church Ethical and Religious Directive 52 notes that the Catholic health centers must discourage modern contraceptive use particularly in marriage where natural methods are recommended (Hubacher et al., 2006 & White, 1999). This argument by Hubacher et al. (2006) and White (1999) could suggest that religion has strong advocacy for natural methods of family planning. But it could also suggest that religious couples might not have control over their methods of managing fertility, and might have been put in that position by their religious faith.

2.5. Review of Foreign Empirical Studies

Under this theme a review of related empirical studies on the subject of this investigation is presented below. The first of these is the study by Urrutia et al. (2018) who reviewed the effectiveness of fertility awareness-based methods (FABM) for preventing pregnancy. The study summarized available information on perfectly utilizing effectiveness of FABM for avoiding pregnancy. The study reviewed 8,755 different citations including 53 studies that contained more than 50 women who were using the FABM to avoid pregnancy. The

study concluded that studies on each fertility awareness method are very few and of low quality. However, pregnancy probabilities differed widely across various fertility methods.

A study conducted to learn about how natural family planning methods have effects on marital relationships was undertaken by VandeVusse, et al.(2003) who suggested from their findings that natural methods of family planning need cooperation from partners since it requires the use of periodic abstinence. According to VandeVusse et al. (2003), contemporary methods of natural family planning such as the BOM need little time of abstinence and have positive outcome. Authors of this study argued that natural family planning practices such as the BOM improve marital relationships and enhance respect and communication.

Odeblag (1994) conducted a study on different types of secretions and the BOM; the author mentioned that there were variations in ovulation based on whether the woman was young or mature, approaching menopause and lactation. According to the findings, periodic abstinence required couples to elicit love for one another in other ways than having sex; and in that way assisting couples to grow their love vocabulary (VandeVusse et al., 2003). Additionally, for VandeVusse et al. (2003) natural family planning improved couple's knowledge of understanding of selves, cycles and bodies. The study showed increase in awareness by men of the woman's body and cycle and couples learn more about sexual intercourse (VandeVusse et al., 2003). Another finding of the study was that natural family planning enriched spirituality among participants. That is, participants reported the method to have allowed them to be connected to God and other participants felt that they were living constantly with their religious belief (VandeVusse et al., 2003). According to VandeVusse et al. (2003) couples reported to be healthy when using natural method such as BOM instead of using chemical or barrier practices.

According to the authors, the study also revealed some few negative themes, such as strained sexual relation and worsened relationships. According to VandeVusse et al. (2003) 13% of the participants reported to have experienced difficulties with abstinence; which increased stress in the relationship in various ways. Another strain in couple's sexual relationship was due to lack of spontaneity and frequency of sexual intercourse because sexual activity needed to be planned (VandeVusse et al., 2003).

The study also showed that partners tend to have unbalanced sexual drives. That is, when sexual intercourse was safe couples would have low hormone levels and libido (VandeVusse et al., 2003). In terms of worsened relationship, VandeVusse et al. (2003) argued that abstinence created anger and frustration, fighting and tension in about 6% of the respondents.

Sinai et al. (2006) conducted a study to find features that could envisage which fertility awareness-based method users are most likely to use the method incorrectly. The study utilized information from two fertility awareness-based family planning methods, the Standard Days Method and the Two-Day Method efficacy trials in four countries. According to the authors, the study also looked into situations that led to unsafe sex during peak days from couples who intended to avoid pregnancy (Sinai et al., 2006). The findings showed that women who are slightly literate indicated, more frequently, abstinence on peak days than literate women (Sinai et al., 2006). Another finding was that users who have never utilized any kind of family planning method before, indicated not having sexual intercourse during fertile days and hardly practice withdrawal or barrier method on fertile days; whereas, women who have used other family planning practices previously indicated to have used another method such as withdrawal or barrier method frequently (Sinai et al., 2006). According to the authors, the quality of housing and income earning occupation had significant statistical effect. That is, women with income generating occupations were more likely to engage in unsafe sexual intercourse on peak days; the study also showed that users with great housing quality were less likely to engage into unsafe sexual intercourse during fertile period (Sinai et al., 2006). Sinai et al. (2006) note that limited studies on conforming with directions for the use of fertility awareness-based methods indicated that marital support and partner communication are significant markers of correct use (Sinai et al., 2006).

Another study was carried out by Frank-Herrmann et al., (2007) to examine the effectiveness and suitability of symptom-thermal method (STM), as a fertility awareness method that use cervical mucus and temperature observation. The title of the study was: The effectiveness of a fertility awareness-based method to avoid pregnancy in relation to a couple's sexual

behavior during the fertile time: a prospective longitudinal study. In that study, it was discovered that STM was a successful and satisfactory practice of family planning; provided that suitable restrictions needed are followed (Frank-Herrmann et al., 2007). Frank-Herrmann et al. (2007) argued that the STM effectiveness is similar to the effectiveness of contemporary contraceptive practices such as oral contraceptives.

A study was conducted to comprehend psychological and social processes that are involved in natural family planning through comparison of continuers and discontinuers of natural family planning practice. Daly and Herold (1983) argued that education, menstrual cycle lengths, religiosity, family planning intention, attitudes towards natural family planning, support of significant others and attitudes toward abstinence are significant to understand natural family planning use. A study by Klaus (1979) showed that people using natural family planning method have high level of education. A study by Seidman (2011) found that normal menstrual cycle length had influence on fertility awareness successful use. Another study found that religiosity was significant in comprehending natural family planning, mainly due to its appeal to traditional Catholics value system. Another important variable to the effectiveness of natural family planning is family planning intention (Daly & Herold, 1983). A study conducted by Seidman (2011) discovered that couples who wished to avoid pregnancy had lower failing rate than those who wished to procrastinate pregnancy. In terms of attitudes towards NFP, a study by Seidman (2011) discovered that people with severe experience with other measures of birth control had higher rate of continuing with fertility awareness methods.

Daly and Herold (1983) argued that people who have utilized other methods of birth control discontinued due to lack of satisfaction with them. Regarding significant others, studies have shown that the influence of sexual partners, parents and peers' impact on other's contraceptive actions (Roax, 1995). For couples who chose NFP, abstinence attitudes are of paramount importance. Marshal and Rowe (1972) found that many couples had difficulties with avoiding pregnancy but this had no adverse result on the method satisfaction.

Another study was conducted by Klaus et al.r (1988) to examine cultural and social factors that were associated with acceptance of the ovulation method. According to the authors, the study made comparison of socio-cultural traits in India,

Bangladesh, Kenya, United States of America and South Korea. Key findings of the study were the religious background, the size of the acceptor's family and the previous level of contraceptive use (Klaus et al.,1988). The findings of the study were that acceptor of ovulation method were not essentially motivated by catholic religion. According to Klaus et al.(1998) 52% of acceptors practiced Catholic religion and Hindus were 43%.; and in Kenya ovulation method was practiced by 12% Protestants in the study. Furthermore, 80% of acceptors in different countries indicated their thoughts of desired family size, regardless of having to use any family planning method in the past. The study also found that the level of education does not seem to be associated with partners' willingness to talk about sex (Klaus et al.,1998).

Study by Stanford et al.(1998) in Missouri investigated the interest of women in practicing the BOM either to conceive or to abstain. The findings of the study were that 43% of women participants were willing to learn more information about BOM and 24% indicated that they would prefer to utilize NFP in order to abstain. Whereas, 32% indicated that they would like to use the method in order to conceive (Stanford et al.,1998). The study also discovered that interest in natural family planning, the BOM, was associated with certain factors. These factors were young women who had no prior live births; women who wished to get pregnant in the future and women who experienced some difficulties in getting pregnant (Stanford et al.,1998).

Authors of this study argued that no association existed between prior uses of any method of family planning and interest in future use of natural family planning. But women who previously applied any natural family planning method either to conceive or avoid pregnancy were more inclined in using modern method of family planning such BOM (Stanford et al.,1998).

According to the Billings Ovulation Method, by timing sexual intercourse relative to the fertile window, women are able to pre-select the sex of their babies (McSweeney, 2011).

McSweeney (2011) conducted a study on 99 couples in Nigeria who needed to pre determine their children sex. The couples used Post-Peak of the Billings Method if they needed male children and the Pre-Peak Method if they needed female children. Post-

Peak method to preselect boys is done through timing coitus relative to ovulation (McSweeney, 2011). If sex happens before ovulation and the woman gets pregnant there is a high probability that the child will be a girl. The study showed that 94.9% of the participants had children predicted by the Peak method that they applied (McSweeney, 2011). Couples with only female children tend to be having many children than would normally have because they are trying to achieve a boy child (McSweeney, 2011). The BOM Peak method could be a remedy for countries with 'boy-child syndrome' where boy children are needed in any way possible.

A study was conducted by Qian et al. (2000) to determine the effectiveness of the Billings Ovulation method, acceptability and a comparison of the Billings Ovulation method to intrauterine device (IUD) in evading pregnancy. According to Qian et al. (2000) the Billings method was well received by couples of various backgrounds in China. The authors reported that among the reasons for the BOM's acceptability was associated with its low cost, high efficacy and safety in comparison to other methods of contraception. Further, the study showed that the BOM was more effective than the IUD. The findings showed that the BOM group had fewer discontinuations associated to medical reasons compared to IUD and the overall use related discontinuations resulted into 65 cases; however, there was nothing significant observed in the BOM'S group (Qian et al., 2000). Lastly, the study also showed that the BOM was effective among infertile women in achieving pregnancy. Out of 3,268 partners practicing the Billings method, 1,032 had live babies after 2-5 cycles (Qian et al., 2000). These babies were kindly referred to as the Billings babies and prenatal doctors were affectionately called Baby-Provider by common people (Qian et al., 2000).

A study was conducted by Fehring and McGraw (2003) to determine how Catholic married couples feel about the Billings Ovulation Method. The authors showed that 80% of partners felt that practicing the method was beneficial to their marriages as it enhanced their spiritual wellbeing, satisfaction with life and the relationship that they had with God (Fehring & McGraw, 2003). This was interpreted to mean a very positive result compared with 74% of partners who felt that the rhythm method was damaging for their marriages (Fehring & McGraw, 2003). Although, natural methods of family planning were a directive from the Catholic Pope, Paul VI, but women abiding by this rule are really in a minority (Popovici, 2010). A study conducted in America

found that Catholic women were as just as similar to non-Catholic women to use non-natural methods of family planning such as the pill (Popovici, 2010).

2.6 Review of Local Empirical Studies

There is no local literature that covers the effectiveness of natural family planning; in particular the Billings Ovulation Methods in South Africa. The efficiency of natural contraceptive methods across various cultural groups in South Africa is not well documented (Department of Health, 2012). Natural family planning methods might not be fully supported or explored in South Africa because of the high prevalence rate of Human Immune Virus (HIV), in particular in KwaZulu-Natal Province where HIV rate is extremely high. Government policies support natural family planning methods such as the BOM but do not promote natural practices of family planning. According to the Department of Health (2012) abstinence and condom use is the most effective way of preventing pregnancy and STIs. Methods of family planning that are promoted in South African public health system include the patch, vaginal ring, contraceptive pill, male condoms, female condoms, emergency contraceptives, sub-dermal implants and injectable contraceptives (Depo-Provera TM) (Department of Health, 2012).

In South Africa women who are HIV positive and are on highly active retroviral therapy (HAART) have challenges of making decisions around having children. Since most women might be HIV positive and on HAART and still want to have children, they are not encouraged by health care workers to conceive or use any method of family planning rather than abstinence and condom, to run away from re-infection.

A study was conducted in Eastern Cape and Gauteng Province to explore women's concerns about living with HIV, being on highly active retroviral therapy and pregnancy (Nduna & Farlane, 2009). According to the authors of this study, women who are HIV positive need information on the impact of the virus on pregnancy results and vice versa. According to Nduna and Farlane (2009) young women, women whose child has died, women whose are not using contraceptives consistently or who have not been ill have optimistic reproductive ambitions. Nduna and Farlane (2009) argued that health care worker's attitudes towards pregnancy have impact on women's fertility ambitions. According to Cooper et al. (2005) health care workers have some reservations about how getting pregnant and child caring will have an impact on the health of HIV positive women.

A study was conducted by Maharaj and Rogan (2011) to qualitatively explore the attitudes of KwaZulu-Natal male towards family planning in the era of HIV. The study showed that there was a severe approval of family planning as a means of regulating fertility. According to the author, condom knowledge was good; however, it was not a preferred method of family planning. According to Maharaj and Rogan (2011) condoms were compared with promiscuity and illicit sex and are less likely to be used in a steady relationship. The author argued that adverse attitudes towards condom use impede the development of using a condom to protect against HIV infections. Therefore, in trying to prevent and manage the transmission of HIV and AIDS, the South African public health system has challenges of promoting the Billings Ovulation Method which does not even require condom usage.

As highlighted earlier in this review, the latest study from the University of KwaZulu-Natal is the one conducted by Ruhuwa (2016). The study was designed to determine if teaching BOM as a lecture method produces a higher performance as compared to assigning homework. The findings showed that use of lecture method to teach people about BOM and how to use it effectively produced a higher performance compared to teaching BOM by assignment of homework. The study also discovered that participants that engaged in self-directed learning perform better in comparison with those that were not exposed to any teaching method. It was therefore concluded that the results of that study concurred with the findings of existing literature which underscored that for people to adopt the use of BOM, they require active teaching on an ongoing basis until they are competent to continue independently. Furthermore, the results of Ruhukwa's (2016) study revealed that assigning homework can be used to good effect for those people who are not able to attend classes due to time factors.

2.7 Concluding Summary

The above review suggests that there are many types of family planning methods ranging from artificial to natural methods of family planning. These methods have different benefits and challenges for its users. The review also indicated that the Billings Ovulation Method is a preferred method in certain regions of the world. According to the review, there are more benefits of using BOM and the BOM is hailed as an effective natural family planning method, mainly in Asia. However, it is not recommended in South Africa as it is possible to abuse and due to the prevalence of HIV in the country. Similarly, the review suggests that there is little information on the Billings Ovulation

in South Africa which may explain why it is less popular when compared to the use of other contraceptives. These results might indicate the direction in which some of the questions of the research might be answered. However, we cannot tell with certainty as to which aspect of the above literature review would be collaborated by the testimony of user- participants in Pietermaritzburg.

2.8 Theoretical framework

The theoretical framework of the study is essentially the Health Belief Model highlighted below:

2.8.1. The Health Belief Model

The Health Belief Model (HBM) was the chosen theoretical framework for the present study. The HBM is used to account for the health behaviors of people (Turner et al.,2004). In the context of the present study, the HBM focuses on that factors that promote people's understanding and acceptance of the Billing Ovulation Methods. The model addresses the correlation between an individual's belief and behavior in this regard. It is used to address problem behaviors that raise health concerns. In the context of the present study, the Health Belief Model teaches that people's responses to BOM information and the guidelines for practicing BOM given to them depends on the belief they have about BOM and its benefits to their lives and needs. In this regard, four perceptions serve as the main constructs of the HBM: perceived seriousness, perceived susceptibility, perceived benefits and perceived barriers. These perceptions, either individually or combined can be used to explain health behavior (Health Belief Model, 2010) and its relationship to people's perceptions of effectiveness of the Billings Ovulation Method. Various features of the HBM of importance to the current study are reviewed below:

2.8.1.1 Perceived seriousness

Under the theme of perceived seriousness, the Health Belief Model indicate that the threat of not being able to pre-select the sex of the child they want is real and is of serious concern; including the need to avoid using artificial contraceptives that have grave side effects.

2.8.1.2 Perceived susceptibility

According to this perception, the threat is severe enough to warrant action. For couples who keep on trying to have a boy child and keeps on having a female might run a risk of promiscuity and family disruptions which may result to HIV infection (McSweeney, 2011). And the threats from non-natural methods of fertility need action from the couples.

2.8.1.3 Perceived benefits

Regarding this theme, women would not come across any negative side effects in following BOM option suggested. They would be able to benefit from the natural method which does not need primary health care access.

2.8.1.4 Perceived barriers

This refers to the individual's evaluation of the obstacles in the way of him or her adopting a new behavior (Health Belief Model, 2010), such as the use of BOM. In this regard the women would fear less cooperation from the partner which would result into unintended pregnancy. At the same time, following the BOM strategy would help couples to achieve their intended aim of planning their pregnancies successfully (Bishop et al., 2004).

This theory, in the context of natural family planning, suggests that mere giving of natural family planning information is not enough. Effort must be made to find out their beliefs about the seriousness of threat of not planning their pregnancy, their reservations about the capacity of the BOM to enable them to achieve their planned pregnancy objective and the procedure for the use of BOM suggested and their beliefs or doubts about their efficacy to use them are taken into account.

2.9 Skinner's theory of operant conditioning

Another theory that was relevant for this study is the theory of operant conditioning by B. F. Skinner. The theory proposes that reinforced behavior tend to be repeated or strengthened, whereas the behavior that is not followed with a good result tends to weaken and eventually disappear (Skinner, 1953). The theory emphasizes the operant conditioning perspective which states that to understand human behavior, the cause of action (stimuli) need to be considered as well as the consequence (response) that follows that action. People's behavior is largely influenced by their environment. The behavior of people who use the BOM either to conceive, avoid pregnancy, delay

pregnancy or pre-select sex of their children can be explained using this theory. If women who are practicing natural family planning are observing signs of cervical mucus regularly and adhering to BOM guidelines, they would get favorable results and their urge to practice BOM will continue. On the other hand, if their partners are not on board with practicing the BOM, women might feel discouraged from practicing the method.

Features of operant conditioning are discussed below relative to the behavior of women/couple who practice the BOM.

2.9.1. Neutral Operant

The feature of Skinner's theory is a response from the situation which neither increases nor decreases the chances of the behavior being recurrent. Women who use the Billings Method and are not observing the method's guidelines, including having sexual intercourse during the Peak period should not hope to get a good result if they wish to avoid pregnancy.

2.9.2. Reinforcement

Reinforcement is an environment response which enhances the chances of behavior to be recurrent or extinguished. Many women who have practiced artificial family planning methods have complained about extreme side effects which also lead to infertility. Women who had used natural methods of family method argued that the method is safe and free and they would continue using it. Thus, the intrinsic nature of BOM and its safe use and also as suggested by the Catholic Church serve as reinforcement for couples who need it, to continue with its use.

2.9.3. Punishment

This aspect of Skinner's theory is an environmental response that reduces the probability of the behavior being recurrent or it weakens the behavior. With regard to this study, strained sexual interactions, such as difficulties with abstinence; especially when a couple wanted to avoid pregnancy, will lead to the couple opting out of BOM.

Given the above, the Health Belief Model and the theory of operant conditioning together constitute the theoretical framework for the present study.

2.10 Summary

This chapter has reviewed the existing literature (Local and Foreign, and theoretical and empirical) on people's perceptions of the effectiveness of the natural family planning methods or fertility awareness methods such as the Billings Ovulation Method. The trend of the review shows that BOM's effectiveness is highly acknowledged in many parts of the world, particularly in China and among Catholic couples who use it. The review suggests that as far as BOM is concerned, religious beliefs have a major influence on people who ascribe to its practice. The Health Belief Model and Operant Conditioning theoretical frameworks have been shown to be relevant for understanding people's response to the practice of Billings Ovulation Method, and they together constitute the theoretical framework for the present study.

CHAPTER THREE

METHODOLOGY

3.1. Introduction

This chapter outlines and describes the research paradigm, study design, methodology, study location, population and sampling, instrumentation, data collection, and the technique for data analysis.

3.2 Research Paradigm, Approach and Design

Narrative/Phenomenological research paradigm was adopted as the research approach for the current study.

The phenomenological research paradigm is relevant when the aim of a study like the present one is to explore people's experience of a phenomenon like BOM, and their perceptions of that phenomenon. Corroborating this observation, Lester (1999) noted that phenomenology is based on individual experience, subjectivity, and personal knowledge. In implementing such a research paradigm, the researcher gathers 'deep' evidence and people's perceptions through qualitative methods of data collection like interviews, participant observation and discussions representing the perceptions of the phenomenon from the perspective of the research participants (Lester, 1999).

This research approach is pursued further in two sections in this study: the research design and the research methods sections. According to Creswell (2012) research design determines decisions about data collection methods, sampling procedures, instrumentation, and data analysis procedure. This study's choice of data-collection was determined by the proposed research questions. Creswell et al. (2006) assert that the research method depended on the kind of data required to answer to the study questions created to guide the study.

Qualitative research design was used in implementing the objectives of the study. Previous studies have focused mainly on quantitative research methods (VandeVusse et al., 2003 & Ruhukwa, 2016). Quantitative research studies are defined by inflexible and structured instruments of data collection and how data is reduced to numbers (Romana, 2011). Thus, quantitative studies on perceived effectiveness of the Billings Ovulation Method would lack narratives of comprehending the effectiveness of the

BOM as perceived by research participants. Qualitative research method, on the other hand, looks into information generated through verbal means and behavior in natural context (Lincoln & Guba, 1994). Qualitative research is, often, more powerful than information compiled through quantitative methods (Romana, 2011). Data collection tool that are used in qualitative research such as interview schedule permits for question modifications during collection of data until saturation point is reached (Lincoln & Guba, 1994).

Qualitative research method explores people's perceptions, views, and experiences in their use of a particular method like the BOM in the current study. It is also essentially a phenomenological study because in this study, the views and beliefs of the select participants on the matter under study was sought for. This design is considered appropriate for the study since the present study is interested in identifying participants' perceptions of the effectiveness of BOM they use.

3.3 Research Location and Population

The study was conducted in two locations here in Pietermaritzburg; first, at Northdale District hospital, a public hospital located in the northern suburbs of Pietermaritzburg, KwaZulu-Natal, South Africa. Northdale community was predominantly of Indian population due to South Africa's historical past of segregation. The hospital was largely used by Indian communities. The second location for the study was the Roman Catholic parish (St. Mary's) located within the city in Pietermaritzburg, KwaZulu-Natal, South Africa. The parish was predominantly used by Africans and few Whites during the apartheid period. The study assumed that these locations were different and represented the cultural setting that is similar to other urban hospitals and parish that are not involved in the study. The study used open ended interview questions in studying the participants from these locations. The sample for the study consisted of five women and one man who practiced natural family planning, the BOM. The research was conducted in August 2019.

3.4. Sampling

According to Patton (1990), sampling is a manner in which a desirable representative part of the population is selected with the aim of determining the characteristics of a broader population. Non-probability sampling method was used to recruit participants for the study and they included women who were practicing natural family planning,

the BOM. To get at these women purposive and snowball sampling were used. A total of six respondents participated in the study. Sampling techniques that were used in the study are briefly clarified below.

3.4.1. Purposive sampling

Oppong (2013) and Patton (1999) agree that purposive sampling is a technique that is utilized in in-depth studies whereby the researcher co-opts the participants with relevant knowledge or experience of an issue of interest in the study. It is a non- probability sampling method that relies on participants that are considered as information rich-cases for getting to the data that is relevant for the present study (Durrheim & Painter, 2006). According to Creswell (2012, 2009), purposive sampling is used with designs that aim at gathering qualitative information and are associated with studies that use small population and in-depth interviews to gather data. Oliver (2006) also argued that purposive sampling helps with studies that need small groups and people with specific information on a given problem targeted in the study. The objective of this method was to examine people's experiences and perceptions on a certain issue, such as with the current study. In the context of the present study, the main reason for using purposive sampling was to look for a specific group of people who were using or have used the Billings Ovulation Method as their natural family planning method. Thus, the study sample was selected on the basis of the specific knowledge to be found only in them, the actual users of BOM.

3.4.2 Snowball sampling

Snowball sampling is also a non-random sampling technique used in this study, whereby the initial persons interviewed were asked to suggest additional people to be interviewed. Babbie and Mouton (2005) argue that snowball sampling is a method whereby respondents are asked by the researcher to refer other possible participants to the study. Snowball sampling for the present study was cost-effective, as it required less time and effort needed during data collection (Patton, 1990). According to Babbie (2005) snowball sampling is appropriate and recommended when a target population like those covered in the present study is hard to get. Snowball sampling for the current study began with a few numbers of people who met the criteria. Each member identified through purposive sampling was asked to recommend other people with same needs (like pregnancy promotion or prevention); thereafter, the researcher contacted them to be included in the research.

3.5. Research instruments

The study used one instrument to collect data; and this instrument was the in-depth interview. The instrument contained ten questions for individual interviews. According to Terre Blanche et al. (2006), an interview is a dialogue between two people where the interviewer asks the interviewee questions to explore an issue of interest to the study. The interview questions were created from the knowledge emanated from the review of literature. The interview questions aimed at ensuring that the questions were appropriate in order to serve the objectives of the study. Interviews were utilized to investigate individual views and experiences on using natural family planning, the Billings Ovulation Method. Interviews allowed participants to openly discuss confidential information about their sexual life and experiences in using the Billings' Ovulation Method.

The in-depth personal information would not have been raised in a group setting. In-depth interview questions (Appendix 5) were utilized to lead the data collection process. These questions gave participants room for flexibility in sharing their ideas and experiences with the researcher. The questions tapped on knowledge of the BOM, factors contributing to using the method, challenges of using this method and ways to have BOM to become a satisfactory and preferred method among its users. Rephrasing of the questions and probing of participants' responses were necessary not only for an insightful discussion, but also to gain an understanding of any concept raised in the interview session (Kelly, 2006).

3.6. Validity, Reliability and Rigor

The study ensured that the instruments used enhanced validity. Hence, the study measured what it's supposed to measure. That is, participant's satisfaction and challenge about the Billings Ovulation Method were explored. In order to attain instrument validity, the interview questions were created to talk to significant questions of the study. Through probing and in-depth interviewing of participants, the interviewer ensured that the participants used the BOM within 12 months and were above 18 years. Reliability was ensured through a technique of member checking. Member checking included the process of going back to interview participants using a draft report which had their opinions on research questions. Participants were required to cross-check any possible misrepresentations of their points raised during the interview. Babbie and Mouton (2005) suggests that conducting qualitative research in a way promotes credibility,

dependability and trustworthiness as an appropriate way of

managing the requirements of scientific research. To enhance the trustworthiness of data, credibility, transferability, conformability and dependability were observed.

Credibility is a criterion of a qualitative study which involves establishing that the findings from the study will be trustworthy from the perspective of the participants (Shenton, 2004). To guarantee credibility, research participants were acquainted with information about the Billings Ovulation Method. The study utilized purposive sampling in order to get cases or participants that have rich information (Patton, 1990) on the study questions. Apart from tape-recording the interviews, participants' opinions were written down when responding to the interview questions. Dependability refers to the degree to which the research findings are consistent and could be repeated (Babbie & Mouton, 2005; Shenton, 2004). The study accomplished dependability by guaranteeing that the data was reliable over time including the conditions in which it was gathered. According to Polit and Beck (2008) transferability refers to the degree in which the outcome of the study can be applicable into other contexts. This phenomenon was achieved through the provision of a detailed description of the study and its context. Furthermore, the study made a detailed description of the inclusion and exclusion criteria for the population sample allowing other people to visualize the participants and the settings where the results and the methods might be applicable.

The study also ensured that conformability was enhanced. Babbie and Mouton (2005) argued that conformability refers to the degree to which results are the outcome of the aims and objectives of the research and not some biases from the researcher. This phenomenon was achieved by transcribing and analyses of interviews audio recordings generated from the reported findings. Continuous comparative analysis as a process of inspecting data accuracy (Silverman, 2009) was observed. The researcher assessed precision of data transcripts through audio recordings and making comparisons to the transcripts.

3.7. Data Collection

Data was collected by using interviews as the main research instrument to gather information. Interviews were conducted by the researcher to the sample of six participants drawn from two different settings who had experience of BOM; i.e. the Northdale hospital and the Catholic Church as earlier mentioned. Interviews were utilized to examine individual perceptions and experiences on using the BOM. Using

interviews allowed participants to easily discuss intimate information about their fertility management practices. Such intimate information would not have been discussed in a group setting. In-depth interview questions (Appendix 5) were used to control and guide the process of collecting data. In-depth interview questions provided participants space for elasticity in providing their narratives on their experiences and perceptions of using the BOM, with the researcher. Interview questions tapped on participants' perceptions of benefits of using the BOM, any possible challenges faced by its users, the satisfaction levels of using the method and the reasons for the BOM being or not being considered a preferred method of fertility management, where this is the case.

Probing and rephrasing of questions was fundamental to acquire insightful discussion and obtain an understanding of constructs that were discussed during interviews (Kelly, 2006). The study used six in-depth interviews with five women and one man. The interview was conducted in English at the convenient times for BOM users. Some participants responded from the advert (Appendix 4) requesting their participation. Each in-depth interview session lasted between 8 to 20 minutes. The duration of each interview rested on each participant's experience of using the BOM and the participants' willingness to answer intimate questions. The researcher anticipated that each interview would take one hour but there was no interview session that lasted that long. Some participants were shy to express their views on certain questions. This might be due to cultural constraints that does not allow women to talk about intimate sexual experiences or might have been due to power dynamics, since the researcher was a male and most participants were female. Participants' fears to profoundly talk about sexual experiences were a major setback encountered by the researcher. Another impediment was that some participants who agreed to participate in the study did not honor their appointments, in particular, male participants.

The Catholic interviews were conducted in the St. Mary's Catholic Church with all the participants. These participants were members of the church not the church officials. However, these members were recruited through the church. Participants were not identified from a database nor participants were part of another research project. The researcher was assisted by a church elder who is also a leader in youth activities to identify participants. The church elder made an announcement in the church for interested participant specifying that potential participants should be above 18 years

and have or still using the BOM within 12 months period. Both men and women were encouraged to participate in the study. Participants who have not used the method within the set period were not allowed to partake in the study. Also participants who were below the age of 18 years were also excluded in the study. The in-depth interviews were conducted on various days to accommodate all the participants. The church allocated a room to the researcher and the elder did not participate in the research except that she organized participants in the church. The researcher met with all participants in the church and accompanied them to a private interview room. Likewise, a participant in Northdale hospital was interviewed in the

hospital. The researcher was helped by the sister in charge of the antenatal clinic. The sister in charge made announcements to clinic visitors every morning during health talks. The potential participant left her contact details with the sister and the researcher contacted her on another day. The arrangement was made for the interview to take place and the interview was made to correspond with the potential participant clinic visit date. The clinic allocated a private room for the study interviews. The sister in charge of the clinic did not participate or influence the study. She only assisted with organizing the participant and providing the researcher with a private room for in-depth interviews. In depth interviews were conducted in English. The researcher explained the study and participants role including ethical considerations. The researcher explained that they were no wrong answers and that participants should provide details as much as they could. All participants agreed to be audio-recorded; hence, data was recorded by means of audio- recording and was also written by researcher. The list of questions that were asked to participants could be found in Appendix 5.

3.8 Data analysis

Data analysis was another significant phase to complete during the research. According to Terre Blanche et al. (2006) data from different sources is collected, revised and analyzed in order to extract the results and thus reach the inferences. The current study used the Interpretative Phenomenology Analysis (IPA) as the data analysis technique to examine the findings. According to Smith and Osborn (2007) interpretative phenomenological analysis, as used in this study, attempts to examine personal experiences of the participants in relation to the problem investigated. It is relevant for analyzing personal perception of the individual or explanation of an object or occasion as opposed to an effort to give an impartial statement of an object or occasions, studied.

The present study's analysis was done in stages. According to Biggerstaff and Thompson (2008) stage one was to transcribe the data and read the data numerous times so that it could make sense. During this stage the researcher was profoundly focused on the data, thinking about the setting and the atmosphere in which the interview was done. The researcher also made notes on his reflections about interview experience and his own observations. The second stage was to change the notes into developing themes and the third stage included looking for a relationship and grouping of themes (Kvale, 1983). The reason for using this method was that it allowed the

researcher to make a detailed examination of how research participants made sense of their personal experiences as lived by themselves of their perceptions of using the Billings Ovulation Method.

3.9. Ethical considerations

The study was permitted by the Biomedical Research Ethics Committee of University of KwaZulu-Natal (Appendix 3). Gatekeepers' approval was granted by the Department of Health-KwaZulu-Natal (Appendix 1 and 1A) and St' Mary's Catholic Church (Appendix 2). Furthermore, guidelines from the Health Professions Council of South Africa for doing research were applied. Information on ethical approval was imparted to participants. The information sheet was presented to study participants (Appendix 6). The information sheet had specific information about the study, confidentiality and storage of research data. The information sheet allowed study participants to make informed decisions on whether or not they would like to continue with the study. It also covered procedures to maintain participant's anonymity. Hence, participants were required to select a pseudonym to be utilized in the study.

Participant's autonomy was ensured at all times. Emanuel et al. (2000, 2008) argued that ethical tenants of collaborative partnership, beneficence and non- malfeasance should be observed when conducting the research. Collaborative partnership was achieved through explaining to the participants that their participation in the study was voluntary and that their refusal to answer any questions or terminate the interview when they desire would not result in any adverse consequences. Beneficence was observed by explaining to prospective participants that the study intended to establish how they feel about the effectiveness of Billings Ovulation Method and the challenges, if any, they had faced in using it. Potential participants were assured of the study's social value, as the desired end was to benefit the society at large. Non-malfeasance was ensured by explaining that there was no potential danger in the study. However, reflection on self-experiences may invoke happy or sad emotions. Furthermore, fertility issues may also be sensitive matters sometimes. Therefore, an arrangement was made with the University of KwaZulu-Natal, Pietermaritzburg campus, Child and Family Centre (CFC) to provide psycho-social support whenever needed. (Appendix 7)

Attempts were made to adhere to the recruitment criteria of participants to ensure scientific validity. Therefore, those who met the criteria to be included in the study were recruited as the population sample of the study. The researcher endeavored to recruit participants who had been on the Billings Ovulation Method in the previous twelve months and participants who were currently on the BOM. Participants were requested

to read and sign the consent form voluntarily (Appendix 8 and 9). This indicated their adequate understanding of their rights for participation in the study and also to agree to be a study participant. Lastly, participants were also made aware that should they wished to get more information about the study or have any questions regarding their rights for participating in the study, they could communicate with the Human & SocialSciences Research Ethics of UKZN, contacts given on the information sheet.

3.10. Dissemination of results

The outcome of this research will be submitted to the University of KwaZulu-Natal (UKZN) in partial fulfilment of the requirements for the degree of Master of Social Science in Counselling Psychology. The electronic version of the completed thesis report will be deposited in the university library. And it is anticipated that some part of the thesis result will be prepared for publication when approval for the thesis has been secured.

3.11. Conclusion

The study used qualitative research method in an attempt to identify participants' perceptions of the effectiveness of the Billings Ovulation Method they use or have used. For this reason, the research used in-depth interview questions to collect data. The participants were drawn from two separate settings in Pietermaritzburg, thereby enhancing the phenomenon of geographical and participants' triangulation to promote rigor. The research settings consisted of Northdale District hospital, a public health facility and in St. Mary's church, a Roman Catholic parish. The qualitative data was analyzed by isolating dominant themes generated by the study in relation to the research questions investigated.

CHAPTER FOUR

FINDINGS OF THE STUDY

4.1. Introduction

This chapter presents the findings of the study. The presentation is organized according to the research questions investigated; all of which were aimed at understanding participants' perceptions of Billings Ovulation Method as a satisfactory method of fertility management. The study was qualitative in nature and the findings were garnered from in-depth interviews from six participants from public health hospital and the Roman Catholic Parish in Pietermaritzburg.

The entire presentation will be preceded by a descriptive analysis of participants and the findings of the study will be highlighted research question by research question. And it would be recalled that the following were the major questions of the study whose answers will be presented shortly:

1. To what extent are the study participants satisfied or dissatisfied with their use of the BOM as a fertility management method?
2. What are the major benefits accruing from their use of BOM as a fertility management method?
3. What challenges do participants face in their use of BOM as a fertility management method?
4. What do participants give as some of the reasons why many people do not make use of BOM as a fertility management practice?

4.2. Descriptive Analysis of Distribution of Respondents

A total of 6 participants were involved in the study; consisting of five females and one male. All participants were African. Research participants were taken from Northdale Hospital (1) and Roman Catholic parish (5) in Pietermaritzburg respectively. Majority of the female participants used the BOM as a method of achieving pregnancy. Many of the male participants who initially agreed to be interviewed declined interviews at a

later stage. Hence, the researcher used five female participants and one male who availed themselves. All participants were from Pietermaritzburg; and five of them came from the Catholic Church. Only one participant came from the Northdale Hospital. Open-ended questions were asked to all participants and one had a challenge in expressing herself in English but this did not affect the quality of gathering the data. The researcher ensured that clarity was achieved through summarizing and paraphrasing what was said by participants so that data accuracy was not affected. Participants were given pseudonyms; hence, their real names were not captured in the study. Details of the study participants are presented in the following table:

Table 4.2.1 Summary of characteristics of participants in Northdale hospital and the Roman Catholic Parish.

Pseudonyms	Gender	Age	Race	Marital status
1. Zama	F	36	African	Married
2. Zibuko	F	29	African	Single
3. Andreas	M	41	African	Single
4. Venz	F	41	African	Married
5. Mitchel	F	38	African	Married
6. Zinhle	F	32	African	Married

Table 4.2.1. The above Table shows that the participants studied varied in age and marital status.

4.3. Findings of the Study Research Question by Research Question

4.3.1. Research Question One:

To what extent are the study participants satisfied or dissatisfied with their use of the BOM as a fertility management method?

A number of themes emerged from different participants' answers of this question. The themes are highlighted below.

4.3.1.1. Theme One: Satisfied with the Billings Ovulation Method.

Majority of the participants admitted that they were satisfied with their use of BOM. The following are illustrative responses garnered from participants that corroborate this conclusion.

Zibuko, a female participant stated:

"...I'm satisfied since it has been good on me, you know. Eh... it has not only taught me to know myself physically but it has also promoted the fact that by using it I now eat healthy food, so that I may know with my hormones or when thing like this happen I may understand that this is the time for my ovulation. I'm very satisfied with it..."

Speaking in the same vein, Venz, a female participant remarked saying:

"...I am very much satisfied; it is safe and requires to focus on writing down. Yes, for most reasons some I have told you, I'm satisfied with it. Very much happy, it is safe and it requires to focus on writing down what you observed and when it's safe to use. Yes..."

Zinhle, a female participant, similarly agreed that:

"...Yah, I feel okay with this method, I am very satisfied you know, although my husband will not tag along sometimes. But, the method itself is a wonderful method. Highly safe and I sometimes recommend it to my friends and colleagues at work. They will also think it's a good way. I used the pills before and I would have problems with, with bleeding and I stopped them using this method; I don't remember the last time, you know, I was bleeding..."

Similarly, Andreas a male participant noted that:

“...Ah, I wouldn't complain about this method, I'm okay with it. It's just that me and my partner we just need to work on our relationship issues...”

These indications confirm that for the majority of the participants in this study, the Billings Ovulation Method is a satisfactory method of fertility management.

4.3.1.2. *Mixing the Billings ovulation method with other methods.*

Pertaining to satisfaction with the method some participant alluded that, although they are satisfied with the method but they used the method in conjunction with other methods in order to ensure that they don't get pregnant, when they do not desire to get pregnant.

Zama, a female participant was the first to share this view:

“... I would say I am satisfied, but my satisfaction (.) I wouldn't know how satisfied I am because sometimes I am having to use the calendar method alongside the Billings ovulation method. Yes, I'm not confident to use the BOM alone because eh... it can be tricky when it comes to checking eh...when its come to checking when you are more fertile and less fertile with the BOM's method. So that why I'm not confident in using it alone, that why I had to use it with the calendar method...”

Zinhle, a female participant also shared the view that BOM is a good method although she still finds the need to use BOM in combination with another method:

“...it's a good method shame, I like it. You know how you men are; my husband would want to have sex when we should be avoiding. Already, we have two children and he has two from previous relationships. So we use condoms or sometimes he will ejaculate outside. I can't risk another baby, we are not ready at the moment. It becomes very risky when your partner want you and you are fertile...”

4.3.1.3 *The Billings ovulation method perceived as effective in managing fertility.*

From the data collected in the field it is clear that most participants perceive the Billings ovulation method as effective. Many participants mentioned that they were satisfied

with the method because according to them, it was able to help them achieve what they wanted to achieve.

Commenting in this regard:

Zibuko, a female participant who wished to avoid pregnancy by using it attested to the effectiveness of the BOM, when she remarked that:

“...since I’m not pregnant yet, I would say it’s very effective. Since it has taught me to take charge of my body changes and taught me how to learn how my body operates. So it is very effective since... you know, ever since I started using it I’m not pregnant yet...”

Similarly, Zama, a female participant, highlighted that the BOM was effective in two areas for her. According to Zama, the method was effective in terms of conceiving and avoiding pregnancy. In this regard she stated that it was effective for her, as per the following extract:

“...eh... with the avoiding of pregnancy or and with the...when you do want to get pregnant, with the conception of pregnancy, to conceive...”

Venz, a female participant, wanted to get pregnant and shared her perceptions on the effectiveness of the Billings ovulation method; she said she is able to see the signs which BOM’s method teaches:

“...I see when I’m ovulating although I’m not pregnant yet. Two months is not much time to tell but I’m happy that I’m able to see this slipping mucus. Yes...”

In addition, Mitchel, a female participant, found the method to be very effective since she suspected that she might be pregnant because of the method. She said:

“...eh, getting pregnant. I think it is effective and I missed my periods and I, I’m really pregnant I would be happier about it cos the foundation the family needs children...”

The above extracts are, again, clear in their response to the research question investigated. They show that almost all the female participants agree that they are satisfied with their use of BOM as either a method of achieving pregnancy or for avoiding it. One or two participants, who said they use BOM in combination with

another method, showed that they were satisfied with it even though they want to make sure that they do not become pregnant in making use of only the BOM method.

4.3.2. Research Question Two:

What are the major benefits accruing from the use of BOM as a fertility management method?

This section presents the perceptions of the participants as concerns the benefits of their use of the Billings Ovulation Method

4.3.2.1 Theme One: BOM allows self- awareness and to see changes in the body.

The data gathered confirmed that the Billings ovulation method benefits users by allowing its users to be aware of any changes within the body. Following extracts supports the above theme:

According to Zama:

“...the benefit of using this method is that you get to know your body, for example; I know when I’m about to be on my menstrual cycle because I can see from my mucus plugs that no I’m about to be on my menstrual cycle. So it’s good to know your body and you know it’s good to keep track of eh...eh eh eh, the workings of your reproduction system as a woman. Yes. So its helps there...”

Almost in the same tone and conviction like Zama above, Zibuko, a female participant, highlighted that:

“...the benefits, I think I will give you two. One the fact that I don’t have to spend money, you know spending money is a problem I don’t have money. So, I don’t have to worry about buying pills that I don’t have money with, you know. It’s free! You know. Secondly, the fact that I don’t have to worry about any weight changes in my body, you know and three I think the fact that ever since I’ve started using it or applying it on my body now I understand the fact that I can take charge of my body. You know, I can understand it better, I can talk to it better and it can respond better in a better way. Yes...”

Similar to Zibuko’s attestation above, Zinhle, a female participant also alludes to the idea of BOM benefitting her by helping her to be aware of her body changes.

Thus commenting in this regard, according to Zinhle, in using BOM:

“...You get to know yourself well. You are able to detect anything in your virgin (sic) early and see a doctor if it’s infection or things like STI’s like they always encourage women in clinics to be able to see them, yah. You know your body and when you are not fertile especially the changes between being fertile and not. You know your body unlike taking injections which brings changes you can’t notice even...”

Similarly, Venz, a female participant, states that when you are using the Billings Ovulation method you can be able to detect changes in the body, particular, the vaginal changes. This can be seen from the following comment by Venz:

“...Eh...I will so far say I’m able to observe changes in my body and like has drawn me very closely to my husband. Yes. Yah. I believe whenever you purchase a product you always need to look at the benefit of what you gaining from the product. You cannot just purchase a product and you are not gaining anything, benefit. As a woman, you should be able to differentiate whether you are experiencing any changes in your body. Yes. I mean you can tell as a female if there is any changes in your body for instance or you have unpleasant odor or the color of your discharge is changes; and when you are not ovulating. You can tell such a lot of things...”

Zinhle, a female participant, echoed the above when she highlighted that:

“...you are able to feel a wetness sensation, you know, and if your vagina is slippery. I think if you are having fertility challenges you can know early, from observing mucus and when to go for help or something.

Again, the above extracts are explicit in showing participants’ attestations of many positive benefits they derive in using BOM. In general, they all gave credit to BOM as a method that helps them to have concrete awareness of the natural changes that take place in their bodies, apart from the menses that all women are familiar with.

4.3.2.2. Theme Two: BOM is natural and has no side effects

Participant highlighted the fact that the BOM has no side effect as another benefit that motivates them to continue using the Billings ovulation method. Extracts that highlight the sentiments of the participants in this regard are given below:

Zibuko, a female participant, comparing the experience of other women who use injections and other methods as a contraceptive, firmly narrated how she benefits from the BOM that has no side effects.

“...I would say firstly, I had (sic) people complain about side effects from prevention and injections you know. So that is something that I didn’t want to deal with, you know. Since I struggle with body changes on my body physically. So eh... the fact that I don’t have to use anything to change my body or to put in my body; it was the first reason. The second is the fact that it’s free, you know. I don’t have to buy anything, I don’t have to spend any money that I don’t have...”

Concurring with Zibuko above, Zama, also a female participant highlights the following:

“...the fact that I don’t have to use artificial things on my body. I think that is another benefit as it is natural way of prevention and conception. So, yah...that another benefit I can think of right now...”

Mitchel, a female participant, also concurred with the view that with BOM there is no side effects:

“...ovulation (referring to BOM) is natural, taking place in your body; there is no side effect...”

Another female participant, Zinhle, shared a similar view:

“...I was using injections and sometimes emergency pills before, it will left me sick or nauseas. One doctor told me the other day that contraceptives is bad for my body. From than I decided to look for something safe, the Billings method is very safe, yes. I was worried but you get used to it...”

From the above attestations, this study has shown that among the key benefits which people derive from in their use of BOM is the fact that it helps them to know themselves and their body system better and to use that knowledge in the pragmatic management of their fertility; and additionally, that it is a fertility management method with no side effects.

4.3.3. Research Question Three:

What challenges do participants face in their use of BOM as a fertility management method?

Although participants agreed on certain major benefit and the effectiveness of the Billings Ovulation Method, they also noted some challenges. These challenges were collated into themes. They noted that achieving full mastery of body changes through it is a major challenge.

4.3.3.1. Theme One: Body changes are a challenge when using the BOM

In relation to this theme Zinhle testified:

“...at times when I look back at my twenties and thirties I think it was easy for me to notice eh...mucus. Ey, I’m old now (Laughing) and growing up has change a lot of things when it comes to my body. Sometimes it can be difficult to notice, you know, you know the wetness in your private part. You know those small changes but they are important for ovulation I guess. I think this might be a problem a challenge. It’s a problem...”

Making a similar point, Zama remarked:

“...the main challenge is... is like I said it can be a bit confusing eh... in terms of when you are examining your mucus plug. It’s not always easy because like our bodies as women after having children and growing older they change; so it’s not... it’s not as easy in my late thirties as it was in my early years like in my late twenties. My body has changed. So, that is the challenge that eh...when body changes eh...also all these things like my mucus plug is no longer the same; so, yah. That, my challenge; which is the reason why I have to sometimes mix it with the calendar method. Just to be sure. Yes...”

Concurring with the views of these others, Zibuko stated:

“...one a female body is a challenge itself it’s hard to say some months are the same as the other because this month you may track your ovulation accordingly and see the signs and symptoms. But next month the signs and symptoms of you going to your ovulation days may be the same sings as you being at the peak of

your menstruation. So those are some of the challenges that you know I came across them and secondly, I think the fact that when when eh...how can I put it. When your body is not in a right state of mind its does not only affect your physical thinking only and your mental it's also affect you; and as women the type of hormones that we have are easily to be tricked off you know. Our estrogen it's so easy to be ticked off. If I get mad its can affect my chances of my ovulation and my chances of menstruation. So those are types of challenges I've been going through. Yah..."

These attestations confirm the point made in the literature review that effective use of the Billings Ovulation Method must require the help of an informed guidance with necessary information and education on how best to use it.

4.3.4. Research Question Four:

What do participants give as some of the reasons why many people do not make use of BOM as a fertility management practice?

4.3.4.1 Theme One: Lack of knowledge of the BOM

Participants highlighted the 'lack of knowledge' as the principal reason that might make other people not to prefer the Billings Ovulation Method.

Comenting in this regard, Zibuko observed:

"...lack of knowledge. Most people they don't know it because it is not mostly advertised as other prevention methods. It's rare to find a nurse or clinic that would tell you about it, you know; and I think these pharmaceutical companies they don't promote it because they want to sell their product. So lack of knowledge, lack of advertisement I think is the reason why most people not necessarily they don't like it, but they don't know about it. You know. I think that is it. It's hard to appreciate something that you don't know. But if there were more knowledge or more access to it you know, I think people will prefer it you know. Yah. I don't know, I think that way it will help. I wouldn't talk much because like I said most people don't know about it. Mm. Out of five people you may ask, two they know about it the rest three they don't. So, Yah..."

Concurring with Zibuko's point above, Zinhle remarked:

“...honestly now, people don't know about this method. Maybe rich people knows about it I don't know but with us, people would say 'what are you talking about'. I also came to know it very late in my life and have used pills and other dangerous means you know. Young girls don't know this and they should(be) taught early, I think...”

In addition to the idea of lack of awareness of BOM as their major explanation for why people do not prefer the use of BOM, Zama stated:

Ey, I don't know because its might be that the people you are referring to they don't know how to use the method properly. So, I don't know why they don't prefer it. If they haven't understood how to use it properly it's might be a problem. Yes. So, I don't know

The above extracts suggest that in relation to this research question the participants are of the view that any woman or couples who do not prefer to adopt BOM as a fertility management method must be those who are not aware of BOM as a fertility management strategy or those who are aware of it but have not really learnt how to use it. Otherwise, they would assume, with proper information and education most people should prefer to adopt BOM as an efficient natural family planning method with no side effects.

4.4 Conclusion

This chapter has presented the findings of the study in relation to the four research questions investigated. The trend of the findings shows that majority of the participants who use BOM as a fertility management strategy, are quite satisfied in using it. The trend of the findings also shows that most of the participants have immense conviction in BOM's effectiveness in helping them to manage their fertility issues. The one or two participants who said they combine it with other methods never said they found it wanting. One of them said she combines it with the calendar method just to bolster the effects she wants to achieve in managing her fertility. To the question of what they (the participants) benefit in using BOM, majority of the participants highlighted that among the major benefits of using BOM is the fact that, unlike other artificial methods such as pills and injections for achieving the same goal, BOM has no side effects. And, finally, to the question of how to explain why some people do not seem to prefer to adopt it as a fertility management strategy, the participants' speculated that it is possible that those

people who do not prefer to adopt BOM are those who are ignorant of it as a fertility management device; or those who even though they know about it, have not achieved sufficient mastery of how to use it.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 Introduction

In this chapter the findings of the study presented in the previous chapter are discussed and the conclusions highlighted. The study was undertaken to explore participants' perceptions of satisfaction with the BOM they use as a fertility management device. The discussion of the findings will be organized around the four research questions investigated. The principal objective of this discussion is to link the findings of the study to the literature reviewed, with the aim to determine which of the findings are in line with or deviate from the trend of previous studies on BOM.

5.2 Discussion of Results Research Question by Research Question

5.2.1 Research Question One:

To what extent are the study participants satisfied or dissatisfied with their use of the BOM as a fertility management method?

As highlighted in the previous chapter, almost all the participants in the study expressed satisfaction with their use of BOM as a fertility management method. Majority of the participants perceive BOM as an effective method of helping them to manage their fertility as it enables them to use their body changes, not artificial procedures, to decipher and determine when they are free to engage in sex without becoming pregnant or to notice when they are fertile and could become pregnant by engaging in sex, if they so desire. From these participants' point of view, it is clear that they are satisfied with the Billings ovulation method. As revealed in the previous chapter their greatest source of satisfaction is that BOM is a natural process of family planning which helps those who use it to manage their fertility issues without harmful side effects.

These findings are in line with the report by Popovici (2010) who remarked that: "nature has given the BOM so that couples can plan their fertility without using artificial methods which might be harmful."

Of course, although, most participants perceived the BOM in a positive light in the sense that they were satisfied with it in managing fertility; it is important to note that

some participants in the study also said that they were mixing the method with other methods even though they were happy with the BOM. They mentioned that because of the concerns over the trickiness of checking the mucus plug and partner wanting to have sex during fertile window, participants combine BOM with other methods such as the withdrawal method and calendar method to avoid pregnancy. For example, Zama (all names mentioned in this discussion are pseudonyms) remarked that she uses another method in combination with BOM because detecting the slipperiness in her vagina might be tricky especially due to changes in her body. This angle of the finding corroborated the view credited to Odeblad (1994) who remarked that changes in women's body, for instance due to inflammation of the vagina and cervix may result in a greater discharge and changes in the flow quality, thus, infertile and fertile windows are sometimes vague. While some of the participants' response to this vagueness through the use of BOM in combination with other methods might appear to be a wise and cautious procedure, but it is possible that with better education and charting of one's fertility pattern, the individual can come to acquire a more clearer way of understanding these changes and could achieve the results they desire without the need for mixing of the methods. One way one could achieve this aim of avoiding the need to mix the BOM with other methods, is to seek medical help to enable one to master how to clearly identify the peak and off-peak phases in one's fertility cycle.

Some of the participants' (e.g., Zinhle), report that they use BOM with another method like using a condom or having the husband to ejaculate outside in order to avoid the risk of becoming pregnant when they do not want show that what most users must endeavor to achieve for their confidence to grow in the use of BOM as a standalone method of fertility management is through the acquisition of sufficient information and education on how BOM works and the best way to use it. This point is related to the view credited to Betts (1984) who argued that differentiating between the biological basis of the practice and the people's problems in using it is important. It is also crucial to remember that with BOM, Billings and Westmore (1994) argued that abstinence is fundamental during fertile windows and it is among the important guidelines that need to be observed by couples who use it. According to this assertion by these authors, participants who are mixing the BOM with other methods are failing to adhere to the essential tenet of the Billings ovulation method.

Apart from the intricacies that are needed to be mastered in the successful use of BOM, most of the participants mentioned that they were satisfied with the Billings Ovulation Method because it was effective in managing fertility. For example, one of the participants, Venz, who wished to be pregnant agreed that the BOM was an effective method. Venz alluded from her experience that, “I see when I’m ovulating although I’m not pregnant yet”. Betts (1984) mentioned that the effectiveness of the BOM is determined by the exploration of mucus symptoms as efficient predictor of fertility and infertility. Another participant, Zibuko who used the method to avoid getting pregnant agreed with Zama, one of the female participant’s in the study when she said that “since I’m not pregnant yet, I would say it’s very effective”. Mitchel, a female participant who wished to conceive, also mentioned from her point of view that the BOM was effective when she said “think it is effective and I missed my periods and I, I’m really pregnant I would be happier about it cos the foundation the family needs children”. Most participants echoed similar sentiment about the effectiveness of the BOM.

Given the above one can therefore conclude that from the perceptions of the majority of the participants in this study BOM is an effective method in fertility management, particularly, when the users adhere to the BOM’s basic principles. This finding concurred with the literature which asserts that the Billings Ovulation Method has been proven to be highly effective in fertility management (Fryer, 2001). Furthermore, according to the literature, the study on the BOM’s effectiveness was conducted in many regions including Asia, which found that the BOM had 100 % pregnancy rate when used correctly (Nondaba 2013). The findings of the present study are therefore in line with the international literature on BOM and attestations of its effectiveness among users worldwide.

5.2.2. Research Question Two:

What are the major benefits accruing from the use of BOM as a fertility management method?

The study participants reported their own experiences of the major benefits emanating from using the Billings Ovulation Method. The initial theme that emerged from the study regarding the participant’s perceptions of the major benefits of using the BOM was that the BOM allows for self- awareness and that with it the user is able to observe and monitor her bodily changes.

Specifically, according to majority of the participants, the principal benefits of BOM include the fact that it has no harmful side effects, and because it is natural it does not require spending money to make use of it. Another important benefit of BOM according to most of the participants is that it enables them to be in touch with their bodies and to effectively keep track with the functioning of their reproductive system. Similarly, some of the participants (Zinhle, Zama, Venz) emphasize that because BOM allows the user to know her body well it is able to assist them to detect anything early; such as the vaginal infection or sexually transmitted infections. They acknowledge that observing the cervix mucus helped them to detect any unpleasant vaginal odor, color of the discharge and whether they are ovulating or not. These findings concur with the results of the study by Vande Vusse et al. (2003) which indicated that natural family planning improved couple's knowledge of understanding of selves, cycles and bodies. The present findings are also in line with the view credited to Bresons and Bresons (2006) who argued that even when fertility awareness methods do not achieve pregnancy but they offer significant information on sexual, cervical and ovulatory functioning, they provide a significant benefit to the users.

These trends encourage the important conclusion that participants in the present study consider their use of BOM as providing them with enormous benefits.

These findings speak indirectly to the findings of the study by Lwelamira et al. (2012) which aimed at ascertaining married women's knowledge and attitude towards modern contraceptives, and to determine the extent of use of contraceptives as well as to identify factors which influenced current use of contraceptives. The study showed that there are many reasons that impede women from using contraceptives and the significant ones include their tendency to come with negative side effects, myths, rumors and misinformation, as well as limited access and availability of family planning services. By not having side-effects, the Billings Ovulation method, just as it was in the present study was hailed as a safe preferable method by most the participants.

5.2.3. Research Question Three:

What challenges do participants face in their use of BOM as a fertility management method?

In examining this question, the participants agreed that achieving effective mastery in monitoring changes in the body present a challenge in using the BOM. The one and only main theme that emerged from the present study when participants were asked about the challenges they face in their use of BOM was the notion of an ever changing female body. Participants highlighted that gaining mastery of changes in their bodies have become a challenge because they have grown and it has become difficult to detect cervix mucus as a result.

Thus, from her own point of view and experience, Zinhle, one of the participants, alluded that “at times when I look back at my twenties and thirties, I think it was easy for me to notice eh mucus. Ey, I’m old now (Laughing) and growing up has change (*sic*) a lot of things when it comes to my body. Sometimes it can be difficult to notice, you know, you know the wetness in your private part”.

This point was also raised by Zama (another female participant) who shared a similar sentiment when she said that “is like I said it can be a bit confusing in terms of when you are examining your mucus plug. It’s not always easy because like our bodies as women after having children and growing older they change; so, it’s not, it’s not as easy in my late thirties as it was in my early years like in my late twenties”.

These findings are directly related to the concerns expressed in the study by Betts (1984) who over served that the effectiveness of the BOM is determined by the exploration of mucus symptoms as an efficient predictor of a woman’s fertility and infertility. Therefore, if users of the BOM could not observe the cervix mucus effectively, one can end up conceiving even when they wanted to delay or avoid pregnancy.

This is the point which Zibuko, another one of the female participants, was alluding to in her response to the question about the possible challenges to be faced in following BOM.

Commenting in this regard, Zibuko observed, “Our estrogen it’s so easy to be ticked off. If I get mad it can affect my chances of my ovulation and my chances of menstruation. So those are types of challenges I’ve been going through”.

This stance concurs with the view by Odeblag (1994) who conducted a study on different types of secretions in relation to the use of BOM. From the study, Odeblag

(1994) highlighted that there were variations in ovulation based on whether the woman was young or mature, approaching menopause and lactation. Odeblag noted that the changes in the body, according to the study participants, make it difficult to efficiently observe the mucus in the cervix.

What these indications appear to imply is that for some participants in the present study, changes in their bodies, relative to their age, often interfere with the consistency of appearance of ovulation; making it difficult for the basic BOM principles to be followed.

When asked what motivated them to stick to the use of the BOM in spite of these challenges, Zama, commented that she used the BOM despite its challenges because “it’s a natural method; so, it’s easy on my body”. Also Zibuko when asked what motivated her to persist with her use of BOM despite some of its associated challenges said “the fact that it teaches to me not to rely on drugs. I can rely on natural methods that would assist me in knowing my body better, you know”.

The fact that the BOM was based on natural processes in terms of observing the mucus was the main reason for continuing with it. This suggests that participants wanted to use a device like BOM they know is safe with no negative impacts on their bodies. Mitchel another participant, concurred with the above indication, and shared similar sentiments when she remarked that she continued to use the BOM because of how she valued safety over side effects. In expatiating on this she commented that “our faith and believing that through this way I pray that God want us to be safe from poison or dirt”.

Using the BOM besides the challenges, ties up with the second theme when participants were asked about the major benefits accruing from their use of the BOM. Certainly, participants acknowledged how safe the BOM was in their body since it is a natural method. Therefore, the fact that the BOM does not use any drugs or artificial means; participants stood resolute in continuing with it in managing fertility.

The above responses and expatiations are very instructive. They demonstrate that people who adopt BOM and persist in using it are those who see it as a natural process of managing their fertility in which there is no fear of adverse side effects in using it.

5.2.4 Research Question Four

What do participants give as some of the reasons why many people do not make use of BOM as a fertility management practice?

The majority of participants in this study remarked that although they could not say for sure why many people do not appear to make use of the BOM, but they could speculate on some of the possible reasons why this is the case. In this instance the most popular reason they gave was the view that most people do not know the Billings Ovulation Method and that in their view, this is the foundational reason why the method is not used by many people. This indication implies that it is not the BOM that is the problem but the predominance of lack of public awareness of it as a fertility management device that is the problem.

Zibuko, in support of the above view gave as her reason for many people not using BOM simply and squarely to “lack of knowledge. Most people they don’t know it because it is not mostly advertised as other prevention methods. It’s rare to find a nurse or clinic that would tell you about it. It’s hard to appreciate something that you don’t know”.

Concurring with this view, Zama, another female participant, added that even when people know about BOM but often they do not possess a full knowledge of it and how to use it. Making this very point, Zama remarked that “I don’t know because its might be that the people you are referring to they don’t know how to use the method properly”.

The above indications mean that according to the participants in this study, lack of knowledge of the BOM might mean among other things, that many people have never heard about the method, or that even when they have heard or informed about it they do not know how to apply or practice it.

What these observations tend to suggest is that in order for the BOM to be used by many people it needs be thoroughly and systematically publicized or marketed like other methods of fertility management such as the artificial methods that are fully brought to the awareness of people. Hence, the commonly used fertility awareness practices in South Africa do not include the Billing's Ovulation Method, but the sympto-thermal method and the rhythm method (Department of Health, 2012). Yet the BOM is recognized in policy by the South African National Department of Health, but the government does not promote its use. It is not easy to say why this is the case but it

might be due to the fact that the method does not use a condom and South Africa has a high prevalent rate of Human Immune Virus (HIV). Therefore, the government might be afraid that promoting the BOM might indirectly encourage the spread of the virus. This is the point which Cooper et al. (2005) appeared to be alluding to when they observed that health care workers have some reservations about how getting pregnant and child caring will have an impact on the health of HIV positive women.

5.3. Summary and Implications of the Study

The aim of this study has been to explore the perceptions of satisfaction of the BOM among target participants in Pietermaritzburg who use it as a fertility management device. The study sought to determine how the users of the BOM feel about it in their experience of using it, whether they are satisfied or dissatisfied with the method; their view of the benefits of using the method; the challenges they feel are associated with their use of the BOM and why many people do not seem to use it. A qualitative approach was used in implementing the study. Research was done in two purposively selected places in Pietermaritzburg, KwaZulu-Natal province; namely, Northdale hospital and St. Marry Catholic Church. The study used purposive sampling to recruit study participants. Oppong (2013) and Patton (1999) agreed that purposive sampling is a technique that is utilized in in-depth studies whereby the researcher co-opts the participants with knowledge or experience of an issue of interest in the study. Six participants were co-opted into the study sample, on the criterion of their experience of using it within the past twelve months; and, in addition, were above the age of eighteen. The study used the in-depth interview as the research instrument. The in-depth interview included ten questions for individual interviews aimed at gathering the data needed for answering the four questions investigated in the study.

The study established that people who use BOM are satisfied with it as an effective fertility management device and that they prefer it to other methods available due to its naturalness, which presents no harmful side effects to those using it. The study also established that although some participants highlighted the problem at times of struggling to identify the cervix mucus that is looked out for in BOM, yet they persist in using it on account of its safety and its effectiveness in helping them to monitor and interpret the changes in their bodies and what these changes tell them regarding when they could become or not become pregnant. Similarly, the study found that many people

are still unfamiliar with BOM and its value as a fertility management device. The study discovered by implication that there is a need to alert the people through public information dissemination of how the body might change due to things such as aging whilst using the BOM and how to efficiently detect or observe the fertile and infertile window as reflected in their body changes.

5.4 Recommendations for Policy and Practice

Based on the findings and the implications emanating from the study, the following recommendations are made for enhancement of policy and practice associated with BOM as a fertility management device:

1. There is need for provision of appropriate information and education of the masses in the use of BOM should be encouraged for effective results. According to Ruhukwa (2016) participants exposed to taught programme on BOM did better than those who try to learn and use it independent of informed assistance. Those who pass through an appropriate training on BOM get an explanation on how a person could make observations of fertility as well as how to avoid or achieve pregnancy, using BOM.
2. The South African government, in general, and the Department of Health in particular should encourage the use of the BOM in its clinics, hospitals and mobile clinics. This practice should be facilitated through the use of the health professionals such as nurses, doctors and home based carers.
3. Information about the BOM should be disseminated through the mass media campaigns as well as through psycho educational conferences, and accessed freely across the country.
4. Public centers for the Billings Ovulation Method should be created. The centers can be used to access information, learn about the method, how to practice it and encourage male partners to be more active in fertility management. In this way, users of the BOM can always visit these BOM centers to get help should they encounter any challenges and share successes, challenges and the benefits of using the method with health professionals and others.

5.5 Limitations of the study

One of the major limitations of this study is its sample size and the fact that the study used mostly females because almost all the male prospective participants did not come for interviews.

Similarly, the findings might have been influenced only by selected sampled settings only and not the users in the whole of Pietermaritzburg.

Another limitation of this study is that prospective participants who use private fertility management system were not included in the study sample. South African communities are extremely stratified along economic and social lines. It would have been interesting to explore the views of people who access private fertility management settings in order to find out if they have views with their counterparts in this study on the perceived effectiveness of the BOM.

Another limitation was the fact that most participants used the BOM to avoid pregnancy and to conceive, rather than to delay pregnancy or pre-select the sex of the child. Perhaps, another study is needed to explore that would find out the level of users' satisfaction with BOM as a natural method for delaying pregnancy or for pre-sex selection.

Lastly, having a male researcher limited some important discussion of the study such as the intimate process of monitoring vaginal discharge etc.

5.6 Recommendations for Further Research

Based on these limitations, the following recommendations for further research are made:

1. Additional research is needed that will use a larger sample to explore people's perceptions of the effectiveness of BOM as derived from their experience of using it.
2. Future studies along the lines of the present research should be conducted gathering participants from multiple settings beyond the two focused on in this research.
3. Further research along the lines of the present study is needed drawing participants from users of private health system. South African communities are extremely stratified along economic and social lines. For this reason, it would be interesting to explore the views of people who access private fertility

management settings in order to find out if they have views similar to their counterparts in this study on the effectiveness of BOM.

4. Further research is encouraged to look into the challenges that are faced by partners who are users of the BOM.
5. The study should consider using female research assistant due to the topic sensitive nature.

REFERENCES

- Babbie, E., & Mouton, J. (2005). Qualitative Studies. In J. M. E. Babbie (Ed.), *The practice of social research* (pp. 269-311). Cape Town: Oxford University Press.
- Billings, J., & Billings, L. (1990). The Billings Ovulation Method. In R.C. Ruiz, J. Russel & I. Ruiz (Eds), *Proceedings of the international seminar on natural family planning*, (pp.43-51). Hong Kong: Hong Kong University Press.
- Billings, E., & Westmore, A. (1994). *The Billings Method: Controlling fertility without drugs or devices*: Gracewing Publishing.
- Bishop, A. C., Baker, G. R., Boyle, T. A., & MacKinnon, N. J. (2014). Using the Health Belief Model to explain patient involvement in patient safety. *Health Expectations*, 18(6), 3019–3033.*doi: 10.1111/12286*.
- Creswell, J. W. (2002). *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research* (4thEd). Boston: Pearson.
- Creswell, J. W., Shope, R., Plano Clark, V. L., & Green, D. O. (2006). How interpretive qualitative research extends mixed methods research. *Research in the Schools*, 13(1),1-11
- Daly, K. J., & Herold, E. S. (1983). Natural family planning: A comparison of continuers and discontinuers. *Population and environment*, 6(4), 231-240.
- Davies, H. (2012). Natural fertility regulation. *Catholic Medical Quarterly*, 62(4),18-20.
- Department of Health. (2012). *National contraceptive clinical guidelines*: Pretoria, South Africa: Retrieved on 12 May, 2016

from:<http://www.doh.gov.za/docs/policy/2013/contraceptiveclinicalguidelines28jan2013>

- Durrheim, K., & Painter, D. (2006). Collecting quantitative data: Sampling and measuring. In M. Terre Blanche, K. Durrheim & D. Painter (Eds.), *Research in practice: Applied methods for the social sciences* (pp. 131-159). Cape Town: University of Cape Town Press.
- Fehring, R. J., & McGraw, E. (2002). Spiritual responses to the regulation of birth (A historical comparison). *Nursing Faculty Research and Publications*, 51.
- Frank-Herrmann, P., Heil, J., Gnoth, C., Toledo, E., Baur, S., Pyper, C., ...&Freundl, G. (2007). The effectiveness of a fertility awareness-based method to avoid pregnancy in relation to a couple's sexual behaviour during the fertile time: a prospective longitudinal study. *Human Reproduction*, 22(5).
- Harris, B., Goudge, J., Ataguba, J. E., McIntyre, D., Nxumalo, N., Jikwana, S., &Chersich, M. (2011). Inequities in access to health care in South Africa. *Journal of public health policy*, 32(1), S102-S123.
- Hubacher, D., Reyes, V., Lillo, S., Zepeda, A., Chen, P. L., & Croxatto, H. (2006). Pain from copper intrauterine device insertion: Randomized trial of prophylactic ibuprofen. *American Journal of Obstetrics and Gynaecology*, 195(1), 1272–127. doi: 10.1016/j.ajog.2006.08.022
- Indongo, N. (2007). *Contraceptive choice and use of methods among young women in Namibia*. Doctoral thesis, University of Pretoria.
- Johnston, R. (2012). *Historical Abortion Statistics, South Africa*. Retrieved from <http://www.jblearning.com/samples/0763743836/Chapter%204.pdf>
- Karim, S. A., & Karim, Q. A. (2010). *HIV/Aids in South Africa*: Cambridge University Press.
- Kelly, K. (2006). From encounter to context: Collecting data in qualitative research. In M. Terre Blanche, K. Durrheim, & D. Painter (Eds.), *Research in practice:*

- Applied methods for the social sciences (pp. 285–319). Cape Town: University of Cape Town Press. Kelly
- Klaus, H. (1982) Natural Family Planning: A Review, *Obstetrical and Gynecological Survey*, 37(2), 128
- Laing, J. E. (1978). Estimating the effects of contraceptive use on fertility: Techniques and findings from the 1974 Philippine national acceptor survey. *Studies in Family Planning*, 9(6), 150-162.
- Lince-Deroche, N., Pleaner, M., Morroni, C., Mullick, S., Firnhaber, C., Harries, J., ...&Holele, P. (2016). Achieving universal access to sexual and reproductive health services: the potential and pitfalls for contraceptive services in South Africa. *South African Health Review*, 2016(1), 95-108.
- Lincoln, Y. S., & Guba, E. G. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 105-117). Thousand Oaks, CA: Sage.
- Lwelamira, J., Mnyamagola, G., & Msaki, M. M. (2012). Knowledge, Attitude and Practice (KAP) towards modern contraceptives among married women of reproductive age in Mpwapwa District, Central Tanzania. *Current Research Journal of Social Sciences*, 4(3), 235-245.
- Maharaj, P., & Rogan, M. (2011). Missing opportunities for preventing unwanted pregnancy: A qualitative study of emergency contraceptive. *Journal of Family Planning Reproductive Health Care*, 37(1), 89–96.
doi:10.1136/jfprhc.2011.0055
- Meng, K. H., & Cho, P. D. K. S. (1989). Profile of the Billings Ovulation Method Acceptors and. *Journal of Korean medical science*, 4(1), 29-34.
- McSweeney, L. (2011) Successful sex-preselection using natural family planning. *African Journal of Reproductive Health*, 15(1), 79-84.
- Nakiboneka, C. and Maniple, E. (2008) Factors related to the uptake of natural family planning by clients of Catholic health units in Masaka Diocese, *Uganda*: 6(3), 126-141.
- Nondabula, B. (2013). Methods of fertility management among students of the University of KwaZulu-Natal, South Africa: A study of the extent of knowledge, utilisation and rating of billing ovulation method (BOM). Unpublished dissertation.

- Nsubuga, H., Sekandi, J. N., Sempeera, H., & Makumbi, F. E. (2016). Contraceptive use, knowledge, attitude, perceptions and sexual behaviour among female University students in Uganda: A cross-sectional survey. *BMC Women's Health, 16*(6), 1–11. doi: 10.1186/s12905016 0286-6
- Ntozi, J. P., & Kabera, J. B. (1991). Family planning in rural Uganda: knowledge and use of modern and traditional methods in Ankole. *Studies in family planning, 11*6-123.
- Odeblad, E. (1994). The discovery of different types of cervical mucus and the Billings Ovulation Method. *Bulletin of the Natural Family Planning Council of Victoria, 21*(3), 3-34.
- Oliver, P. (2006). *Research methods, purposive sampling*. London: Sage Publications.
- Olugbenga-Bello, A. I., Abodunrin O.L., & Adeomi A.A (2011). Contraceptive practices among women in rural communities in South-Western Nigeria. *Global Journal of Medical Research, 11*(2), 1-9.
- Opong, S. H. (2013). The problem of sampling in qualitative research. *Asian Journal of Management Sciences and Education, 2*(2), 202–210.
- Osman, S, & Thompson, A. (2012). A preventable pandemic: unsafe abortion in South Africa. Retrieved from <http://www.mariestopes.org.za/sites/www.mariestopes.org.za/files/unsafe%20abortion%20factsheet%20Marie%20Stopes.pdf>
- Otwombe, K. N., Petzold, M., Martinson, N., & Chirwa, T. (2014). A review of the study designs and statistical methods used in the determination of predictors of all-cause mortality in HIV-infected cohorts: 2002–2011. *PloS one, 9*(2), 87-102.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.
- Phyfer, J. (2012). Methods of fertility management among students of the University of KwaZulu-Natal, South Africa: A study of the extent of knowledge, utilisation and rating of billing ovulation method (BOM). Unpublished dissertation.
- Polit, D.F., & Beck, C.T. (2008) *Nursing Research: Generating and Assessing Evidence for Nursing Practice*. (8th ed.). Lippincott Williams & Wilkins, Philadelphia: Pa.


- Popovici, A. (2010). Fertility, science and conscience. *National Catholic Reporter*, 47(3), 8b.
- Ramona, S. E. (2011). Advantages and disadvantages of quantitative and qualitative information risk approaches. *Chinese Business Review*, 10(12), 1106–1110
- Rowan, M., & Huston, P. (1997). Qualitative research articles: Information for authors and peer reviewers. *Canadian Medical Association Journal*, 157(1), 1442-1446.
- Ruhukwa, C. (2016). Promotion of Students' Knowledge and Utilization of the Billings Ovulation Method of Natural Fertility Management: An Experimental Study. Master's Thesis, University of KwaZulu-Natal.
- Sedgh, G., Singh, S., & Hussain, R. (2014). Intended and unintended pregnancies worldwide in 2012 and recent trends. *Studies in Family Planning*, 45(1), 301-314 doi:10.1111/j.17284465.2014. 00393.x
- Shao-Zhen, Q. (2003). China successfully launching Billings Ovulation Method. *International jubilee Conference*.
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63-75.
- Silverman, D. (2009). *Doing qualitative research* (3rd ed.). London: Sage Publications.
- Sinai, I., Lundgren, R., Arévalo, M., & Jennings, V. (2006). Fertility awareness-based methods of family planning: predictors of correct use. *International family planning perspectives*, 94-100.
- Smith, A. D., & Smith, J. L. (2014). Billings Mentor: Adapting natural family planning to information technology and relieving the user of unnecessary tasks. *The Linacre Quarterly*, 81(3), 219-238.
- Stats, S. A. (2014). Statistics South Africa. *Formal census*.
- Terre Blanche, M., Durrheim, K., & Kelly, K. (2006). First steps in qualitative data analysis. In M. Terre Blanche, K., Durrheim & D. Painter (Eds.), *Research in Practice: Applied methods for the social sciences* (pp. 34-59). Cape Town: University of Cape Town Press.
- Trussell, J. (2011). Contraceptive failure in the United States. *Contraception*, 83(5), 397–404. doi: 10.1016/j.contraception.2011.01.021

- Turner, L. W., Hunt, S. B., Dibrezzo, R. & Jones, C. (2004). Design and implementation of an osteoporosis prevention program using the Health Belief Model. *American Journal of Health Studies*, 19(2), 115-121.
- United Nations. (1996). *Levels and trends of contraceptive use as assessed in 1994*. New York: Author.
- Urrutia, R. P., Polis, C. B., Jensen, E. T., Greene, M. E., Kennedy, E., & Stanford, J. B. (2018). Effectiveness of fertility awareness–based methods for pregnancy prevention: A systematic review. *Obstetrics & Gynaecology*, 132(3), 591-604.
- VandeVusse, L., Hanson, L., Fehring, R. J., Newman, A., & Fox, J. (2003). Couples' views of the effects of natural family planning on marital dynamics. *Journal of Nursing Scholarship*, 35(2), 171-176.
- Van der Riet, M. (2009). The production of context: using activity theory to understand behaviour change in response to HIV and AIDS. *Unpublished PhD dissertation, University of KwaZulu-Natal, Pietermaritzburg, South Africa. [Links]*.
- Wang, W., Wang, S., Pullum, T., & Amatepi, P. (2012). How family planning supply and the service Environment affect contraceptive use: findings from four East African countries. *DHS analytical Studies*, 26.
- Wassenaar, D. R., & Slack, C. M. (2016). How to learn to love your research ethics committee: Recommendations for psychologists. *South African Journal of Psychology*, 46(3), 306-315
- Weissmann, M. C., Foliaki, L., Billings, E., & Billings, J. (1972). A trial of the ovulation method of family planning in Tonga. *The Lancet*, 300(7781), 813-816.
- White, K. A. (1999). Crisis of conscience: Reconciling religious health care services providers' beliefs and patients' rights. *Stanford Law Review*, 51(6), 1703–1749.
- Zinaman, M. J. (2006). Using cervical mucus and other easily observed biomarkers to identify ovulation in prospective pregnancy trials. *Paediatric and perinatal epidemiology*, 20, 26-29.

APPENDICES

APPENDIX 1

Gatekeeper Approval



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE:
Health Research & Knowledge
Management

Physical Address: 230 Langalaba Road, Pietermaritzburg
Postal Address: Private Bag X9051
Tel: 033 395 3095, 3188 2122, Fax: 033 394 0780
Email: info@kznhealth.gov.za

Ref: KZ_201809_026

Dear Ms S Thabetho
(UKZN)


Subject: Approval of a Research Proposal:

- The research proposal titled '**Fertility Management through the Billings Ovulation Method (BOM): A Study of Effectiveness among Target Couples from Pietermaritzburg South Africa**' was reviewed by the KwaZulu-Natal Department of Health (KZN-DoH).

The proposal is hereby **approved** for research to be undertaken at Greys and Northdale Hospitals.

- You are requested to take note of the following:
 - Kindly liaise with the facility manager BEFORE your research begins in order to ensure that conditions in the facility are conducive to the conduct of your research. These include, but are not limited to, an assurance that the numbers of patients attending the facility are sufficient to support your sample size requirements, and that the space and physical infrastructure of the facility can accommodate the research team and any additional equipment required for the research.*
 - Please ensure that you provide your letter of ethics re-certification to the unit, when the current approval expires.*
 - Provide an interim progress report and final report (electronic and hard copies) when your research is complete.*
- Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to rxcm@kznhealth.gov.za

For any additional information please contact Ms G Khumalo on 033-395 3189.

Yours Sincerely


Dr E Lutge
Chairperson, Health Research Committee
Date: 27/09/19

Fighting Disease, Fighting Poverty, Doing More

APPENDIX 1A

Gatekeeper Approval



Appendix 1a
DIRECTORATE: OFFICE OF THE CEO

1000 York Road, Pietermaritzburg 6001
Tel: 0333 247 4661 Fax: 0333 247 4662 Email: info.northdale@kzn.gov.za 337 73
www.northdale.gov.za NORTHDALE HOSPITAL

DATE	13 February 2019
TO	Mr S Thabethe
FROM	Mrs BC Maphanga : CEO Northdale Hospital
RE:	Approval Letter to Conduct Research : Fertility Management through the Billings Ovulation Method (BOM): A Study of Effectiveness among Target Couples from Pietermaritzburg South Africa

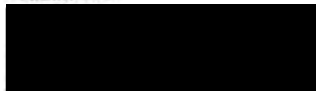
Dear Mr S Thabethe

I have pleasure in informing you that permission has been granted to you by Northdale Hospital to conduct a study on : Fertility Management through the Billings Ovulation Method (BOM): A Study of Effectiveness among Target Couples from Pietermaritzburg South Africa

Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received approval of your study from the Provincial Health Research and Ethics Committee (PHREC) in the KZN Department of Health.
3. Please ensure this office is informed before you commence your research.
4. The District Office/Facility will not provide any resources for this research.
5. You will be expected to provide feedback on your findings to the District Office/Facility.
6. You are required to contact this office regarding dates for providing feedback when the research has been completed.

Thank You



MRS BC MAPHANGA
CEO: NORTHDALE HOSPITAL

Fighting Diseases, Fighting Poverty, Giving Hope

APPENDIX 2

Gatekeeper Approval



Christ the King Catholic Church

26 Cycas Road
Merewent.
Durban
Tel: (031) 461 1123
E-mail: ckparishwentworth@gmail.com

23 July 2020

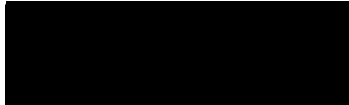
To Whom It May Concern

Dear Sir / Madam

This is to certify that Thabethe Sineliso was given permission to do his research with subjects from St. Mary's Catholic Church by Fr. Mhlanganisi Dlamini OMI, during the year 2019.

His topic was relevant to the Catholic Church's teaching on family planning. His chosen topic was "Fertility Management through the Billings Ovulations Method: A study of effectiveness among target couples from Pietermaritzburg, South Africa".

Yours sincerely in Christ



Fr. Mhlanganisi Dlamini OMI
Priest



APPENDIX 3

Ethics Approval



02 April 2019

Mr Sineliso Thabethe (982199980)
School of Applied Human Sciences – Psychology
Pietermaritzburg Campus

Dear Mr Thabethe,

Protocol reference number : HSS/0888/018M

Project title: Fertility Management through the Billings Ovulation Method (BOM) : A study of effectiveness among target couples from Pietermaritzburg, South Africa

Approval Notification – Full Committee Reviewed Protocol

With regards to your response received on 27 March 2019 to our letter of 21 September 2018, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully


Dr Rosemary Sibanda (Chair)

/ms

cc Supervisor: Professor Augustine Nwonye
cc Academic Leader Research: Dr Maud Mthembu
cc School Administrator: Ms Priya Kanan

Humanities & Social Sciences Research Ethics Committee

Dr Rosemary Sibanda (Chair)


Westville Campus, Govan Mbeki Building

Postal Address: Private Bag 95401, Durban 4000

Telephone: +27 (0) 31 260 3887/3004/637 Facsimile: +27 (0) 31 260 4038 Email: rosibanda@ukzn.ac.za / msibanda@ukzn.ac.za / rosibanda@ukzn.ac.za

Website: www.ukzn.ac.za



Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville

APPENDIX 4

Advert

DO YOU WANT TO TALK ABOUT NATURAL FAMILY PLANNING, THE BILLINGS OVULATION METHOD (BOM)?

Would you be interested in participating in an interview about the Billings Ovulation Method? Are you using or have been using the ovulation method before and you are from Pietermaritzburg and over the age of 18?

I am looking for male and female or couple participants from Pietermaritzburg to be part of my master's research exploring "Effectiveness of natural family planning (BOM)" This will be done through interview sessions with YOU!!

If you will be interested in participating in this study, please contact me by email sinelisothabethe@gmail.com/0796284432

PLEASE NOTE: CONFIDENTIALITY IS GUARANTEED!!!

APPENDIX 5

Interview Questions

Section A:

1. Age: _____ Gender: _____
2. Race: _____ Marital Status _____

Section B

1. When last have you used the Billings Ovulation Method (BOM)?
2. What were you using the BOM for?
3. What have you used the BOM for other than what you have said?
4. How effective was the BOM in sex pre-selection/preventing pregnancy or conceiving?
5. What motivated you to use the BOM?
6. How satisfied or dissatisfied were you with this method?
7. What were the benefits of using the method?
8. What were the challenges of using the BOM?
9. What kept you motivated in using the BOM besides the challenges?
10. Why do other people don't prefer the BOM as the fertility management method?

APPENDIX 6

Information sheet



Introduction

Thank you for agreeing to participate in this interview. This document is intended to provide you with information about this study and your role within it. In order to participate in this study you **MUST** be a female using natural family planning method or have used the method before and you must be 18 and above.

My name is SinelisoThabethe, a post-graduate student at the University of KwaZulu-Natal, Pietermaritzburg campus. As part of my master's degree, I am conducting a study on **Fertility Management through the Billings Ovulation Method (BOM): A Study of perceptions Effectiveness among Target Couples from Pietermaritzburg South Africa**. I would like to know your experiences with regard to using natural family planning method. By conducting this research, I hope to get understanding of your perceptions on issues related to Billings Ovulation Method.

Confidentiality

Your identity will be kept confidential in this process by using the pseudonym of your choice. This pseudonym will be used during the discussion in the interview, in the transcription of the discussion as well as the final research dissertation.

Storage of the research data

The transcriptions of the discussion will be kept for future research purposes such as additional analysis. They will be stored for five years in a locked cabinet in my supervisor's office, as will any other materials relating to this research. To keep your

identity confidential, all the data will be stored separately from information which links it to your actual name.

Possible benefits of participating in the study

By participating in this research you could benefit directly from engaging the issues surrounding the ovulation method. You could benefit indirectly from this research as the findings may assist in designing interventions to assist people who have challenges with ovulation method when needed. At this time I do not foresee any risk that the study may cause you by participating in the research. However, should you feel stressed due to your participation in the study you can approach the Child and Family Centre at the University, for a counselling appointment:

Tel: 033 260 5166).

Additional

If you have any questions you would like to ask, you are welcome to contact me using the details at the bottom of the page. If you have any questions, you may also contact my supervisor:

Prof Augustine Nwoye
SUPERVISOR
Discipline of Psychology
University of KwaZulu-Natal
Email: nwoye@ukzn.ac.za
Tel no: 033 260 5100

If you have any ethical concerns about this study you can also contact Ms. PhumeXimba of the Humanities and Social Science Research Ethics Committee (031 260 3587; Email ximbap@ukzn.ac.za)

Thank you for your time and participation. I hope this is an interesting and rewarding experience for you.

Sincerely,

SinelisoThabethe
RESEARCHER
sinelisothabethe@gmail.com
0796284432

APPENDIX 7

CFC Permission

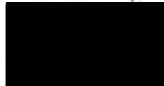


10 September 2018

To whom it may concern

This letter serves to provide the assurance that should any research participant interviewed by Mr Sineiso Thabethe (Psychology masters student) require psychological assistance as a result of any distress arising from the research project titled: "*Fertility Management through the Billings Ovulation Method (BOM): A Study of Effectiveness among Target Couples from Pietermaritzburg South Africa*", the service will be provided by Psychology Masters students and/or intern psychologists at the Child and Family Centre, University of KwaZulu-Natal, Pietermaritzburg Campus. It is acknowledged that Mr Thabethe's project is under the supervision of Prof. Augustine Nwoye.

Yours sincerely,



Dr Phindie L. Mayaba
Director: Child and Family Centre

CHILD AND FAMILY CENTRE

School of Applied Human Sciences

Discipline of Psychology

Postal Address: Private Bag X01, Scottsville, Pietermaritzburg 3209, South Africa

Telephone: +27 (0)33 260 3144/4348 Email: mayaba@ukzn.ac.za Website: psychology.ukzn.ac.za

Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

APPENDIX 8

Consent form for interviews



I hereby agree to participate in this study. I have had an opportunity to read and understand the information sheet given to me.

The purpose of the study has been explained to me. I understand what is expected of me in terms of my participation in this study and the time commitment I am making to participate.

I understand that my participation is voluntary, and I know that I may withdraw from the study at any point, without negative consequences.

I understand that my data will be stored securely for a period five years and may be used for future research. I understand that measures will be taken to ensure that my identity is protected and my participation in this research will be completely confidential in this regard. I understand that no identifying information about me will be published.

I have the contact details of the researcher should I have any more questions about the research. In the unlikely event that any personal issues should arise during the research, I have been given contact details for Counselling services. I have also been given contact information of the Humanities and Social Sciences Research Ethics Committee office.

Signature of Participant.....

Date.....

APPENDIX 9

Consent for audio

In order to be able to understand clearly what has been said in this interview and to remember it, I would like to record the discussion on this small digital recorder. I will then listen to the recording and write it down word for word.

After this transcription has been made, I will then delete the recording on the digital recorder.

I assure you that your name will not be linked to the recording or the written information from the recording. I will give you a code name, using numbers, for example Participant 1, Interview 3.

Do you consent to the recording of this discussion?

Yes No

If yes, then please sign here _____ Date: _____