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**KNOWLEDGE, ATTITUDES, AND BEHAVIOURS OF FEMALES REQUESTING
TERMINATION OF PREGNANCY IN NELSON MANDELA BAY REGARDING
EMERGENCY CONTRACEPTIVES**



**BY
CHWAYITA NYANGENI**

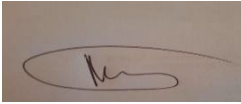
University of Fort Hare
A DISSERTATION SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR
MASTER OF NURSING

**THE UNIVERSITY OF FORT HARE
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF NURSING**

SUPERVISOR: DR N.M RALA

DECLARATION

I, Chwayita Nyangeni, 202003979, declare that the dissertation titled **Knowledge, attitudes, and Behaviours of Females Requesting Termination of Pregnancy in Nelson Mandela Bay regarding Emergency Contraceptives** is my work and has not been submitted for assessment to another university or for other qualifications. I further declare that I am fully aware of the University of Fort Hare's policy on plagiarism and ethics and have taken every precaution to comply with the regulations. The Ethical clearance certificate number is REC-100118-054.

Signature:  Date.....20 May 2024.....



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CERTIFICATION

This dissertation titled: **Knowledge, attitudes, and Behaviours of Females Requesting Termination of Pregnancy in Nelson Mandela Bay regarding emergency contraceptives** meets the regulations governing the award of the degree of Master of Nursing at the University of Fort Hare and is approved for its contribution to scientific knowledge.

Signature of the supervisor..... Date...24 May 2024.....



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DEDICATION

This dissertation is dedicated to my late grandmother, Nokwanela Margaret Matiwane. I am grateful for her unconditional love and for raising me through difficult times to be the independent female I am today. She will always be loved. May her beautiful soul continue to rest in peace.



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Research participants for their willingness to participate in the study



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ABSTRACT

Background

Unintended pregnancies leading to termination of pregnancy (TOP) continue to increase regardless of the availability of emergency contraceptives (ECs). The increase in uptake of TOP services suggests underutilisation of ECs. This could be due to insufficient knowledge, negative attitudes, and non-conforming behaviour towards ECs.

Objectives

This study investigated the knowledge, attitudes, and behaviours of women regarding emergency contraceptive use in Nelson Mandela Bay.

Methods

A total of 390 women participated in this cross-sectional survey and a structured self-administered questionnaire was used for data collection. The data were summarised using frequency distribution tables and associations between participant characteristics and KAB were carried out using the chi-square test.

Results

Participants knew that condom rupture (70.3%) and forced intercourse/rape (64.9%) were circumstances under which ECs may be used. Women from informal settlements were less likely to be aware of the usefulness of ECs in preventing pregnancy (OR=0.3; 95%CI (0.16; 0.59)) compared to township and urban women and so were those with less than university education (OR=0.2; 95%CI (0.07;0.39)). Women from informal settlements and those with high school education were more likely to be neutral than to agree with effectiveness of ECs compared to township women (OR=2.3; 95%CI(1.14;4.69)) and those with university education (OR=2.6; 95%CI (1.38; 4.88)), respectively. Rural women were less likely to have previously used ECs compared to township women (OR=0.2; 95%CI (0.06;0.86)), so were those with high school education compared to university graduates (OR=0.4; 95%CI (0.19;0.74)).

Conclusion

Emergency contraception knowledge, attitudes, and behaviours were found to be related to the residential type and educational level. This study recommends

strengthening awareness campaigns on ECs to women whose messaging considers residential type and education level.

Keywords: Emergency contraceptives, knowledge, attitudes, behaviours, termination of pregnancy.



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LIST OF ACRONYMS AND ABBREVIATIONS

BMI	Body Mass Index
CHC	Community Health Centre
COCs	Combined Oral Contraceptives
CTOP	Choice on Termination of Pregnancy
CIUDs	Copper Intrauterine Devices
ECs	Emergency Contraceptives
ECPs	Emergency Contraceptive Pills
GCP	Good Clinical Practice
KAB	Knowledge Attitude and Behaviours
LNG	Levonorgestrel
NMB	Nelson Mandela Bay
NMBHD	Nelson Mandela Bay Health District
OCPs	Oral Contraceptive Pills
POPs	Progestogen Only Pills
RPNs	Registered Professional Nurses
SA	South Africa
SPSS	Statistical package for social sciences
TOP	Termination of Pregnancy
WHO	World Health Organisation

DEFINITION OF TERMS

Knowledge is the information gained through experience or education (Soanes, 2002:500). For this research study, knowledge refers to the awareness and understanding possessed by participants regarding emergency contraceptives and their ability to display relevant knowledge required for seeking and using ECs.

Attitude is a way of thinking or feeling about someone or something (Soanes, 2002:49). For this study, an attitude refers to the participant's willingness to use emergency contraception. Those willing to use ECs are considered to have a positive attitude towards them, and those not inclined to use ECs, due to their reasons, are deemed to have a negative attitude towards ECs.

Behaviour is how someone acts or conducts themselves toward something or a person (Soanes, 2002:72). For this study, behaviour refers to the way participants act towards the use of ECs. A participant whose behaviour is deemed positive towards the use of ECs will not be deterred by any limitations or restrictions to the use of ECs, whereas participants considered to be having negative behaviour will be prevented by the limitations or restrictions to use ECs.

Emergency contraceptives are contraceptives used to prevent pregnancy that may have resulted from unprotected sexual intercourse with no other contraceptive used, breaking of the condom, and missed contraceptive pills (Macdonald & Magill-Cuerden, 2011:334). EC is a hormonal drug (morning-after pill) or an intrauterine contraception device (IUCD) taken within five days after unprotected sexual intercourse or if a condom breaks or the person misses a contraceptive pill(s) (WHO, 2021). In this research study, emergency contraceptive means the use of oral contraceptive pills, both combined oral contraceptives and progestogen-only pills, taken within five days of unprotected sexual intercourse or an intrauterine contraceptive device inserted within five days after unprotected sexual intercourse to prevent unintended pregnancy.

Termination of pregnancy (TOP) is defined as the separation and removal by medical or surgical means of the contents of the uterus of pregnant females (The Choice on Termination of Pregnancy Act, No. 92 of 1996, 1996: chap 1). In the context of this research study, TOP refers to pregnancies that are terminated legally by trained TOP providers according to the Choice on Termination of Pregnancy Act.

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CHAPTER 1: OVERVIEW OF THE STUDY

1.1 Introduction and Background

Emergency contraceptives (ECs) have been confirmed to prevent pregnancies following unprotected sexual intercourse. They are widely available to females, yet unintended pregnancies continue to be on the increase (Hope, Hattingh & King, 2016:11). The World Health Organization [WHO] (2018) recommends emergency contraceptives for any female of reproductive age after unprotected sexual intercourse, contraceptive failure, or in cases of sexual assault. Emergency contraceptives can prevent unintended pregnancies up to 95% if used correctly within five days of unprotected sexual intercourse (World Health Organization [WHO], 2018).

Globally, emergency contraceptives are an underutilised option for preventing unintended pregnancies, and their use remains a best-kept secret in reproductive health (Awopegba et al. (2021:1); Gemzell-Danielsson and Marions (2004:341). A study conducted in Canada found that while most of the participants were aware of the existence of emergency contraceptives, only 52% had ever used them (Rivet et al. (2021:199)). Despite evidence that emergency contraceptives are an effective means of preventing unintended pregnancies, many females are still unaware of the different emergency contraceptive methods, and those who are aware tend to doubt the safety of emergency contraceptives (Rimi et al., 2016:1909). Knowledge regarding emergency contraceptives is critical in preventing unsafe abortions, and initiatives need to be implemented to advocate the use of emergency contraceptives to prevent unintended pregnancies and termination of pregnancy (Parmar (2018:35)).

Worldwide, emergency contraceptives are available in private pharmacies and public health facilities without needing a medical prescription (Hayes, Hutchings & Hayes, 2000:203). In 1997, access to ECs in Washington State was increased by allowing pharmacists and independent practitioners to provide EC pills directly to females as a measure to reduce unintended pregnancies (Hayes, Hutchings & Hayes, 2000:203). From the year 2000, access to emergency contraceptives increased as many countries, including South Africa, removed the requirement of a medical prescription for access to emergency contraceptives (Parida & Bhatia, 2014:1). In South Africa, emergency contraceptives are available in all primary health care facilities without a need to present a prescription (Blanchard, Harrison & Sello, 2005:172).

A study conducted by Westley and Glasier (2010:243) found that, while emergency contraceptives were available for use in many countries, unintended pregnancy rates did not decrease. In addition, despite the availability of emergency contraceptives in many countries around the world, females still resort to voluntary termination of pregnancy (Pattanaik et al., 2017:93). This suggests that other factors bar females from attempting to access emergency contraceptives in healthcare facilities, besides availability of emergency contraceptives (Kunene, 2013:19). Poor knowledge regarding ECs was found to be one such barrier to the utilisation of emergency contraceptives (Westley & Glasier, 2010:243; Hailemariam et al., 2015:2). Another factor that discouraged females from seeking emergency contraceptives was the negative attitude of the healthcare providers' towards emergency contraceptives (Osa-Izeko, Govender & Ross, 2016:161). There was a generally held view among healthcare providers that emergency contraceptives encourage promiscuity (Osa-Izeko, Govender & Ross, 2016:161). Suppose healthcare providers hold such attitudes and beliefs. In that case, there is a high likelihood that they do not even provide information on emergency contraceptives to their clients, let alone encourage emergency contraceptive use.



A quantitative study conducted in Kwa-Zulu Natal, South Africa, found that females of childbearing age have their peers as their primary source of information on emergency contraceptives (Haffejee et al. (2018:81)). There is a high possibility that information shared among peers would lack authority as it is not likely to be based on scientific evidence, which may lead to ill-informed decisions concerning emergency contraceptive use (Haffejee et al., 2018:81). A quantitative study conducted in Ethiopia found that healthcare providers did not offer information on the available emergency contraceptive options to their clients (Abate, Assefa & Alemaheyu, 2014: 7).

In a study conducted in Ethiopia, Mishore, Woldemarian and Huluka (2019:2) found that participants' educational level was significantly associated with knowledge and utilisation of emergency contraceptives. Knowledge regarding emergency contraceptives was substantially higher among literate than in illiterate participants (Mishore, Woldemarian & Huluka, 2019:2). Similarly, a study conducted in Kwa-Zulu Natal found that knowledge regarding emergency contraceptives was associated with educational level such that highly educated participants had more information concerning emergency contraceptives (Osa-Izeko, Govender & Ross, 2016:160). In

contrast, a study conducted in Ghana found that knowledge regarding emergency contraceptives was not associated with educational level, as there was no statistically significant difference in information about emergency contraceptives among literate and illiterate females (Opuku and Kwaununu (2011:151)).

Besides the influence of educational level, travelling distance to healthcare facilities and non-availability of emergency contraceptives could be hinderances to access to and consumption of emergency contraceptives (Feleke, Nigussie & Debele, 2019:2). Additionally, a quantitative study conducted in Ethiopia concluded that several factors that led to the non-utilisation of emergency contraceptives included long distances to healthcare facilities and non-availability in healthcare facilities (Feleke, Nigussie & Debele, 2019:2).

Residential zone of the females's residence was found to have a significant association with the utilisation of emergency contraceptives among females in a study carried out in Ethiopia (Feleke, Nigussie and Debele (2019:2)). It was found that females residing in urban areas utilised emergency contraceptives more than those living in rural areas and was justified. Females in urban areas were exposed to more information-sharing media compared to their rural counterparts in rural areas (Feleke, Nigussie & Debele, 2019:3). Furthermore, emergency contraceptives may be more accessible in urban areas than in rural areas (Feleke, Nigussie & Debele, 2019:2).

Emergency contraceptive use was found to be more likely among single females than married females and this could be due to the non-regular use of contraceptive methods and unplanned sexual intercourse among single females (Feleke, Nigussie & Debele, 2019:3). A descriptive study conducted in Botswana revealed that older females were more likely to use emergency contraceptives than younger females and females from urban areas had better knowledge of emergency contraceptives than their rural counterparts (Kgosiemang & Blitz, 2018:4).

Despite evidence that emergency contraceptives are an effective means of preventing unintended pregnancies, many females are still unaware of the different emergency contraceptive methods, and those who are aware tend to doubt the safety of emergency contraceptives (Rimi et al., 2016:1909). Knowledge regarding emergency contraceptives is critical in preventing unsafe abortions, and initiatives need to be

implemented to advocate the use of emergency contraceptives to prevent unintended pregnancies and termination of pregnancy (Parmar (2018:35)).

1.2 Problem statement

The South African public health service offers contraceptives, including emergency contraceptives, free of charge to all females who may need them (Bongongo & Govender, 2019:1). Despite the South African government's ongoing efforts to educate females on the importance of emergency contraceptives in preventing unintended pregnancies, there has been a rise in requests for termination of pregnancy services (Bongongo & Govender, 2019:1). Knowledge, attitudes, and behaviour towards emergency contraceptives needs to improve to reduce the number of unplanned pregnancies and requests for termination of pregnancy services (Bongongo and Govender (2019:2).

According to the South African Maternal, Child & Females health barometer statistics, a national total of 84 220 terminations of pregnancy were recorded between March 2015 and April 2016 (Massyn et al., 2016:84). Of that national total, 12 782 (15.2%) were recorded in the Eastern Cape province and of that provincial total, 2112 (16.5%) were recorded in the Nelson Mandela Bay Health District (NMBHD) (Massyn et al., 2016:84). In the period between March 2020 and April 2021, NMBHD recorded 4 043 pregnancy terminations, almost twice the number of terminations in the March 2015 to April 2016 period.

Concerning live births, the NMBHD birth records showed that 7.7% of all live births in the period between April 2017 and March 2018 were by females in the 10 to 19 years age group (Massyn et al., 2019:65). For the period between April 2019 and March 2020, the proportion of live births, by females in that same age group was 9.7%, which represents an increase when compared to the same period in 2017/18 (Massyn et al., 2020:15). Pregnancies among most of the females in this age group were unintended and more than half of them resulted in abortions and complications that led to maternal deaths (Massyn et al., 2020:9).

The increase in terminations of pregnancies suggests underutilisation of emergency contraceptives, which could be attributed to insufficient knowledge, negative attitudes, or non-conforming behaviour towards emergency contraceptives. The increasing proportion of females requesting termination of pregnancy services in the Nelson

Mandela Bay Health District encouraged the researcher to conduct a study assessing their knowledge, attitudes and behaviours (KAB) towards ECs.

1.3 Research aim

This study investigated females' knowledge, attitudes, and behaviours regarding emergency contraceptives in Nelson Mandela Bay, SA.

1.4 Objectives of the study

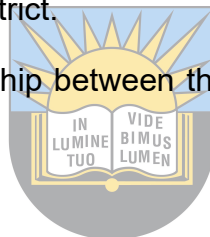
The objectives of the study were to:

Assess the knowledge regarding ECs among females requesting termination of pregnancy at Nelson Mandela Bay Health District.

Assess attitudes towards ECs among females requesting termination of pregnancy at Nelson Mandela Bay Health District.

Examine behaviour towards ECs among females requesting termination of pregnancy at Nelson Mandela Bay Health District.

Determine if there is any relationship between the females's KAB and demographic characteristics.



1.5 Research questions

Based on the above objectives, the following research questions were formulated:

What knowledge about emergency contraceptives do females requesting termination of pregnancy in the Nelson Mandela Bay Health District have?

What are the attitudes of the females requesting termination of pregnancy in the Nelson Mandela Bay Health District towards emergency contraceptives?

What are the emergency contraceptive-related behaviours of females requesting termination of pregnancy in the Nelson Mandela Bay Health District?

What are the relationships between the KAB of females requesting termination of pregnancy in the Nelson Mandela Bay Health District and their demographic characteristics?

1.6 Significance of the study

The recommendations from this study will assist the district's maternal, child, and female health directorate in optimising the promotion and utilisation of emergency

contraceptives by females residing in the Nelson Mandela Bay area and beyond. The promotion and utilisation of emergency contraceptives provide a cost-effective way of reducing unintended pregnancies that will result in termination, legally or illegally. Awareness and use of emergency contraceptives minimise unintended pregnancies and related maternal mortalities due to pregnancy-related complications. Findings from this study will contribute to the body of knowledge on sexual reproductive health related to emergency contraceptives.

1.7 Conceptual framework

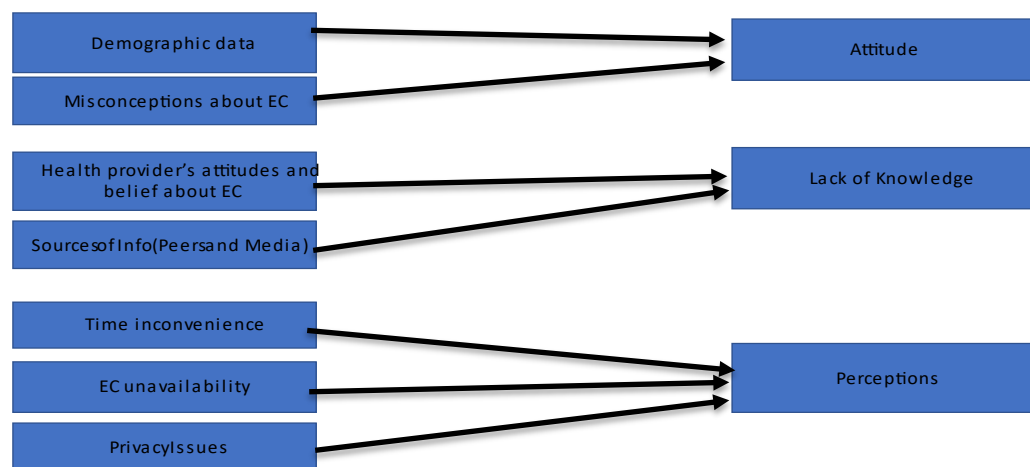


Figure 1.1: Conceptual framework of this research study

A conceptual framework is the basis of the research problem, which describes the aspects selected from the theoretical framework to become the basis of enquiry (Kumar, 2011). The conceptual framework determines which questions are to be answered by the research and how empirical procedures are to be used as tools in finding answers to the questions (De Vos et al., 2011:35). In the conceptual framework, the researcher seeks to explain how the research problem would be explored and show how ideas in a research study relate to one another (Grant & Osanloo, 2014). The conceptual framework helps the researcher to identify and construct their worldview and assumptions of the phenomenon to be investigated (Grant & Osanloo, 2014).

The respondents' age, education, socioeconomic status, and geographical location may influence their attitudes towards emergency contraception. Cultural norms and religious beliefs may play a significant role in shaping females' attitudes towards EC. Religious opposition to contraception can lead to negative attitudes and reduced usage of ECs. Also, misconceptions about ECs, such as confusing it with abortifacients, can negatively impact attitudes.

Healthcare providers' religious beliefs towards EC may influence the KAP of EC. Healthcare providers believe that EC encourages promiscuity amongst women, and that causes women not to use long-term contraceptives if they are given information regarding EC, which could cause women not to have the necessary information regarding EC. These beliefs infringe on the sexual reproductive rights of women to information about their sexual reproductive health. Women may make use of TOP services when pregnant due to the lack of information regarding EC.

The source of information regarding EC may also influence its KAP. Information regarding EC received from peers and media may be inaccurate and lack a scientific background, which could create misconceptions about EC. In contrast, information obtained from healthcare workers could be based on scientific evidence and accurate. Receiving correct information regarding EC could cause a good attitude towards EC, leading to increased use of EC.

Time inconvenience may affect women's perceptions regarding EC because women may know about EC and have a good attitude towards EC. Still, because healthcare facilities are not within their reach, there could be a barrier to accessing EC.

EC's unavailability in healthcare facilities could also influence its use. The unavailability of emergency contraceptive pills and intrauterine devices in healthcare facilities could cause pregnancies to be terminated because they were not prevented, and that could also cause an increased rate of unintended pregnancies. In addition to drug unavailability, privacy issues of patients in healthcare facilities could cause non-utilization of EC because women may feel that by requesting EC in healthcare facilities, other people know that they were involved in unprotected sexual intercourse.

1.8 Chapter outline

This research study consists of five chapters.

Chapter 1: Overview of the study

Chapter One provided an introduction and background of the research study, including the problem statement and objectives.

Chapter 2: Literature Review

Chapter Two presents a literature review of this research study that assisted the researcher in developing a questionnaire suitable for this research study.

Chapter 3: Methodology

Chapter Three presents the research methodology used in this research study.

Chapter 4: Results and discussion

Chapter Four presents the results and discussion of the study results with the literature control.

Chapter 5: Conclusion, limitations and recommendations

Chapter Five presents a summary, limitations, conclusion, and recommendations for the study.

1.9 Summary

Chapter One provided an overview of the research study with specific reference to the background, problem statement, aim and objectives, and significance of the study.



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CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The previous chapter introduced the research topic by providing a background to the research problem, aim and objectives, and significance of the study. This chapter presents the literature reviewed as a basis for the study. The literature reviewed covered topics on females's knowledge of and attitudes towards emergency contraceptives, as well as their emergency contraceptive-related behaviours. Literature was obtained from EBSCOhost, Google Scholar, and PubMed online databases. Keywords/phrases used for the literature search were "emergency contraceptives", "knowledge of females regarding emergency contraceptives", "attitudes of females regarding emergency contraceptives", "behaviours of females towards emergency contraceptives", and "termination of pregnancy and emergency contraceptives". The literature review was conducted to determine the existing body of knowledge on emergency contraception and identify possible gaps.

2.2 Emergency contraceptives

Emergency contraceptives play a crucial role in preventing unintended pregnancies in South Africa (Dahan-Farkas & Vally, 2019:46). Despite emergency contraceptives being widely available at no cost in public health facilities in South Africa, unintended pregnancies continue to be a concern (Dahan-Farkas & Vally, 2019:46). In addition to preventing unintended pregnancies, emergency contraceptives reduce maternal morbidity and mortality related to unsafe abortion as well as the termination of pregnancy rate (Myer et al., 2007:6; Perveen et al., 2017: 277). Emergency contraceptives are the only female contraceptive methods that offer females the opportunity to prevent pregnancy after unprotected sexual intercourse (Ziba & Yakong, 2019:2). Emergency contraceptives are safe and effective if used within 120 hours (five days) of unprotected sexual intercourse (World Health Organization [WHO], 2018). Despite the availability of emergency contraceptives globally, unintended pregnancies and unsafe termination of pregnancy are still predominant problems for females, and this is due to a lack of adequate knowledge, poor attitude and negative behaviour towards emergency contraceptives (Gebremedhin et al., 2017:2). Every female has a right to decide when to have children (Office of the High Commissioner for Human Rights, 2014:51). These rights are upheld with emergency contraception in

cases of unprotected sexual intercourse, condom rupture, intrauterine device expulsion, missed contraceptive pills, late use of injectable contraceptives and coerced sexual intercourse (Mohammed, Abdulai & Iddrisu, 2019:2).

There are two types of hormonal emergency contraceptive methods used globally, namely the Yuzpe regimen, also known as Combined Oral Contraceptives (COCs) and the Progestogen Only Pills (POPs). The Yuzpe regimen has been globally available since the 1990s and was about 75% effective in preventing unintended pregnancies, but females complained about unpleasant side effects (Mooney-Somers et al., 2019:176). At the time of conducting this study, COCs used as emergency contraceptives were a combination of Ethinyl Estradiol and Levonorgestrel (LNG), whereas POPs contain Levonorgestrel only. Both COCs and POPs are recommended for use within 120 hours of unprotected sexual intercourse. However, the sooner the pills are taken, the more effective they are (Mozzanega & Nardelli, 2019:6). The POP regimen is now up to 95% effective. The COC regimen is up to 77% effective. Both POPs and COCs are most effective when taken within 24 hours of unprotected sexual intercourse (Department of Health, 2015:39). EC pills are not abortifacient but prevent fertilisation by delaying ovulation and are less effective if administered after ovulation has occurred (Mooney-Somers et al., 2019:179).

Copper Intrauterine Devices (Cu IUDs) can also be used as EC and lower the chances of pregnancy after unprotected intercourse by up to 99.9% and are some of the most effective ECs available (Goldstuck & Wildemeersch, 2015:3). The Cu IUDs reduce sperm motility, resulting in the sperm not reaching the ovum in time to fertilise it (Goldstuck & Wildemeersch, 2015:3). The Cu IUDs are most effective if inserted within 120 hours of unprotected intercourse (Goldstuck & Wildemeersch, 2015:4). Additional benefit of inserting an IUCD is the prevention of future pregnancies as the IUCD has a lifespan of between 5 to 10 years, depending on the type (Goldstuck & Wildemeersch, 2015:4). Emergency conception knowledge and access to emergency contraceptives use of ECs has been proven to prevent many unplanned and unwanted pregnancies following unprotected intercourse (Department of Health, 2015:39). Emergency contraceptives are especially useful for young females, because their sexual activity is usually unplanned, and thus may be unprotected (Department of Health, 2015:39). There are no medical eligibility criteria for the use of emergency contraceptive pills. Emergency contraceptive pills are not meant for repeated use or

use as the primary method of contraception, so much so that females who use them in that way need to be counselled and encouraged to use more regular contraceptive options that may be more appropriate and more effective (WHO,2021).

Frequent and repeated use of emergency contraceptive pills may be harmful to females with conditions classified as medical eligibility criteria (MEC) category 2, 3, or 4 for COCs and POPs. Frequent use of emergency contraceptive pills can result in increased side effects, such as menstrual irregularities, although their repeated use poses no known health risks (WHO, 2021). Counselling on the use of emergency contraceptive pills should include options for using regular contraceptive methods and advice on correct use of the methods to avoid method failure (WHO, 2021).

2.3 Knowledge regarding emergency contraceptives

All females need to have accurate information regarding emergency contraceptives for the uptake of emergency contraceptives to increase. Lack of knowledge regarding emergency contraceptives hinders emergency contraceptives (Chaudhary, 2022:676). One of the barriers that hinder females's access to emergency contraceptives is the healthcare providers, who are usually inadequately trained, insufficient in number, and poorly supervised (Hogmark et al., 2013:2). Gunardi and Ginting (2019:190) found that midwives lacked knowledge of ECs. A study conducted in Nigeria found that only 24% of healthcare providers had good knowledge about emergency contraceptives (Olufunke et al., 2006). Improving the quality of care, including the provision of training on contraceptives increases and sustains contraceptive use by females (Hogmark et al., 2013:2). For healthcare providers to deliver reliable information to females, they need adequate knowledge of contraceptive methods and training in counselling skills (Hogmark et al., 2013:2). Some of the critical predictors of emergency contraceptive use include knowledge and awareness of the contraceptives (Gunardi & Ginting 2019:190).

A study conducted in Sweden found that knowledge and awareness campaigns related to contraceptives increased awareness, knowledge, and use of emergency contraceptives and reduced termination of pregnancy rates (Wilder et al., 2009:2). The lack of knowledge concerning contraceptive use is one of the major causes of unplanned pregnancies, and which results in significant health and social problems (Asut et al., 2018: 2). While almost all healthcare providers in Iran are familiar with emergency contraceptives, only a third of them had in-depth knowledge and this was

attributed to their failure to promote correct and accurate information about emergency contraceptives (Mohammad-Alizadeh-Charandabi, Farshbaf-Khalili & Moeinpoor, 2012:57).

In addition to a lack of adequate knowledge among healthcare providers, their negative attitudes and beliefs hinder them from actively promoting emergency contraceptives (Perveen et al., 2017: 277). A study conducted in Iran found that about half of the healthcare providers believed that emergency contraceptive awareness would reduce the use of condoms, which would then lead to an increase in the rate of unprotected sexual intercourse and sexually transmitted infections (Mohammad-Alizadeh-Charandabi et al., 2012:58). In a study conducted in Pietermaritzburg, South Africa, 79,5% of the participating healthcare providers believed that the provision of emergency contraceptive knowledge could lead to high levels of risky sexual behaviour which would lead to increased HIV transmission (Sibanda & Titus, 2017). A study conducted in Nigeria found that 6% of healthcare providers believed that emergency contraceptives act as abortifacients and would affect the uptake and consistent use of regular contraceptives (Olufunke et al., 2006:91). The unkind and judgmental behaviour of healthcare providers discourages young females from enquiring and seeking knowledge about emergency contraceptives (Wondimagegne, Debelew & Koricha, 2023:7).



On the other hand, healthcare facilities that are sufficiently resourced with skilled personnel are essential in awareness creation and information dissemination (Abebaw, Tesfa, Gezimu, Bekele and Duguma, 2022:7). Healthcare providers with positive attitudes and beliefs are likely to provide females with helpful information about contraceptives, emergency or otherwise, contributing to the females's general knowledge about contraceptives (Mohammed, Abdulai and Iddrisu, 2019:5). It is essential to capacitate healthcare providers with high-level expertise about emergency contraceptives so that the information they provide to females about preventing unplanned and unwanted pregnancies after unprotected sexual intercourse is accurate and effective (Mohammed, Abdulai and Iddrisu, 2019:5).

Results of a study conducted in Australia showed that, while females might know about emergency contraceptives, they did not know how and where to access the services (Mooney-Somers et al., 2019:181). A study conducted in Ethiopia found that healthcare

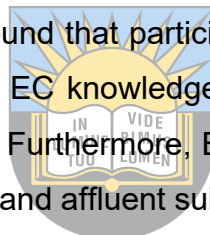
services did not incorporate contraception as a health concern, nor did the educational system promote reproductive health, which hinders the youth from accessing information on emergency contraception and thus making healthcare services adolescent-unfriendly (Wondimagegne, Debelew and Koricha, 2023:7).

Emergency contraceptives are widely available at a cost from private healthcare providers and at no cost in public healthcare facilities; depending on each country's legislation, this information may not be accessible to every female who may need it (Mamabolo, 2017:83). Some females who are aware of the cost implications associated with emergency contraception services from private healthcare providers have the misconception that such costs also apply to public healthcare providers (Mamabolo, 2017:83).

Further misconceptions relating to a lack of knowledge include that emergency contraceptive pills cause termination of pregnancy, need a prescription, have dangerous side effects, and may cause future infertility. A study conducted in Pakistan found that 64% of females had the misconception that emergency contraceptive pills are abortive drugs (Abdullah et al., 2024:5). Another study conducted in Asia found that 42.6% of the females believed that emergency contraceptive pills cause future infertility, block blood vessels, or structurally damage female reproductive organs ((Mir & Malik, 2010:361); (Al-Shami et al., 2023:162; Sedlander et al., 2021:344)). The belief that contraceptive use causes infertility was associated with older age (Sedlander et al., 2021:344). A qualitative study conducted in Nigeria found that females believe that the side effects are teratogenic and can cause infertility (Ajayi et al., 2016:8). All the misconceptions displayed insufficient knowledge about emergency contraception (Mooney-Somers et al., 2019:182).

A study conducted in Ghana found that females residing in urban areas were more likely to possess sufficient knowledge regarding emergency contraceptives than females who reside in rural areas (Tutu, Aryeh-Adjei & Ampadu, 2018:3). The reason for the difference between residents residing in rural areas and urban areas was associated with proximity and access to facilities providing such services (Tutu, Aryeh-Adjei & Ampadu, 2018:3). Residents of urban areas had a greater access to services including the availability of healthcare facilities and contraceptives than those in rural areas (Tutu, Aryeh-Adjei & Ampadu, 2018:3). Similarly, a study conducted in Cape

Town, only 17% of females residing in rural areas were aware of emergency contraceptives compared to 35% of females residing in urban areas (Myer et al., 2007:3). Additionally, Myer et al.,(2007:4) found that females residing in urban areas to have better exposure to knowledge because they have a variety of reproductive health information sources while rural females depend, predominantly, on public health clinics. Furthermore, females residing in urban areas have more opportunities to obtain reproductive health information than females who reside in rural areas (Kgosiemang & Blitz, 2018:4). Additionally, a study conducted in Nepal suggests that females residing in urban areas have significantly higher knowledge due to their increased access to mass media, internet and health service facilities (Chaudhary, 2022:679). Similarly, a study conducted in Ethiopia also found that females residing in urban areas had a higher knowledge than those in rural areas (Belachew et al., 2023:5). In addition, females in urban areas have better access to the Internet, media outlets, and healthcare providers than females in rural areas (Belachew et al., 2023:5). Belachew et al. (2023:4) further found that participants residing in urban areas were 3.19 times more likely to possess EC knowledge than those residing in rural areas (AOR = 3.19; 95% CI: 1.20, 5.23). Furthermore, Belachew et al. (2023:4) emphasise that women residing in large cities and affluent suburbs were 2.68 more likely (AOR = 2.68; 95% CI: 1.46, 4.74) to possess EC knowledge compared to women in small peripheral regions.



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Knowledge regarding emergency contraceptives and interest in them depends on the sexual activity of the females, with those who had never had sexual intercourse being less knowledgeable (Ziba & Yakong, 2019:3). Abera et al. (2021:4) confirm that, in addition to sexual activity, women who had a history of previous pregnancy were three times more likely to use ECs than those with no history of pregnancy (AOR=3.0; 95% CI: 2.3–9.02). Females's level of education increases their awareness of emergency contraceptives (Ekhtiari et al., 2018:3). A study conducted in Johannesburg, South Africa (SA), found that knowledge regarding emergency contraceptives was associated with females having a senior secondary or tertiary education and being employed (Lukhaimane & Adam, 2015:266). Another study conducted in Nepal found that awareness of emergency contraceptives was significantly associated with educational level, such that those with higher levels of education had more knowledge (Chaudhary, 2022:679). Similar results were obtained from a study conducted in

Ethiopia, which found that females with at least secondary school education were 3.41 times more likely to be knowledgeable about ECs with (AOR of 3.41%; 95% CI: 2.19,4.88) compared to those with lower educational levels (Belachew et al., 2023:4). Educated females have better access to health care information and more ability to comprehend reproductive health issues and make optimal choices of contraceptive technique for their circumstances (Belachew et al., 2023:4). Additionally, in a study conducted by Demissie et al. (2020:6), the multivariate regression analysis demonstrated that students who had good knowledge (AOR = 2.3, 95% CI:1.20, 4.25) were two times more likely to use ECs. A study conducted by Abera et al. (2021:4) confirms that women who had good knowledge were 2.2 times more likely to use an ECs than those who were not knowledgeable about ECs (AOR=2.24; 95% CI: 1.32–5.8). This suggests that education plays a vital role in the understanding and awareness of emergency contraceptives (Chaudhary, 2022:679).

A study conducted in Ethiopia found that knowledge of emergency contraceptives was higher for females older than 24 years compared to females younger than 24 years, and this was attributed to the fact that females are likely to be exposed to more sexual health information, emergency contraception included, as they get older (Belachew et al., 2023:4). Similarly, a study conducted by Davis et al (2020:4) discovered that there was an association between the age of participants and the level of awareness regarding emergency contraceptives. The association was seen with the participants of more than 25 years of age with a statistical significant P-value of less than 0.001(Davis et al., 2020:6). Studies conducted in the USA have shown that older females are more likely to have adequate knowledge of emergency contraceptives because older females are likely to be more sexually active than young females (Seetharaman, Yen & Ammerman, 2016:163). Furthermore, Demissie et al. (2020:6) found that there is a significant association between age and the use of ECs, with a multivariable logistics regression analysis showing that college female students between the ages of 20 and 24 years (AOR = 2.3, 95% CI: 1.21, 4.49) were two times more likely to use ECs. In a study conducted by Abera et al. (2021:4), the multivariable logistic regression analysis showed that, participants aged above 20 years were two times more likely to use ECs than to those who had their first sexual intercourse at a younger age (15–19 years), (AOR=2.04; 95% CI: 1.72-6.5). In contrast, a study conducted in Pakistan found that knowledge regarding emergency contraceptives was

not significantly associated with the age of participants as demonstrated by a P-value of 0.096 (Abdullah et al., 2024:4).

The risk of misinformation concerning emergency contraceptives is very high, and many females fear possible adverse effects of emergency contraceptives, including future infertility (Mutie et al., 2012:274). The distortion can be attributed to the informal network of sources regarding emergency contraceptives (Mutie et al., 2012:274). Literature revealed that the primary source of emergency contraceptive information was mass media (Demissie, Nigatu & Beyene, 2020:4). In contrast, medical sources of information are reliable (Verma et al. (2015:324)). A study conducted in India obtained similar results, finding that females gained their information from the internet due to its accessibility through smartphones (Davis et al., 2020:6). In contrast, a study conducted in Ethiopia found that females who were exposed to media were more knowledgeable than those with no media access (Belachew et al., 2023:5). Media is believed to have a powerful ability to explain different emergency contraception methods, their benefits and accessibility, which enhances the females's knowledge (Belachew et al., 2023:5). A study conducted by Demissie et al. (2020:7) found a significant association between the marital status and the use of ECs. A study conducted in Ethiopia found that married women were three times more likely to use ECs (AOR = 2.8, 95% CI: 1.22, 1.21) than their unmarried counterparts (Demissie et al., 2020:7). Similarly, the same study found that divorced women were five times more likely to use ECs (AOR = 4.9, 95% CI: 1.12, 21.08) than women who were never married (Demissie et al., 2020:7). In addition to the marital status, there is a significant association between a woman's knowledge of ECs and their previous exposure to regular contraceptives, first sexual exposure and pregnancy (Belachew et al., 2023:4 & Abera et al., 2021:4). According to Abera et al. (2021:4), women who had experience of other forms of regular contraception utilisation were three times more likely to use ECs than those who did not have exposure of other forms of regular contraception (AOR=3.01; 95% CI: 2.13–7.27). Belachew et al. (2023:4) and Abera et al. (2021:4) further agree that, women who have a pregnancy experience are likely to possess good knowledge about ECs 17.19% (95% CI: 15.18, 19.40). Abera et al. (2021:5) further found that there was an association between women's knowledge of ECs and their history of sexual activity to the extent that such women knew that the use of ECs following unprotected sexual activity prevents pregnancy.

2.4 Attitudes towards emergency contraceptives

The bivariate analysis of a study conducted in Kenya revealed that age, level of education, year of study and insurance coverage were significantly associated with level of knowledge and utilisation of ECs among the participants (Nyambura et al., 2017).

Females whose knowledge about emergency contraceptives is enhanced may have a positive attitude towards their use, whereas females with limited knowledge may have negative attitudes (Perveen et al., 2017: 277). Nyambura et al. (2017:999) found that the level of education influences a positive attitude towards the use of ECs. The results of a study conducted by Nyambura et al. (2017:99) demonstrate that tertiary education was significantly associated with the utilisation of ECs (OR = 2.756; 95% CI: 1.109 - 6.851, $p = 0.025$). Nyambura et al. (2027:999) observed that participants who had been exposed to health information demonstrated- a 5.6 fold increment in their willingness to use ECs due their higher probability of exposure to information about ECs (aOR = 5.565; 95% CI: 2.379- 13.016, $p < 0.001$). Habitu et al. (2018:4) found that utilisation was higher among participants who had information about ECs than those who had not [AOR (95% CI) = 6.3 (2.4, 9.7)]. Successful use of emergency contraceptives requires accurate knowledge of and favourable attitude towards emergency contraception methods such that females who obtained inaccurate information (dangerous side effects, congenital abnormalities and abortifacient) about emergency contraceptives may have a negative attitude (Hailemariam et al., 2015:5). A study conducted in India found that the negative attitudes were associated with poor and moderate awareness (Davis et al., 2020:4). Some females perceive emergency contraceptives as a risk for increased chances of contracting sexually transmitted infections including HIV. These would have negative attitudes (Demissie, Nigatu & Beyene, 2020:5). Females from urban areas have adequate access to information and are more likely to have positive attitudes towards emergency contraceptives (Kgosiemang, 2018:4).

A study conducted in India found that 83% of females had positive attitudes, and the remaining 17% who had negative attitudes attributed it to their religious values (Verma et al., 2015:324). In contrast, Abraha et al. (2019:4) found that Protestant religion

followers were 60.8 times more likely to utilise EC compared to Orthodox-Christian followers (AOR = 60.85, CI (5.34–693.29). In Ethiopia, favourable attitudes were observed among Orthodox Christians (Mutie et al., 2012:274). A study conducted in Ghana found that 48.7% of females believed that the provision of emergency contraceptives to females would encourage promiscuity and discourage compliance with other contraceptive methods (Yeboah, Appiah & Kampiti, 2022:9).

Besides religious values, it was found that age influenced attitudes towards emergency contraceptives such that younger females (18-25 years) had a more positive attitude than those older than 25 years or younger than 18 years (Verma et al., 2015:324). Nyambura et al. (2017:999) found that women aged 20 years and above were two times more likely to utilise ECs compared to their younger counterparts (OR = 2.026; 95% CI: 0.991 -4.143, $P = 0.040$). Similar results were also found in a study conducted in India, where age also influenced the attitudes of females towards emergency contraceptives (Davis et al., 2020:10). This finding is confirmed by Abraha et al. (2019:4) who found that women who have not used ECs before had negative attitudes towards ECs and as such, were less likely to use them than their counterparts who have used ECs (AOR = 0.030, CI (0.006–0.14).

In contrast, the bivariate analysis of a study conducted in Kenya revealed that age, level of education, type of college, year of study and insurance coverage were significantly associated with level of knowledge and utilisation of ECs among the participants (Nyambura et al., 2017:999). In addition, Habitu et al. (2017:4) note that information about ECs, cultural acceptance of ECs, sexual intercourse by agreement, getting pregnant after sex, treatment by service providers, free ECs, and attitude towards ECs had P values of <0.2 in the bivariate logistic regression model and thus demonstrating positive attitude towards EC use..

The parity of females was also found to be a factor that influences the females' attitudes, with mothers of at most two children having more positive attitudes than those with more children (Verma et al., 2015:324). The majority of participants in a study conducted in Nepal had positive attitudes, with more than half of them believing in the safety of emergency contraceptives (Shakya et al., 2020:7). A large percentage of participants felt that routine information about emergency contraceptives should be

included in contraceptive counselling and sex education in schools (Shakya et al., 2020:8).

Rokicki & Merten (2018:8) found that participants showed negative attitudes towards emergency contraceptives due to fear of change in their menstrual rhythm and regularity as well as the fear of possible structural damage to the uterus, preventing future ability to conceive. It was found that some females believe that taking emergency contraceptive pills would lead to addiction and thus ineffectiveness in preventing pregnancy (Rokicki & Merten, 2018:8). A study conducted in Ethiopia found that the females had a negative attitude towards emergency contraceptives and attributed this to their fears that emergency contraceptives would promote promiscuity and affects the menstrual cycle (Davis et al., 2020:8).

2.5 Behaviours towards emergency contraceptives

It has been observed that awareness, attitudes, and beliefs influence contraceptive use (Leon-Larios et al., 2022:7). Mistaken beliefs that emergency contraception can cause termination of pregnancy or is detrimental to health discourage females from seeking emergency contraceptives (Mutie et al., 2012:268). A study conducted in Spain revealed that 50% of females believed that emergency contraceptive use affects females' fertility and that repeated use leads to health-related consequences in the long term (Leon-Larios et al., 2022:7). Additionally, in a Parkistan study 58% of participants did not utilise emergency contraceptives due to fear of the side effects which include infertility (Abdullah et al., 2024:4). Such fears are a significant barrier to emergency contraceptive use among females in South Ethiopia (Wondimagegne, Debelew & Koricha, 2023:5). Females fear side effects like infertility and being judged by family and friends (Wondimagegne, Debelew & Koricha, 2023:5). In Ghana, the main barrier to emergency contraceptive use was found to be fear of future infertility (Ziba & Yakong, 2019:4). Non-usage of emergency contraceptives among females can be attributed to insufficient knowledge which, in turn, influences the females's attitudes and behaviours (Hernandez et al., 2017:124). A Nepalese study found that 29.6% of females attributed low uptake of emergency contraceptives to a lack of knowledge since information on emergency contraceptives is not widely and correctly disseminated (Chaudhary, 2022:678). There exists an information gap regarding the correct usage of emergency contraceptives, as mass media does not provide reliable and adequate information (Chaudhary, 2022:678). In a study conducted by Feleke et

al. (2019:3) the multivariate binary logistic regression analysis for knowledge of EC [AOR = 5.66, 95% CI 3.976, 8.070] and having a positive attitude towards EC [AOR = 2.75, 95% CI 1.946–3.881] were found to be significantly associated with EC use. Contrary to most reviewed literature, a study conducted in Southeast Brazil found that knowledge regarding emergency contraceptives had no significant direct or indirect effects on the uptake of emergency contraceptives (Chofakian et al., 2016:7).

The credibility of the sources of information on emergency contraceptives may significantly influence the behaviour of females towards emergency contraceptives. This is suggested in a study that was conducted in Nigeria, which found that females whose source of information was health providers (91.2%) were significantly more likely to utilise emergency contraceptives compared to those who had friends and peers as sources of information (Isa et al., 2016:198). In Canada, Wagner et al. (2019:7) found that females with high-credibility sources of information (70.5%) had significantly higher intentions to use emergency contraceptives than those who obtained information from low-credibility sources (26.5%). Both studies demonstrate the need to increase the dissemination of information from highly credible sources and to curb misinformation by countering information from low to zero-credibility sources of information, wherever possible (Wagner et al., 2019:7). The frequency with which accurate information is disseminated has been found to influence females's intentions to use emergency contraceptives (Wagner et al. 2019:7). Repeated exposure of the females to information on emergency contraceptives was found to be associated with intention to use emergency contraceptives (Wagner et al. 2019:7).

Social and cultural norms influence behaviour towards emergency contraceptives by strictly prohibiting exposure of females to sexual and reproductive health information from sources other than within their social and cultural context (Wondimagegne, Debelew & Koricha, 2023:6). Some communities in Ethiopia believe that adolescent females who use emergency contraceptives are deviant, indecent, and promiscuous (Wondimagegne, Debelew & Koricha, 2023:6). Similarly, in Uganda, emergency contraceptive use was found to be socially and culturally associated with infidelity and prostitution of females (Namasivayam et al., 2022:2). Most cultural practices intensify social norms that discourage the use of emergency contraceptives (Namasivayam et al., 2022:2).

A study conducted in India revealed that the educational level of participants was associated with emergency contraceptive use. (Verma et al., 2015:325). Similarly, a study conducted in Nairobi revealed that education significantly affects emergency contraceptive use (Mutie et al., 2012:274). This was attributed to educated females having greater motivation to obtain information on strategies to delay childbearing and thus seek options for contraception (Mutie et al., 2012:274).

A study conducted in Tanzania found that religions which embrace the use of contraceptives tended to be receptive towards emergency contraceptive use as opposed to religions that prohibit contraceptive use (Sundararajan et al., 2019:4). Catholics and Muslims in Ethiopia despise the use of emergency contraceptives (Mutie et al., 2012:274). Some religious practices that are against abortion believe that emergency contraceptive use is a form of chemical abortion (Ziba & Yakong, 2019:4). Catholics believe that emergency contraceptives have an anti-implantation effect that acts as an abortifacient (Ziba & Yakong, 2019:4). In contrast, Feleke et al. (2029:3) found the Orthodox religious affiliation as one of the bivariate factors associated with use of ECs. Other studies also found that most religions advocate for abstinence from sexual intercourse before marriage, and therefore do not support the use of emergency contraceptives ((Wondimagegne, Debelew & Koricha, 2023:6); (Lukhaimane & Adam, 2015:266)). A study conducted in Pakistan where 90% of female participants were Islam, 40% of the female participants believed that use of emergency contraceptives contradicts their moral and religious values (Abdullah et al., 2024:5).

In some cases, females suggest alternative herbal concoctions as being effective in preventing unplanned and unwanted pregnancies (Hernandez et al., 2017:124). Some females feel that healthcare providers do not provide family planning counselling, which suggests that the primary source of pregnancy prevention information would be family and friends (Hernandez et al., 2017:124). Another barrier to non-use of emergency contraceptives was found to be the spouses, 29% of female participants in Pakistan could not use emergency contraceptives due to their spouses who would not permit them to use emergency contraceptives (Abdullah et al., 2024:5).

The judgmental behaviour of healthcare providers also contributes to the low uptake of emergency contraceptives by asking embarrassing questions that discourage young females from seeking emergency contraception services (Hernandez et al., 2017:124). Healthcare service providers have their biases and misconceptions regarding emergency contraceptives. These pose significant barriers to the use of emergency contraceptives by females in Nigeria (Onasoga et al., 2016:59). Furthermore, some healthcare providers fear that adolescent knowledge or use of emergency contraceptives may lead to more unprotected sexual intercourse and a decrease in the use of a regular method of contraception (Onasoga et al., 2016:59).

A study conducted in Ethiopia revealed that females in the 25-34 age group were the highest users, followed by females in the 15-24 age group, and females above 45 years of age were the least users (Mutie et al., 2012:274). In comparison, the study conducted by Feleke et al. (2019:3) found that women in the 20-24 age group had a significantly high inclination to use ECs [AOR = 2.10, 95% CI 1.200–3.671]. Onasoga et al. (2016:59) reported that one of the factors influencing the utilisation of emergency contraceptives by females was the concern about what other people might say. In some cases, availability, accessibility, and peers influence the utilisation of emergency contraceptives by females (Onasoga et al., 2016:59). While females may have various reasons for not using emergency contraceptives, misinformation about adverse effects and the belief that emergency contraceptives are abortifacients remain central to the females's decisions to use emergency contraceptives (Onasoga et al., 2016:59).

2.6 Summary

This chapter presented the literature on females' knowledge, attitudes, and behaviours regarding emergency contraceptives, which was reviewed as a basis for this study. The literature review showed that unintended pregnancies continue to increase despite the availability of emergency contraceptives. The literature review also found that healthcare providers' inadequate knowledge of emergency contraceptives contributed to non-use by females. Place of residence, employment status, level of education, and source of information were identified as the demographic characteristics that influenced emergency contraceptive use.

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter presented the literature reviewed to establish the existing knowledge about the topic under study. This chapter examines the methodology used to gather and analyse the information to answer the research questions. This research methodology chapter describes the research design, study setting, study population, sampling, sampling process, data collection, data collection instrument, selection and training of research assistants, data analysis, and ethical considerations.

3.2 Research approach and the design

A research design is a step-by-step procedure that researchers adopt before the data collection and analysis processes in such a way that the research objectives can be objectively achieved (Asenahabi, 2019:77). In addition, the research design is a plan, structure, and strategy of investigation that is adopted to obtain answers to research questions with optimal control of variables (Asenahabi, 2019:78).

The variables of interest in this study were measured on a 5-point Likert scale, which is a numerical scale in which low values represent low levels of agreement (Apuke, 2017:41). Besides the fact that the variables are quantifiable, the analysis of the data was based on specific statistical techniques (Apuke, 2017:41). The quantitative measurement of the variables and the quantitative analysis of the data, both make the study design quantitative.

This study involves the measurement of the demographic characteristics (exposures) and the knowledge, attitudes, and behaviour (outcomes) without imposing any controls on the participants other than the inclusion and exclusion criteria. The fact that the study did not involve manipulating participants makes the design observational, and the data were collected at a single point in time for all participants, making the design cross-sectional (Setia (2018:261)).

Since the data and the analysis were both quantitative, the data collection was cross-sectional, and the participants were observed in their usual environment, the design of this study can be best described as an observational, cross-sectional quantitative design.

3.2.1 Study setting

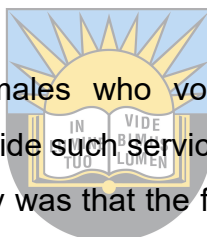
A research setting is a physical location where the study is conducted and the conditions under which data collection occurs (Grove et al., 2013). The study was conducted in public health institutions providing termination of pregnancy in the Nelson Mandela Bay Health District of the Eastern Cape province of South Africa. The health district has five institutions that terminate pregnancy services, namely, Dora Nginza Hospital, Uitenhage Hospital, Leticia Bam Community Healthcare Centre (CHC), Motherwell CHC, and PE Central CHC.

3.2.1 Study population

A study population is a group of individuals who meet the sample criteria for inclusion in a study (Grove et al., (2013). For this study, the population of interest was all the females who sought termination of pregnancy from any one of the five public health facilities in the study setting.

3.2.1.1 Inclusion criteria

Included in this study were females who voluntarily requested termination of pregnancy in the facilities that provide such services in the study area. The only other restriction for inclusion in the study was that the females should be at least 12 years old. This criterion is based on the fact that, by legislation, a pregnant 12-year-old female can seek termination of pregnancy without having to seek consent from parents or guardians.



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3.2.1.2 Exclusion criteria

Excluded in this study are females who had a mental illness due to their limited ability to make voluntary choices. Females under the age of 12 years were excluded from this study because, by legislation, they cannot voluntarily seek termination of pregnancy services, which is one of the inclusion criteria.

3.2.1.3 Sampling process and sample size

Bhardwaj (2019:158) defines sampling as a procedure to select a sample from a large population group for a certain kind of research purpose. Furthermore, sampling allows the researcher to estimate the sampling errors and assists in getting information concerning some characteristics of the population (Bhardwaj, 2019:158). The selected

sample should have characteristics similar to those of the population under study to allow generalisability of the results to the population (Polit & Beck, 2013: 178).

Convenience sampling was utilised in this study. Convenience sampling is a nonprobability sampling technique in which participants are included in the study because they are conveniently accessible (Grove et al., 2013: 686). Convenience sampling was the chosen sampling method for this study because the researcher used available participants, in other words, females who requested termination of pregnancy in NMBHD facilities and who met the inclusion criteria.

Dora Nginza Hospital receives an average of 132 requests for termination of pregnancy per month. In comparison, Uitenhage Provincial Hospital receives 48 requests, and Motherwell Healthcare Center, Port Elizabeth Central Community Health Centre, and Leticia Bam receive 65, 40, and 45 requests, respectively. This means that every month, the health district of Nelson Mandela Bay receives a monthly average of 330 requests for termination of pregnancy.

The sample size was determined using the sample size computational formula given below.

$$n = \frac{Z_{(1-\alpha/2)}^2 pq}{e^2}$$

where;

n is the required sample size

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$Z_{(1-\alpha/2)}$ is the confidence limit for a central $(1 - \alpha/2)$ % confidence interval

α is the significance level

e is the margin of error

p is the population proportion knowledgeable of emergency contraceptives

$$q = 1 - p$$

Assuming an infinitely large population, 50% knowledgeable of emergency contraceptives, 5% margin of error, and 5% significance level, the estimated minimum sample size required was 384 participants. To accommodate refusal to participate, withdrawals, and spoilt questionnaires, an extra 39 participants were added to the estimated sample size, resulting in an effective sample size of 423 participants. The

additional 39 participants represent 10% of the estimated sample size. Of the 423 questionnaires distributed, 390 were completed and returned by the participants.

3.2.2 Data collection

Data collection is systematically gathering and measuring information on variables of interest, enabling one to answer the stated research questions (Muhammad & Kabir, 2016:202).

The knowledge, attitudes, and behaviour of females regarding emergency contraception were measured using a structured self-administered questionnaire. The distribution and collection of questionnaires were done by trained and assessed research assistants at each site. Besides the competencies and skills, research assistants were also trained in COVID-19 precautionary measures. All the participants and the research assistants were required to wear masks, sanitise hands with 70% alcohol sanitiser, keep the venue well-ventilated, sanitise pens after each use, keep social distance by having one participant answer the questionnaire at a time and complete the COVID-19 screening tool including the testing of body temperature to check for any signs and symptoms of COVID-19. In the event of positive screening for COVID-19, the participant was sent to a clinical practitioner for further assessment.

The research assistants approached the participants in the respective healthcare institutions and explained the study's aim and objectives, clarified the participants' roles, and estimated the time to complete the questionnaire. Participants were allowed to ask any clarification questions before being asked to complete an informed consent form. Those who gave their consent were then given a questionnaire and a pen to complete it. The research assistants were available throughout the process to assist with clarifications whenever the need arose.

Once completed, the participants were asked to drop their completed questionnaires into a sealed box with only an opening for the questionnaires. The boxes were collected at the end of each day throughout the data collection period. At the end of the data collection period, the boxes were opened, and the completed questionnaires were checked for completeness. Those that were not completed properly were discarded, and those that were properly completed were captured onto an MS Excel spreadsheet. The hard copies were stored safely in a locked cupboard and will be kept

locked there for at least five years for audit and verification purposes. The data collection was conducted from February to April 2022.

3.2.2.1 Data collection instrument

Globally, researchers use questionnaires as data collection instruments within their survey designs (Saunders et al., 2016:175). A structured self-completed questionnaire, that was designed to gather information relevant to answering the research questions, was developed. The questionnaire was developed based on the questionnaire used by Solanki and Kulkarni (2016). The questions were formulated in English and took less than 30 minutes to complete. The questionnaire consisted of four sections. The first section, Section A, comprised of questions aimed at determining the demographic characteristics of participants. Sections B, C, and D were on the knowledge, attitudes, and behaviour of participants, respectively.

The demographic characteristics of interest were age, residence, marital status, educational level, religion, and number of living children. Knowledge was assessed based on 15 statements about emergency contraceptives, and participants were given three response options: true, false, and uncertain. Attitudes were assessed based on seven statements about emergency contraception, and participants were asked to indicate their level of agreement with those statements. The levels of agreement were measured on a 5-point Likert scale, with response categories: strongly disagree, disagree, uncertain, agree, and strongly agree.

3.2.2.1.1 Validity and reliability

The validity and reliability of the questionnaire used in this study were previously tested in a similar research study in Mumbai (Solanki & Kulkarni, 2016). Although the questionnaire had been tested previously, the researcher adapted it to the present study to retest the validity and reliability and achieve its contextual relevance. A pilot study of 42 participants (10% of the sample size) was conducted before the actual data collection was conducted to test the instrument's reliability and validity. The pilot study checked the relevance of the questions and estimated the time required to complete the questionnaire. The validity of the questionnaire was ensured so that the data collected measured what was intended (Taherdoost, 2016:28). The reliability of the questionnaire was ensured so that it yielded consistent results if used repeatedly over time on the same person (Brink et al., 2018:155). The Cronbach's alpha

coefficient was used to assess the reliability of the attitude items. The Cronbach's alpha coefficient for the seven items was found to be 0.691, which is reflective of the acceptable internal consistency of the attitude questionnaire. According to Polit and Beck (2010:377), the normal range of Cronbach's alpha is between 0 and 1, and the closer it is to 1, the higher the reliability of the questionnaire.

3.2.2.2 Selection and training of research assistants

Data collection refers to a process of acquiring information on variables of interest in a predetermined and methodical way that makes it possible to respond to specific research questions (Muhammad & Kabir, 2016:202).

Five research assistants were recruited from the registered professional nurses at the different facilities to facilitate the data collection. These research assistants were appropriately given a detailed briefing of the study and their roles in the research process. They were trained on how to request voluntary informed consent and how to conduct the data collection. The training also included COVID-19 precautionary measures needed when engaging with the participants.

All the participants and the research assistants were required to wear masks, sanitise hands with 70% alcohol sanitiser, and complete the COVID-19 screening tool, including taking body temperature to check for any signs and symptoms of COVID-19. If a participant tested positive for COVID-19, they were sent to a medical practitioner for further assessment.

The trained research assistants approached the females who were at the healthcare institutions that provide termination of pregnancy services and requested them to participate in the research study. Participants were not forced or persuaded to engage in the research study. The research assistants explained the aim and objectives of the research, clarified what was expected of the participants and asked them to complete and sign the informed consent form. Those who had given consent were given a chance to ask any questions regarding the study before being handed a questionnaire and a pen and asked to complete the questionnaire.

3.2.2.3 Pilot study

A pilot study is a small feasibility study designed to test the methods planned for a larger investigation (Lowe, 2019:117). In addition, a pilot study aims to prevent the

researcher from conducting a large-scale study without adequate knowledge of the efficacy of the methods proposed (Lowe, 2019:117). The validity of the questionnaire was tested by conducting a pilot study to ensure that the data collected measured what it was intended to measure (Taherdoost, 2016:28). The reliability of the questionnaire was evaluated with the test-retest method. The results yielded consistent answers (Brink et al., 2018:155).

The pilot study was conducted in January 2022. Forty-two (n=42) participants (10% of the sample size) who met the inclusion criteria were included in the pilot test. The researcher conducted the pilot study to detect flaws in the study, correct errors in the questionnaire, and test the feasibility of the study. The data from the pilot test did not form part of the results of this study.

Pregnant females requesting termination of pregnancy services were recruited, without coercion or persuasion, to participate in the pilot study. The inclusion and exclusion criteria were assessed, and the study objectives were explained. Permission to conduct the study was obtained from Dora Nginza Hospital management, questionnaires were disseminated, and pens were provided to the participants. Questions related to the questionnaire were answered by the researcher and assistants as participants filled in the questionnaires.

After analysing the pilot data and discussing it with the academic supervisor, the statements in questions 10 and 12 were changed to include 'private pharmacies' rather than just 'pharmacies'. All the questions were relevant, covered all the content, and met the study objectives.

3.2.3 Data analysis

Quantitative data analysis is an orderly process that collects and evaluates measurable and verifiable data, enabling the researcher to systematically categorise, sum up, and demonstrate observations (Ali, 2021). Once the questionnaires were completed, the responses were captured in Microsoft Excel and exported to SPSSv21 for onward analysis.

A descriptive analysis was carried out to summarise the data to get an initial understanding of the data, and this was followed by an inferential analysis (Kaur, Stoltzfus & Yellapu, 2018:60). Frequency distribution tables and percentages were used to summarise the demographic variables as well as knowledge, attitudes, and

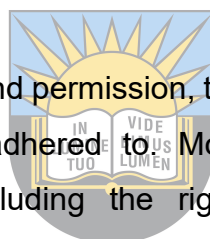
behaviour items. For the inferential analysis, the chi-squared test for independence was used to test for associations between KAB and demographic characteristics. Odds ratios and their 95% confidence intervals were used to determine the strength and direction of the significant associations detected by the chi-squared test.

The statistical analysis was carried out using version 21 of the Statistical Package for Social Sciences (SPSS) statistical software. All tests for statistical significance were carried out at a 5% level of significance.

3.2.4 Ethical considerations

The researcher in this research study protected the rights of the participants by obtaining ethical clearance from the Faculty of Health Science Research Ethical Committee (FHREC) at the University of Fort Hare (FHREC#100118-054). Permission to access health facilities was obtained from the Eastern Cape Department of Health and management of the selected hospitals for the study (attached as Appendix B, C and D).

After obtaining ethical clearance and permission, the principles of respect for persons, beneficence, and justice were adhered to. Moreover, the human rights of the participants were protected, including the right to privacy, self-determination, confidentiality, protection, and avoidance of harm or discomfort (Brink, Van der Walt & Van Rensburg, 2018: 31).



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3.2.4.1 Principle of respect for persons

Before the commencement of the study, the researcher obtained ethical clearance from the University of Fort Hare (FHREC#100118-054) and the Eastern Cape Department of Health (Appendix B). After that, permission to conduct the study was obtained from the Nelson Mandela Bay Health District (Appendix C and D). The managers of the units providing termination of pregnancy services were consulted to gain access to their units. In this study, respect for persons was maintained by ensuring that participants gave informed consent to participate in the study. Participants younger than 18 years of age were allowed to take part in the research study without the permission of the guardian or the parents. Requesting permission from the parents would have violated the rights of the young females. The participants were given relevant information regarding the research study and were allowed to decide whether they wanted to participate in the study or not.

Furthermore, participants were informed that they had a right to withdraw from the study at any time without incurring any penalties. The principle of respect for persons in this research study was maintained by ensuring that participants' dignity, well-being, and safety were taken care of. To further promote respect for persons, the participants' identities were kept anonymous by using codes instead of their names. The completed questionnaires were kept under lock and key in the academic supervisor's office at the University of Fort Hare for five years, after which they were destroyed.

3.2.4.2 Principle of beneficence

The researcher secured the participants' physical, psychological, emotional, economic, social, and legal well-being. Participants were not subjected to any unnecessary harm or discomfort and were not coerced to participate in the research study. Furthermore, the research questionnaire was constructed in a manner that did not violate participants' privacy and confidentiality. The purpose and the benefits of the research study were explained to the participants, and should they wish not to give out the information, their decision was respected. If participants felt uncomfortable answering the questionnaire, they were allowed to discontinue at any given time.

3.2.4.3 Principle of justice

The research participants were selected for the study for reasons directly related to the research problem. The respect and honour of agreements between the researcher and the participants were maintained. All the participants were treated equally and with dignity and selected based on the inclusion criteria. Participants were reimbursed for their time and inconvenience in participating in the study. In line with the National Minimum Wage Act, each participant was reimbursed an R21.69 hourly rate (National Minimum Wage Act, No. 9 of 2018, 2021: s6).

3.2.4.4 Right to privacy and confidentiality

The participant's right to privacy and confidentiality was upheld throughout the research study. The participants were informed of all the possible limits to their right to privacy, as well as steps taken to ensure that their right to privacy was not violated. These steps included training research assistants on maintaining the privacy and confidentiality of participants by not divulging the information received from the participants. Privacy was also ensured by separating the participants so that each one

could answer the questionnaire in private without interference from other participants. The participants did not write their particulars on the questionnaires to maintain anonymity and confidentiality. Personnel who were not directly involved in the research study did not have access to the confidential information provided by the participants. The data collected was kept between the researcher, supervisor, and statistician

3.3 Summary

This chapter discussed the research design and methods utilised in this study. The study sought to assess the knowledge, attitudes, and behaviours regarding emergency contraception among females who were requesting termination of pregnancy services. A structured questionnaire with closed questions was used to collect the data from 423 participants, and the information obtained was quantified. Statistical techniques were used to answer the research questions. Ethical considerations were also discussed to protect the rights of the participants.



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CHAPTER 4. RESEARCH STUDY RESULTS AND DISCUSSION

4.1 Introduction

The previous chapter presented the design and methodology used to achieve the objectives of the study. This chapter presents the data analysis, interpretation, and discussion of the study results. The findings are presented following the sequence of the questionnaire. The descriptive summary of the data is presented first, followed by the tests for statistical significance. Frequency and percentage distribution tables were used to summarise the variables. The chi-squared test for independence was used to test for the significance of associations between demographic characteristics and knowledge, attitudes, and behaviour. Where significant associations were detected, the odds ratios and their 95% confidence intervals were used to determine the direction and strength of the associations. All the tests conducted to determine the statistical significance were carried out at a 5% level of significance.

4.2 Demographic characteristics of the participants

Of the 423 questionnaires that were distributed, 390 were completed and returned by the participants. This translates to a response rate of 92.2%, which is acceptably high. The demographic characteristics of interest in this study were age, place of residence, marital status, educational level, religion, and number of living children. The frequency and percentage distribution of the participants according to their demographic characteristics is shown in Table 4.1 below.

Table 4.1: Distribution of participants by demographic characteristics

Characteristic	Category	Frequency	Percentage
Age (years)	18yrs and less	53	13.6
	19-25yrs	149	38.2
	26-30yrs	99	25.4
	31-35yrs	64	16.4
	36yrs and above	25	6.4
Residence	Township	247	63.3
	Informal settlement	49	12.6
	Rural	11	2.8
	Suburb	83	21.3
Marital status	Never married	359	92.1
	Married	18	4.6
	Divorced	9	2.3
	Widowed	4	1.0
Level of education	Primary school or lower	4	1.0
	High school	190	48.7

	College	106	27.2
	University	90	23.1
Religion	Christian	379	97.2
	Others	11	2.8
Number of children	No children	124	31.8
	One child	136	34.9
	2 Children	91	23.3
	3 Children	26	6.7
	4 Children & above	13	3.3

The frequency distribution table above shows that the sample was made up of predominantly Christian participants (n=379,97.2%), the majority of whom were 30 years old and younger (301(77.2%)) and of these, 53(13.6%) were younger than 19 years old. Most of the participants were residing in the township areas (n=247, 63.3%) and concerning marital status, 359(92.1%) were never married. About a third of the females had no child (n=124,31.8%), and half of those that had children had only one child (n=136,34.9%). The complete distribution of the females according to their demographic characteristics is shown in Table 4.1 above.

4.3 Emergency contraception knowledge

Emergency contraception knowledge was assessed based on 15 multiple-choice questions. The distribution of the participant's responses to the questions is shown in Table 4.2, below. The numbers in each cell of the table represent the frequency and, in brackets, the corresponding percentage. The questions assessed the participant's knowledge of different aspects of ECs: timing of use, effects, and accessibility.

Table 4.2: Distribution of participant responses to knowledge items

Knowledge item	Response		
	TRUE	FALSE	Don't know
EC used if condom ruptures	274 (70.3)	48 (12.3)	68 (17.4)
EC used if forgot to take contraceptive pills	213 (54.6)	54 (13.9)	123 (31.5)
EC used after forced sex and/or rape	253 (64.9)	51 (13.1)	86 (22.0)
EC used if contraception fails	192 (49.2)	59 (15.1)	139 (35.7)
EC used if missed menstrual period	162 (41.6)	91 (23.3)	137 (35.1)

EC pills cause abortion	153 (39.2)	108 (27.7)	129 (33.1)
EC prevent unwanted pregnancy	224 (57.4)	58 (14.9)	108 (27.7)
EC used only after forced sex or rape	140 (35.9)	146 (37.4)	104 (26.7)
EC available in public healthcare facilities	146 (37.4)	69 (17.7)	175 (44.9)
EC available in private pharmacies only	168 (43.1)	132 (33.8)	90 (23.1)
EC is paid for in public healthcare facilities	50 (12.8)	252 (64.6)	88 (22.6)
EC is paid for in private pharmacies	248 (63.6)	52 (13.3)	90 (23.1)
ECs are recommended within 24 hours of intercourse	186 (47.7)	69 (17.7)	135 (34.6)
ECs are recommended within 120 hours after sex	212 (54.4)	38 (9.7)	140 (35.9)
EC used after a missed menstrual period	163 (41.8)	85 (21.8)	142 (36.4)



The results show that the majority of the participants thought that the knowledge statements were false or were not sure except for the statement on payment for emergency contraceptives in public healthcare facilities where the majority were not certain or thought they were paid for (321 (82.3%)). While not in the majority, a substantial proportion of the participants were uncertain on many items with most percentages falling between 30.0% and 40.0%.

Since this study was about establishing how much knowledge the participants had, those who were uncertain were considered as lacking knowledge regarding ECs. These results show that 70.3% of participants knew that ECs can be used in the event of condom rupture, after forced sex intercourse and/or rape (64.9%), after missing the usual contraceptives (54.6%), upon failure of usual contraceptives (49.2%), and within 120 hours of sexual intercourse (54.4%). While the recommended timing of emergency contraception use is within 120 hours, some participants thought ECs should be taken within 24 hours of intercourse (17.7%). A few of the participants knew that emergency contraception is not meant for instances in which a menstrual period

is missed (23.3%) and that it is not meant only for cases of forced sexual intercourse or rape (37.4%).

Concerning the effects of ECs, only 27.7% of the participants knew that ECs do not cause abortion while 57.4% knew that it prevents unwanted pregnancy after unprotected sexual intercourse. The results show that 37.4% of the participants knew that ECs are available in public health facilities while 33.8% knew that emergency contraceptives are not only available in private pharmacies. The majority of the participants knew that emergency contraceptives are paid for in private pharmacies (63.6%) and that they are free in public health facilities (64.6%). Only the percentages are quoted and the corresponding frequencies are included in Table 4.2, above.

These results show that there was a lack of knowledge concerning the availability and/or sources of emergency contraception services and instances in which emergency contraceptives can be used. While most of the participants knew that emergency contraceptives are used in the event of forced sex/rape, few knew that it can be used in other instances. This suggests that there is a need for educational interventions targeting these aspects of emergency contraceptives.

4.3.1 Associations between knowledge and demographic characteristics

The knowledge items sought to find out if the participants knew the circumstances under which emergency contraceptives are applicable, the timing of emergency contraception use, the effects of emergency contraception, and the accessibility of emergency contraceptives. The chi-squared test for independence was used to test for association between the participant's knowledge and their demographic characteristics. The marital status and religion of the participants were excluded from this analysis because almost all the participants had never been married and were Christians. This left age, residential area, education and number of living children as the only demographic characteristics worth testing for associations. Where significant associations were detected, odds ratios and their 95% confidence intervals were used to determine the strength and direction of associations. The chi-squared test statistics and p-values are presented in tables for each knowledge item and all four demographic characteristics. Only the odds ratios corresponding to the significant associations are quoted in the interpretation and the rest of the odds ratios are

attached as Appendix G. Note that the odds ratios quoted in the document and those presented in appendix G are adjusted odds ratios. The last category of each of the demographic variables was used as the reference category. Only the categories of demographic characteristics that significantly differ from the reference category are mentioned in the interpretation below. The categories that are not mentioned in the interpretation are not significantly different from the reference category.

The results below are presented according to the different knowledge areas tested.

4.3.1.1 Circumstances for emergency contraception

The aspects tested under circumstances under which ECs were used included condom rupture, missed contraceptive, forced sex/rape, failed contraception, and missed menstrual period.

The results show that knowledge that emergency contraceptives can be used in the event of condom rupture was found to be significantly associated with all four demographic characteristics. However, based on the 95% confidence intervals, the associations with age and number of children were found to be not significant. The associations with residential areas show that participants from informal settlements were less likely to know that emergency contraceptives can be used after condom rupture compared to those from township and other residential areas (OR=0.3; 95%CI (0.16,0.59)). Concerning education those with high school, and college education were significantly less likely to know about emergency contraceptives after condom rupture with odds ratios and 95% confidence intervals of 0.2 (0.07,0.39) and 0.3 (0.15, 0.82), respectively.

The knowledge that emergency contraceptives can be used in the event of one having forgotten to take the usual contraceptive was found to be associated with residential areas and education. However, the confidence intervals of the odds ratios confirmed that it was only the association with a residential area that was genuinely statistically significant. The association with the residential area was such that participants from informal settlements were less likely to have the knowledge compared to those from the township (OR=0.3; 95%CI (0.17,0.67)) and those from the suburb were significantly more knowledgeable than the ones from the township (OR=2.0; 95%CI (1.15,3.60)).

Knowing that emergency contraceptives can be used in the event of forced sexual intercourse (rape) was significantly associated with the residential area and education. The associations were such that participants from the township were equally likely to know as those from the suburbs and rural areas and that those from informal settlements were significantly less likely to know compared to the township participants (OR=0.4; 95%CI (0.19,0.70)). Concerning education, participants with a high school education were less likely to know that emergency contraceptives can be used after forced sex/rape compared to university graduates (OR=0.4; 95%CI (0.20,0.78)).

The knowledge that emergency contraceptives can be used in the event of failed contraception (withdrawal) depends on the residential area and education of the participants. The associations were such that participants from informal settlements were less likely to be knowledgeable compared to participants from the township (OR=0.4; 95%CI (0.21,0.83)) and other residential areas. Participants with a high school education were less likely to know compared to university graduates (OR=0.4; 95%CI (0.24,0.77)) and college graduates.

The knowledge that emergency contraceptives use cannot be used after a missed menstrual period was found to be associated with education and the number of children. However, on inspecting the odds ratio confidence intervals it was found that only the number of children had a statistically significant association. The association was such that those with no children were more likely to know that emergency contraceptives are not used after a missed menstrual period compared to those with at least three children (OR=13.2; 95%CI (2.94,58.94)). All those with at least one child were equally likely to know that emergency contraceptives are not used after a missed period.

The knowledge that emergency contraceptives are not only used in the event of forced sex/rape was found to be significantly associated with the residential area and education. The associations were such that suburb participants were more likely to know compared to township participants (OR=0.18; 95%CI (0.16,0.31)) and that participants with high school education were less likely to know compared to university graduates (OR=0.3; 95%CI (0.19,0.67)).

Table 4.3: Chi-squared tests for circumstances of using emergency contraception

Circumstance	Characteristic	DF	Chisq	p-value
Condom ruptures	Age	4	9.8	0.0544
	Residential zone	3	24.6	<.0001 ^s
	Education	2	29.9	<.0001 ^s
	Living children	3	8.1	0.0523
Forgot usual contraceptive	Age	4	3.1	0.5411
	Residential zone	3	26.5	<.0001 ^s
	Education	2	10.5	0.0052 ^s
	Living children	3	2.0	0.5715
Forced sex/rape	Age	4	5.4	0.0822
	Residential zone	3	25.0	<.0001 ^s
	Education	2	20.1	<.0001 ^s
	Living children	3	2.4	0.4992
Failed contraception	Age	4	2.7	0.6020
	Residential zone	3	15.7	0.0013 ^s
	Education	2	14.3	0.0008 ^s
	Living children	3	1.3	0.7371
Missed menstrual period	Age	4	4.5	0.3472
	Residential zone	3	7.3	0.0636
	Education	2	10.1	0.0063 ^s
	Living children	3	17.5	0.0006 ^s
Forced sex/rape only	Age	4	8.9	0.0520

Residential zone	3	22.9	<.0001 ^s
Education	2	32.2	<.0001 ^s
Living children	3	7.8	0.0589

4.3.1.2 Timing of emergency contraceptives

Knowing whether emergency contraceptives are recommended within 24 hours of sexual intercourse or not was found to be independent of all four demographic characteristics. That emergency contraceptives are recommended within 120 hours of sexual intercourse was found to be significantly associated with residential areas and education. The associations were such that participants from informal settlements were significantly less likely to know that emergency contraceptives can be used within 120 hours of intercourse compared to township participants (OR=0.4; 95%CI (0.18,0.71)) and that participants with a high school education were less likely to know compared to university graduates (OR=0.4; 95%CI (0.22,0.76)).

Table 4.4: Chi-squared tests for timing of using emergency contraception

Timing of emergency contraception use	Characteristic	DF	Chisq	p-value
Within 24 hours of sex	Age	4	1.2	0.8856
	Residential zone	3	4.6	0.2057
	Education	2	1.6	0.4402
	Living children	3	0.9	0.8337
Within 120 hours of sex	Age	4	1.3	0.8673
	Residential zone	3	14.4	0.0024 ^s
	Education	2	11.2	0.0037 ^s
	Living children	3	5.9	0.1145

4.3.1.3 Effects of emergency contraceptives

Two items addressed the issue of perceived effects of emergency contraceptives and those two addressed issues of abortion and pregnancy prevention. The results show

that knowledge that emergency contraceptives do not cause an abortion had a significant association with the residential area and education of the participants. The associations were such that participants from rural areas were more likely to know that emergency contraceptives do not cause an abortion compared to township participants (OR=5.9; 95%CI (1.57,22.29)). Concerning education, participants with a high school education were less likely to know that emergency contraceptives do not cause an abortion compared to university graduates (OR=0.5; 95%CI (0.28,0.89)).

Concerning pregnancy prevention, the knowledge that emergency contraceptives prevent unwanted pregnancy was found to be dependent on the residential area. The association was found to be such that participants from informal settlements were significantly less likely to know that emergency contraceptives prevent unwanted pregnancies compared to township participants (OR=0.3; 95%CI (0.15,0.56)).

Table 4.5: Chi-squared tests for effects of emergency contraception

Effects of emergency contraception	Characteristic	DF	Chisq	p-value
Causes abortion	Age	4	5.8	0.2177
	Residential zone	3	11.1	0.0110 ^s
	Education	2	10.4	0.0056 ^s
	Living children	3	5.7	0.1297
Prevents unwanted pregnancy	Age	4	4.4	0.3574
	Residential zone	3	17.7	0.0005 ^s
	Education	2	2.5	0.2924
	Living children	3	1.3	0.7444

4.3.1.4 Accessibility of emergency contraceptives

Accessibility of emergency contraceptives was assessed through availability and affordability. Knowledge that emergency contraceptive services are available in public health facilities was found to be associated with education and the association was such that participants with high school education were less likely to know that EC

services are available in public health facilities compared to university graduates (OR=0.4; 95%CI (0.26,0.85)). Concerning the availability of emergency contraceptive services at private pharmacies, it was found that knowledge of that is associated with the residential area and the association was such that rural participants were more likely to know of the availability of the services at private pharmacies compared to township participants (OR=4.7; 95%CI (1.25,18.34)).

The knowledge that the services are paid for in public facilities was found to be independent of all demographic characteristics under study. On the other hand, the knowledge that the ECs are paid for in private pharmacies was significantly associated with residential areas, education, and a number of children. The associations were such that participants from informal settlements were substantially less likely to know that compared to township participants (OR=0.3; 95%CI (0.17,0.64)), participants with high school education were less likely to have the knowledge compared to university graduates (OR=0.5; 95%CI (0.24,0.89)), and those with no child were less likely to know compared to those with at least three children (OR=0.2; 95%CI (0.07,0.65)).

Table 4.6: Chi-squared tests for accessibility of emergency contraceptives

Access to emergency contraception	Characteristic	DF	Chisq	p-value
Available in public healthcare facilities	Age	4	6.3	0.1792
	Residential zone	3	5.3	0.1489
	Education	2	17.0	0.0002 ^s
	Living children	3	1.1	0.7883
Available in private pharmacies only	Age	4	3.6	0.4687
	Residential zone	3	11.1	0.0510
	Education	2	9.8	0.0073 ^s
	Living children	3	3.8	0.2881
Payment in public healthcare facilities	Age	4	6.9	0.1360
	Residential zone	3	6.0	0.1098
	Education	2	3.9	0.1407

	Living children	3	6.3	0.0991
Payment in private pharmacies	Age	4	2.9	0.5720
	Residential zone	3	16.2	0.0011 ^s
	Education	2	7.6	0.0221 ^s
	Living children	3	10.6	0.0143 ^s

4.4 Attitudes towards emergency contraceptives

To establish participants' attitudes towards emergency contraception, the attitude items were summarised using frequency and percentage distributions shown in Table 4.7 below.

Table 4.7: Distribution of participants by attitudes towards emergency contraception

Attitude items	Response				
	SD	D	U	A	SA
EC use after unprotected sex	17 (4.4)	12 (3.1)	40 (10.2)	167 (42.8)	154 (39.5)
Other contraceptives affect EC use	18 (4.6)	34 (8.7)	189 (48.5)	101 (25.9)	48 (12.3)
ECs highly effective	12 (3.1)	25 (6.4)	173 (44.4)	107 (27.4)	73 (18.7)
ECs ineffective	58 (14.9)	114 (29.2)	179 (45.9)	28 (7.2)	11 (2.8)
EC use recommendation	20 (5.1)	35 (9.0)	52 (13.3)	180 (46.2)	103 (26.4)
EC use embarrassment	121 (31.0)	164 (42.0)	10 (2.6)	51 (13.1)	44 (11.3)
I need more EC information	13 (3.3)	8 (2.1)	4 (1.0)	135 (34.6)	230 (59.0)

Table 4.7 above shows that the majority of the participants agree or strongly agree that they would use emergency contraceptives in the event of unprotected sexual intercourse (321 (82.3%)), that they need more information on emergency contraceptives (365 (93.6%)), and that they would recommend emergency contraceptives to friends (283 (72.6%)). On the other hand, the majority of participants disagreed or strongly disagreed that they would feel embarrassed to ask for emergency contraceptives (285 (73.0%)). Almost half of the participants were uncertain

about the potential influence of other contraceptives on EC use (189 (48.5%)) and 149(38.2%) believed that other contraceptives influence the use of ECs. Concerning the effectiveness of emergency contraceptives, 180 (46.5%) agreed or strongly agreed that ECs are highly effective and 173 (44.4%) were uncertain.

4.4.1 Associations between attitudes and demographic characteristics

The distribution of responses to the attitudes items showed that at least 70.0% of the females would use ECs in the event of unprotected sex, recommend emergency contraception, not be embarrassed to seek ECs and need more information on emergency contraception. For these items, it was not necessary to investigate any possible associations with demographic characteristics.

Only the items on the influence of other contraceptives and effectiveness of ECs were tested for associations with demographic characteristics and the results are shown in the table below. The results show that participant's opinions on the influence of other contraceptives were not significantly associated with all the demographic characteristics. The participant's opinions on the effectiveness of ECs were found to be significantly associated with the residential area and education of the participants. The associations were such that the informal settlement participants were significantly more likely to be neutral than to agree compared to their township counterparts (OR=2.3; 95%CI (1.14, 4.69)) and participants with a high school education were significantly more likely to be neutral than to agree compared to those with a university education (OR=2.6; 95%CI (1.38, 4.88)). This association confirms the conceptual framework of this study which assumed that education may have influence on the attitudes of females regarding ECs.

Table 4.8: Chi-squared tests for association between attitude and demographic characteristics

Attitude item	Characteristic	DF	Chisq	p-value
Other contraceptives affect EC	Age	8	10.5	0.2306
	Residential zone	6	3.7	0.7127
	Education	4	9.9	0.0562

	Living children	6	5.4	0.4929
ECs are highly effective	Age	8	10.9	0.2062
	Residential zone	6	15.2	0.0188 ^s
	Education	4	14.6	0.0056 ^s
	Living children	6	10.8	0.0942

4.5 Behaviour towards emergency contraceptives

To establish participants' behaviour towards emergency contraception, the behaviour items were summarised using frequency and percentage distributions shown in Table 4.9 below.

Table 4.9: Distribution of participants by behaviour towards emergency contraception

Behaviour Items	Response	
	Yes	No
I have previously used ECs	82(21.0%)	308(79.0%)
My religion does not allow me to use ECs	24(6.2%)	366(93.8%)
Distance to healthcare facility prevents me from using ECs	67(17.7%)	321(93.8%)
Lack of information prevents me from using ECs	332(85.1%)	58(14.9%)

Table 4.9 above demonstrates that the majority of participants had never previously used ECs (308 (79.0%)), were not restricted by religion to use ECs (366 (93.8%)), were not restricted by the distance to healthcare facilities to use ECs (321 (93.8%)) and lastly, the majority of participants were prevented by the lack of information from using ECs (332 (85.1%)).

4.5.1 Associations between behaviour and demographic characteristics

Emergency contraception-related behaviour was assessed using four items that addressed issues of previous use, religious restrictions, facility proximity and information on emergency contraceptives. The results showed that only previous use and information needs were significantly associated with some demographic characteristics. Specifically, previous use of emergency contraceptives was found to be significantly associated with education while information needs were significantly associated with residential areas. The associations were such that participants with high school and college education were significantly less likely to have previously used emergency contraceptives with odds ratios of 0.4 and 0.2 and 95% confidence intervals of (0.19,0.74) and (0.10, 0.42), respectively. Concerning information needs, the results showed that rural and suburb participants were significantly less likely to blame lack of information for not using emergency contraceptives compared to township participants with odds ratios of 0.2 and 0.4 and 95% confidence intervals of (0.06, 0.86) and (0.21,0.78), respectively. Religion and distance to health facilities were found to have no association with emergency contraception use.

Table 4.10: Chi-squared tests for behaviour and demographic characteristics

Behaviour item	Characteristic	DF	Chisq	p-value
Previous EC use	Age	4	7.5	0.1114
	Residential zone	3	22.3	<.0001 ^s
	Education	2	36.5	<.0001 ^s
	Living children	3	3.8	0.288
Religion against EC	Age	4	5.0	0.2861
	Residential zone	3	3.9	0.2685
	Education	2	0.6	0.7434
	Living children	3	1.5	0.6724
Distance prevents EC use	Age	4	5.6	0.2317
	Residential zone	3	3.9	0.2759

	Education	2	3.5	0.1753
	Living children	3	7.1	0.0679
Ignorance prevents EC use	Age	4	3.9	0.4104
	Residential zone	3	17.8	0.0005 ^s
	Education	2	5.8	0.0562
	Living children	3	2.9	0.4024

4.6 Summary of results

The participants in this study were predominantly single Christian females, the majority of whom were 30 years old and younger (301(77.2%)) and of these, 53(13.6%) were younger than 19 years old, with one or no child (66.7%), and residing in the township (63.3%). Close to half of the participants had, at most, a high school education (49.7%).

Most of the participants knew that emergency contraceptives can be used in the event of condom rupture (70.3%), or unprotected forced sexual intercourse (64.9%), and can be bought at a private pharmacy (63.6%), or received free of charge at public healthcare facilities (64.6%). The majority of the participants did not know that emergency contraceptives do not cause abortion (72.3%), cannot prevent pregnancy if used after a menstrual period has already been missed (76.7%), and that they are not only meant for victims of rape (62.6%). Slightly more than half of them knew that emergency contraceptives can be used if one forgets to take the usual contraceptive (54.6%), or usual contraceptive fails (49.2%), and that they should be used with 120 hours of unprotected sexual intercourse (54.4%).

The majority of the participants expressed intention to use emergency contraceptives in future (82.3%), would recommend them to friends (72.6%), would not be embarrassed to use them (73.0%), and would need more information on emergency contraceptives (93.6%). This is indicative of a positive attitude concerning these items. However, slightly less than half expressed uncertainty concerning the effectiveness of emergency contraceptives (44.4%) and their interaction with other contraceptives (48.5%). This is indicative of a neutral attitude concerning those items. Overall, the

participants can be said to have had neutral to positive attitudes towards emergency contraceptives. Most of the participants had no religious restrictions to emergency contraceptive use (93.8%), had no challenges of distance to a healthcare facility (93.8%), and needed more information about emergency contraceptives (85.1%). Of all the participants, only 21.0% had ever previously used emergency contraceptives.

Tests for association between demographic characteristics and knowledge about, and attitudes and behaviour towards emergency contraceptives were performed. The tests found that all knowledge items depended on the participants' residential areas and educational level. The relationships were such that informal settlement dwellers and those with at most high school education were significantly less likely to be knowledgeable compared to those from formal settlements and with university education respectively. These results show that knowledge about emergency contraceptives increases with the affluence of residential areas and level of education.

Participants from informal settlements were more likely to reserve their opinion on the effectiveness of emergency contraception compared to their township, rural and suburb counterparts than those with a high education compared to their college and university counterparts. Age, marital status, and religion had no significant associations with the knowledge, attitudes, and behaviour of participants.

4.5 Discussion

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The study aimed to investigate the knowledge, attitudes, and behaviours of females regarding emergency contraceptives in Nelson Mandela Bay, South Africa. The results revealed that majority The discussion in the next section will focus on the results presented above.

The results show that the majority of the participants knew that emergency contraceptives can be used to prevent pregnancy, in the event of condom rupture (70.3%) and that this knowledge was significantly associated with the residential area and level of education of participants. The associations were such that participants from informal settlements were less likely to know that emergency contraceptives could be used after condom rupture compared to those from the other residential areas. This finding supports the view that there is no universal access to contraception information in the Nelson Mandela Bay Health District. The literature reveals the possible reasons for participants residing in informal settlements to be less likely to

know emergency contraceptives. As such, Milowski, Zille and Ahrens (2021:6) found that females residing in non-urban areas are less likely to receive information about emergency contraceptives compared to their urban counterparts. This study found that participants from informal settlements were less likely to have adequate knowledge about emergency contraceptives. A study conducted in Uganda demonstrated that 70% of participants from informal settlements had sufficient knowledge regarding emergency contraceptives (Birabwa et al., 2021:4). The survey conducted in Uganda found that the reason for participants from informal settlement dwellers having adequate knowledge about emergency contraceptives was that they had high exposure to mass media (Birabwa et al., 2021:7). It is important to note that the knowledge being referred to in this study is specifically meant for use of emergency contraception use after condom rupture while the other studies looked at emergency contraception knowledge in general.

Concerning education, this study found that those with an educational level lower than university were significantly less likely to know about the use of emergency contraception after condom rupture compared to university graduates. Such a result is not necessarily surprising, as those with higher educational levels are likely to understand the information better than those with a lower level of education. This study showed that those with a high school education and those with a college education were similar. This can be explained by the fact that these two groups of individuals have the same academic training level. The difference is that those with a college education have vocational training besides academic training. As such, in terms of information consumption, these two groups are likely to be similar. A study conducted in Ethiopia found that emergency contraception knowledge was associated with participants' level of education and maturity (Mesfin, 2020:8). higher education and maturity was associated with better knowledge regarding emergency contraceptives (Mesfin, 2020:8).

This study found that 76.7% of the participants wrongly thought emergency contraceptives could be used if one has missed a menstrual period. If a female has unprotected sexual intercourse and misses a menstrual period there is a high possibility that the female is already pregnant and taking any form of contraception, at this stage, will not assist in the prevention of pregnancy. These results confirm the conceptual framework of this study that lack of information regarding ECs leads to use

TOP services. This study found that the childless participants were significantly more likely to know that emergency contraceptives cannot be used after a menstrual period had already been missed compared to those with at least three children. This could be because those with no children are young and are not ready to have children, while those with one or two children could have learnt from past experiences. They might have attempted to use emergency contraceptives in their previous exposures to unprotected sexual intercourse, which might have resulted in the one or two children they currently have.

It was found that the majority of participants thought that emergency contraceptives can cause abortion (72.3%) and that those with a high school education were less likely to know that emergency contraceptives do not cause abortion compared to university graduates. This could be because those with a university education have better access to healthcare information and education, which has a favourable impact on females's ability to comprehend reproductive health issues (Belachew et al., 2023:4). In contrast, a study conducted in India found that only 29% of the participants had the misconception that emergency contraceptives cause abortion (Davis et al., 2020:6). This suggests that the extent of sexual and reproductive health education among the participants in this study was lower than that of the participants used in the Indian study. This result concurs with the previous result that the majority of females in this study thought emergency contraceptives could be used even after one had already missed a menstrual period.

The knowledge of the accessibility of emergency contraceptives was assessed through questions enquiring about the availability of emergency contraceptives in healthcare facilities. The majority of participants in this study did not know that emergency contraceptives were available in public healthcare facilities (62.6%). This could be due to the notion that there is no focus on emergency contraceptives as an integral part of the primary healthcare package. This could also be caused by legislation that does not allow the promotion of programs related to contraceptives in schools. It was found that participants with lower levels of education were less likely to be aware of the availability of emergency contraceptives in public health facilities. A study conducted in the Western Cape found that only 37% of participants did not know that emergency contraceptives were available in public healthcare facilities (Myer et al., 2007:3). This Western Cape study found that participants with a higher

level of education had the greatest levels of emergency contraception knowledge and this was attributed to the fact that females with more education may get reproductive health information from sources other than public health clinics (Myer et al., 2007:4). A similar study conducted in KwaZulu Natal found that 70.5% of participants knew that emergency contraceptives were available in public healthcare facilities (Hoque & Ghuman, 2012:4). This high level of knowledge from KwaZulu Natal was attributed to peer-education approaches as the majority of participants heard about emergency contraceptives from their peers rather than healthcare providers (Hoque & Ghuman, 2012:5). Another study conducted in India found that only 11.7% of participants knew that they can obtain emergency contraceptives from public health facilities (Sahu, Chhabra & Gautam, 2019:119).

The majority of participants in this study knew that emergency contraceptives were paid for in private pharmacies (63.6%). The knowledge that emergency contraceptives were paid for in private pharmacies was significantly associated with residential areas. The associations were such that females from informal settlements were significantly less likely to know that emergency contraceptives were paid for in private pharmacies compared to township dwellers. This association could be linked to the reason that participants from informal settlements depend on public healthcare facilities for services, including emergency contraceptives, and are not interested in services provided in private pharmacies as they cannot afford to obtain services from private pharmacies. This concurs with a study conducted in Uganda which found that females from the informal settlements rely on public health facilities closest to them for emergency contraceptives because private pharmacies charge high fees for family planning services including emergency contraceptives (Lukyamu et al., 2021:6).

The findings of this study highlight the need for health education to raise awareness of emergency contraceptives as the majority of participants lacked information on the availability of emergency contraceptives in public healthcare facilities. Furthermore, healthcare providers need to raise awareness of reproductive health education, especially emergency contraceptives, to correct the misconceptions that emergency contraceptives cause abortion and that they can be used after one has missed a menstrual period.

Concerning the attitudes of participants towards emergency contraceptives, this study found that 82.3% of the participants would use emergency contraceptives if the need arose. This shows that the participants had a positive attitude towards emergency contraceptive use. This is more than the proportion of participants who expressed intention to use emergency contraceptives in a similar study conducted in KwaZulu Natal. In the KwaZulu Natal study, 63.2% of participants expressed the intention to use emergency contraceptives in the future (Hoque & Ghuman, 2012:5). Furthermore, this study found that the majority of participants would recommend the use of emergency contraceptives (72.6%). In the study conducted in KwaZulu Natal, 61.8% of participants stated that they would recommend the use of emergency contraceptives in the future (Hoque & Ghuman, 2012:5). The results of this study closely concurs with a study conducted in Ethiopia, which found that 88.4% of participants were willing to use emergency contraceptives and would recommend their use to other females (Fekadu, 2017:5). This study further showed that 73.0% of participants would not feel embarrassed about using emergency contraceptives. In contrast, a study conducted in Uganda found that participants were embarrassed to obtain and use emergency contraceptives for fear of being judged and stigmatized by the community for premarital sexual intercourse and the perception of irresponsibility (Kabunga et al., 2024:4). Almost all the participants in this study expressed their need for more information on emergency contraceptives emergency. The need for more information regarding emergency contraceptives is confirmed by the misconceptions that were identified in the knowledge about emergency contraceptives, above. Similar results were found in a study conducted in India where 82.5% of participants agreed that there is a need for more information regarding emergency contraceptives, including incorporating this into the curricula of educational institutions (Davis et al., 2020:8). This study found that the participants had positive attitudes towards the use of emergency contraceptives and these attitudes were independent of demographic characteristics of participants.

About half of the participants of this study were uncertain of whether other contraceptives would affect the use of emergency contraceptives and their opinions were independent of demographic characteristics. Concerning the effectiveness of emergency contraceptives, the participants were almost equally divided between those who believed they were effective and those who did not think so or were

uncertain. Their opinions on the effectiveness of emergency contraceptives were found to be significantly associated with their resident areas and level of education. Informal settlement dwellers were significantly more likely to be neutral than to agree compared to their township counterparts. These results demonstrate that participants from informal settlements lacked information on the effectiveness of emergency contraceptives as shown by their neutral attitudes. A similar study conducted in Ethiopia found that 42.2% of participants from informal settlements were less likely to have opinions about the effectiveness of emergency contraceptives (Belachew, 2023:5). The neutral attitude towards the effectiveness of emergency contraceptives can be explained by factors such as low socio-economic status, limited access to information and poor educational attainment of most informal settlement dwellers (Belachew, 2023:5). Davis et al. (2020:10) found that attitudes towards the effectiveness of emergency contraceptives were significantly associated with emergency contraceptives knowledge such that positive attitudes were associated with moderate to high levels of knowledge. Furthermore, a study conducted in India found that 99.7% of participants who had a positive attitude toward emergency contraceptives believed that emergency contraceptives are effective for the prevention of pregnancies (Fernandes, D'Souza & Karkada, 2014:66).

Participants' opinions on the effectiveness of emergency contraceptives were found to be associated with participants' level of education. A study conducted by Makola et al., (2019:4) found that participants' opinions on the effectiveness of emergency contraceptives were generally positive amongst participants who had secondary school education compared to those with primary or no formal education. The level of education of participants was found to be an important factor regarding attitudes toward the effectiveness of emergency contraceptives (Pazol et al., 2023:10). Educated participants can access and read relevant educational material with an in-depth understanding (Pazol et al., 2023:10). Makola et al., (2019:5) argued that educated participants have positive attitudes toward effectiveness of emergency contraceptives because education exposes females to reproductive health information and empowers them to make informed decisions about reproductive health services.

This section will discuss the behaviour of participants towards the use of emergency contraceptives. This study found that most of the participants in this study had never used emergency contraceptives and that previous use of emergency contraceptives

was found to be significantly associated with education. The associations were such that participants with high school and college education were significantly less likely to have previously used emergency contraception. This association can be attributed to a lack of knowledge regarding emergency contraceptives and the lack of willingness to use emergency contraceptives. Contrary to this study, a study conducted in Ethiopia found that 61.8% of participants had previously used emergency contraceptives and this was attributed to their moderate to high levels of education and adequate knowledge regarding emergency contraceptives as well as their willingness and readiness to use emergency contraceptives (Genemo, Korsas & Bayisa, 2022:1120). A similar study conducted in KwaZulu Natal found that 78.8% of participants had never used emergency contraceptives (Hoque & Ghuman, 2012:5). The non-utilization of emergency contraceptives was attributed to the lack of knowledge and misconceptions related to emergency contraceptives (Hoque & Ghuman, 2012:5).

Furthermore, 93.8% of participants in this study had no religious restrictions to using emergency contraceptives. A study conducted in Ethiopia found that the religion of participants was significantly associated with the use of emergency contraceptives, with Protestant religious followers being more likely to utilize emergency contraceptives compared to Orthodox Christian, Catholic and Muslim religious followers who were less likely to utilize emergency contraceptives (Abraham et al., 2017:4). Kunene (2014:64) found that Christians were viewed as a barrier to the use of emergency contraceptives which is in contrast to this study as majority of participants were Christian but their Christianity did not hinder them from using emergency contraceptives. The majority of participants in this study were of the Christian faith. Despite the Christian religion not being in support of emergency contraceptive use, the majority of participants in this study did not view that as a hindrance and expressed that they would use emergency contraceptives if the need arose.

Most of the participants did not view distance to healthcare facilities as a barrier to emergency contraceptive use. A study conducted in Ethiopia found that only 45% of participants highlighted that long distance to healthcare facilities was a barrier to the use of emergency contraceptives (Habitu et al., 2018:4). The rest of the participants

did not have a distance problem since healthcare facilities were accessible (Habitue et al., 2018:6).

The results of this study found that rural and suburban participants were significantly less likely to blame lack of information for not using emergency contraceptives compared to township participants. Participants from suburban and rural areas could be less likely to blame lack of information for not using emergency contraceptives due to other factors that cause non-utilisation like cultural norms, religious beliefs and personal choices. A study conducted by Kwame et al., (2022:8) found that there is a relatively low use of emergency contraceptives compared to the level of emergency contraceptive awareness in Sub-Saharan Africa. Additionally, Kwame et al., (2022:8) suggest that knowing or being aware of emergency contraceptives is not the only factor necessary or responsible for their use, factors such as culture and norms could be associated with the low uptake of emergency contraceptives.

4.6 Summary

This study found that most of the participants who were requesting termination of pregnancy at the time of this study were between the ages of 19-25, single, Christian and resided in townships. The majority of them showed adequate knowledge of the circumstances under which emergency contraceptives can be used.

Two misconceptions about emergency contraceptives came out of this study. One was that emergency contraceptives can cause abortion and can be taken after one has missed a menstrual period. These misconceptions show a lack of emergency contraception information among the participants and suggest a need for extensive information dissemination.

The tests for associations with demographic characteristics showed that, where significant associations existed, knowledge about emergency contraceptives was associated with residential areas and educational levels. The associations were such that informal settlement dwellers and those with low levels of education were less likely to be knowledgeable than formal settlement dwellers and those with high education. Those without children were less likely to hold the misconception that emergency contraception can be used after a missed period compared to those with at least three children.

The majority of the participants had positive attitudes towards emergency contraception but were uncertain about the effectiveness of emergency contraceptives. Concerning behaviour, the majority of the participants in this study had never used emergency contraceptives before and blamed lack of information as the reason for the non-utilisation of emergency contraceptives.

The results obtained in this study were found to concur with those from similar studies in other parts of South Africa and other countries. The results of this study suggest a need for a health promotion programme targeted at emergency contraception.

CHAPTER 5: SUMMARY, LIMITATIONS, RECOMMENDATIONS AND CONCLUSION

5.1 Introduction

The previous chapter presented the data analysis, interpretation, and discussion of the results. This chapter presents a summary of the findings, limitations, conclusions, and recommendations.

5.2 Summary of the study

Emergency contraceptives (ECs) are contraceptive methods that are used to prevent pregnancy after unprotected sexual intercourse (Kwame et al., 2022:2). Unintended pregnancies remained an imperative public health issue with females having unintended pregnancies annually (Kwame et al., 2022:2). Emergency contraceptives can reduce the risk of unintended pregnancies when taken within 120 hours of unprotected sexual intercourse and the World Health Organisation recommends emergency contraceptives for any female of reproductive age (Kwame et al., 2022:2).

Regardless of the availability, safety, and efficacy of emergency contraceptives, there is still limited awareness and use of emergency contraceptives among females of reproductive age in South Africa (Kwame et al., 2022:7). Despite the availability of emergency contraceptives in public healthcare facilities and private pharmacies, there were factors that acted as barriers for females attempting to access emergency contraceptives, poor knowledge, and negative attitudes are among those factors (Fekadu, 2017:6, Hailemariam et al., 2015:2; Osa-Izeko, Govender & Ross, 2016:161). Improvement of knowledge, attitudes, and behaviour towards emergency

contraceptives can reduce the prevalence of unplanned pregnancies and the uptake of termination of pregnancy services (Bongongo and Govender (2019:2)).

This study was conducted to determine the emergency contraceptives-related knowledge, attitudes, and behaviour of females requesting termination of pregnancy services at public health facilities in the Nelson Mandela Bay Health District. To achieve that objective, quantitative cross-sectional research was conducted in public health institutions providing termination of pregnancy services within the NMBHD. A self-administered structured questionnaire was used to collect information on the knowledge, attitudes, and behaviour of the participants, as well as their demographic characteristics.

Concerning their demographic characteristics, the participants were predominantly young females who had never been married, with one or no child and high school education, of the Christian faith and resided in the townships.

The results showed that at least 60% of the females knew that emergency contraceptives can be used in the event of condom rupture or forced sex (rape) and that the services are free in public health facilities and paid for in private pharmacies. However, less than 40% of them knew that public healthcare facilities offer emergency contraceptive services, and think that such services are only available for victims of rape. This study identified two misconceptions, namely, that emergency contraceptives cause abortion and that they can prevent pregnancy even after one has already missed a menstrual period.

Overall, the participants had positive attitudes and behaviour towards emergency contraceptive use, regardless of their demographic characteristics, except for the effectiveness of emergency contraceptives. For the effectiveness of emergency contraceptives, the informal settlement dwellers were more likely to be neutral than to agree compared to formal settlement dwellers. Informal settlement dwellers were found to be less likely to have emergency contraception knowledge compared to formal settlement dwellers. Similarly, those with a low level of education were found to be less likely to have emergency contraception knowledge compared to those with a higher educational level. Concerning the number of children, those with one or no child were significantly more likely to know that once a period is missed, emergency contraceptives cannot be used to prevent pregnancy. Age, religious background, and

distance to health facility had no significant associations with knowledge about, attitudes, and behaviour towards emergency contraceptives.

5.3 Limitations of this study

Limitations of a research study are the restrictions that the researcher cannot control based on the research methodology and design of the research study (Miles, 2017:2). The limitation of this study was that the study focused only on females requesting termination of pregnancy services in the Nelson Mandela Bay health district. As such, the results may not be generalisable to all females in Nelson Mandela Bay, nor are they generalisable to the Eastern Cape province of South Africa, let alone the whole country. Secondly, men were not included in this study and their contribution to the findings remains unknown. Thirdly, this research study adopted a quantitative design using only structured questionnaires to collect data, which did not allow for probing the reasons behind participants' choices concerning emergency contraceptive use, their knowledge and attitudes.

5.4 Recommendations of the study

The recommendations were made based on the findings and the limitations of this study. These were classified into two groups, namely, recommendations for the nursing practice and nursing research.

For the nursing practice, it is recommended that the results of this study be incorporated into the planning and designing of emergency contraception awareness campaigns and that the implementation of existing policies on contraception be strengthened. Awareness campaigns should focus on women residing in rural and informal settlements as well as those who have limited education as the results of this study have demonstrated that this group is either neutral or lack the knowledge, attitudes and behaviours necessary to utilise ECs. The available policies and guidelines regarding the availability of ECs should be made widely available to the general population in languages that they understand. Such distribution of policies and guidelines on ECs might enhance the knowledge and improve the attitudes and behaviours of participants regarding the use of ECs. Youth-friendly services with particular emphasis on ECs should be strengthened and made available in all public and private healthcare facilities. While males and parents were not included in this study, it could be of benefit to extend the knowledge and information about ECs to all

sectors of the community reduce family barriers regarding the use of ECs. Awareness campaigns about ECs should be extended to schools and places of worship to break down the stereotypes regarding the benefits of ECs.

For nursing research, this study is localised, it is recommended that this study be considered as a baseline for a larger and more inclusive study that would not be limited to only those females who are seeking termination of pregnancy services at NMB. Besides conducting studies on the general population, it is recommended that a similar study be conducted on the healthcare professional population. Additionally, a more in-depth research study with a larger sample size including participants from private healthcare providers should be conducted to increase the generalizability of the research findings. Furthermore, a qualitative research study is recommended to obtain a more in-depth picture of the phenomenon (in a more explorative and descriptive manner) of the participant's views on ECs.

5.5 Conclusion

In conclusion, the findings of this study showed that females requesting termination of pregnancy services had limited knowledge regarding emergency contraceptives. It was found that some females have the misconception that emergency contraceptives cause abortion and can be taken even after a menstrual period has been missed and that such services are only available for victims of forced sexual intercourse (rape).

Residential zone and educational level emerged as the main demographic characteristics significantly associated with knowledge about contraceptives. The results suggest that knowledge about contraceptives increases with the level of education and affluence of the residential area. While most of the females had never used emergency contraceptives, they would use it and recommend it in the future. This study established a basis for developing future research and interventions.

REFERENCES

- Abate, M., Assefa, N., & Alemayehu, T. 2014. Knowledge, attitude, practice, and determinants emergency contraceptive use among females seeking abortion services in dire Dawa, Ethiopia. *PLoS ONE*, 9(10).
<https://doi.org/10.1371/journal.pone.0110008>.
- Ajayi, A. I., Nwokocha, E. E., Akpan, W., & Adeniyi, O. V. (2016). Use of non-emergency contraceptive pills and concoctions as emergency contraception among Nigerian University students: Results of a qualitative study. *BMC Public Health*, 16(1). <https://doi.org/10.1186/s12889-016-3707-4>.
- Ali, A. (2021). *Quantitative Data Analysis*.
<https://doi.org/10.13140/RG.2.2.23322.36807>.
- Al-Shami, K. M., Al-Ashwal, F. Y., Naoras Bitar, A., & Alshakhshir, S. (2023). *Open Access Journal of Contraception ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/doi20* Contraceptives Knowledge and Perception: A Cross-Sectional Study Among Future Pharmacists in Jordan Contraceptives Knowledge and Perception: A Cross-Sectional Study Among Future Pharmacists in Jordan. <https://doi.org/10.2147/OA>.
- Amalba, A., Mogre, V., Appiah, M. N. A., & Mumuni, W. A. 2014. Awareness, use, and associated factors of emergency contraceptive pills among females of reproductive age (15-49 years) in Tamale, Ghana. *BMC Females's Health*, 14(1).
<https://doi.org/10.1186/1472-6874-14-114>.
- Apuke, O. D. 2017. Quantitative Research Methods : A Synopsis Approach. *Kuwait Chapter of Arabian Journal of Business and Management Review*, 6(11), 40–47.
<https://doi.org/10.12816/0040336>.
- Arnold, M., Bonifaz, A., Chambers, K., Roy, A. & Scherreik, A. 2015. Factors Influencing Emergency Contraception Use in Indigent Population. *Excerpts in Pharmacy Research Journal*. 1(3): 1-8.

- Asenahabi, B. M. 2019. Qualitative research, Mixed method research. In *International Journal of Contemporary Applied Researches* (Vol. 6, Issue 5). <https://www.researchgate.net/publication/342354309>.
- Asut, O., Ozenli, O., Gur, G., Deliceo, E., Cagin, B., Korun, O., Turk, O., Vaizoglu, S., & Cali, S. 2018. The knowledge and perceptions of the first-year medical students of an International University on family planning and emergency contraception in Nicosia (TRNC). *BMC Females's Health*, 18(1). <https://doi.org/10.1186/s12905-018-0641-x>.
- Awopegba, O.E., Chukwudeh, O.S., Owolabi, E.O & Ajayi, A.I. 2021. Trends in emergency contraception awareness among females and girls in 28 sub-Saharan countries. *BMC Public Health*. 21:1987. <https://doi.org/10.1186/s12889-021-12067-y>.
- Belachew, T. B., Negash, W. D., Belay, D. G., Aragaw, F. M., Asratie, M. H., & Asmamaw, D. B. (2023). Emergency contraceptive knowledge and associated factors among abortion experienced reproductive age females in Ethiopia: a multilevel analysis using EDHS 2016 data. *BMC Pregnancy and Childbirth*, 23(1). <https://doi.org/10.1186/s12884-023-06091-6>.
- Bhardwaj, P. 2019. Types of sampling in research. *Journal of the Practice of Cardiovascular Sciences*, 5(3), 157. https://doi.org/10.4103/jpcs.jpcs_62_19.
- Birabwa, C., Chemonges, D., Tetui, M., Baroudi, M., Namatovu, F., Akuze, J., Makumbi, F., Ssekamatte, T., Atuyambe, L., Hernandez, A., & Sewe, M. O. (2021). Knowledge and Information Exposure About Family Planning Among Females of Reproductive Age in Informal Settlements of Kira Municipality, Wakiso District, Uganda. *Frontiers in Global Females's Health*, 2. <https://doi.org/10.3389/fqwh.2021.650538>.
- Blanchard, K., Harrison, T. & Sello, M. 2005. Pharmacists' Knowledge and Perceptions of Emergency Contraceptive Pills in Soweto and the Johannesburg Central Business District, South Africa. *International Family Planning Perspectives*. 31(2): 172-178.
- Bongongo, T., & Govender, I. 2019. Knowledge, attitudes, and practices of contraceptive methods among females seeking voluntary termination of pregnancy

at Jubilee Hospital, Pretoria, South Africa. *African Journal of Primary Health Care and Family Medicine*, 11(1). <https://doi.org/10.4102/phcfm.v11i1.1919>.

Brink, H., Van der Walt, C. & Van Rensburg, G. 2012. Fundamentals of research methodology for health care professionals. 3rd edition. Juta & Company Ltd. Cape Town. Fundamentals of research methodology for health care professionals. 3rd edition. Juta & Company Ltd. Cape Town.

Brink, H., Van der Walt, C. & Van Rensburg, G. 2018. Fundamentals of research methodology for health care professionals. 4th edition. Juta & Company Ltd. Cape Town. Fundamentals of research methodology for health care professionals. 3rd edition. Juta & Company Ltd. Cape Town.

Can, G., Gecer, N., Ucuncu, S. Y., Topbas, M., Beyhun, N. E., & Bulut, B. 2015. Factors affecting awareness of emergency contraception among females. *TAF Preventive Medicine Bulletin*, 14(2), 101–106. <https://doi.org/10.5455/pmb.1-1391288689>.

Chaudhary, S. (2022). Knowledge, attitude and practice towards emergency contraceptive pills and factors hindering its use among female reproductive age group visiting urban health centre at Rajbiraj, Nepal—*International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, 11(3), 676. <https://doi.org/10.18203/2320-1770.ijrcog20220544>

Children's Act, No. 38 of 2005. Government Gazette. 19 June. Government Notice No. 28944. Cape Town: Government Printer.

Chimatiro, C. S., Mpachika-Mfipa, F., Tshotetsi, L., & Hajison, P. L. 2022. School-going adolescent girls' preferences and views of family planning services in Phalombe district, Malawi: A descriptive, cross-sectional study. *PLoS ONE*, 17(5). <https://doi.org/10.1371/journal.pone.0267603>.

Chofakian, C.B.N., Borges, A.L.V., Sato, A.P.S., Gizelton Pereira Alencar, G.P., Santos, O.A. & Fujimori, E. 2016. Does the knowledge of emergency contraception affect its use among high school adolescents? Brazil. *Artigo*. 32(1).

Dahan-Farkas, N. & Vally, M. 2019. The use of emergency hormonal contraception in South Africa: current and future perspectives. *South African Family Practice*. 61(2):46-48.

Davis, P., Sarasveni, M., Krishnan, J., Bhat, L. D., & Kodali, N. K. 2020. Knowledge and attitudes about the use of emergency contraception among college students in Tamil Nadu, India. *Journal of the Egyptian Public Health Association*, 95(1).
<https://doi.org/10.1186/s42506-019-0030-9>.

Demissie, T. W., Nigatu, A. M., & Beyene, G. M. 2020. Assessment of emergency contraceptives utilization and associated factors among female college students at Debre Tabor town. *Contraception and Reproductive Medicine*, 5(1).
<https://doi.org/10.1186/s40834-020-00139-0>.

Devine, K.S. 2012. The Underutilization of Emergency Contraception. *Americal Journal of Nursing*. 112 (4): 44-50.
<https://doi:10.1097/01.NAJ.0000413459.37863.02>.

Ekhtiari, A., Amirkhani, Z., Esfahani, A., Bayesh, S., Najibpour, R., & Saghafi, M. 2018. Survey of Knowledge and Attitude Toward Emergency Contraceptive Method Among Married Females in Reproductive Age Group. *Jundishapur Journal of Health Sciences*, In Press(In Press). <https://doi.org/10.5812/jjhs.57700>.

Fekadu, Y. 2017. Knowledge Attitude and Utilization of Emergency Contraception among Health Science and Medical Students of Arba Minch University, 2015. *Journal of Females's Health Care*, 06(04). <https://doi.org/10.4172/2167-0420.1000383>.

Feleke, A. E., Nigussie, T. S., & Debele, T. Z. 2019. Utilization and associated factors of emergency contraception among females seeking abortion services in health institutions of Dessie town, North East Ethiopia, 2018. *BMC Research Notes*, 12(1). <https://doi.org/10.1186/s13104-019-4707-0>.

Garrett Wagner, K. P., Widman, L., Nesi, J., & Noar, S. M. (2018). Intentions to Use Emergency Contraception: The Role of Accurate Knowledge and Information Source Credibility. *American Journal of Health Education*, 49(4), 264–270.
<https://doi.org/10.1080/19325037.2018.1473179>.

Gebremedhin, K. B., Gebresillassie, T., Bihone, B., Demeke, T., & Habtie, N. 2017. Assessment of Knowledge, Attitude, and Behaviour towards Emergency Contraceptive among Female Students of Fasiledes Preparatory School, Gondar, Ethiopia. *Clinics in Mother and Child Health*, 14(2). <https://doi.org/10.4172/2090-7214.1000260>.

Gemzell-Danielsson, K. & Marions, L. 2004. Mechanisms of action of mifepristone and levonorgestrel when used for emergency contraception. *Human Reproduction Update*. 10(4): 341–348. <https://doi:10.1093/humupd/dmh027>.

Genemo, E. S., Korsar, A. T., & Bayisa, H. G. (2022). Emergency Contraceptive Pill Use and its Impact on Condom Utilization Among University Students: A Cross-Sectional Study. *International Journal of Females's Health*, 14, 1115–1126. <https://doi.org/10.2147/IJWH.S375841>.

Goldstuck, N. D., & Wildemeersch, D. 2015. Practical Advice for Emergency IUD Contraception in Young Females. *Obstetrics and Gynecology International*, 2015, 1–6. <https://doi.org/10.1155/2015/986439>.

Grove, S.K., Gray, J. & Burns, N. 2013. The practice of Nursing Research: Appraising and Generating Evidence. 7th edition. Missouri: Elsevier.

Gunardi, E.R. & Ginting, L.M. 2019. Knowledge, Attitude, and Behaviour of Midwives towards Emergency Contraception. *Indones J Obstet Gynecol*. 7(3):188-192.

Gupta, R.K., Raina, S.K., Verma, A.K. & Shora, T. 2016. Emergency contraception: Knowledge and attitude toward its use among medical students of a medical college in North-West India. *Journal of Pharmacy and Bioallied Sciences*. 8(3):234-239. <http://doi:10.4103/0975-7406.175974>.

Habitu, Y. A., Yeshita, H. Y., Dadi, A. F., & Galcha, D. 2018. Prevalence of and Factors Associated with Emergency Contraceptive Use among Female Undergraduates in Arba Minch University, Southern Ethiopia, 2015: A Cross-Sectional Study. *International Journal of Population Research*, 2018, 1–8. <https://doi.org/10.1155/2018/2924308>.

Haffejee, F., O'Connor, L., Govender, N., Reddy, P., Sibiyi, M. N., Ghuman, S., Ngxongo, T., & Borg, D. 2018. Factors associated with unintended pregnancy among females attending a public health facility in KwaZulu-Natal, South Africa.

South African Family Practice, 60(3), 79–83.

<https://doi.org/10.1080/20786190.2017.1396790>.

Hailemariam, T. G., Tesfaye, T., Melese, T., Alemayehu, W., Kenore, Y., Lelamo, Y., Saul, T., & Seifu, C. N. 2015. Sexual experiences and emergency contraceptive use among female university students: A cross-sectional study at Wachamo University, Ethiopia Public Health. *BMC Research Notes*, 8(1). <https://doi.org/10.1186/s13104-015-1070-7>.

Hayes, M. Hutchings, J. & Hayes, P. 2000. Reducing unintended pregnancy by increasing access to emergency contraceptive pills. *Maternal and Child Health Journal*. 4(3):203-208.

Hernandez, J.H., Muanda, M., Garcia, M. & Matawa, G. 2017. Awareness and Perceptions of Emergency Contraceptive Pills Among Females in Kinshasa, Democratic Republic of the Congo. *International Perspectives on Sexual and Reproductive Health*. 43(3):121-130. <https://doi.org/10.1363/43e4417>.

Hogmark, S., Klingberg-Allvin, M., Gemzell-Danielsson, K., Ohlsson, H., & Essén, B. 2013. Medical students' knowledge, attitudes and perceptions towards contraceptive use and counselling: a cross-sectional survey in Maharashtra, India. *BMJ Open*. 3(1). <https://doi.org/10.1136/bmjopen-2013-003739>.

Hope, D.L., Hattingh, H.L. & King, M. A. 2016. Australian pharmacy students' knowledge, attitudes, and behaviours regarding emergency contraception. *Pharmacy Education*. 16(1):11-17.

Hoque, M. E., & Ghuman, S, (2012). Knowledge, Practices, and Attitudes of Emergency Contraception among Female University Students in KwaZulu-Natal, South Africa. *PLoS ONE*, 7(9). <https://doi.org/10.1371/journal.pone.0046346>.

Isa, B., Ibrahim, S., Kullima, A., & Bako, B. (2016). Awareness and utilization of emergency contraception among female undergraduates in a Nigerian University. *Tropical Journal of Obstetrics and Gynaecology*, 33(2), 196. <https://doi.org/10.4103/0189-5117.192224>.

Kabunga, A., Kigongo, E., Acanga, A., Tumwesigye, R., Auma, A. G., Musinguzi, M., Kambugu, C. N., Okalo, P., Abal, J. A., Namata, H., & Mwesigwa, D. (2024). Qualitative study on stigma as a barrier to emergency contraceptive pill use among

university students in the Lango subregion, Uganda. *BMJ Open*, 14(2).

<https://doi.org/10.1136/bmjopen-2023-07947>.

Kaur, P., Stoltzfus, J. & Yellapu, V. 2018. Descriptive statistics. *International Journal of Academic Medicine*. 4(1):60-63.

Kgosiemang, B., & Blitz, J. 2018. Emergency contraceptive knowledge, attitudes and practices among female students at the University of Botswana: A descriptive survey. *African Journal of Primary Health Care & Family Medicine*, 10(1).

<https://doi.org/10.4102/phcfm.v10i1.1674>.

Kranzler, E. C., & Bleakley, A. 2019. Youth Social Media Use and Health Outcomes: #diggingdeeper. In *Journal of Adolescent Health* (Vol. 64, Issue 2, pp. 141–142).

Elsevier USA. <https://doi.org/10.1016/j.jadohealth.2018.11.002>.

Kunene H.S 2013. Factors influencing Emergency Contraceptive use: Perspective of the students in Durban, South Africa.

Kwame, K. A., Bain, L. E., Manu, E., & Tarkang, E. E. 2022. Use and awareness of emergency contraceptives among females of reproductive age in sub-Saharan Africa: a scoping review. *Contraception and Reproductive Medicine*, 7(1).

<https://doi.org/10.1186/s40834-022-00167-y>.

Leon-Larios, F., Ruiz-Ferron, C., Jalon-Neira, R. M., & Praena-Fernández, J. M. (2022). Nursing Students' Knowledge, Awareness, and Experiences of Emergency Contraception Pills' Use. *Journal of Clinical Medicine*, 11(2).

<https://doi.org/10.3390/jcm11020418>.

Lukyamuzi, Z., Tetui, M., Fonseca-Rodríguez, O., Atuyambe, L., Makumbi, F. E., & Baroudi, M. (2021). Quality of Care in Family Planning Services: Differences Between Formal and Informal Settlements of Kira Municipality, Uganda. *Frontiers in Global Females's Health*, 2. <https://doi.org/10.3389/fgwh.2021.656616>.

Lowe, N.K. 2019. What is a Pilot Study? *Journal of Obstetric Gynecologic & Neonatal Nursing* 48(2). <https://doi:10.1016/j.jogn.2019.01.005>.

Lukhaimane, T.A & Adam, Y. 2015. Females's willingness to use emergency contraception: Experience at Chris Hani Baragwanath Academic Hospital, Johannesburg, South Africa. *South African Medical Journal*. 105(4):266-267. <https://doi:10.7196/samj.9411>.

Macdonald, S. & Magill-Cuerden, J. 2011. *Mayes' Midwifery*. Edinburgh: Elsevier.

Mamabolo, P. R. (2017). Sex differences in the awareness of emergency contraceptive pills associated with unmarried Korean university students' intention to use contraceptive methods: An online survey. *Reproductive Health*, 12(1).
<https://doi.org/10.1186/s12978-015-0076-x>.

Massyn, N., Peer, N., Padarath, A. & Barron, P. 2016. Maternal, Child and Females's Health Barometer. Durban: Health Systems Trust. Available:
<http://www.hst.org.za/publications/HST%20Publications/MCWH%20Publication%20Final%20web.pdf> [2021, May 13].

Massyn, N., Peer, N., Padarath, A. & Barron, P. 2019. Maternal, Child and Females's Health Barometer. Durban: Health Systems Trust. Available:
<http://www.hst.org.za/publications/HST%20Publications/MCWH%20Publication%20Final%20web.pdf> [2021, May 13].

Massyn, N., Peer, N., Padarath, A. & Barron, P. 2020. Maternal, Child and Females's Health Barometer. Durban: Health Systems Trust. Available:
<http://www.hst.org.za/publications/HST%20Publications/MCWH%20Publication%20Final%20web.pdf> [2021, May 13].

Mesfin, D. (2020). Emergency contraceptive knowledge, utilization and associated factors among secondary school students in Wolkite town, southern Ethiopia, cross sectional study. *Contraception and Reproductive Medicine*, 5(1).
<https://doi.org/10.1186/s40834-020-00119-4>.

Miles, D. A., & Scott, L. 2017. Workshop: Confessions of a Dissertation Chair Part 1: The Six Mistakes Doctoral Students Make with the Dissertation. Presented at the 5th Annual. In *Source*.

Milkowski, C. M., Ziller, E. C., & Ahrens, K. A. 2021. Rural-urban residence and emergency contraception use, access, and counseling in the United States, 2006-2017. *Contraception: X*, 3, 100061. <https://doi.org/10.1016/j.conx.2021.10>.

Mir, A., & Malik, R. (2010). Emergency contraceptive pills: Exploring the knowledge and attitudes of community health workers in a developing Muslim country. *North*

American Journal of Medical Sciences, 359–364.

<https://doi.org/10.4297/najms.2010.2359>.

Mishore, K. M., Woldemariam, A. D., & Huluka, S. A. 2019. Emergency Contraceptives: Knowledge and Practice towards Its Use among Ethiopian Female College Graduating Students. *International Journal of Reproductive Medicine*, 2019, 1–8. <https://doi.org/10.1155/2019/9397876>.

Mohammad-Alizadeh-Charandabi, S., Farshbaf-Khalili, A., Moeinpoor, R., & Assistant, P. (2012). Emergency Contraception: Providers' Knowledge and Attitudes and Their Relationship with Users' Knowledge and Attitudes at Public Health Centers/Posts of Tabriz. In *Journal of Caring Sciences* (Vol. 2012, Issue 1). <http://journals.tbzmed.ac.ir/JCS>.

Mohammed, S., Abdulai, A.-M., & Iddrisu, O. A. 2019. Pre-service knowledge, perception, and use of emergency contraception among future healthcare providers in northern Ghana. *Contraception and Reproductive Medicine*, 4(1). <https://doi.org/10.1186/s40834-018-0082-9>.

Mooney-Somers, J., Lau, A., Bateson, D., Richters, J., Stewart, Black, M& Nothnagle, M. 2019. Enhancing the use of emergency contraceptive pills: A systematic review of females's attitudes, beliefs, knowledge, and experiences in Australia. *Health care for females international*. 40(2):174-195. <https://doi:10.1080/07399332.2018.1526286>.

Mozzanega, B. & Nardelli, G. B. 2019. UPA and LNG in emergency contraception: the information by EMA and the scientific evidences indicate a prevalent anti-implantation effect. *The European Journal of Contraception and Reproductive Health Care*. 24(1):4-10. <https://doi.org/10.1080/13625187.2018.1555662>.

Muhammad, S., & Kabir, S. 2016. Methods of Data Collection. <https://www.researchgate.net/publication/325846997>.

Mutie, I., Odero, M., Ng'ang'a, M. & Mbugua, G. 2012. The Prevalence and Knowledge of Emergency Contraceptive Pills (ECP's) among females in Kibera, Nairobi. *African Journal of Health Sciences*. 23 (4):266-267.

Myer, L., Mlobeli, R., Cooper, D., Smit, J., & Morroni, C. (2007). Knowledge and use of emergency contraception among females in the Western Cape province of South Africa: A cross-sectional study. *BMC Females's Health*, 7.

<https://doi.org/10.1186/1472-6874-7-14>.

Namasivayam, A., Schluter, P. J., Namutamba, S., & Lovell, S. (2022). Understanding the contextual and cultural influences on females's modern contraceptive use in East Uganda: A qualitative study. *PLOS Global Public Health*, 2(8), e0000545. <https://doi.org/10.1371/journal.pgph.0000545>.

National Minimum Wage Act, No. 9 of 2018. Government Gazette. 17 December. Government Notice No. 1616. Cape Town: Government Printer.

Office of the High Commissioner for Human Rights. (2014). www.ohchr.org.

Olufunke, M., Ebuehi, O. A. T., & Ebuehi, V. (2006). *Health Care Providers' Knowledge of, Attitudes toward and Provision of Emergency Contraceptives in Lagos, Nigeria* (Vol. 32, Issue 2). <https://about.jstor.org/terms>.

Onasoga, O. 2016. Adolescents' Knowledge, Attitude and Utilization of Emergency Contraceptive Pills in Nigeria's Niger Delta Region. *International Journal of MCH and AIDS (IJMA)*, 5(1). <https://doi.org/10.21106/ijma.93>.

Opuku, B. & Kwaununu, F. 2011. Knowledge and Practices of Emergency Contraception among Ghanaian Females. *African Journal of Reproductive Health*. 15(2): 147-152.

Osa-Izeko, O., Govender, R.D. & Ross, A.J. 2016. Self-reported knowledge and use of emergency contraception among females presenting for termination of pregnancy. South Africa. *South African Family Practice*. 58(1):158-163. <https://doi:10.1080/20786190.2016.1223797>.

Parida, S.P. & Bhatia, V. 2014. Emergency Contraception: Current status in India. *Research and Reviews: Journal of Medicine*. 1-5.

Parmar, M. (2018). Knowledge and Attitude Regarding Emergency Contraceptives among Married Females of Reproductive Age Group in a Tertiary Care Centre. *International Journal of Science and Research*. <https://doi.org/10.21275/ART20204397>.

Pattanaik, S., Patnaik, L., Subhadarshini, A., & Sahu, T. 2017. Socio-clinical profile of married females with history of induced abortion: A community-based cross-sectional study in a rural area. *Journal of Family Medicine and Primary Care*, 6(1), 93. <https://doi.org/10.4103/2249-4863.214967>.

Perveen, F., Khan, M., Akhter, R. & Saleem, S. 2017. Knowledge and Attitude towards Emergency Contraceptives among Nursing and Midwifery Students in Tertiary Care Hospitals, Karachi. *ASH & KMDC*. 22(4):276-283.

Polit, D.F. & Beck, C.T. 2013. *Essentials of Nursing Research: Appraising Evidence for Nursing Practice*. 8th edition. New York: Wolters Kluwer Health.

Polit, D.F. & Beck, C.T. 2010. *Essentials of Nursing Research; Appraising Evidence for Nursing Practice*, 7th edition, Philadelphia: Wolters Kluwer Lippincott Williams & Wilkins.

Rimi, S., Nagulapally, H., & Abhijeet, S. 2016. Knowledge of Emergency Contraceptives Among Females of Reproductive Age Group. *Journal of Evolution of Medical and Dental Sciences*, 5(34), 1909–1912.

<https://doi.org/10.14260/jemds/2016/452>

Rivet, D., Robinson, H., Sydora, B.C. & Ross, S. 2021. Contraception Use and Attitudes Among Females Seeking Pregnancy Termination: Descriptive Cross-Sectional Survey. *Journal of Obstetrics and Gynaecology Canada*. 43(2):197-203.

<https://doi:10.1016/j.jogc.2020.06.023>.

Rokicki, S., & Merten, S. 2018. The context of emergency contraception use among young unmarried females in Accra, Ghana: A qualitative study. *Reproductive Health*, 15(1). <https://doi.org/10.1186/s12978-018-0656-7>.

Sahu, M., Chhabra, P., & Gautam, V. (2019). Knowledge and parity: Perspectives of usage of emergency contraceptive pills among females of a rural area of Delhi. *Nigerian Medical Journal*, 60(3), 117. https://doi.org/10.4103/nmj.nmj_121_17.

Saunders, M., Lewis, P. & Thornhill, A. 2016. *Research Methods for Business Students*. 7th Ed. Pearson: Harlow.

Sedlander, E., Bingenheimer, J. B., Lahiri, S., Thiongo, M., Gichangi, P., Munar, W., & Rimal, R. N. (2021). Does the Belief That Contraceptive Use Causes Infertility Actually Affect Use? Findings from a Social Network Study in Kenya. *Studies in Family Planning*, 52(3), 343–359. <https://doi.org/10.1111/sifp.12157>.

Setia, M. S. 2016. Methodology series module 3: Cross-sectional studies. *Indian Journal of Dermatology*, 61(3), 261–264. <https://doi.org/10.4103/0019-5154.182410>.

Shakya, S., Shrestha, S., Shrestha, R. K., Giri, U., & Shrestha, S. 2020. Knowledge, attitude and practice of emergency contraceptive pills among community pharmacy practitioners working in Kathmandu Valley: A cross-sectional study. *BMC Health Services Research*, 20(1). <https://doi.org/10.1186/s12913-020-05543-5>.

Sibanda, E., & Titus, M. J. (2017). Knowledge, attitudes and practices of health professionals in public health institutions on emergency contraception in Pietermaritzburg, Kwazulu-natal Province, South Africa. *South African Journal of Obstetrics and Gynaecology*, 23(1), 7–11. <https://doi.org/10.7196/SAJOG.2017.v23i1.1091>.

Soanes, C. 2002. *Oxford South African pocket dictionary*. 3rd ed. Cape Town: Oxford University Press.

Solanki, R., & Kulkarni, R. (n.d.). Emergency contraception: How close, How far? A study about knowledge attitude and practices among females attending immunization OPD at tertiary care hospital in Mumbai. *Journal of Preventive Medicine and Holistic Health*, 2(2), 41. <https://doi.org/10.18231/2454-6712.2016.0004>.

South Africa. Department of Health. 2015. *National Contraception Clinical Guidelines: A Companion to the National Contraception and Fertility Planning Policy and Service Delivery Guidelines*. Pretoria.

Sundararajan, R., Yoder, L. M., Kihunrwa, A., Aristide, C., Kalluvya, S. E., Downs, D. J., Mwakisole, A. H., & Downs, J. A. (2019). How gender and religion impact uptake of family planning: Results from a qualitative study in Northwestern Tanzania. *BMC Females's Health*, 19(1). <https://doi.org/10.1186/s12905-019-0802-6>.

Taherdoost, A. H, & Lumpur, K. 2016. Validity and Reliability of the Research Instrument; How to Test the Validation of a Questionnaire/Survey in a Research. In

International Journal of Academic Research in Management (IJARM) (Vol. 5, Issue 3). <https://ssrn.com/abstract=3205040>.

Tesfaye, T., Tilahun, T., & Girma, E. 2012. Knowledge, attitude and practice of emergency contraceptive among females who seek abortion care at Jimma University specialized hospital, southwest Ethiopia. *BMC Females's Health*, 12. <https://doi.org/10.1186/1472-6874-12-3>.

The Choice on Termination of Pregnancy Act, No. 92 of 1996. *Government gazette*. 22 November. Government notice no. 1891. Cape Town: Government Printer.

Tutu, E. O. 2018. Awareness and Usage of Emergency Contraceptives (EC) Among University Students: The Case of Ghana. *Journal of Gynecology and Females Health*, 10(3). <https://doi.org/10.19080/jgwh.2018.10.555788>.

Verma, A., Singh, S. V., Gupta, V. K., Garg, S., & Meena, J. K. 2015. Attitude, practice and need assessment of emergency contraception among females of reproductive age group in Delhi. *Journal of Young Pharmacists*, 7(4), 320–327. <https://doi.org/10.5530/jyp.2015.4.6>.

Westley, E. & Glasier, A. 2010. Emergency contraception: dispelling the myths and misperceptions. *Bull World Health Organ*. 88:243. <https://doi:10.2471/blt.10.077446>

Wondimagegne, Y. A., Debelew, G. T., & Koricha, Z. B. (2023). Barriers to contraceptive use among secondary school adolescents in Gedeo zone, South Ethiopia: A formative qualitative study. *BMJ Open*, 13(3). <https://doi.org/10.1136/bmjopen-2021-060582>.

World Health Organisation. 2018. *Emergency contraception, February 2018*. Available: <http://www.who.int/news-room/factsheets/detail/emergencycontraception> [2020, July 17].

World Health Organisation. 2021. *Emergency contraception, November 2021*. Available: <http://www.who.int/news-room/factsheets/detail/emergencycontraception> [2020, July 19].

Ziba, F. A., & Yakong, V. N. 2019. Awareness and Utilization of Emergency Contraceptives: A Survey among Ghanaian Tertiary Students. *Asian Journal of*

Research in Nursing and Health. 2(1): 1-7.

<https://www.researchgate.net/publication/334001137>.



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APPENDICES

Appendix A: Ethical Clearance Letter



University of Fort Hare
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HEALTH RESEARCH ETHICS COMMITTEE

P.O. Box 1054
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E-mail: dgoon@ufh.ac.za

ETHICAL CLEARANCE CERTIFICATE REC-100118-054

Certificate Reference Number: **Ref #2021=12=04=ChwayitaN**

Project title: Knowledge, attitudes and behaviours regarding emergency contraceptives among women requesting termination of pregnancy in Nelson Mandela Bay

Nature of Project: Masters of Nursing

Principal Researcher: Chwayita Nyangeni

Student Number: 202003979

Supervisor: Mrs N Rala

Co-Supervisor: Ms P Onyango

On behalf of the University of Fort Hare Health Research Ethics Committee (HREC), I hereby give ethical approval in respect of the undertakings contained in the above-mentioned project and research instruments(s). Should any other instruments be used, these require separate authorization. The Researcher may therefore commence with the research as from the date of this certificate, using the reference number indicated above.

Please note that the HREC must be informed immediately of

- Any material change in the conditions or undertakings mentioned in the document
- Any material breaches of ethical undertakings or events that impact upon the ethical conduct of the research

The Principal Researcher must report to the HREC in the prescribed format, where applicable, annually, and at the end of the project, in respect of ethical compliance.

The HREC retains the right to

- Withdraw or amend this Ethical Clearance Certificate if
 - Any unethical principles or practices are revealed or suspected
 - relevant information has been withheld or misrepresented
 - regulatory changes of whatsoever nature so require
 - the conditions contained in the Certificate have not been adhered to
- Request access to any information or data at any time during the course or after completion of the project.



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HEALTH RESEARCH ETHICS COMMITTEE

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Tel: +27 (0) 43 704 7368
E-mail: dgoon@ufh.ac.za

- In addition to the need to comply with the highest level of ethical conduct principal investigators must report back annually as an evaluation and monitoring mechanism on the progress being made by the research. Such a report must be sent to HREC monitoring@ufh.ac.za.

The Ethics Committee wishes you well in your research endeavours.

Yours sincerely

Professor DT Goon
Chairperson: HREC
15th December 2021

@ufh1916

ufh1916

www.ufh.ac.za

Appendix B: Permission Letter from the Eastern Cape Department of health



Enquiries: Yvonne Gixela

Tel no: 079 074 0859

Email: Yvonne.Gixela@echealth.gov.za / ygixela@gmail.com

Date: 25 January 2022

Knowledge, attitudes and behaviours regarding emergency contraceptives among women requesting termination of pregnancy in Nelson Mandela Bay. (EC_202201_004)

Dear Mrs. C. Nyangeni

The department would like to inform you that your application for the above mentioned research topic has been approved based on the following conditions:

1. During your study, you will follow the submitted protocol with ethical approval and can only deviate from it after having a written approval from the Department of Health in writing.
2. You are advised to ensure, observe and respect the rights and culture of your research participants and maintain confidentiality of their identities and shall remove or not collect any information which can be used to link the participants.
3. The Department of Health expects you to provide a progress update on your study every 3 months (from date you received this letter) in writing.
4. At the end of your study, you will be expected to send a full written report with your findings and implementable recommendations to the Eastern Cape Health Research Committee secretariat. You may also be invited to the department to come and present your research findings with your implementable recommendations.
5. Your results on the Eastern Cape will not be presented anywhere unless you have shared them with the Department of Health as indicated above.

Your compliance in this regard will be highly appreciated.

SECRETARIAT: EASTERN CAPE HEALTH RESEARCH COMMITTEE



TOGETHER, MOVING THE HEALTH SYSTEM FORWARD

Appendix C: Permission Letter from Nelson Mandela Bay Health District

 Province of the EASTERN CAPE HEALTH	Office of the Clinical Governance Manager Nelson Mandela Bay Health District Private Bag X 28000, Greenacres, Port Elizabeth. 6057. REPUBLIC OF SOUTH AFRICA
	Enquiries : Dr L P MAYEKISO Telephone : 041-391-8173 Facsimile : 041-391-8133 E-mail : mbasa.mayekiso@gmail.com
	Our Reference: RES/NYANGENI /2022 Your Reference: Date: 31 JANUARY 2022

**Ms C NYANGENI
PORT ELIZABETH**

**REQUEST FOR PERMISSION TO CONDUCT RESEARCH ON THE KNOWLEDGE,
ATTITUDES AND BEHAVIOURS REGARDING EMERGENCY CONTRACEPTIVES
AMONG WOMEN REQUESTING TERMINATION OF PREGNANCY IN NELSON
MANDELA BAY**

In response to your application for permission to conduct the above research, permission is hereby granted with the following proviso:

- Health service delivery should not be disrupted under any circumstances.
- Timeous appointments must be made with the relevant persons prior to commencement of interviews/visits.
- All required data should be collected by the Researcher or a designated fieldworker (whose name should be forwarded to the relevant Sub District Coordinators prior to data collection). The Sub District Coordinators Messrs. Jacobs – 060 563 1123, Koll – 060 563 1225 and Reuters – 060 557 9732 should be contacted **before** your visit and this letter is to be presented when visiting the facilities.
- Researchers and Fieldworkers are to adhere to the Covid-19 policy and must complete and return the attached Indemnity Form before entering the facilities.

The Nelson Mandela Bay Health District, as the research site, will expect a copy of the final research report when the study is completed. If the duration of the research period is required to be extended, the District Office (District Manager) should be informed accordingly.

This Office would like to wish you well in your research study.

Yours faithfully


DR L P MAYEKISO
CLINICAL GOVERNANCE MANAGER – NMBHD

Appendix D: Permission Letter from Dora Nginza Hospital



Room D G 28A • Dora Nginza Regional Hospital • Spondo Street • Zwide • Port Elizabeth • Eastern Cape
Private Bag X11951 • Algoa Park • Port Elizabeth • 6005 • REPUBLIC OF SOUTH AFRICA
Tel: +27 (0)41 406 4014 • Cell: +27 (0)82 956 6709 • Fax: +27 (0)866 413 211 • Email: jaline.kotze@echealth.gov.za

2 February 2022

Ms C Nyangeni

RE: REQUEST TO DO RESEARCH

Dear Ms Nyangeni

Your request to do research at Dora Nginza Regional Hospital is hereby approved.

The approval is granted with the following conditions attached:

1. Adherence to the conditions as set out in the ethics approval from UFH (Reference no. Ref#2021=12=04=ChwayitaN)
2. Adherence to the conditions as set out in the approval from the ECDOH research committee (EC_202201_004)

I wish you all the success with your research.

Regards,

Dr Jaline Kotze
Senior Manager: Medical Services
Dora Nginza Regional Hospital

Together, moving the health system forward

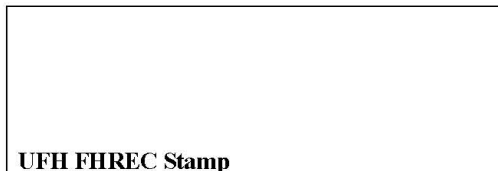
Fraud prevention line: 0800 701 701
24 hour Call Centre: 0800 032 364
Website: www.echealth.gov.za



Appendix E: Informed Consent Form



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PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT: KNOWLEDGE, ATTITUDES, AND BEHAVIOURS OF WOMEN REQUESTING TERMINATION OF PREGNANCY IN NELSON MANDELA BAY REGARDING EMERGENCY CONTRACEPTIVES.

PRINCIPAL INVESTIGATOR: CHWAYITA NYANGENI

ADDRESS: 57 DONNABEL VILLAS BURT DRIVE NEWTON PARK PORT ELIZABETH 6045

CONTACT NUMBER: 0761528497/0737948611

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

This study has been approved by the **University of Fort Hare Faculty of Health Sciences Research Ethics Committee (UFH FHREC) (Ref No: #2021=12=04=ChwayitaN)** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki and the ethical guidelines of the National Health Research Ethics Council. It might be

necessary for the research ethics committee members or relevant authorities to inspect the research records.

What is this research study all about?

- *This study will be conducted in Nelson Mandela Bay health facilities and will involve investigation of knowledge, attitudes, and behaviours of women requesting termination of pregnancy in Nelson Mandela Bay regarding emergency contraceptives.*
- *The objectives of this research are:*
 1. *To assess the knowledge regarding ECs among women requesting termination of pregnancy at Nelson Mandela Bay Health District.*
 2. *To assess attitudes towards ECs among women requesting termination of pregnancy at Nelson Mandela Bay Health District.*
 3. *To examine behaviour towards ECs among women requesting termination of pregnancy at Nelson Mandela Bay Health District.*
 4. *To determine if there is any relationship between KAB and the demographic data.*

Why have you been invited to participate?

- *You have been invited to participate because you are suitable to participate in the study in terms of inclusion criteria*
- *You have also complied with the following inclusion criteria:*
 1. *Women who voluntarily request TOP in public health institutions designated to terminate pregnancies in the NMB health district.*
 2. *Women who are 12 years and older.*
- *You will be excluded if:*
 1. *Women have mental illnesses as they may not comprehend EC fully*
 2. *Women who are younger than 12 years old.*

What will your responsibilities be?

- *You will be expected to honestly answer all the questions on the questionnaire*

Will you benefit from taking part in this research?

- *The direct benefits for you as a participant will be the chance to express your knowledge, attitudes and behaviours regarding emergency contraceptives.*
- *The indirect benefit will be the change implemented after the recommendations has been done after the study has been conducted.*

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

- *There are no known risks associated with the study.*

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

- *Should you have the need for further discussions after or during the completion of the questionnaire, an opportunity will be arranged for you to express your concerns causing discomfort and should you wish to discontinue with the questionnaire you may do so.*

Who will have access to the data?

- *Anonymity and confidentiality will be ensured by not writing names on the questionnaires. Reporting of findings will be anonymous by excluding the identities of participants and the institutions where data was collected. Only the researcher and the supervisors will have access to the completed data. Data will be kept safe and secure by locking hard copies in locked cupboards in the researcher's office and for electronic data it will be password protected. Data will be stored for 5 years.*

What will happen with the data/samples?

- *This is a once off collection and data will be destroyed by means of shredding the completed questionnaires after 5 years*

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

Yes. You will be paid to take part in the study for time inconvenience.

Who can you contact for additional information regarding the study?

The primary investigator Chwayita Nyangeni, can be contacted during office hours on her cellular phone at 0761528497. The study leader Ms N. Rala can be contacted during office hours at Tel: 043 704 7595. The co-study leader Ms P. Onyango can also be contacted during office hours at Tel: 043 704 7375. Should you have any questions regarding the ethical aspects of the study, you can contact the Chairperson of the UFH FHREC, Prof DT Goon, during office hours at Tel 043 704 7368.

How will you know about the findings?

- The findings of the research will be shared with you through meetings to share the findings. A research report will be written, and a copy will be kept at the University of Fort Hare Library.

Declaration by participant

By signing below, I agree to take part in a research study titled:

I declare that:

- I have read this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to both the person obtaining consent, as well as the researcher and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) on (*date*) 20....

.....
Signature of participant

.....
Signature of witness

Declaration by person obtaining consent

I declare that:

- I explained the information in this document to the participants
- I encouraged her to ask questions and took adequate time to answer them.
- I am satisfied that she adequately understands all aspects of the research, as discussed above
- I did not use an interpreter.

Signed at (place).....on (date).....20.....

.....
Signature of person obtaining consent

.....
Signature of witness

Declaration by researcher

I declare that:

- I explained the information in this document to the participant.
- I encouraged her to ask questions and took adequate time to answer them.
- I am satisfied that she adequately understands all aspects of the research, as discussed above
- I did not use a interpreter.

Signed at (*place*) on (*date*) 20....

.....
Signature of researcher

.....
Signature of witness

Appendix F: Data Collection Tool (Questionnaire)



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Together in Excellence

QUESTIONNAIRE COVER LETTER

Dear Madam

My name is Chwayita Nyangeni a Master's Nursing degree student at University of Fort Hare with student no. 202003979. I am conducting a research study on **Knowledge, attitudes and behaviors of women requesting termination of pregnancy in Nelson Mandela Bay regarding emergency contraceptives**. The objectives of the study are:

- To assess the knowledge regarding ECs among women requesting termination of pregnancy at Nelson Mandela Bay Health District.
- To assess attitudes towards ECs among women requesting termination of pregnancy at Nelson Mandela Bay Health District.
- To examine behaviors towards ECs among women requesting termination of pregnancy at Nelson Mandela Bay Health District.
- To determine if there is any relationship between KAB and the demographic data.

As a research participant in my study, you are requested to kindly complete the following questionnaire. The questionnaire should take about 10 to 15 minutes of your time to complete. Privacy and confidentiality of the data generated from the questionnaire will be ensured.

For any queries, you can contact me on 0761528497 or email me on matiwanechwayita2@gmail.com.

Kind regards,
Chwayita Nyangeni.

QUESTIONNAIRE

TITLE: KNOWLEDGE, ATTITUDES, AND BEHAVIOURS OF WOMEN REQUESTING TERMINATION OF PREGNANCY IN NELSON MANDELA BAY REGARDING EMERGENCY CONTRACEPTIVES.

Instructions:

- ☐ Please do not write your name or your particulars on the questionnaire
- ☐ Please indicate your choice with **X**
- ☐ Please answer all questions

SECTION A: DEMOGRAPHIC DATA.

1. Age (Years)

19yrs and less	
20-25yrs	
26-30yrs	
31-35	
36 and above	

2. Place of residence

Township	
Informal settlement	
Rural	
Suburb	
Other (specify).....	

3. Marital status

Never married	
Married	
Divorced	
Widowed	

4. Level of education

Primary school or lower	
High school	
College	
University	

5. Religion

Hindu	
Muslim	
Christian	
Others	

6. Number of living children

0	
1	
2	
3	
4 and above	

SECTION B: KNOWLEDGE OF WOMEN REGARDING EMERGENCY CONTRACEPTIVES.

Please mark with an X to indicate how correct or not are the following aspects regarding Emergency Contraceptives (ECs).

Knowledge statement	True	False	Uncertain
1. ECs are used if condom rupture during intercourse			
2. ECs are used when one forgot to take contraceptive pills			
3. ECs are used after forced sex and/or rape			
4. ECs are used when there is failure of other contraceptives			
5. ECs are used when there is a missed menstrual period			
6. EC pills cause abortion			
7. ECs prevent unwanted pregnancy after unprotected sexual intercourse			
8. ECs should be used only when forced to have sex or raped			
9. ECs are available for use in public healthcare facilities			
10. ECs are available for use in private pharmacies only			
11. One needs to pay for ECs in public healthcare facilities			
12. One needs to pay for ECs in private pharmacies			
13. ECs are recommended within 24 hours after sexual intercourse			

14. ECs are recommended within 120 hours after sexual intercourse			
15. ECs can be used after a missed menstrual period			

SECTION C: ATTITUDES OF WOMEN TOWARDS EMERGENCY CONTRACEPTIVES.

Please mark with an X to indicate how satisfied or dissatisfied you are with each of the following aspects regarding Emergency Contraceptives (ECs).

Statement	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
16. I would use ECs after unprotected sexual intercourse					
17. Other contraceptives influence use of ECs					
18. ECs are highly effective					
19. ECs are not effective at all					
20. I would recommend EC use					
21. I would be embarrassed to ask for ECs					
22. I need more EC information					

SECTION D: BEHAVIORS OF WOMEN TOWARDS USE OF EMERGENCY CONTRACEPTIVES.

Please mark with an X to indicate whether the statement is YES or NO to following aspects regarding Emergency Contraceptives (ECs).

Behaviour statement	Yes	No
23. I have used ECs previously		
24. My religion does not allow EC use		
25. Distance to healthcare facilities prevents EC use		
26. I don't use ECs because I lack knowledge		

THANK YOU VERY MUCH FOR YOUR PARTICIPATION

Appendix G: Odds Ratio

Odds Ratio estimates for knowledge and demographic characteristics associations

Item	Comparison	OR	95%CI	
			LCL	UCL
Q1-Condom rupture	Age 1 vs 5	3.0	0.78	11.46
	Age 2 vs 5	1.7	0.57	5.13
	Age 3 vs 5	1.9	0.65	5.42
	Age 4 vs 5	1.7	0.59	4.66
	Residence Informal vs Township	0.3	0.16	0.59
	Residence Rural vs Township	0.9	0.21	3.61
	Residence Suburb vs Township	1.0	0.53	1.97
	Education College vs University	0.4	0.15	0.82
	Education HighSch vs University	0.2	0.08	0.39
	Children 0 vs 3	1.1	0.37	3.33
	Children 1 vs 3	1.8	0.68	4.62
	Children 2 vs 3	1.8	0.73	4.41
Q2-Forgot contraceptive	Age 1 vs 5	1.2	0.33	4.21
	Age 2 vs 5	1.1	0.37	3.01
	Age 3 vs 5	0.9	0.33	2.56
	Age 4 vs 5	0.8	0.29	2.19
	Residence Informal vs Township	0.3	0.17	0.66
	Residence Rural vs Township	1.4	0.39	5.06
	Residence Suburb vs Township	2.0	1.15	3.60
	Education College vs University	0.7	0.40	1.37
	Education HighSch vs University	0.6	0.32	1.07
	Children 0 vs 3	0.8	0.28	2.10
	Children 1 vs 3	1.1	0.46	2.71
	Children 2 vs 3	1.2	0.51	2.80
Q3-Forced sex/rape	Age 1 vs 5	1.2	0.32	4.35
	Age 2 vs 5	1.6	0.55	4.70
	Age 3 vs 5	1.8	0.65	5.15
	Age 4 vs 5	1.0	0.39	2.85
	Residence Informal vs Township	0.4	0.19	0.70
	Residence Rural vs Township	2.5	0.50	12.31
	Residence Suburb vs Township	1.5	0.82	2.83
	Education College vs University	0.6	0.29	1.16
	Education HighSch vs University	0.4	0.20	0.78
	Children 0 vs 3	1.0	0.34	2.93
	Children 1 vs 3	0.9	0.36	2.31
	Children 2 vs 3	0.9	0.37	2.10

Q4-Failed contraceptive	Age 1 vs 5	1.8	0.51	6.64
	Age 2 vs 5	1.5	0.52	4.36
	Age 3 vs 5	1.5	0.53	4.17
	Age 4 vs 5	1.5	0.56	4.26
	Residence Informal vs Township	0.4	0.21	0.83
	Residence Rural vs Township	2.8	0.69	11.12
	Residence Suburb vs Township	1.2	0.71	2.06
	Education College vs University	0.7	0.36	1.20
	Education HighSch vs University	0.4	0.24	0.77
	Children 0 vs 3	0.9	0.34	2.56
	Children 1 vs 3	0.9	0.37	2.18
	Children 2 vs 3	0.9	0.39	2.11
Q5-Missed period	Age 1 vs 5	0.2	0.04	0.92
	Age 2 vs 5	0.5	0.13	1.96
	Age 3 vs 5	0.6	0.15	2.29
	Age 4 vs 5	0.9	0.23	3.30
	Residence Informal vs Township	0.5	0.20	1.32
	Residence Rural vs Township	2.9	0.78	11.12
	Residence Suburb vs Township	0.8	0.44	1.58
	Education College vs University	0.5	0.27	1.06
	Education HighSch vs University	0.6	0.29	1.15
	Children 0 vs 3	13.2	2.94	58.94
	Children 1 vs 3	3.5	0.85	14.35
	Children 2 vs 3	3.0	0.76	11.82
Q6-Causes abortion	Age 1 vs 5	0.5	0.12	2.10
	Age 2 vs 5	0.9	0.28	3.06
	Age 3 vs 5	0.9	0.28	2.91
	Age 4 vs 5	0.6	0.19	2.06
	Residence Informal vs Township	0.7	0.33	1.64
	Residence Rural vs Township	5.9	1.57	22.29
	Residence Suburb vs Township	1.1	0.61	1.94
	Education College vs University	0.7	0.35	1.22
	Education HighSch vs University	0.5	0.28	0.99
	Children 0 vs 3	2.5	0.77	8.47
	Children 1 vs 3	1.2	0.41	3.81
	Children 2 vs 3	1.9	0.67	5.63
Q7-Pregnancy prevention	Age 1 vs 5	1.8	0.51	6.65
	Age 2 vs 5	1.9	0.66	5.49
	Age 3 vs 5	2.3	0.83	6.55
	Age 4 vs 5	1.4	0.53	3.85
	Residence Informal vs Township	0.3	0.15	0.57
	Residence Rural vs Township	0.6	0.17	2.08

	Residence Suburb vs Township	1.0	0.58	1.71
	Education College vs University	0.9	0.47	1.57
	Education HighSch vs University	0.8	0.45	1.50
	Children 0 vs 3	0.8	0.29	2.27
	Children 1 vs 3	0.6	0.24	1.48
	Children 2 vs 3	0.7	0.31	1.73
Q8-Forced sex only	Age 1 vs 5	1.3	0.31	5.79
	Age 2 vs 5	2.5	0.73	8.45
	Age 3 vs 5	2.0	0.59	6.53
	Age 4 vs 5	1.0	0.30	3.39
	Residence Informal vs Township	0.4	0.19	1.01
	Residence Rural vs Township	2.2	0.59	7.92
	Residence Suburb vs Township	1.8	1.05	3.17
	Education College vs University	0.7	0.38	1.28
	Education HighSch vs University	0.4	0.20	0.67
	Children 0 vs 3	1.3	0.43	3.93
	Children 1 vs 3	1.0	0.35	2.61
	Children 2 vs 3	0.8	0.31	2.21
Q9-Public availability	Age 1 vs 5	1.2	0.31	4.89
	Age 2 vs 5	1.8	0.56	5.54
	Age 3 vs 5	1.8	0.58	5.47
	Age 4 vs 5	1.9	0.64	5.72
	Residence Informal vs Township	1.0	0.48	1.89
	Residence Rural vs Township	2.3	0.65	8.44
	Residence Suburb vs Township	1.2	0.70	2.07
	Education College vs University	1.0	0.55	1.78
	Education HighSch vs University	0.5	0.26	0.85
	Children 0 vs 3	1.2	0.44	3.39
	Children 1 vs 3	0.8	0.34	2.13
	Children 2 vs 3	0.9	0.37	2.17
Q10-Private availability	Age 1 vs 5	0.8	0.21	3.40
	Age 2 vs 5	1.4	0.44	4.55
	Age 3 vs 5	1.7	0.55	5.35
	Age 4 vs 5	2.1	0.71	6.43
	Residence Informal vs Township	0.7	0.32	1.39
	Residence Rural vs Township	4.8	1.25	18.35
	Residence Suburb vs Township	1.4	0.82	2.47
	Education College vs University	1.7	0.90	3.07
	Education HighSch vs University	0.9	0.46	1.60
	Children 0 vs 3	1.7	0.59	4.77
	Children 1 vs 3	0.7	0.27	1.73
	Children 2 vs 3	0.8	0.34	1.98

Q11-Public payment	Age 1 vs 5	2.2	0.60	7.86
	Age 2 vs 5	2.8	1.00	8.09
	Age 3 vs 5	1.9	0.69	5.19
	Age 4 vs 5	1.5	0.58	4.10
	Residence Informal vs Township	0.8	0.44	1.58
	Residence Rural vs Township	3.3	0.66	16.25
	Residence Suburb vs Township	1.5	0.82	2.65
	Education College vs University	0.7	0.37	1.31
	Education HighSch vs University	0.7	0.40	1.40
	Children 0 vs 3	1.1	0.37	2.98
	Children 1 vs 3	0.7	0.27	1.59
	Children 2 vs 3	1.2	0.52	2.83
Q12-Private payment	Age 1 vs 5	4.7	1.25	17.50
	Age 2 vs 5	2.5	0.84	7.43
	Age 3 vs 5	1.4	0.50	4.00
	Age 4 vs 5	1.2	0.44	3.28
	Residence Informal vs Township	0.3	0.17	0.64
	Residence Rural vs Township	2.1	0.42	10.75
	Residence Suburb vs Township	1.1	0.62	1.99
	Education College vs University	0.7	0.38	1.42
	Education HighSch vs University	0.5	0.24	0.89
	Children 0 vs 3	0.2	0.07	0.66
	Children 1 vs 3	0.8	0.32	2.10
	Children 2 vs 3	0.9	0.35	2.08
Q13-Within 24hrs	Age 1 vs 5	0.4	0.08	1.99
	Age 2 vs 5	0.5	0.13	1.82
	Age 3 vs 5	0.7	0.20	2.40
	Age 4 vs 5	1.0	0.31	3.47
	Residence Informal vs Township	0.5	0.19	1.36
	Residence Rural vs Township	2.7	0.72	10.25
	Residence Suburb vs Township	0.9	0.47	1.86
	Education College vs University	1.5	0.70	3.23
	Education HighSch vs University	1.2	0.54	2.62
	Children 0 vs 3	2.5	0.68	9.11
	Children 1 vs 3	1.3	0.41	4.24
	Children 2 vs 3	1.3	0.42	3.80
Q14-Within 120hrs	Age 1 vs 5	2.2	0.61	7.80
	Age 2 vs 5	1.0	0.36	2.99
	Age 3 vs 5	0.7	0.24	1.87
	Age 4 vs 5	0.7	0.25	1.86
	Residence Informal vs Township	0.4	0.18	0.71
	Residence Rural vs Township	0.8	0.21	2.67

	Residence Suburb vs Township	1.3	0.76	2.29
	Education College vs University	0.7	0.38	1.32
	Education HighSch vs University	0.4	0.22	0.76
	Children 0 vs 3	0.4	0.15	1.13
	Children 1 vs 3	1.1	0.47	2.80
	Children 2 vs 3	1.1	0.46	2.54
Q15-Missed period	Age 1 vs 5	0.2	0.04	0.97
	Age 2 vs 5	0.7	0.17	2.44
	Age 3 vs 5	0.9	0.25	3.15
	Age 4 vs 5	0.7	0.19	2.47
	Residence Informal vs Township	0.5	0.15	1.39
	Residence Rural vs Township	7.9	2.01	30.77
	Residence Suburb vs Township	2.0	1.09	3.62
	Education College vs University	0.6	0.30	1.19
	Education HighSch vs University	0.5	0.27	1.09
	Children 0 vs 3	3.2	0.92	11.44
	Children 1 vs 3	0.8	0.25	2.66
	Children 2 vs 3	1.0	0.34	3.14



University of Fort Hare
Together in Excellence

Odds Ratio estimates for behaviour and demographic characteristics associations

Item	Comparison	OR	95%CI	
			LCL	UCL
Q23-Ever EC use	Age 1 vs 5	0.5	0.08	2.81
	Age 2 vs 5	0.5	0.13	1.79
	Age 3 vs 5	0.7	0.20	2.54
	Age 4 vs 5	1.0	0.28	3.37
	Informal vs Township	0.2	0.05	1.02
	Rural vs Township	2.5	0.64	9.57
	Suburb vs Township	1.8	0.98	3.29
	College vs University	0.4	0.19	0.74
	HighSch vs University	0.2	0.10	0.42
	Children 0 vs 3	0.9	0.25	3.07
	Children 1 vs 3	1.4	0.45	4.14
	Children 2 vs 3	0.8	0.27	2.42
Q24-Religious restrictions	Age 1 vs 5	0.5	0.02	12.14
	Age 2 vs 5	2.2	0.21	23.43
	Age 3 vs 5	3.5	0.37	34.08
	Age 4 vs 5	1.3	0.12	13.55
	Informal vs Township	0.9	0.19	4.20
	Rural vs Township	2.8	0.30	25.55
	Suburb vs Township	2.8	1.09	7.44
	College vs University	2.1	0.57	7.81
	HighSch vs University	3.0	0.86	10.83
	Children 0 vs 3	1.0	0.13	7.41
	Children 1 vs 3	0.8	0.12	4.85
	Children 2 vs 3	1.2	0.22	6.90
Q25-Distance to facility	Age 1 vs 5	0.6	0.10	3.11
	Age 2 vs 5	1.4	0.35	5.80
	Age 3 vs 5	2.5	0.67	9.40
	Age 4 vs 5	2.3	0.64	8.11
	Informal vs Township	1.2	0.55	2.61
	Rural vs Township	<0.001	<0.001	999.00
	Suburb vs Township	0.8	0.36	1.56
	College vs University	2.0	0.87	4.70
	HighSch vs University	2.2	0.94	4.93
	Children 0 vs 3	1.0	0.29	3.21
	Children 1 vs 3	0.4	0.14	1.11
	Children 2 vs 3	0.6	0.25	1.65
Q26-Lack information	Age 1 vs 5	1.0	0.13	7.58
	Age 2 vs 5	1.0	0.18	5.75
	Age 3 vs 5	0.5	0.09	2.76
	Age 4 vs 5	0.7	0.13	4.19
	Residence Informal vs Township	1.7	0.49	5.95
	Residence Rural vs Township	0.2	0.06	0.87

Residence Suburb vs Township	0.4	0.21	0.78
Education College vs Univer	1.3	0.60	2.84
Education HighSCH vs Univer	1.4	0.65	3.18
Children 0 vs 3	0.5	0.11	2.40
Children 1 vs 3	0.6	0.13	2.38
Children 2 vs 3	0.9	0.22	3.86



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Appendix H: Letter from the editor



Date: 01 January 2024

DECLARATION OF EDITING

I, Professor Margaret Williams, hereby declare that I did the language editing on the dissertation as detailed below. The dissertation is for submission purposes in fulfilment of the requirements for the Degree Master of Nursing in the Faculty of Health Sciences, University of Fort Hare. The dissertation has been edited for English language, grammar, syntax, punctuation, and spelling, followed by proofreading.

TITLE

**KNOWLEDGE, ATTITUDES, AND BEHAVIOURS OF WOMEN REQUESTING TERMINATION OF PREGNANCY
IN NELSON MANDELA BAY REGARDING EMERGENCY CONTRACEPTIVES**

AUTHOR

Chwayita Nyangeni

Disclaimer: The author is free to accept or reject my changes to the document after editing and proofreading. However, I do not bear responsibility for revisions made to the document after my edit and proofreading on **01/01/2024**

Signed:

Associate Professor/Research Associate
Faculty of Health Sciences
Nelson Mandela University.
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