

HIV patients' perceptions of mobile technology support in Nelson Mandela Bay, Eastern Cape

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KEYWORDS

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Text messaging

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Antiretroviral treatment

Adherence

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Retention in care

Lost to follow-up

Nelson Mandela Bay Metropolitan Municipality



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ABBREVIATIONS

ART	Antiretroviral Therapy
HIV	Human Immunodeficiency virus
HTS	HIV Testing Services
NDOH	National Department of Health
MSF	Médecins Sans Frontières
TAC	Treatment Action Campaign
PMTCT	Prevention of mother-to-child transmission
WHO	World Health Organization
UTT	Universal Test and Treat
SMS	Short Message Service
APP	Application



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ABSTRACT

South Africa has one of the largest HIV and AIDS burdens in the world, with an estimated 7.52 million people living with HIV in 2018. The antiretroviral therapy (ART) programme is the biggest and most costly programme in the country, with 3.7 million people enrolled as of 2017. The success of antiretroviral therapy is dependent on adherence to medication and long-term retention in care. It has been reported that support groups can improve the treatment adherence of patients and their retention in care. However, enrolment in adherence support groups is voluntary, and the abovementioned success thereof is dependent on the commitment of the patient to active participation in the group. It is estimated that about 80% of adults and young people own at least one mobile phone, which makes this technology suitable to improve communication and enhance interaction amongst support group members.

The aim of the study was to explore the acceptability and feasibility of mobile technology, particularly WhatsApp, to enhance adherence support of patients on ART.

A qualitative exploratory study design was utilised to investigate the perceptions of members of an ART support group of mobile technology as a tool to enhance psychosocial support. Data was collected through four focus group discussions with 27 ART patients in Nelson Mandela Bay Metropolitan Municipality, Eastern Cape. The transcribed data was subjected to content analysis. Ethics clearance was obtained from the UWC Biomedical Research Ethics Committee, and permission was obtained from the Eastern Cape Province Department of Health. Informed consent was obtained from all the participants, and all data was kept confidential and the anonymity of the participants was maintained.

The study found that participants perceived mobile technology as an acceptable option for support, but economic factors like the cost of data and the requirements of the type of mobile device posed barriers to its usefulness and feasibility. Although the convenience of mobile technology was acknowledged, the participants felt that the role and functions of traditional support groups are clear and cannot be replaced by other media, including mobile technology. The participants valued physical contact as critical to facilitating emotional support. The role of mobile technology was therefore regarded as limited in the current resource-constrained setting.

Further research is needed to explore how mobile technology and apps can complement the functions and operations of treatment support groups for ART patients.



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DECLARATION

I declare that “*HIV patients’ perceptions of mobile technology support in Nelson Mandela Bay, Eastern Cape*” is my own work. It has not been submitted for any degree or examination to any university. All the sources that I have quoted have been indicated and acknowledged by complete referencing.



22 March 2021

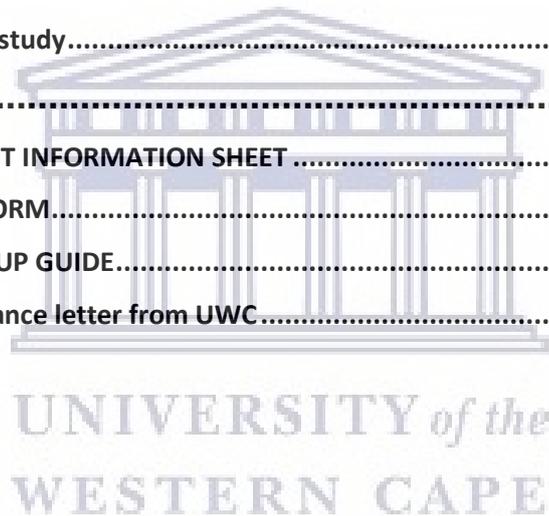


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CHAPTER ONE

INTRODUCTION

1.1 Background

Mobile technology has become an integral part of people's existent with approximately 900 000 individuals joining a mobile phone network daily worldwide (Brown, 2002). It is however estimated that 97% of the Tanzanian population have access to a mobile telephone while 62% of mobile phone users in Botswana share their phones with a family member, friend or neighbour (James & Versteeg, 2007).

South Africa has the largest HIV burden in the world, with an estimated 7.52 million people living with HIV in 2018 (Statistics South Africa [StatsSA], 2018). The introduction of antiretroviral therapy (ART) has improved the quality of life for many people living with HIV in South Africa (Masokoana, 2009). The ART programme is regarded as the largest and most expensive programme in the public health sector (Wouters *et al.*, 2010). In 2017, an estimated 3.7 million people were enrolled in the ART programme– translating to 65% of the people living with HIV in the country (AVERT 2019). The increasing number of people living with HIV is due to a combination of new HIV infections and the success of the ART programme that results in people living longer with their HIV diagnosis.

Several studies have confirmed that psychosocial support systems improve ART adherence, but Boyles *et al.* (2011) went further to link support systems to the improvement of patient retention in care. The study by Boyles *et al.* shows that the presence of community-based treatment supporters and support groups can reduce patient appointment and treatment defaulting. Support groups have been associated with improved health outcomes amongst ART patients, particularly viral load suppression. Poor compliance with ART, on the other hand, often results in patients presenting with poor health outcomes due to poor viral load suppression.

In 2016, the National Department of Health (NDOH) launched the Adherence Guidelines for Chronic Diseases. Chronic disease refers to a condition that persists for three months or longer. Chronic diseases are preventable and can be controlled but not cured. When the HIV condition is well managed through optimal and

consistent adherence, the patient becomes stable on ART and the condition has characteristics like that of a chronic disease (Colvin, 2011). The adherence guidelines prescribe a minimum package of eight interventions (Nacosa.org.za, 2019), 2016; Fox et al., 2018), which are:

- 1) Fast-track treatment-initiation counselling
- 2) Enhanced adherence counselling
- 3) Spaced fast lane appointments
- 4) Adherence clubs
- 5) Decentralised medicine delivery
- 6) Tracing and retention in care
- 7) Child and adolescent disclosure counselling
- 8) Integrated care of patients with chronic conditions

The purpose of the National Adherence Strategy is to decongest the health facilities by diverting stable HIV patients who do not need to be seen often by a clinician to three decanting modalities (Meyer *et al.*, 2017). The three decanting modalities are *Adherence clubs*, *Spaced and fast lanes*, and *Decentralised medicine delivery*. *Adherence clubs* and *Decentralised medicine delivery* are provided in community-based venues. The *Spaced and fast lane* modality is facilitated in the facility and focuses on the collection of medication only – without being seen by a clinician to reduce the patient waiting time in the facility.

1.2 Research problem

The integration of mobile technology as an additional support system for ART adherence has not yet been adequately explored. However, the lack of consistent referral pathway to an adherence support group has increased the number of patients who does not remain in care after being initiated on ART. Although the treatment adherence of patients in a support group is believed to be higher than those with no support structure (Beyene et al., 2009), the commencement and maintenance of a support group is complex.

There has been evidence that mobile technology like short message service (SMS) reminders can improve adherence to medication (Pop-Eleches et al., 2011). The SMS reminders provide a means for healthcare providers to communicate with the patients about their next visits and ART collection times, and for the dissemination of

other vital information that supports the patient and therefore improve adherence. The use of mobile phones is on the increase and, according to De Tolly and Alexander (2009), there are 36 million mobile phone users in South Africa. It has been found that 80% of mobile phone users are youths and adults. The uncoordinated traditional support groups pose a barrier to the optimal functioning of support groups which make the number of mobile phones owned by the youth and young adults in South Africa a strong possibility to venture into mobile technology as an additional support option.

The DoH's universal test and treat (UTT) intervention strategy has increased the need for adherence support. UTT is an intervention strategy in which the population at risk is offered HIV testing services (HTS) and diagnosed HIV infected individuals receive treatment to reduce the spread of the virus to other people.

The support group option is given to most patients who are diagnosed with a life-limiting illness and studies have shown that social support assist to reduce isolation of patients and increase the quality of health for people living with HIV (Crook et al., 2005). The abovementioned study also found that men are more likely to refuse the option to join a support group. Both men and women who join support groups attend the support group for only one year. However, the available studies failed to identify why there was sudden withdrawal after a year on treatment.

The increasing number patients who are newly initiated on ART and the number of patients who leave the traditional support group after one year, is an indication that there is a need for an alternative to traditional support groups.

1.3 Aim and objectives of the study

This study aimed to explore the feasibility and acceptability of mobile telephone technology as additional support to improve ART adherence among HIV-positive patients.

The objectives of the study were:

1. To describe the current support system for patients
2. To explore how the current support system can influence the use of mobile technology for additional support;

3. To explore patient perceptions of the usefulness of mobile technology amongst the support group members; and
4. To explore the feasibility of a WhatsApp group as additional patient support.

The research questions for this study were:

- What is the current support system for support group members?
- How can the current support system influence mobile technology support?
- Do current support group members use WhatsApp?
- Do the current support group members think mobile technology is useful?

1.4 Outline of the thesis

Chapter 2 presents a review of the literature of factors influencing adherence to medication and the support of patients with a chronic or life-limiting illness. Chapter 3 describes the research design and methodology in terms of the setting, study population and sampling procedure, data collection and data analysis. In Chapter 4 there is a detailed discussion of the themes derived from the data. Lastly, Chapter 5 presents with the conclusions and recommendations for future studies.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Despite the increase in the use of mobile technology in health care, treatment adherence and the use of mobile technology are not well documented (Välimäki *et al.*, 2012). The study done by Välimäki *et al.* shows that a combination of mobile technology and health care improves the social support of the patients, but there was not enough evidence of the benefits for treatment adherence. However, the study sample was small and could not show a difference in adherence patterns. A study that was done with young people living with HIV and AIDS on ART showed that the use of personalised daily text message reminders significantly improved self-reported adherence (Dowshen *et al.*, 2012).

ART is a lifelong commitment that has developed from placing the entire responsibility on the healthcare provider to a shared responsibility between the healthcare provider and the patient (Bates, 2010; Fox *et al.*, 2018). The workload of the healthcare providers became significantly bigger when the Department of Health started with its national ARV roll-out to qualifying patients living with HIV, which increased the demand for support. The increased patient numbers on ART required effective monitoring to identify missed appointments by patients and treatment defaulting. It has been suggested that social and economic factors such as gender inequality, migration, disability grants and social support are some of the challenges that interfere with ART adherence (Kagee, 2009). A study by Skoydal *et al.* (2011) found that men perceived HIV as a threat to their masculinity, which, in turn, caused them to refuse to acknowledge their HIV-positive status. This attitude interfered with their adherence to ART, as well as their support of their partner's adherence. It has been proven that disclosure of HIV status plays an important role in promoting adherence to ART. Research amongst HIV-positive patients in serodiscordant relationships reported missing ART doses of the HIV-positive partner. The main reason for missing the doses was non-disclosure of serostatus (Stirratt *et al.*, 2009). Aspeling and Van Wyk (2008) argue, however, that patients' beliefs and traditional

customs do not affect adherence as much as the lack of adequate treatment preparation, comprehensive HIV education, and a supportive patient healthcare provider relationship. Another common factor that fuels poor adherence to ART is a lack of enough food (Young et al., 2014). Support groups are an essential intervention to assist in addressing the social and economic factors that threaten effective adherence.

The introduction of the prevention of mother-to-child transmission (PMTCT) programme in Khayelitsha was the turning point for HIV treatment in the Western Cape (World Health Organization [WHO], 2003). The programme was initiated and facilitated by Doctors without Borders (Médecins Sans Frontières [MSF]) to increase HIV testing and education (Levy et al., 2005). MSF collaborated with the Treatment Action Campaign (TAC) on treatment literacy and the mobilisation of people living with HIV. The collaboration between the two entities assisted in increasing awareness of HIV, increased HIV testing, reduced discrimination and increased adherence to antiretroviral therapy (ART). It was this approach that resulted in the improved ART adherence of patients in the MSF programme (WHO, 2003).

2.2 Support groups

Traditional support groups refer to a group of people who meet regularly to support each other by discussing the challenges they have in common and finding ways to cope with the situation (Bradstreet, 2006). Support groups develop mutual support from the fact that the members have a shared concern (Helgeson & Gottlieb, 2000). Support could be the delivery of information, skills and resources that are important for the transfer of expertise to the individual. The group activities are not limited to group meetings for psychosocial support only, but also focus on income-generation strategies and interventions (Schopler & Galinsky, 2014). Support could be provided by peers, health professionals or community care workers, as indicated by the study by Boyles et al. (2011). This study shows the success that treatment supporters had in tracing patients who defaulted on treatment using telephonic contact with the patient. The use of mobile technology in health care has increased in recent years as a platform to deliver information and reminders that serve as additional support for patients (Välimäki et al., 2012). A study done with online support group members

living with HIV showed that there were six empowering outcomes and processes for group members. These processes were exchanging information, sharing experiences, connecting to others, encountering emotional support, finding recognition and understanding, and helping others. The six empowering outcomes were increased optimism, emotional wellbeing, social wellbeing, being better informed, improved disease management, and feeling confident in the relationship with physicians. Lack of physical connection was one of the disempowering aspects of online support groups (Mo & Coulson, 2014). This is an indication that a combination of the traditional support groups and online support can be a winning combination,

2.3 HIV treatment adherence

Several studies have been conducted to investigate the importance of adherence to medication (Catalani *et al.*, 2013; Chen *et al.*, 2013; Cohen *et al.*, 2013; Galárraga *et al.*, 2013). Treatment adherence has been positively linked to a good provider-patient relationship and effective communication (De Lima *et al.*, 2016; Ross, 2015). Good treatment adherence has improved the health status of HIV patients, turning the disease from a terminal illness into a chronic illness (Van Loggerenberg *et al.*, 2015).

However, poor treatment adherence is common amongst patients with psychological distress and can result in poor viral load suppression, drug resistance and increased AIDS-related deaths (Mutumba *et al.*, 2016). Other reasons why adherence is challenging to maintain have been reported as lack of food, fatigue, treatment-related adverse events like nausea, vomiting, diarrhoea, sexual dysfunction and lipodystrophy (abnormal fat distribution or accumulation). Symptoms like a sore throat with painful swallowing, anxiety, cough and loss of appetite are also factors that contribute to poor ART adherence. According to Al-Dakkak *et al.*, 2013, patients who experience treatment fatigue are not likely to adhere to ART due to pill burden.

2.4 HIV adherence clubs in South Africa

The number of people on ART in South Africa has increased tremendously and health facilities have become more congested (Roy *et al.*, 2018). The strategy that

has been adopted by the National Department of Health (NDOH) to manage the large numbers of stable patients is to decant stable patients into adherence clubs (MacGregor *et al.*, 2018). Adherence clubs are a long-term retention strategy for clinically stable patients receiving ART (Wilkinson, 2013).

The purpose of the adherence clubs is to improve patient adherence to treatment and retention in care by bringing the patients' medication closer to where they live (Mukumbang *et al.*, 2016). Stable patients refer to patients who are compliant with ART and are virally suppressed.

Adherence clubs refer to a meeting of approximately 30 stable patients who gather in a venue to collect their medication (Wilkinson 2013). Traditional support groups have always been an important part of the healthcare system, as they encourage treatment adherence and patient retention in the healthcare system.

The migration to adherence clubs was encouraged by the recognition of the commitment and ownership displayed by the patients towards treatment adherence. The group of stable patients bypasses all the processes of the routine clinic visit by meeting in a separate venue to collect their medication and getting a health talk (Dudhia & Kagee, 2015). The venue can be on the clinic premises or out in the community, depending on what the group of patients finds most convenient.

2.5 The use of mobile technology in supporting patient adherence

Smartphones have given rise to an increased development of applications (apps) that improve communication and information sharing. Smartphones are mobile devices that have computer abilities and can connect to an internet connection (Hebden *et al.*, 2012). Several apps on adherence have been developed but the focus has been on clinical or self-management. There has not been much research done on the benefits of their long-term use (Lester *et al.*, 2010).

There has been evidence of coherence and social support from the use of specific apps as the one described on a study by Du *et al.* (2014). The focus of the study was on a behaviour-change app that provides interventions and group support to help people to adopt healthy habits shows that the group became more supportive of each other and performed better. Mobile applications are updated and replaced

frequently; therefore the use of apps is beneficial for individuals who can keep up with these frequent updates.

The mobile technology method most preferred by health providers is text messages sent to patients as weekly reminders to increase patient treatment adherence (Lester *et al.*, 2010; Ware *et al.*, 2016). SMS reminders are useful but have been criticised as one-way communication that gives no option for patient feedback or interaction. There is not much research done on the benefits of bi-directional type of communication on patient support to adherence.

A study amongst university students in Ghana showed that WhatsApp influenced student performance negatively because it consumed a lot of their time and influenced their grammatical sentence construction negatively (Yeboah & Ewur, 2014). This study highlights the extent to which people engage with mobile technology which provides an opportunity for mobile support-group marketing.

Recent studies have shown that mobile technology is helpful in assisting with ART adherence. It went further to use MXit to pilot HIV content knowledge amongst high school learners in Khayelitsha, Western Cape. The learners felt that MXit was cheap, fast and anonymous, but they also expressed a desire to communicate on a more modern platform like Facebook and WhatsApp (Henwood *et al.*, 2016).

Mobile technology presents a variety of options for the user. It therefore is suggested that the choice of mobile technology is determined by cost of data, age of the user and type of device used.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research design and methodology. It also describes the setting, study population and sampling procedure, data collection and data analysis. Finally, the chapter concludes with sections on rigor and ethics.

3.2 Research setting

The study was conducted in Booyens Park informal settlement in the Nelson Mandela Bay Metropolitan Municipality. Booyens Park is a microcosm of Nelson Mandela Bay Metropolitan Municipality as it reflects the general demographics of the district. The Metropolitan Municipality is situated in the south-eastern part of the Eastern Cape Province, South Africa. The Eastern Cape is one of South Africa's poorest provinces, with an unemployment rate of 28.3% according to Statistics South Africa ([Stats SA], 2011). According to the 2011 census, 68% of the population in Nelson Mandela Bay Metropolitan Municipality was between the ages of 15 and 64 years, with a youth unemployment rate of 37%, while only 12% of the population had tertiary education and less than 50% had grade 12. The unemployment rate refers to people who are actively seeking a job as a percentage of the labour force. The total population of Nelson Mandela Bay Metropolitan Municipality is 1.1 million, with an HIV infection prevalence of 30% and a life expectancy of 46 years for men and 51 years for women.

3.3 Research design

Qualitative research involves research methods that is concerned with methodical collection, ordering, description and interpretation of data that is produced from talks, observation or documentation (Kitto et al., 2008). It also focuses on seeking to understand phenomena from the perspectives of those involved in their setting as experienced by them (Robertson & McCartan, 2016).

A qualitative exploratory study design was used in this research to explore the feasibility and acceptability of mobile telephone technology as additional support to improve ART adherence among HIV-positive patients. This research attempts to explore the perceptions, views and understanding of the participants regarding using mobile technology to enhance adherence to medication in the research setting.

3.4 Study population and sampling

A study population refers to all the people from whom information is required (Wiid & Diggins, 2013). The study population consisted of people living with HIV (PLWHA) who are taking ART and are part of a support group in Booyens Park, Nelson Mandela Bay Metropolitan Municipality, Eastern Cape. The age group of the study population ranged between 18 and 65 years.

3.5 Data collection

Data was collected through focus group interviews with members of two support groups from resource-limited settings in the Nelson Mandela Bay Metropolitan Municipality. This qualitative method of data collection was appropriate to explore topics in a group interview by a facilitator that was used to define the behaviour, likes, attitudes and dislikes of the group that was interviewed concurrently (Du Plooy-Cilliers *et al.*, 2014).

Du Plooy-Cilliers *et al.* describe the construction of focus groups as consisting of a small group of fewer than 10 people with a facilitator. Focus groups have been defined as undertaking purposive discussions of a specific topic or theme with a group of between eight and 10 people who share a common interest (Schurink *et al.*, 1998).

The organization where the support groups belonged to was purposively chosen based on the sound governance practices of the organisation. Two meetings were held with the people who oversaw the support group members. The first meeting was held with the manager of the organization to discuss the research and seek permission to access the support groups. The two support groups were chosen randomly based on the support group meeting dates. The second meeting was held with the organizational manager and the two support group facilitators. The purpose

of the meeting was to be introduced to the support group facilitators and study introduction. The facilitators were given an opportunity to choose an interview time between 10:00 and 14:00 on the days of the support group meeting. Interviews were going to last between 40minutes and 60minutes.

The first focus group interview was held with 7 support group members to explore the perceptions and ideas about mobile technology (Dilshad & Latif, 2013). A second focus group interview followed a week after the first. Purposive sampling method was used in selecting the participants (Du Plooy-Cilliers *et al.*, 2014). Purposive sampling was done at the discretion of the researcher to choose the organisation that had the most characteristics that represented the study population (Singleton *et al.*, 1988). Support group members from two groups in resource-limited settings in Nelson Mandela Bay Metropolitan Municipality were selected. The sample excluded HIV-positive patients who were bedbound and not able to attend the support group meetings.

The data was collected from the focus groups using open-ended questions that encouraged participants to express their views. Themes were identified in advance and were then used to facilitate the discussion with the participants. An interview guide was used to facilitate the focus groups, and prompting questions were used to encourage conversation (see Appendix B). Two support group facilitators were interviewed separately from the rest of the groups to avoid bias in the responses.

All the participants were fluent in Xhosa and all the interviews were conducted in Xhosa to ensure that all the group members could participate fully. All the interviews were audio-recorded and transcribed in Xhosa. The transcripts were then translated into English for the submission of the thesis. The transcripts and the one-hour in-depth support group member interview recordings, and the researcher's reflective notes were kept in a lockable cabinet for safekeeping. To ensure reliability and validity, data triangulation techniques were adopted, using interviews and observation (Foss & Ellefsen, 2002).

The research assistant was a qualified social worker who is experienced in qualitative research methods. All the interviews were audio-recorded and transcribed in Xhosa and then translated into English by the experienced research assistant. The research assistant was trained during the pilot phase of the research. This ensured that the transcriptions and translation done by the research assistant accurately

reflect the views of the participants. The involvement of the research assistant did not interfere with the views of the participants during data collection and ensured that ethical standards were maintained.

3.6 Data analysis

Qualitative content analysis was conducted on all the transcribed data from the four focus group interviews. The reason for using content analysis was to discover the themes and patterns embedded in the text. Themes have been described as a pattern in the information that at minimum describes and organises the possible observations, and at maximum interprets aspects of the phenomenon (Muir-Chochrane, 2006). The researcher made sense of the information by sifting and interpreting the information (Pope *et al.*, 2000) to identify themes and subthemes. The emerging themes formed the process of analysis that has been described in eight steps by Du Plooy-Cilliers *et al.* (2014). The process of analysis consists of the preparation of data, defining the theme of analysis, developing categories and a coding scheme, pre-testing the coding schemes and samples, coding the text, assessing the consistency of the coding employed, drawing inferences based on coding or themes, and reporting your methods and findings (Patton, 2002).

3.7 Rigor

The researcher established credibility using well-established research methods. Focus group interviews were recorded to ensure the correct transcription of the interviews. Clear and simple language was used for the interviews. The researcher kept a journal to reflect. Member checks to ensure the information was understood correctly were done throughout the focus groups. The external auditor was research supervisor based at the University of the Western Cape (UWC) who monitored the research process. The researcher made use of peer debriefing to gain support and guidance. The researcher remained neutral so as not to influence the group facilitation in any way (Shenton, 2004). The participants' views on the findings of the study indicated whether the findings were in line with the data material.

Trustworthy is made up of credibility, transferability, dependability and conformability. The interview tools met the objectives of the research to ensure credibility. All interviews were conducted in a similar manner by sticking to the interview guide. The

researcher recorded all the interviews and transcribed them from the recordings to ensure the validity of the data collected (Shenton, 2004). The transcripts and the audiotapes were kept for cross-reference. The audiotapes were marked with the date to ensure that all the interviews were accounted for. All interviews were conducted according to the interview guide (Seale & Silverman, 1997).

3.8 Ethics considerations

Ethics clearance was obtained from the UWC Biomedical Research Ethics Committee. Permission to do the study was sought in writing from the Eastern Cape Province Department of Health.

Focus groups were conducted with members of the support groups after permission to gain access was granted by St Francis Hospice. Written consent was obtained from the support group members, who consented to be part of the focus groups. Members who would like to have given written consent but wanted to remain anonymous were given pseudonyms. Members who preferred to give written consent but were not literate could use an X.

The Helsinki Declaration, the Hospice Palliative Care Association (HPCA) and the University of Western Cape (UWC) ethical guidelines were followed by the researcher to ensure the safety and protection of the participants (*Journal of the American Medical Association [JAMA]*, 2013). The study posed no physical, psychological or financial harm to the participants. Information obtained in the focus groups was not to be discussed with anyone. Recordings were stored on the laptop and password protected for confidentiality purposes. The researcher explained to the participants that participation was voluntary. Participants were informed that they could withdraw from the study at any time with no negative consequences.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Introduction

The main themes are presented and discussed in this chapter, namely: Perceptions of mobile technology; Barriers to the use of mobile technology; Support group and treatment adherence; the Impact of mobile technology on treatment adherence; and Treatment adherence and partner support.

4.2 Perceptions of mobile technology

4.2.1 Short Message Service

This theme describes how the support group members felt about the usefulness of mobile technology. When the support group members thought of mobile communication, they considered text messages (or SMSs) only. SMS was the preferred method of communication amongst the participants because it is cost-effective and compatible with most mobile devices.

Although different text modalities were available to the participants in the study, SMS proved to be the preferred mode. One of the SMS modalities that was used was the PEP group, a text-based application that is downloaded and connects only individuals who have the application on their devices.

“It is a free SMS service...” Male, 18 years, Group 2.

A study by Déglise *et al.* (2012) shows that the most used SMS modality for disease prevention, surveillance and compliance was bulk messaging (Lester *et al.*, 2010). Bulk messaging is the dissemination of large numbers of SMS messages by the health providers to the patients to remind them of their appointment date or to send specific health messages (Rana *et al.*, 2015).

The Déglise *et al.* study found, in line with other research findings, that bulk SMS communication is a commonly used method of mass communication. The disadvantage of using bulk SMS messaging to communicate with patients is the

danger of unintentionally disclosing the HIV status of a client who shares a mobile phone with a friend or relative (Rana *et al.*, 2015).

4.2.2 Sharing of mobile devices

The support group members in this study who were sharing a mobile device, however, showed no discomfort about the limited access to mobile technology. However, the support group members expressed a wish to have access to mobile devices with better functions, such as a smartphone. The lack of financial resources had an impact on the type of device and communication package that the support group members could afford.

"For me, the technology is not the barrier but what I think the main challenge is, it is money to buy data bundles, which is why we mostly use what is free, applications that do not cost much". Female, 30, Group 2

"Where we have the option to use other ways of sharing bulky information like pictures and music, I use my phone to share these things with some of my friends in the support group". Female, 29, Group 2

Although texting was preferred more than voice calls, the type of device owned by the support group members determined the options they had in terms of communication applications. This preference was confirmed in the statements by the respondents that clearly indicated the choice of communication medium was mostly influenced by the type of device.

"SMS mostly, my phone can't access WhatsApp" Female, 27, Group 3

"I use my phone for Facebook and WhatsApp..." Female, 24, Group 3

4.2.3 Traditional Support groups and ART adherence

The participants still perceived traditional support groups as a significant part of their peer support. Support group meetings do not just provide the members with psychosocial support, but also address the economic and physical aspects of the members through income-generation projects and the provision of a plate of food at every meeting. The data collected in this research shows a clear link between support groups and treatment adherence.

Unemployment was high amongst the support group members; some of the members were dependent on a social grant and others were learners. The limited

income that support group members receive per household makes mobile devices and technology a luxury and not a priority. Some of the participants told about financial challenges in their families due to a lack of regular income.

The focus for these households is on the provision of basic needs, as clearly stated by one of the participants who said that finances in her household were limited and that the food served at the support group meetings was one of the reasons why she attended every meeting.

“It’s only when someone has a problem, they are struggling with then I can advise”. Female, 40, Group 4

“Maybe one person in the support group is suffering sometimes, and does not have someone to support...” Female, 38, Group 4

“My husband sometimes goes and queue for a temporary job, sometimes he comes back empty-handed, and twice a month we get a good plate of food in the support group.” Female, 27, Group 3

“Financial support through the profits of food gardens and beadworks that is for sale”. Female, 38, Group 4

4.2.4 Sharing of mobile devices

The participants in this study did not all have their own mobile devices but indicated that they had access to a mobile device. The studies by Leon *et al.*, 2015 indicated that the acceptability and feasibility of mHealth in Bolivia and South Africa is a limiting factor because not all the participants in the studies had their own mobile devices. The sharing of mobile devices amongst support group members in this study is in line with other studies done on access to mobile devices.

4.2.5 Mobile technology and ART adherence support

Studies have shown a correlation between the use of mobile technology and support of ART adherence (Haberer *et al.*, 2016). Haberer *et al.* refer to this correlation as a mixed result, because it combines mobile technology and traditional support groups to provide the patient with continuous support.

4.2.6 WhatsApp and group communication

Although a modality like WhatsApp with a group chat function was an option for group communication, it has not been a popular medium of communication amongst support group members. The reasons why WhatsApp was not the most used communication platform amongst the support group members was due to the data cost associated with the modality. This cost implication poses a limitation to the experiences of the participants because their decision is based on what they can afford, and not what is useful for the group.

The findings in this study are like other studies about SMS being the most used mobile technology medium. However, in this study, SMS communication was used as a two-way communication channel as opposed to the one-way mass communication used between health providers and patients (Déglise *et al.*, 2012). There were other participants in the study who felt that they only used their mobile devices to communicate with friends and family outside the support group.

"I mostly use my phone to make and receive calls, only my friends and family did not support group members." Female, 26, Group 3

The participants do not always associate support with mobile technology communication with group members outside the support group meeting. This conclusion is drawn based on all the reasons that were used to explain the limited interaction between support group members outside the traditional support group sessions.

SMSs have been used effectively by healthcare providers to remind patients of their next appointments and to communicate health messages (Bangsberg, 2011; Lester *et al.*, 2010). Bangsberg (2011) and Lester *et al.* (2010) showed that weekly text health messages sent to HIV-positive patients improved adherence and the viral load count of patients. However, Välimäki *et al.* (2012) argue that there is a link between patient medication adherence and mobile technology, although this is not well documented.

"My husband goes and queue for a temporary job. It helps but not reliable, sometimes he comes home empty-handed." Female, 27, Group 3

"Financial support through the profits of food gardens and beadworks that is for sale". Female, 40, Group 4

4.2.7 Discussion

There should be a differentiation between one-sided SMSs and interactive SMSs. Interactive SMSs are text messages in which the patient also has an opportunity to respond. One-sided messages are SMSs that are being sent to several people at once, with no option for receivers to respond. Bulk SMS communication between healthcare providers and the patient is convenient and cost-effective for the sender. This form of communication has limitations, as it is one-way communication and does not give the receiver the option to respond.

However, it was evident from the interaction with the support group members and from their responses that mobile technology is not considered a preferred communication between the support group members, because of the challenge with affordability. In contrast, the use of mobile applications seems to be appreciated by most adherence group members if access to smart mobile phones with data could be facilitated.

Hence, it is believed that the mobile phone and mobile applications could promote timely communication and information sharing and likely improve participation by the group, as well as adherence. This study was exploratory and based on popular trends, and thus there was the expectation that the use of mobile technology would be a welcome option.

4.3 Barriers to the use of mobile technology

4.3.1 Economic barrier

This theme describes the barriers experienced by the support group members in relation to the use of mobile technology. The challenges that were raised by the support group members regarding the use of technology were mostly related to economics and age. According to a study by Boulus *et al.*, 2011, there is a high level of text message communication among young people daily. Boulus *et al.* explain that the latest smart mobile devices are increasingly gaining popularity among young people, which is not in line with this research.

This research found that the older generation is mostly using mobile devices for making calls to keep in touch with their relatives.

The younger support group members displayed an eagerness to learn from each other in the focus group. This eagerness was obvious when one-member shared information on the PEP application. The findings of this research are in line with the findings of Boulus *et al.* (2011), as the younger participants indicated that they used their mobile devices for more than communication.

The older generation said that they used their phones for voice messages and that the unavailability of internet connection was not a factor in their lives. Boulos *et al.* build on the Kenyan study by showing that application downloads have increased, from three hundred million in 2009 to five billion in 2010. The participants in this study downloaded the PEP application and it was utilised by the individuals who felt that it suited their needs best.

“All you do is to download the app and you can communicate with anyone who has the app on their phone.” Male, 18, Group 2

4.3.2 Teaching and learning from each other

The participants indicated that they learnt from each other, irrespective of their type of device. The amount of technical information that was shared amongst support group members was influenced by age. The older participants did not show any interest in learning or receiving new information.

“I am too old for these SMS things. All I do is to make and receive calls on this phone”. Female, 57, Group 1

“We learn from one another as things changes all the time or new apps come up”. Female, 23, Group 2

4.3.4 Affordability of data

The affordability of data was one barrier that most of the members could identify with. The members who had no data issues were those who used BlackBerry devices due to the affordable data plan that was attached to the device.

“Challenge for me is buying data”. Female, 30, Group 1

The issue of affordable data is not uncommon where patients in low-income settings use their phones to access healthcare services. In a study that was done in 32 villages in Mpumalanga, South Africa, it was found that 30% of the patients did not have airtime to respond to mHealth at the time of the interview. These patients had

to wait for their grant money to load airtime in order to participate in the interviews. The findings of the study on mHealth and the affordability of mobile phone airtime are like the findings in this study on the affordability of data bundles.

Unemployment is high in Booyens Park, with the result that most of the support group members are either unemployed or receiving a social grant. This situation made the affordability of data a major challenge for the participants.

"Sometimes my data just disappears, I don't know why and that I really don't like it". Female, 26, Group 3

"Cell C is just a problem on that side where I stay. You have to stand in certain areas of the house to get a better connection". Female, 38, Group 1

4.3.5 Internet access and type of device

Some of the challenges were related to the device limitations.

"I can access the internet, but my phone does not want to download WhatsApp". Female, 48, Group 2

"Mine is that my phone is old, and it just freezes any time". Male, 16, Group 3

The biggest barrier for participants was related to their devices, as is evident from their responses.

"I do not have any challenges with my Nokia; only thing that I am praying for is a touch screen phone". Female, 37, Group 4

4.3.6 Discussion

The benefit of ART adherence outweighs poor adherence but patients still fail to adhere to treatment. Some of the factors associated to poor adherence are poverty and unemployment (Azia et al., 2016). The participants in this study have indicated that the main reason for attending the support group is for food security. Research has shown that food insecurity has a negative impact on adherence to ART (Anema 2009).

The participants in this study had a high level of unemployment which made them vulnerable to a lot of factors associated with lack of income. The lack of income was also the barrier to considering the benefits of mobile technology objectively. It was clear from their response that mobile technology was not a priority.

Although mobile technology having great potential to improve adherence in resource limited settings, in spite of the cost challenge. To bridge the cost challenge, a study that was done in Swaziland explored a no-cost call option. This was done in the form of a missed call to a patient as a dose reminder to the patient (Kilner et al., 2013).

This is however a good innovation to be considered but will not be useful in the support group setting as it is one sided communication. Interactive SMS and interactive voice notes were used in Uganda (Haberer) which brings a different possibility to the fore.

4.4 Support group and treatment adherence

4.4.1 Emotional support and adherence

This theme describes the effect that social support had on the treatment adherence of the members. The success that the patients experienced in terms of their treatment adherence was as a result of the emotional support that they gave and received from each other.

“We encourage the members to disclose at home because it helps when it comes to the taking of medication.” Female, 42, Group 4

Another member of the support group said that fear of disapproval from family and friends results in patients missing treatment doses more frequently. The reason why the clients miss the doses is that they forget to take the treatment as it is hidden.

Other reasons that will aggravate the situation include that they do not have the freedom to put measures in place that will act as reminders to take their treatment. Participants confessed that emotional stress caused by external factors was a common reason that made them skip a dose or two of their ART.

“Where a husband drinks a lot and when he is under the influence of alcohol, swear at me about my HIV status. Things like that have a negative influence on one's mental state and the interest to take one's medication”. Female, 27, Group 2

“Emotionally we also have the meetings where people can talk about their issues and we can support each other”. Female, 50, Group 4

4.4.2 Financial support and adherence

One participant mentioned that finances are not good in their households and that the food served at the support group meeting was one of the reasons why some participants attended the meetings.

“Sometimes it can be someone who stops taking medication because they have no food in the house, then she will be stopping because the tablets are 'eating' her on the inside”. Female, 32, Group 2

“It has been helpful for me and my husband as we have a good plate of food twice in the month”. Female, 27, Group 3

Financial stress experienced by support group members was an issue that affected adherence negatively. Kalichman *et al.* (2011) also include the distance to the area of intervention to the lack of resources that are contributing to the challenges of treatment adherence. However, the study by Azia *et al.* (2016) shows that there are far more challenges, including economic and psycho-social issues. These two studies are a summary of the findings of this study.

“My husband goes and queue for a temporary job. It helps but not reliable, sometimes he comes home empty-handed”. Female, 27, Group 3

“...financial support through the profits of food gardens and beadworks that is for sale”. Female, 42, Group 4

4.4.3 Discussion

ART adherence is a lifelong commitment that requires the patient to have a functional support system. Traditional support groups have been one of the available optional support systems in communities. The support groups have evolved and taken many innovative forms that have been derived from traditional support groups.

The rules for membership attached to a support groups are the guide the choice for the members. A study done on support groups in Durban, South Africa found that support group members' reason for joining the support group was to gain skills and information so that they can share in the community (Ramlagan *et al.*, 2014).

This finding was different from the findings of this study where the participants remained in the support group because of the plate of food and the income

generation project. The support group caters for the needs of the members; the members will continue to attend the meetings.

A basic form of support is where the immediate need of a person or group is taken care off. Community Adherence Support Groups (CASG) is a form of treatment group support used in Mozambique. The group consist of 5 – 7 members, where each member gets a turn to collect the ART for the group for the month (Jobarteh et al., 2016). This type of support is great for people who needs adherence support.

PLWHA support groups are usually attached to a health facility to ensure patients who need support are referred appropriately. It is not all the support groups however which have an income generation aspect attached to it. It is imperative for the referring person to understand the needs of the patient and match it with the appropriate group in the community.

Several studies have shown a link between economic factors and structural barriers that influence ART adherence (Kagee et al., 2010). According to Sangowawa and Owoaje, PLWHA have a high rate of unemployment due to ill health. Their recommendation is further research into support group income generation. This recommendation is inline what the findings in this study that food security is the basis for support group attendance.

4.5 The impact of mobile technology on treatment adherence

4.5.1 Impact of mobile technology on treatment adherence

This theme describes the impact that mobile technology has on the treatment adherence of the support group members. South Africa is a middle-income country with a lot of health facility inequalities in terms of rural allocation compared to urban allocation. This is due to the healthcare intervention points in rural areas that are not easily accessible for the clients because of the long distances between households and the facilities (Heckmanet al., 1998).

"I am old and stay with my grandchildren. It gives me peace knowing I have numbers of people whom I can call should I be stranded and need help".

Female, 63, Group 1

"I mostly use my phone to make and receive calls, only my friends and family but not support group members". Female, 48, Group 2

4.5.2 Mobile technology in limited resourced settings

There is no doubt that mobile technology can improve healthcare service delivery in all settings. However, there has been inconclusive evidence on the type of mobile technology that has a lasting impact on treatment adherence. The most researched mobile technological intervention is one-sided bulk text messages containing health messages to encourage adherence.

Based on the interaction with the support group members in this research, my observation was that there is a place for face-to-face meetings. It was not clear, however, if the preference for face-to-face meetings was based on the challenges attached to the use of mobile technology. What is clear from the statement below is that emotional support can be provided effectively through face-to-face meetings.

“Emotionally we also have the meetings where people can talk about their issues and we can support each other”. Female, 39, Group 4

“I think for announcements and urgent meetings cell phones are good”.
Female, 41, Group 4

4.5.3 The need for face to face meetings

The need for face-to-face meetings was echoed in the findings of a study done on the perceptions of young people regarding online support groups. Although the participants felt a sense of belonging with their peers in the online support group, they indicated that their first preference was still faced-to-face support group meetings (Van Uden-Kraan et al., 2011).

Online support groups create a familiarity and a sense of belonging, but participants felt they had no influence on the peers in the group (Barak et al., 2008). Traditionally, psychosocial support goes along with a hug from the supporter to the supported, which is not possible in an online support group.

“The support we get in the group is not going home with us that is why having a phone gives us a way to maintain contact with other people”. Female, 41, Group 4

4.5.4 Lack of access

The cost of data was one aspect that had a negative impact on how the participants viewed mobile technology. A lack of access to a mobile device for some of the participants impacted negatively on their interaction with their peers. The lack can be divided between (1) access to the device due to the lack of a personal mobile device, (2) the lack of access to a communication platform due to the mobile device's inability to access the internet, and (3) the participants' non-usage of the internet due to the high cost of data.

"For me, the technology is not the barrier but what I think the main challenge is money to buy data bundles, which is why we mostly use what is free or does not cost much". Female, 38, Group 4

"I do not have a cell phone". Female, 40, Group 4

However, mobile technology has reached a stage of universal usage where the unavailability of a personal mobile device does not influence the usage of mobile technology negatively. As was evident in a study done among low-income students on the usage of mobile technology devices, 25% of the students did not have their own mobile devices, but their usage was as high as the students who owned their own mobile devices. The students who did not own their own mobile devices borrowed from family members and other students (Kreutzer, 2009).

The study done by Kreutzer is in line with the findings of the study that was done in Booyens Park, as support group members borrowed mobile devices from other members for their personal interaction with the support group members outside the traditional support group meeting.

This reluctance can be interpreted as being that the support group members have not made any link between treatment adherence and mobile technology. The participants indicated that they used their mobile devices to communicate with friends and family outside the support group. Other participants however felt there was a definite benefit to mobile technology as an additional support.

"The support we get in the support group is not going home with us that is why having a phone gives us a way to maintain contact with other people". Female, 56, Group 4

4.5.5 Factors influencing mobile technology

There will always be a place for mobile communication in any community, and the use of mobile technology will be influenced by different factors. One participant felt that mobile technology means an extension of her support.

"I am old and stay with my grandchildren. It gives me peace knowing I have numbers of people whom I can call should I be stranded and need help".

Female, 63, Group 1

Watkins *et al.* (2018) refer to this reaching out to seek health care or support as the capability approach.

4.5.6 Discussion

4.6 Treatment adherence and partner support

This theme describes the impact that the support of a partner has on the adherence of a client. Several studies have shown a link between support group intervention and the treatment adherence of patients who are taking chronic medication. The findings in this study are in line with what Kagee and others have said about the social factors affecting the adherence of patients (Kagee, 2009; Power *et al.*, 2003). Although the disclosure of the HIV status of patients has been linked to the success of patient adherence, the dynamics between men and women living with HIV have not received much attention (Bhatia *at al.*, 2017). Most of the support group members were female, which could mean that the male partners were missing or not part of the support group.

"Where a husband drinks a lot and when he is under the influence of alcohol, swear at me about my HIV status. Things like that have a negative influence on one's mental state and the interest to take one's medication". Female, 27, Group 2

The absence of male partners in the support groups is an indication of the potential lack of external support for the participants. This study did not focus on the kind of support participants received from their partners. Power *et al.* (2003) imply that the non-support of a partner is a threat to adherence by the patient, and this is in line with the findings of this study.

The Power *et al.* study supports the views that good adherence has been associated with increased satisfaction with partner support. The participants also indicated that there are other factors that interfere with adherence, such as the lack of food.

“Sometimes it can be someone who stops taking medication because they have no food in the house, and then she will be stopping because the tablets are ‘eating’ her on the inside”. Female, 32, Group 2

The interaction with the participants also emphasised the importance of support group membership and the connection it has with income and food security. Household income is low among the support group members, with the result that these members generally live in poverty.

The extent of poverty was made clear by the statement by one of the participants, who mentioned that the food they receive from the support group meeting was an important source of nutrition for the support group members.

“It has been helpful for me and my husband as we have a good plate of food twice in the month”. Female, 27, Group 3

The support group also becomes useful in assisting the members to maintain their adherence to medication through the provision of food. A study by Sing *et al.* (2015) showed that patients on ART adhered better to their treatment when they received food assistance. The plate of food provided to the support group members during their meeting is providing in their immediate needs. The food gardens and beadwork are providing the members with a sustainable income option per household.

“My husband goes and queue for a temporary job. It helps but not reliable, sometimes he comes home empty-handed”. Female, 27, Group 3

“Financial support through the profits of food gardens and beadworks that is for sale”. Female, 40, Group 4

This chapter shows the complexity of mobile technology in resource-limited settings and that further discussion and research is still needed.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

This chapter outlines the conclusion and recommendations of this study, taking into consideration the perceptions of the support group members and the limitations of the study.

5.1 Conclusion

The aim of the study was to explore the feasibility and acceptability of mobile technology as additional support to improve ART adherence among HIV-positive patients. It was revealed in the study that SMS is the preferred mode of communication amongst support group members. Although the participants showed awareness of the other text modalities that were available, SMS was still used the most to communicate. The SMS communication that the participants were referring to is two-way communication between two people. It can then be concluded that the participants did not consider group communication as an important form of support.

The study also revealed that age and affordability play an important role when it comes to technology. The younger participants showed eagerness to learn about and share information on mobile technology, while the older participants indicated that they do only the absolute minimum on their devices. All the participants shared a common challenge when it came to the cost of data. Both young and older participants felt that data was expensive, and that SMS was the better communication option because it was the cheapest.

The treatment adherence success of the participants was attributed to the emotional support they received from each other in the support group meetings. The study revealed that emotional stress caused by external factors is among the reasons why participants became less adherent to their ART. The participants also felt that the lack of support of a significant other made it hard to take treatment as prescribed. Other stressors that caused patients to abandon their treatment were a lack of finances. The income generation programme in the support group has created a source of income for many of the members.

This study revealed that older participants had a sense of appreciation of the security of having someone other than their household members available should the need arise to call for help. Booyens Park is semi-rural and there is no health facility where most of the participants live. Some of the participants did not want additional contact with a support group member. This is an aspect for future research to explore, namely whether the younger participants need less contact than the older participants. This research did not look at understanding the preferences of individuals, but only tried to understand the perceptions of the group members. Support group members are encouraged to disclose their status to their partners or another person to promote support and improve adherence. There were very few male support group members compared to their female counterparts, and it was not clear if this was because the males were at work or just not interested to be part of the support group.

In conclusion, the factors influencing the optimal use of mobile technology are multiple and at different levels of influence, such as the individual, social and economic. They are also interrelated, which adds to the complexity of the use of mobile technology in resource-limited settings. Therefore, additional support to improve adherence to ART will have to be defined according to the understanding of support group members in resource-limited areas, and then explored to see if there is a need.

5.2 Recommendations

The recommendations of the study were derived from a combination of what the participants thought about the usefulness of mobile technology as additional support to enhance adherence, and the observations of the researcher.

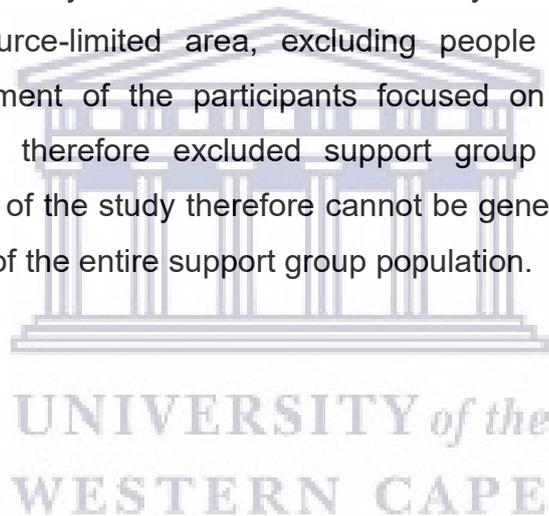
- It is recommended that future studies try to understand the reason behind the lack of male interest in traditional support groups to address the barriers to adherence experienced by female partners.
- Future studies should investigate other economically viable options, such as low-cost group communication applications to address the data cost issue that was found in this study.
- Traditional support groups remain an important form of support in resource-limited areas; hence the recommendation of this study is to preserve the

authenticity thereof through annual training of the facilitators by the organisations that have support groups as part of their services. It is recommended that the government departments that have a social responsibility are engaged for support.

- Disclosure has been reported to be a catalyst for good treatment adherence. This research therefore recommends that treatment adherence messages also be directed to the friends and families of the patients to create an environment of two-way support coming from the patients and from their families.

5.3 Limitations of the study

One limitation of this study was that it focused only on collecting data from participants in a resource-limited area, excluding people who had access to resources. The recruitment of the participants focused on members who were physically mobile, and therefore excluded support group members who were bedridden. The findings of the study therefore cannot be generalised, as the sample was not representative of the entire support group population.



REFERENCES

- Al-Dakkak, I., Patel, S., McCann, E., Gadkari, A., Prajapati, G. & Maiese, E.M. 2013. The impact of specific HIV treatment-related adverse events on adherence to antiretroviral therapy: a systematic review and meta-analysis. *AIDS care*, 25(4):400-414.
- Anema, A., Vogenthaler, N., Frongillo, E.A., Kadiyala, S. and Weiser, S.D., 2009. Food insecurity and HIV/AIDS: current knowledge, gaps, and research priorities. *Current HIV/AIDS Reports*, 6(4), pp.224-231.
- Aspeling, H.E. & Van Wyk, N.C. 2008. Factors associated with adherence to antiretroviral therapy for the treatment of HIV-infected women attending an urban care facility. *International Journal of Nursing Practice*, 14(1):3-10.
- AVERT 2019. *HIV and AIDS in South Africa*. [Online] Available at: <https://www.avert.org/professionals/hiv-around-world/sub-saharan-africa/south-africa> [Accessed 11 Aug. 2019].
- Azia, I.N., Mukumbang, F.C. & Van Wyk, B. 2016. Barriers to adherence to antiretroviral treatment in a regional hospital in Vredenburg, Western Cape, South Africa. *Southern African Journal of HIV Medicine*, 17(1):476-478.
- Barak, A., Boniel-Nissim, M. & Suler, J. 2008. Fostering empowerment in online support groups. *Computers in human behavior*, 24(5):1867-1883.
- Beyene, K.A., Gedit, T. & Engidawork, T. 2009. Highly active antiretroviral therapy adherence and its determinants in selected hospitals from the south and central Ethiopia. *Pharmacoepidemiology and Drug Safety*, 18(11):1007-1015.
- Bhatia, D.S., Harrison, A.D., Kubeka, M., Milford, C., Kaida, A., Bajunirwe, F., Wilson, I.B., Psaros, C., Safren, S.A., Bangsberg, D.R. & Smit, J.A. 2017. The role of relationship dynamics and gender inequalities as barriers to HIV-serostatus disclosure: qualitative study among women and men living with HIV in Durban, South Africa. *Frontiers in public health*, 5:188-192.
- Boulos, M.N.K., Wheeler, S., Tavares, C. & Jones, R. 2011. How smartphones are changing the face of mobile and participatory healthcare: an overview, with example from eCAALYX. *Biomedical engineering online*, 10(1):24-28.
- Boyles, T.H., Wilkenson, L.S., Leisegang, R. & Maartens, G. 2011. Factors influencing retention in care after starting antiretroviral therapy in a rural South African programme. *PLOS ONE*, 6(5): e19201.
- Bradstreet, S. 2006. Harnessing the 'lived experience' Formalizing peer support approaches to promote recovery. *Mental Health Review Journal*, 11(2):33-37.
- Bricki, N. and Green, J., 2007. A guide to using qualitative research methodology. London School of Hygiene and Tropical Medicine: London
- Brown B. Studying the use of mobile technology. In *Wireless world 2002* (pp. 3-15). Springer, London.
- Chen, N.E., Meyer, J.P., Avery, A.K., Draine, J., Flanigan, T.P., Lincoln, T., Spaulding, A.C., Springer, S.A. & Altice, F.L. 2013. Adherence to HIV treatment and

- care among previously homeless jail detainees. *AIDS and Behavior*, 17(8):2654-2666.
- Cohen, C.J., Meyers, J.L. & Davis, K.L. 2013. Association between daily antiretroviral pill burden and treatment adherence, hospitalization risk, and other healthcare utilization and costs in a US Medicaid population with HIV. *BMJ Open*, 3(8): e003028.
- Colvin, C.J. 2011. HIV/AIDS, chronic diseases and globalization. *Globalization and Health*, 7(1): Art.31.
- Crook, J., Browne, G., Roberts, J. & Gafni, A., 2005. Impact of support services provided by a community-based AIDS service organization on persons living with HIV/AIDS. *Journal of the Association of Nurses in AIDS Care*, 16(4):39-49.
- Dilshad, R.M. and Latif, M.I., 2013. Focus Group Interview as a Tool for Qualitative Research: An Analysis. *Pakistan Journal of Social Sciences (PJSS)*, 33(1).
- Déglise, C., Suggs, L.S. & Odermatt, P. 2012. SMS for disease control in developing countries: A systematic review of mobile health applications. *Journal of Telemedicine and Telecare*, 18(5):273-281.
- De Lima, I.C.V., Galvão, M.T.G., De Oliveira Alexandre, H., Lima, F.E.T. & De Araújo, T.L. 2016. Information and communication technologies for adherence to antiretroviral treatment in adults with HIV/AIDS. *International Journal of Medical Informatics*, 92:54-61.
- De Tolly, K. & Alexander, H. 2009. *Innovative use of cell phone technology for HIV/AIDS behavior change communications: 3 pilot projects*. Cape Town: Cell-Life.
- Dowshen, N., Kuhns, L.M., Johnson, A., Holyda, B.J. & Garofalo, R. 2012. Improving adherence to antiretroviral therapy for youth living with HIV/AIDS: A pilot study using personalized, interactive, daily text message reminders. *Journal of Internet Medical Research*, 14(2): e51.
- Du, H., Youngblood, G.M. & Pirolli, P. 2014. Efficacy of a smartphone system to support groups in behavior change programs. *In Proceedings of the Wireless Health 2014 on National Institutes of Health (WH '14). Association for Computing Machinery, New York, NY, USA, 1–8. DOI: <https://doi.org/10.1145/2668883.2668887>*
- Dudhia, R. & Kagee, A. 2015. Experiences of participating in an antiretroviral treatment adherence club. *Psychology, Health & Medicine*, 20(4):488-494.
- Du Plooy-Cilliers, F., Davis, C. & Bezuidenhout, R.-M. 2014. *Research matters*. Cape Town: Juta.
- Ellis, T.J. and Levy, Y., 2010, June. A guide for novice researchers: Design and development research methods. In *Proceedings of Informing Science & IT Education Conference (InSITE)* (Vol. 10, pp. 107-118).
- Foss, C. & Ellefsen, B. 2002. The value of combining qualitative and quantitative approaches in nursing research by means of method triangulation. *Journal of advanced nursing*, 40(2):242-248.
- Fox, M.P., Pascoe, S.J., Huber, A.N., Murphy, J., Phokojoe, M., Gorgens, M., Rosen, S., Wilson, D., Pillay, Y. & Fraser-Hurt, N. 2018. Assessing the impact of the National Department of Health's National Adherence Guidelines for Chronic

Diseases in South Africa using routinely collected data: A cluster-randomized evaluation. *BMJ Open*, 8(1): p.e019680.

Galárraga, O., Genberg, B.L., Martin, R.A., Laws, M.B. & Wilson, I.B. 2013. Conditional economic incentives to improve HIV treatment adherence: Literature review and theoretical considerations. *AIDS and Behavior*, 17(7):2283-2292.

Haberer, J.E., Kiwanuka, J., Nansera, D., Wilson, I.B. and Bangsberg, D.R., 2010. Challenges in using mobile phones for collection of antiretroviral therapy adherence data in a resource-limited setting. *AIDS and Behavior*, 14(6), pp.1294-1301.

Haberer, J.E., Musiimenta, A., Atukunda, E.C., Musinguzi, N., Wyatt, M.A., Ware, N.C. and Bangsberg, D.R., 2016. Short message service (SMS) reminders and real-time adherence monitoring improve antiretroviral therapy adherence in rural Uganda. *AIDS (London, England)*, 30(8):1295 - 1300.

Hebden, L., Cook, A., Van der Ploeg, H.P. & Allman-Farinelli, M. 2012. Development of smartphone applications for nutrition and physical activity behavior change. *JMIR Research Protocols*, 1(2): e9.

Heckman, T.G., Somlai, A.M., Peters, J., Walker, J., Otto-Salaj, L., Galdabini, C.A. and Kelly, J.A., 1998. Barriers to care among persons living with HIV/AIDS in urban and rural areas. *AIDS care*, 10(3):365-375.

Helgeson, V.S. &Gottlieb, B.H. 2000. Support groups. *Social support measurement and intervention: A guide for health and social scientists*, 221-245.

Henwood, R., Patten, G., Barnett, W., Hwang, B., Metcalf, C., Hacking, D. &Wilkinson, L. 2016. Acceptability and use of a virtual support group for HIV-positive youth in Khayelitsha, Cape Town using the Mxit social networking platform. *AIDS Care*, 1-6.

James, J. and Versteeg, M., 2007. Mobile phones in Africa: how much do we really know? *Social indicators research*, 84(1), p.117.

Jobarteh, K., Shiraishi, R.W., Malimbe, I., Gudo, P.S., Decroo, T., Auld, A.F., Macome, V. and Couto, A., 2016. Community ART support groups in Mozambique: the potential of patients as partners in care. *PLOS ONE*, 11(12).

Journal of the American Medical Association. 2013. World Medical Association Declaration of Helsinki: Ethical principles for medical research involving human subjects. *JAMA*310(20): 2191-2194.

Kagee, A. 2009. Adherence to antiretroviral therapy in South Africa. *South African Journal for Psychology*, 38(2):413-428.

Kagee, A., Remien, R.H., Berkman, A., Hoffman, S., Campos, L. and Swartz, L., 2011. Structural barriers to ART adherence in Southern Africa: challenges and potential ways forward. *Global public health*, 6(1), pp.83-97.

Kalichman, S.C., Pellowski, J., Kalichman, M.O., Cherry, C., Detorio, M., Caliendo, A.M. & Schinazi, R.F. 2011. Food insufficiency and medication adherence among people living with HIV/AIDS in urban and peri-urban settings. *Prevention Science*, 12(3):324-332.

Kliner, M., Knight, A., Mamvura, C., Wright, J. and Walley, J., 2013. Using no-cost mobile phone reminders to improve attendance for HIV test results: a pilot study in rural Swaziland. *Infectious Diseases of poverty*, 2(1), p.12.

- Kitto, S. C., Chesters, J., & Grbich, C. (2008). Quality in qualitative research. *Medical Journal of Australia*, 188(4), 243.
- Kreutzer, T., 2009. Generation mobile: online and digital media usage on mobile phones among low-income urban youth in South Africa. Retrieved on March, 30(2009): 903-920.
- Leon, N., Surender, R., Bobrow, K., Muller, J. & Farmer, A. (2015). Improving treatment adherence for blood pressure lowering via mobile phone SMS-messages in South Africa: A qualitative evaluation of the SMS-text Adherence Support (Star) trial. *BMC Family Practice*, 16: Art. 80.
- Lester, R.T., Ritvo, P., Mills, E.J., Kariri, A., Karanja, S., Chung, M.H., Jack, W., Habyarimana, J., Sadatsafavi, M., Najafzadeh, M. & Marra, C.A. 2010. Effects of a mobile phone short message service on antiretroviral treatment adherence in Kenya (WelTel Kenya1): A randomized trial. *The Lancet*, 376(9755):1838-1845.
- Levy, N.C., Miksad, R.A. & Fein, O.T. 2005. From treatment to prevention: The interplay between HIV/AIDS treatment availability and HIV/AIDS prevention programming in Khayelitsha, South Africa. *Journal of Urban Health*, 82(3):498-509.
- MacGregor, H., McKenzie, A., Jacobs, T. & Ullauri, A. 2018. Scaling up ART adherence clubs in the public sector health system in the Western Cape, South Africa: A study of the institutionalization of a pilot innovation. *Globalization and Health*, 14(1):40- 43.
- Masokoana, K.Q. 2009. Adherence and non-adherence to antiretroviral treatment in HIV positive people in Port Elizabeth. Dissertation. Port Elizabeth: Nelson Mandela Metropolitan University.
- Meyer, J.C., Schellack, N., Stokes, J., Lancaster, R., Zeeman, H., Defty, D., Godman, B. & Steel, G. 2017. Ongoing initiatives to improve the quality and efficiency of medicine use within the public healthcare system in South Africa: A preliminary study. *Frontiers in Pharmacology*, 8:751- 755.
- Mo, P.K. & Coulson, N.S. 2014. Are our online support groups always beneficial? A qualitative exploration of the empowering and disempowering processes of participation within HIV/AIDS-related online support groups. *International Journal of Nursing Studies*, 51(7):983-993.
- Mojapelo, T.D, Usher, K. & Mills, J. 2016. Effective pain management as part of palliative care for persons living with HIV/AIDS in a developing country: A qualitative study. *Journal of Clinical Nursing*, 25(11-12):1598-1605.
- Muir-Chochrane, F. 2006. Thematic analysis. *International Journal of Qualitative Methods*, 5(1).
- Mukumbang, F.C., Van Belle., S, Marchal, B. & Van Wyk, B. 2016. Realist evaluation of the antiretroviral treatment adherence club program in selected primary healthcare facilities in the metropolitan area of Western Cape Province, South Africa: A study protocol. *BMJ Open*, 6(4): e009977.
- Mutumba, M., Musiime, V., Lepkwoski, J.M., Harper, G.W., Snow, R.C., Resnicow, K. & Bauermeister, J.A. 2016. Examining the relationship between psychological distress and adherence to antiretroviral therapy among Ugandan adolescents living with HIV. *AIDS Care*, 1-9.

Myer, L., Iyun, V., Zerbe, A., Phillips, T.K., Brittain, K., Mukonda, E., Allerton, J., Kalombo, C.D., Nofemela, A. & Abrams, E.J. 2017. Differentiated models of care for postpartum women on antiretroviral therapy in Cape Town, South Africa: A cohort study. *Journal of the International AIDS Society*, 20(4):21636.

Nacosa.org.za. 2019. [Online] Available at: <https://www.nacosa.org.za/wp-content/uploads/2018/05/SOP-Adherence-counselling-A5-booklet-19-03-2017.pdf> [Accessed 11 Aug. 2019].

Pope, C., Ziebland, S. & May, N. 2000. Analyzing qualitative data. *BMJ*, 320(7227):114-116.

Pop-Eleches, C., Thirumurthy, H., Habyarimana, J.P., Zivin, J.G., Goldstein, M.P., De Walque, D., Mackeen, L., Haberer, J., Kimaiyo, S., Sidle, J. & Ngare, D. 2011. Mobile phone technologies improve adherence to antiretroviral treatment in a resource-limited setting: A randomized controlled trial of text message reminders. *AIDS*, 25(6):825-834.

Power, R., Koopman, C., Volk, J., Israelski, D.M., Stone, L., Chesney, M.A. & Spiegel, D. 2003. Social support, substance use, and denial in relationship to antiretroviral treatment adherence among HIV-infected persons. *AIDS Patient Care and STDs*, 17(5):245-252.

Rana, Y., Haberer, J., Huang, H., Kambugu, A., Mukasa, B., Thirumurthy, H., Wabukala, P., Wagner, G.J. & Linnemayr, S. 2015. Short message service (SMS)-based intervention to improve treatment adherence among HIV-positive youth in Uganda: Focus group findings. *PLOS ONE*, 10(4): pe0125187.

Ramlagan, S., Peltzer, K., Phaswana-Mafuya, N. and Aquilera, J.F., 2010. Support group needs for people living with HIV and AIDS (PLWHA) in communities around Durban, South Africa. *Journal of Psychology in Africa*, 20(1), pp.117-121. Robson, C., & McCarthan, K. (2016). *Real World Research*. (4th edition). Wiley.

Ross, J.L. 2015. HIV treatment adherence: The role of patient-centred communication. Unpublished doctoral dissertation. Alliant International University.

Roy, M., Holmes, C., Sikazwe, I., Savory, T., Wa Mwanza, M., Moore, C.B., Mulenga, K., Czaicki, N., Glidden, D.V., Padian, N. & Geng, E. 2018. Application of a multistate model to evaluate visit burden and patient stability to improve sustainability of human immunodeficiency virus treatment in Zambia. *Clinical Infectious Diseases*, 67(8):1269-1277.

Schopler, J.H. & Galinsky, M.J. 2014. *Support groups: Current perspectives on theory and practice*. Routledge.

Schurink, E.M., 1998. Deciding to use a qualitative research approach. *Research at grass roots: A primer for the caring professions*, pp.239-321.

Seale, C. & Silverman, D. 1997. Ensure rigor in qualitative research. *European Journal of Public Health*, 7:379-384.

Shenton, A.K. 2004. Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2):63-75.

Singleton Jr, R., Straits, B.C., Straits, M.M. and McAllister, R.J., 1988. *Approaches to social research*. Oxford University Press.

Skovdal, M., Campbell, C., Nyamukapa, C. & Gregson, S. 2011. When masculinity interferes with women's treatment of HIV infection: A qualitative study about

- adherence to antiretroviral therapy in Zimbabwe. *Journal of the International AIDS Society*, 14(1):29 - 32.
- Statistics South Africa (Stats SA). 2011. *Mid-year population estimates*. Pretoria. Stats SA.
- Statistics South Africa (Stats SA). 2018. PO302. Mid-Year population estimates. Pretoria. Stats SA.
- Stirratt, M.J., Remien, R.H., Smith, A., Copeland, O.Q., Dolezal, C., Krieger, D. & SMART Couples Study Team. 2006. The role of HIV serostatus disclosure in antiretroviral medication adherence. *AIDS and Behavior*, 10(5):483-493.
- Välimäki, M., Hätönen, H., Lahti, M., Kuosmanen, L. & Adams, C.E. 2012. Information and communication technology in patient education and support for people with schizophrenia. *Cochrane Database of Systematic Reviews*, 10, Art. no. CD007198.
- Van Loggerenberg, F., Gray, D., Gengiah, S., Kunene, P., Gengiah, T.N., Naidoo, K. & Grant, A.D. 2015. A qualitative study of patient motivation to adhere to combination antiretroviral therapy in South Africa. *AIDS Patient Care and STDs*, 29(5):299-306.
- Van Uden-Kraan, C.F., Drossaert, C.H., Taal, E., Smit, W.M., Moens, H.J.B. and Van de Laar, M.A., 2011. Determinants of engagement in face-to-face and online patient support groups. *Journal of medical Internet research*, 13(4), p.e106.
- Ware, N.C., Pisarski, E.E., Tam, M., Wyatt, M.A., Atukunda, E., Musiimenta, A., Bangsberg, D.R. & Haberer, J.E. 2016. The meanings in the messages: How SMS reminders and real-time adherence monitoring improve antiretroviral therapy adherence in rural Uganda. *AIDS*, 30(8):1287-1294.
- Wiid, J. & Diggins, C. 2013. *Marketing research*. Cape Town: Juta.
- Wilkinson, L.S. 2013. ART adherence clubs: Along-term retention strategy for clinically stable patients receiving antiretroviral therapy. *Southern African Journal of HIV Medicine*, 14(2): a77.
- World Health Organization (WHO). 2003. *Antiretroviral therapy in primary health care: Experience of the Khayelitsha Programme in South Africa*. Place: WHO.
- WHO | WHO Definition of Palliative Care. [Online] Available at: <https://www.who.int/cancer/palliative/definition/en/> [Accessed 13 Aug. 2019].
- Wouters, E., Heunis, C., Ponnet, K., Van Loon, F., le Roux Booyesen, F., van Rensburg, D. & Meulemans, H., 2010. Who is accessing public-sector anti-retroviral treatment in the Free State, South Africa? An exploratory study of the first three years of programme implementation. *BMC Public Health*, 10(1), p.387.
- Yeboah, J. & Ewur, G.D. 2014. The impact of WhatsApp Messenger usage on students' performance in tertiary institutions in Ghana. *Journal of Education and Practice*, 5(6): 157 - 164.
- Young, S., Wheeler, A.C., McCoy, S.I. & Weiser, S.D. 2014. A review of the role of food insecurity in adherence to care and treatment among adult and paediatric populations living with HIV and AIDS. *AIDS and Behavior*, 18(5):505-515.

APPENDICES

APPENDIX A: PARTICIPANT INFORMATION SHEET



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Tel: 021- 959 2809, Fax: 021- 959 2872

INFORMATION SHEET

Dear participants

My name is Dalene Mofokeng and I am conducting this research as part of my Master's degree in Health Information Management at the University of Western Cape. My research project is titled: 'HIV patients' perception of mobile technology support in Nelson Mandela Bay, Eastern Cape. Thank you for allowing me to address you regarding my research study. Please be informed that participants may withdraw their participation at any stage of the study by informing the study team. Should you require more information you will find my contact details and the details of my supervisor at the bottom of this document.

INTRODUCTION

The study is aiming to explore the perceptions of two support groups' members on the use of mobile technology as additional support to ART adherence in the Nelson Mandela Bay Metropolitan. The ART initiation is the most expensive program in the South African public health sector. Support groups have been successfully used as part of the health care services to encourage ART adherence.

PURPOSE

The purpose is to explore the feasibility and acceptability of instant short message service (SMS) or text message as an additional platform to improve adherence of ART for patients living with HIV.

PROCEDURE

Participation will be based on the selection of the organization that has a governing body, has been in operation for two years or more and has two or more support groups for people living with a chronic illness. Participation is voluntary and members of the support group can complete the consent after familiarising themselves with the contents of the information sheet. The criteria for the selection of the group members are based on chronic illness because the study focuses on adherence support. Support group members will be requested to take part in focus group interviews that will be conducted by the researcher. The interview will be about 30-45 minutes long. I understand that the researcher will make occasional notes during the interview and that the entire interview will be audiotaped. The researcher will have an assistant present during the

interviews and precaution will be made for the safekeeping of the research data from the interviews including the audiotapes. Feedback on the findings of the study will be shared with the group and with the management of the organization attached to the support group.

BENEFITS

The study can be used for assistance to improve the functioning of traditional support group interaction.

EXCLUSION OF PARTICIPATION

Participation is voluntary; there are no exclusions to support group members.

COMPENSATION

Participation of support group members is voluntary and there will be no remuneration for part-taking in the study, Participants may exit the focus group at any stage without negative consequences.

RISK

The study is not invasive but should any of the participants become distressed by the process the researcher has arranged debriefing by a trained counsellor at the nearby hospice.

CONFIDENTIALITY

The identity of the group will be protected from people outside the support group. There will be a counsellor available to debrief members if the need arises.

PERMISSION

Ethical clearance will be obtained from UWC. Permission from the Eastern Cape Province to do the study will be requested in writing. The researcher will obtain permission from the Non-Profit Organization's CEO.

FURTHER INFORMATION

Should you have any more questions, please contact me:

Dalene Mofokeng

Student no: 9340238

Mobile no: + 27 83 353 4256

Email: deemofokeng@gmail.com

My supervisor's contact details are as follows:

Prof Brian Van Wyk

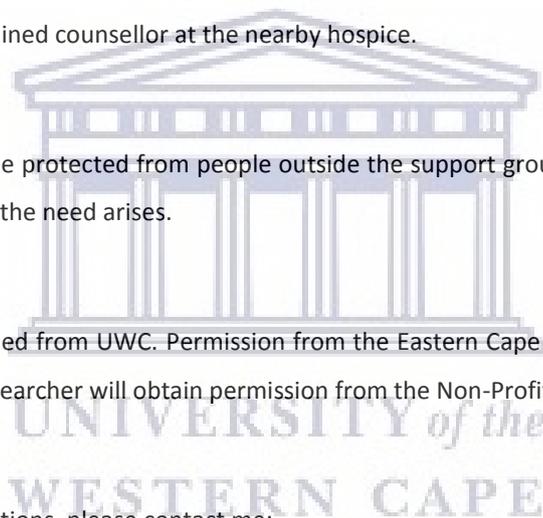
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APPENDIX B: CONSENT FORM



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THE TITLE OF THE RESEARCH:

'HIV patients' perception of mobile technology support in Nelson Mandela Bay, Eastern Cape

I the undersigned, volunteer to participate in the research study conducted by Dalene Mofokeng from the University of Western the Cape. I consent for the interview to be recorded and the information is used in this research.

I understand that the study is about the gathering of information on the perceptions of support group members regarding mobile technology as additional support for members on chronic medication. I will be one of about 8 people in the focus group.

My participation in this study is voluntary and I understand that I will not be paid for my participation. I may withdraw my participation at any stage without risking victimization.

I understand that the researcher will not use my name in any of the research reports and that my confidentiality as a participant in this study will be protected. The identity of the group will be protected from people outside the support group. There will be a counsellor available to debrief members if the need arises.

I have read and understood the explanation provided to me. I have had all my questions answered to my satisfaction, in the language of my choice, and I voluntarily agree to participate in this study. I have been given a copy of the participant information sheet.

Participant name: _____ (Optional)

Participant signature: _____

Interviewer's name: _____

Interviewer's signature: _____

Date of interview: _____

APPENDIX C: FOCUS GROUP GUIDE



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Introduction

Good day and welcome to the focus group session. My name is Dalene Mofokeng, a student at the University of the Western Cape, doing my Master's degree in Health Information Management. I will be facilitating the focus group session and my colleague will assist with the audio recording and the taking of notes. The focus group interview will focus on the perceptions of the support group members regarding mobile technology and what they are mostly using their mobile devices for?

Today we will discuss your mobile devices and what you are comfortable using them for. The objective of the session is to get your opinions on the use of mobile devices as an extension of health services to provide additional support. I will ask questions to facilitate the discussion and you are encouraged to participate freely and say whatever you think is an appropriate answer for the question. It is expected that you will have different ideas around the topic and you are encouraged to voice them out. There are no right or wrong answers and please note that all your contributions are valued. To ensure that all the contributions are noted, it will be beneficial if participants speak one at a time. Our time is limited as the session is expected to last for 45 minutes only and for that reason participants are encouraged to be brief when making their point to ensure that as many opinions as possible are covered. Please note that the entire session will be audio-recorded and occasional notes will be taken. Remember that no personal information of participants will be included in the report. Please make sure that your consent form is signed and dated before the session starts.

Please introduce yourself to assist the facilitation by us knowing each other better. When introducing yourself please say your name, where you stay, your support system at home, how long you have been on ART and any other information you want to share.

Discussion session:

1. What is it you enjoy the most in the support group?
 - 1.1 Anything you like less?
2. Let us talk about the social media platforms we can access
 - 2.1 Of all the platforms mentioned, which one do you like best
 - 2.2 Which one can replace a support group?
 - 2.2 Who or what influenced your decision on your preference of social media platform?
3. How do you feel about mobile technology?
 - 3.1 How long does your data last for?
 - 3.2 How do you secure your phone to ensure privacy?

APPENDIX D: Ethics clearance letter from UWC



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16 November 2017

Mrs DE Mofokeng
Information System
Faculty of Economic and Management Science

Ethics Reference Number: HS17/9/18

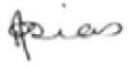
Project Title: HIV patients' perceptions of mobile technology support in Nelson Mandela Bay, Eastern Cape.

Approval Period: 15 November 2017 – 15 November 2018

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology and ethics of the above-mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval. Please remember to submit a progress report in good time for annual renewal.

The Committee must be informed of any serious adverse event and/or termination of the study.


Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

PROVISIONAL REC NUMBER - 130416-049