Knowledge Sharing Practices Among Nurses During COVID-19: A Case Study of Makhanda in the Eastern Cape Province of South Africa

By

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I declare that the above dissertation is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the dissertation to originality checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.

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DEDICATION

I dedicate this dissertation to my three sons, Harold Mugenyi, Arthur Mugenyi, and Luyolo Kamvalethu Veleleni Mugenyi. It is them that I work so hard to ensure that they are proud of me and so that they can also aspire to greater horizons.

I also dedicate this dissertation to the rest of my family, friends, and work colleagues who have always encouraged me and advised me to strive for the best.

Lastly, I dedicate this dissertation to my supervisor Dr. Zimu-Biyela Acquinatta who has been so instrumental in my academic success. It is her advice, belief in me, encouragement, and supervision that has helped me through the course of my studies.

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ABSTRACT

The importance of knowledge in this fast-changing world cannot be overstated. Knowledge is currently considered a crucial organisational resource that transcends other resources, such as land and capital. It plays a vital role in ensuring that organisations maintain a competitive edge. The purpose of this study is to examine knowledge sharing practices among public nursing practitioners during the COVID-19 pandemic in the city of Makhanda, in the Eastern Cape province of South Africa. The study aims to gain insight into the level of knowledge sharing practices among nurses working in eight public health facilities in Makhanda. The study was supported by the positivist paradigm, which is based on the hypothetical-deductive technique used to validate a priori quantitative statements that best meet the needs and objectives of the study. Based on the study's purpose, objectives, and data requirements, a quantitative approach was used, employing a survey design. A questionnaire containing mostly closed ended and a few open-ended questions was distributed to all 56 registered nurses working in eight public health institutions in Makhanda. Of the 56 questionnaires distributed, 47 were returned, yielding an 84% response rate. The collected data was analysed using the Statistical Package for the Social Sciences (SPSS) software version 26, and the results were exported to Microsoft Excel for visualisation and reporting of the findings.

The findings indicate that the respondents understand what knowledge sharing practice is; however, their understanding of this practice among themselves differed from their actual practice of sharing knowledge. The majority of the respondents did not engage in knowledge sharing practice despite being aware of its benefits and importance. Most respondents indicated that knowledge sharing practice is essential to service delivery. The study recommends that knowledge which is relevant to the work the nurses perform should be acquired by them. The study also recommends identifying the nurses responsible for, and their responsibilities in, knowledge sharing practice across various departments, the promotion of a knowledge sharing culture, the use of information and communication technology to support knowledge sharing practice and using communities of practice (CoPs) to share knowledge.

KEY TERMS: Knowledge sharing; knowledge sharing practice; COVID-19 pandemic; knowledge management; knowledge; professional nurses; public healthcare facilities; Makhanda; Eastern Cape Province; South Africa.

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CoPs	Communities of Practice
COVID-19	Coronavirus
ICTs	Information and Communication Technologies
IT	Information Technology
KM	Knowledge Management
KS	Knowledge sharing
KSC	Knowledge sharing Capability
PPE	Personal Protective Equipment
PU	Perceived Usefulness
SARS	Severe Acute Respiratory Syndrome
SECI	Socialisation, Externalisation, Combination, and Internalisation
SET	Social Exchange Theory
TAM	Technology Acceptance Model
TB	Tuberculosis
TRA	Theory of Reasoned Action
UNCIEF	United Nations International Children's Fund
UNISA	University of South Africa
VIKS	Voluntary, Informal Knowledge sharing Model
VCOPs	Virtual Communities of Practice
WHO	World Health Organisation

CHAPTER 1
INTRODUCTION AND BACKGROUND

1.1 Introduction

The study topic, knowledge sharing practices among nurses in Makhanda (formerly Grahamstown) during the COVID-19 pandemic, is introduced in this chapter. The severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) that caused the outbreak of the coronavirus disease (COVID-19) spread quickly around the world and became a serious international danger (Kowalik, Trzonkowski, Lasinska-Kowara, Mital, Smiatacz & Jaguszewski, 2020). The author of this study is aware that pandemics come and go and that by the time COVID-19 is brought under control, some of the information presented here will be outdated because the pandemic would have passed, and vaccines developed. However, the study is crucial for comprehending how knowledge sharing was practiced during these crucial pandemic moments, especially among professional nurses. In order to reduce the effects of dangers such as high mortality rates and double faults in possible future pandemics, this study was deemed essential.

On March 5, 2020, the first COVID-19 case was reported in South Africa. By March 15, 2020 there were 61 cases. The nation was consequently placed in a state of emergency, and President Cyril Ramaphosa announced several measures that were to be taken to combat the spread of the virus (Sekyere, Böhler-Muller, Hongoro, and Makoae, 2020). Healthcare professionals, particularly nurses, are typically considered important participants in responding to a pandemic (Ogolodom, Mbaba, Alazigha, Erondu, Egbe, Golden, Ugwuanyi, Achi & Eke, 2020). Due to their commitment to their vocation, healthcare professionals, particularly professional nurses, are expected to be on the front line when pandemics such as COVID-19 strike regardless of the health risks to them. Consequently, that they must be familiar with pandemic safety measures for both themselves and their patients cannot be contested (Ogolodom et al., 2020). During the COVID-19 pandemic in South Africa, professional nurses played an important frontline role in managing and containing the spread of the virus, by providing care to the infected individuals, and supporting the healthcare system (Kelly et al., 2021). The nurses were also

involved in screening and triaging individuals at healthcare facilities and testing centers, they also assessed patients for COVID-19 symptoms, conducted temperature checks, and directed them to appropriate areas for testing and treatment (Kelly et al., 2021). Given the worldwide declaration of the COVID-19 outbreak as a global pandemic by the World Health Organisation (WHO) and its classification as a national disaster by the head of the National Disaster Management Centre, the Minister of Cooperative Governance and Traditional Affairs, Dr Nkosazana Dlamini Zuma, acting in accordance with the disaster management act, 2002 (Act No. 57 of 2002), specifically section 3, and section 27(1), declared a state of national disaster. This declaration acknowledged the exceptional circumstances that necessitated such an action and aimed to complement the existing measures implemented by governmental entities to address the pandemic (South African Government, 2023).

Knowledge sharing (KS) plays a crucial role in the field of Knowledge Management (KM), particularly for professional nurses. It enables them to exchange valuable experiences and evidence-based knowledge, which is essential in combating a pandemic such as COVID-19. These procedures are essential because they enable nurses and other healthcare professionals to stay informed and deliver high-quality care during a pandemic. Lectures, debates, and online video and audio conferencing are among the methods that healthcare professionals use to exchange information and experiences; however, they are not the only ones. One can use KS in both formal and casual ways. Sabeeh, Mustapha & Muhamad (2017), state that both hard and soft documents, such as printed information materials and online resources, can be used in formal approaches. Informal procedures can take the form of informal exchanges utilising communities of practice (CoPs). Communities of practice may exist physically or virtually (Sabeeh, Mustapha & Muhamad, 2017). According to Asemahagn (2014), KS can exist at the individual or organisational level. Furthermore, Asemahagn (2014) emphasises that, in order to provide their clients with evidence-based, first-rate healthcare during a pandemic, healthcare practitioners require current health information from reliable sources.

Despite the significance of KS, especially during pandemics, KS practice is not properly implemented in public healthcare facilities in countries that are faced with challenges in healthcare management, such as South Africa (Sabeeh, Mustapha & Muhamad, 2017). Health practitioners from such nations demonstrate little evidence of information exchange. As a

result, several medical errors have occurred, including serious injuries, inadequate diagnosis, incorrect treatment, increased resistance to medication, and unexpected deaths (Asemahagn, 2014). Poor peer training, poor peer mentoring, poor peer management, a lack of internet services, and a lacklustre information-sharing culture among staff are some of the causes of ineffective KS practices that have been identified in public healthcare management (Asemahagn, 2014).

According to Zhang, Gonzalez, Morse, and Venkatasubramanian (2017), the 2014 Ebola outbreak in West Africa revealed the gaps in nurses' knowledge of pandemic preparedness. The initial reaction and response to the Ebola outbreak demonstrated the insufficiency of KS practices among the nurses (Zhang et al., 2017). In order to respond quickly to pandemics, KS practices among professional nurses need to be well-coordinated (Zhang et al., 2017). This requires effective knowledge exchange, administration, and usage (in addition to the sharing) of resources and specialists (Zhang et al., 2017). The Ebola outbreak brought attention to the significance of quickly creating and adapting KS practices during a pandemic, with the goal of gathering the appropriate knowledge and disseminating it in a timely and efficient manner (Sommerstein, Geser, Atkinson, Tschan & Morgan, 2017). For knowledge about any pandemic to be disseminated responsibly and successfully and to have a long-lasting effect, professional nurses working in public hospitals and clinics must be aware of it, retain it, and adopt best practices for sharing the knowledge (Sommerstein et al., 2017).

Similarly, since the COVID-19 outbreak in late 2019, more than 32,500 healthcare workers have caught the virus, representing more than 4% of all cases reported globally (UNICEF, 2020:1). Two hundred and fifty-seven of the infected healthcare professionals died from COVID-19-related causes or from complications (UNICEF, 2020). Much has changed in terms of the knowledge created, communicated, and the ability of professional nurses working in public healthcare facilities to effectively implement KS practices (Tovstiga & Tovstiga, 2020). This study intends to gain insight into how professional nurses working in public hospitals and clinics in Makhanda practiced knowledge sharing during the COVID-19 pandemic because it cannot be sufficiently stressed how important KS is to the professional nurses working in South African public healthcare facilities.

In order to effectively combat COVID-19, professional nurses who are a part of the health workforce must gather all pertinent information on the pandemic, make efficient use of relevant KS practice mechanisms, and foster an environment at work that encourages the appropriate sharing of knowledge among co-workers. According to Rusuli and Tasmin (2010), KS is crucial for all knowledge-management strategists and KS practices are a useful tool for knowledge reuse and regeneration among nurses working in public hospitals and clinics. Several public healthcare facilities are starting programmes to ensure that KS practice is successful by incorporating KS techniques into their regular work routines (Rusuli & Tasmin, 2010). It is critical to examine how nurses working in Makhanda's various public-health facilities share knowledge, given the high mortality rates among nurses during COVID-19 in South Africa (UNICEF, 2020).

Fana, Ijeoma, and Sotana (2019) argue that biomedical interventions alone are not sufficient to stop the spread of pandemics and that KS practice should be included as a key factor in doing so. In order to acquire up-to-date information based on science and facts, professional nurses working in Makhanda's public healthcare facilities must be vigilant, willing to share their knowledge of COVID-19 with one another, and open to fresh perspectives (Adeyelure et al., 2019). In the fight against COVID-19, nurses' capacity to recognise, gather, process, exchange, and retain knowledge is crucial. It significantly contributes to lifesaving efforts (WHO, 2020). To effectively manage the knowledge gained in the public clinics and hospitals in Makhanda, nurses working in the public health facilities need to appropriately apply KS practices among themselves (Fana et al., 2019).

1.2 Contextual Background

The city of Makhanda is one of the urban centres (Figure 1.1) in Makana Municipality and in the Eastern Cape Province of South Africa (Makana, 2021). The R67, a provincial route in the Eastern Cape which connects Port Alfred to Komani (formerly Queenstown), lies close to Makhanda. Due to its significance as an economic hub, Makhanda is home to 90% of Makana's inhabitants (Makana, 2021). Makhanda is around 110 kilometres northeast of Port Elizabeth and 130 kilometres southwest of East London. It has a population of about 140,000 (Makana, 2021). Colonel Graham established the then Grahamstown in 1812 as a frontier garrison station

close to Xhosa territory (Britannica, 2021).

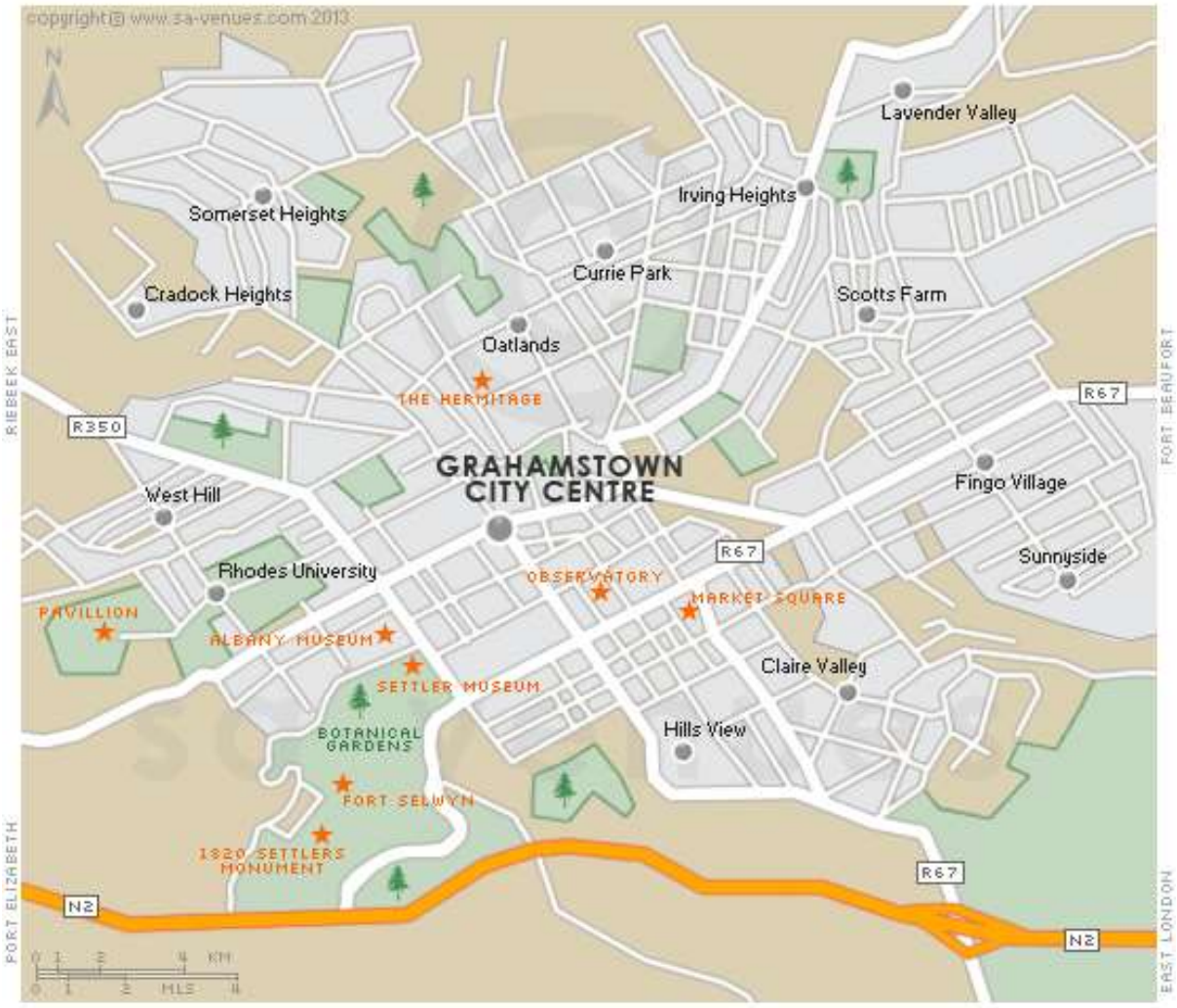


Figure 1.1: The city of Makhanda

This study covers eight public health facilities in Makhanda. The public healthcare facilities included six clinics which where Anglo African Clinic, Raglan Road Clinic, V. Shumane Clinic, N. G. Dlukulu, Middle Terrace, and Joza Clinic. The other public health care facilities were the Temba TB hospital and the general Settlers Day Hospital which is the largest public healthcare facility in Makhanda. In recent years, there has been extensive coverage of healthcare related problems in the Eastern Cape (Allan, Overy, Somhlaba, Tetyana & Zepe, 2004). The Eastern Cape is the region of South Africa where the effects of COVID-19 and a dysfunctional public healthcare system have been the most pronounced and catastrophic (Schneider, 2020). Schneider (2020) has described the tragedy that is faced by a number of

public healthcare facilities, and it paints a picture of mismanagement, corruption, high mortality death rates, and inadequately staffed and skilled facilities. The Nelson Mandela Bay Metropolitan Municipality has come to symbolise the Eastern Cape's public healthcare failings (Schneider, 2020). Patients vying for oxygen, mothers and babies dying in maternity units, clinic and emergency service closures, a lack of personal protective equipment (PPE), and distressed health workers dropping their tools have all been reported (Schneider, 2020). Data on excess mortality published by the South African Medical Research Council demonstrate this (Schneider, 2020). In 2020, the Eastern Cape had by far the highest levels of excess mortality of South Africa's provinces with the Free State coming a close second. The excess mortality measure reports all deaths in excess of projected frontline worker deaths (Schneider, 2020). According to the Eastern Cape Department of Health daily epidemiological report of September 4, 2020, 330 healthcare professionals had died from COVID-19, with the province's death rate for healthcare workers (HCWs) standing at 2.6%, with Nelson Mandela Bay Municipality losing 73 of their Health care workers (Heywood, 2021).

Nowhere in South Africa were nurses at greater risk of contracting and dying from COVID-19 than in the Eastern Cape (Konetze & Kretzmann, 2021). In 2021, then health minister Zweli Mkhize reported that 9117 healthcare professionals in the Eastern Cape had been infected with COVID-19 infections (Konetze & Kretzmann, 2021). This figure exceeded that of South Africa's other eight provinces (Konetze & Kretzmann, 2021). The prevention and control of COVID-19 depends on the appropriate KS practices (Nwagbara, Osual, Chireshe, Bolarinwa, Saeed, Khuzwayo & Hlongwana, 2021). The majority of people in sub-Saharan Africa are not sufficiently aware of the planned health and safety measures suggested by the World Health Organisation (WHO), according to several research papers (Nwagbara et al., 2021). This deficiency has been ascribed to ignorance and false information, which raises concerns regarding COVID-19 KS practices (Nwagbara et al., 2021). A lack of available time for nurses to practice KS with their work colleagues, reluctance on the part of some nurses to do so, reluctance to use social media platforms like Facebook and WhatsApp for KS, and insufficient KS policies in the public hospitals and clinics in Makhanda are the challenges faced by nurses in public health settings when practising KS (Adeyelure, Kalema & Motlanthe, 2019). The other challenges to nurses exchanging knowledge among themselves are a lack of an information-sharing culture and a competitive climate, according to Asemahagn (2014).

The motivation for KS practices by nurses in Makhanda should be the survival of public healthcare facilities, competition, differentiation, globalisation, and an ageing workforce (Omotayo, 2015). Public healthcare facilities in Makhanda must make significant investments to create KM systems that encourage KS practice among nurses in order to uphold and reap the benefits of KS (Adeyelure et al., 2019). Ineffective and insufficient KS practices among nurses as a result of insufficient diligence in the correct implementation of KS practices in public healthcare facilities leads to poor health services that present their own problems (Omotayo, 2015). In a pandemic such as COVID-19, where KS practice is crucial, professional nurses as healthcare workers cannot afford not to share and acquire knowledge that can aid in fighting the pandemic. A lack of coherent and practical KS practice guidelines results in a decline in the standard of operational activities in clinics and hospitals (Adeyelure et al., 2019).

1.3 Statement of the problem

The COVID-19 pandemic imposed unprecedented demands on healthcare systems worldwide, requiring professional nurses to rapidly acquire and disseminate knowledge to effectively respond to the evolving situation. However, the knowledge sharing practices among professional nurses during the pandemic were marred by numerous challenges that hindered the efficient exchange of vital information and best practices (Aydogdu, 2023). These challenges ranged from a limited access to up-to-date and reliable information, insufficient collaboration platforms and tools, lack of standardised knowledge sharing processes, inadequate recognition and incentives to knowledge sharing, and challenges in overcoming organisational and cultural barriers (Aydogdu, 2023). Addressing these challenges and improving the knowledge sharing practices among professional nurses during the COVID-19 pandemic was crucial to optimise patient care, enhance response strategies, and mitigate the spread of the virus. Efforts to establish comprehensive platforms for information dissemination, foster collaboration through dedicated communication channels, develop standardized knowledge sharing processes, and create incentives for participation can significantly enhance the collective expertise of professional nurses, enabling them to respond effectively to the dynamic nature pandemics and improve patient outcomes (Aydogdu, 2023). The significance of KS practice and experience-sharing behaviours as a means of addressing the lack of KS in organisations is very important (Adeyelure et al., 2019). A lack of organised

KS initiatives in public healthcare facilities can lead to increased mortality rates, inaccurate diagnosis, incorrect treatments, and medical errors (Adeyelure et al., 2019). It is not clear whether the studied public healthcare facilities in Makhanda experienced challenges regarding KS practice hence the study aimed to examine what KS practices the professional nurses employed among themselves during the COVID-19 pandemic.

1.4 Purpose, objectives, and research questions

1.4.1 Purpose

The purpose of this study is to examine knowledge sharing (KS) practices among the professional nurses working in public healthcare facilities in Makhanda City during the COVID-19 pandemic.

1.4.2 Research objectives

The research objectives of the study are as follows:

- To examine the level of understanding of KS practices among the nurses working in public healthcare facilities in Makhanda.
- To understand what knowledge about COVID-19 is being shared by nurses and why they are sharing it.
- To investigate if there are challenges in implementing KS practices among nurses working in public healthcare facilities in Makhanda.
- To provide recommendations for improving KS practices among nurses working in public healthcare facilities in Makhanda.

1.4.3 Research questions

The research was guided by the following questions

1. What is the level of understanding of knowledge sharing practices among professional nurses working in public healthcare facilities in Makhanda?
2. What kind of knowledge about COVID-19 is shared by the professional nurses and why?
3. What are the challenges faced by professional nurses working in public healthcare facilities in Makhanda in implementing KS practices?
4. What recommendations can be suggested to improve KS practices among the professional nurses working in public healthcare facilities in Makhanda?

1.5 Justification for the research

It is anticipated that the findings of this study will help in revealing opportunities and challenges of KS practices among professional nurses working in the public healthcare facilities in Makhanda. In addition, it is also anticipated that the study will add to the existing body of knowledge the importance of following sound KS practices during pandemic outbreaks such as COVID-19 and in their aftermath. Policy decision makers will be informed about the importance of KS practices among healthcare professionals during pandemic outbreaks such as COVID-19.

1.6 Scope, limitations, and delimitation of the study

The parameters within which a study is undertaken are referred to as the scope of the investigation, according to Simon and Goes (2013). The study's primary focus is on nurses' KS practices among themselves at Makhanda public healthcare facilities in the Eastern Cape Province of South Africa during the COVID-19 pandemic. The techniques, instruments, and processes used to guarantee that KS practice during COVID-19 was sustainable are included in the scope as is how future pandemics could be dealt with using existing KS practices as a guide.

The study's limitations arise from circumstances that are beyond the control of the researcher (Simon & Goes, 2013). This research focused on examining the practices of knowledge sharing (KS) among professional nurses working in Makhanda City's public healthcare facilities during the COVID-19 outbreak. However, the researcher encountered constraints due to the pandemic, which mandated social distancing in public spaces. Despite attempts to involve all 11 public healthcare facilities in Makhanda, only respondents from eight facilities agreed to participate, with three facilities declining due to reasons such as time constraints and adherence to COVID-19 lockdown protocols. Moreover, the study was restricted to using questionnaires containing predominantly closed-ended questions, with only a few open-ended ones. Face-to-face interviews were not feasible due to South African government regulations on social distancing and limited access to public facilities, as sitting down with respondents for an extended period would have exposed them to the risks of catching COVID-19.

Seasonal epidemics are typical, and in the case of COVID-19, vaccines have been developed in tandem with there being a decline in infection rates. Some of the study's findings were obsolete by the time it was completed because the pandemic had subsided, and COVID-19 vaccines developed.

1.7 Literature Review and Conceptual framework

1.7.1 Literature review

The increasing occurrence of disease outbreaks like Ebola and COVID-19 at a global scale has led to a growing body of literature exploring the practice of sharing knowledge to better understand outbreak preparedness, management, and response (Nelson, Abimbola, Jenkins, Naivalu & Negin, 2021). The presence of resilient and responsive health systems plays a crucial role in effectively handling the rising number of disease outbreaks (Palagyi, Marais, Abimbola, Topp, McBryde & Negin, 2019). These resilient health systems possess the ability to absorb shocks and maintain their capacity even under significant pressure, such as during a pandemic outbreak (Mills, 2017). Additionally, they can adapt to changing circumstances, respond to current and future needs, and efficiently coordinate pandemic response mechanisms through effective planning, knowledge sharing, and information management (Abimbola et al., 2021).

Sharing knowledge practice among individuals within an organization holds the potential to enhance service delivery and gain a deeper understanding of the nature of a pandemic outbreak (Kim, Andrew & Jung, 2017).

The concept of knowledge sharing practice has garnered attention from both researchers and practitioners in the field of knowledge management (Chua, 2003). Numerous studies have been conducted to identify the factors that hinder the practice of knowledge sharing (Chua, 2003). In organisations that have demonstrated systematic knowledge sharing practices, several best practices have been uncovered (Chua, 2003). However, there are still gaps in our understanding of why and when knowledge sharing occurs (Chua, 2003). Several scholars have attempted to differentiate between information and knowledge (Natarajan & Shekhar, 2000). Information is described as data that can be analyzed, correlated, and summarised, while knowledge is defined as information that is validated and imbued with meaning through experiences, beliefs, values, and insights (Davenport & Prusak, 1999). Information is generally independent of individuals, whereas knowledge is context-sensitive (Natarajan & Shekhar, 2000). This implies that information can be easily detached from its source and transferred without losing its meaning, while knowledge needs to be shared within a specific context for its essence to be fully understood (Chua, 2003).

Knowledge sharing practice is considered one of the most effective strategies for organisations to preserve and leverage their experiences and knowledge (Alzoubi, Alrowwad & Masa'deh, 2021). Engaging in discussions, dialogues, and critical thinking while sharing knowledge can generate valuable and innovative solutions to the challenges faced by service recipients (Alzoubi et al., 2021). In this particular study, the researcher proposes that professional nurses working in public healthcare facilities in Makhanda can enhance their knowledge sharing practices through various approaches, such as communities of practice (CoP), utilising information communication technology (ICT) tools for knowledge sharing, fostering a culture that promotes knowledge sharing, and identifying individuals who possess expertise and understanding in knowledge sharing practices. The development of ICT has facilitated easier communication and collaboration among individuals working in different organisations (Abu-Shanab, Haddad & Knight, 2014). Tools for knowledge sharing, such as search engines, the internet, intranets, and peer-to-peer knowledge platforms, are valuable resources that can be

employed within an organization to facilitate knowledge sharing (Abu-Shanab et al., 2014). In this study, the Technology Acceptance Model (TAM) is suggested by the researcher as a suitable framework for leveraging information communication technologies to bring immediate and long-term benefits at both the organisational and individual levels, including enhanced performance (Marikyan & Papagiannidis, 2023).

Professional nurses in Makhanda can utilise ICT tools as a means to practice KS among themselves by harnessing the tools ability to transcend boundaries and break the barriers that can hinder the proper transfer of knowledge among themselves. The proliferation of ICT within organisations had enabled workers to rely on ICT tools to acquire, create, and share knowledge (Kaba & Ramaiah, 2019). These tools can therefore be embraced by the nurses in their quest to acquire, create, and share important knowledge among themselves about a pandemic such as COVID-19. The study aimed to investigate the knowledge sharing practices that professional nurses working in public healthcare facilities in Makhanda used among themselves during the COVID-19 pandemic by determining which methods, tools, and actions they employed.

1.7.2 Conceptual Framework

The socialisation, externalisation, combination, and internalisation (SECI) model of knowledge creation (Nonaka & Takeuchi, 1995a), the knowledge sharing capability model (Kim & Lee, 2006), the social exchange theory (Thibault & Kelley, 1959), the technology acceptance model (Davis, 1989), and the voluntary, informal knowledge sharing model are just a few of the theories and models for studying knowledge sharing (Lee, Chaudhry & Hawamdeh, 2004). The SECI model of knowledge creation serves as the theoretical framework for this investigation. The most popular conceptual framework for comprehending knowledge generating processes in various organisations is the SECI model (Nonaka, 1994). According to Nonaka and Takeuchi (1995a), the manner in which tacit knowledge is perceived has advanced significantly. It is possible to externalise tacit knowledge and make it explicit (Nonaka & Takeuchi, 1995a).

The basis of knowledge conversion theory finds its application in the SECI model (Nonaka & Takeuchi, 1995b). According to the SECI model, knowledge is socialised (tacit to tacit), externalised (tacit to explicit), combined (explicit to explicit), and internalised (explicit to tacit) in an ongoing, spiral process (Nonaka & Takeuchi, 1995b). Explicit knowledge can be found in files, library collections, or databases (Nonaka & Takeuchi, 1995b). It may be challenging to access tacit knowledge, such as the skills, inventiveness, and experiences that people have amassed over time (Muchaonyerwa, 2015). Essential factors like organisational structure, organisational culture, information technology (IT), and management support for KS are incorporated into the SECI model (Muchaonyerwa, 2015). If organisations undertake the required measures, such as performance evaluation, IT infrastructure, mentoring, human resources development and/or the use of subject matter experts, and job-rotation rules, knowledge loss can be reduced (Nonaka & Takeuchi, 1995c). Policies governing job rotation within an organisation offer an opportunity to share knowledge and to transfer skills (Muchaonyerwa, 2015). Information technology is essential for creating a space in which people can engage and work together to exchange knowledge (Nonaka & Konno, 1998).

The TAM (Davis, 1989) was also used as an additional theory to support the study and to understand how technology plays a crucial role in the KS practices of nurses working in public healthcare institutions in Makhanda. This model was used to complement the SECI model. According to the TAM two factors may predict people's acceptance of IT: perceived utility and perceived ease of use (Ma & Liu, 2004). The TAM has undergone extensive testing, acceptance, and application since its creation (Ma & Liu, 2004). Since its formulation, TAM has been the subject of dozens of empirical investigations, and, when compared to other models, it is observed to be more robust, to have better predictive capabilities, and to be more efficient (Venkatesh & Davis, 2000). Despite the fact that the TAM has been the subject of numerous studies, the empirical tests done so far have yielded conflicting and ambiguous results (Ma & Liu, 2004). The theory of reasoned action (TRA) and social psychology theory in general serve as the foundation for the TAM (Fishbein & Azjen, 1975). The perceived utility and usability of IT by nurses working in the public healthcare facilities in Makhanda will determine how effectively they can share knowledge of COVID-19 using IT tools such as their smartphones, computers, and tablets and the software used in KS practice, such as social

sharing applications for example WhatsApp, Twitter, Facebook, and Instagram. To assess how the TAM was used in the context of KS practices among nurses during the COVID-19 pandemic, it was crucial to consider its usability and perceived usefulness.

1.8 Research methodology

This study used quantitative research methodology to acquire participants' insight via a survey questionnaire. In order to gather data and to evaluate and comprehend the study's findings, it was thought acceptable to use a quantitative methodology for this study. The purpose of the research was to determine the views and sentiments of the nurses towards KS practice during a pandemic outbreak such as COVID-19. To ensure the research's validity, study participants were required to fill out a survey questionnaire that consisted of mostly closed-ended questions and a few open questions. The participants of the research were the professional nurses who worked in public health facilities in Makhanda city. The quantitative methodology required the researcher to gather data primarily through a survey questionnaire.

1.8.1 Research design

This study employed a survey design, comprising predominantly closed-ended questions and a few open-ended ones. As stated by Creswell and Creswell (2018), a survey design offers a quantitative representation of population trends, attitudes, and opinions, and enables the examination of associations among variables within a population. The selection of a survey design was justified by its adaptability in collecting data under challenging circumstances, such as during a pandemic outbreak. In this case, COVID-19 restrictions made it difficult to directly access nurses as respondents. By administering a survey questionnaire, the researcher circumvented the need for direct contact and minimized the time that would have been spent on face-to-face interviews with the participants.

1.8.2 Study population

A population is a depiction of individuals or items used to derive conclusions. The term population often refers to the distinct cases a researcher plans to examine (Pandey & Pandey, 2015)). The population for this study comprised 56 professional nurses working in eight public healthcare facilities in Makhanda.

1.8.3 Census method

The census method was used for this study. This meant that no sampling was deemed necessary. The census method is a research methodology used in data collection that involves studying an entire population or universe, rather than just a sample of it. The goal of a census is to collect data on every member of the population being studied. The census method, which is also referred to as a complete enumeration survey method, selects every member item from the population for data collection (Vedantu, 2023). All 56 professional nurses from eight public healthcare facilities in Makhanda city were the target population. The population size was deemed small to warrant the census method without the need for applying a sampling method.

1.8.4 Data collection method

The two basic categories of data collection methods are primary data collection and secondary data collection (Taherdoost, 2021). The systematic process, procedures, and tools used to collect data is known as the data collection method (Taherdoost, 2021). In order to generate thorough results for the survey design, the study applied a quantitative method by using a survey questionnaire as the primary data collection tool.

1.8.5 Validity and reliability

Gunawan (2015) defines validity as the degree to which a study accurately measures its intended objectives, ensuring that the results obtained are pertinent and appropriate to the research inquiry. On the other hand, reliability refers to the study's capacity to produce consistent outcomes when applied repeatedly to the same or similar subjects or circumstances

(Gunawan, 2015). In order to ensure validity, the questionnaire items were largely drawn from previous studies, with careful adjustments and modifications made to align with the specific requirements of this study. To establish reliability, a pilot test involving 20 experienced professional nurses was conducted, aiming to identify potential concerns and assess the feasibility of the research design. This process allowed the researcher to refine the methods and procedures before proceeding with the data collection phase.

1.8.6 Data presentation and analysis

The data underwent analysis using descriptive statistics, utilising the Statistical Package for Social Sciences (SPSS) version 26 software and the Microsoft Excel application. Initially, the participants' questionnaire responses were coded into the SPSS software. Descriptive statistics were then applied to provide a concise overview of the respondents' answers. According to James and Simister (2017), descriptive statistics are employed in quantitative data analysis to present information in a clear and understandable manner, aiding researchers in summarizing and interpreting their findings. The data's patterns were identified by displaying descriptive results in the form of frequencies and percentages, presented through tables and figures. Additionally, descriptive statistics were utilized to analyse the research questions. Subsequently, the information was thoroughly reviewed for significance, summarized, and appropriate recommendations were formulated.

1.9 Ethical considerations

This study adheres to ethical standards to protect the identities of participants and ensure that their informed consent is given voluntarily, without any threats or coercion. Each participant provided informed consent, and they were informed that any information collected from them would remain confidential to ensure respect. Participants' information was kept confidential, and neither the researcher nor anyone else was allowed to share it. The study adheres to the ethical standards of the Human Sciences Research Ethics Committee, as outlined by the University of South Africa's (UNISA) policy on research ethics and the standard operating procedure on research ethics risk assessment. The Eastern Cape Department of Health approved the study, and all ethical protocols were followed closely.

1.10 Definition of keywords

This section provides brief definitions of the basic concepts identified in the research. The identified concepts were as follows: COVID-19 pandemic, information, knowledge, KS, knowledge management, nurses, and Makhanda community.

1.10.1 COVID-19 pandemic

The WHO (2020) describes COVID-19 (coronavirus) as a virus that infects both humans and animals and is a member of the "coronaviridae" family. The respiratory symptoms of COVID-19 include fever, coughing, and shortness of breath. In more severe cases, infection with COVID-19 can result in pneumonia (SARS), and death (WHO, 2020).

1.10.2 Information

The term "information" is used by Floridi (2005) to describe non-mental, declarative, semantic content that IS embedded in real-world physical places like databases, dictionaries, websites, and television shows. This content can be created, gathered, accessed, and processed.

1.10.3 Knowledge

Knowledge is an activity that involves the full use of information. It includes gathering people's ideas as well as their commitments and inspirations (Davenport & Prusak, 1998).

1.10.4 Knowledge sharing

Knowledge sharing is the dissemination of information among individuals, groups, or organisations (Kaewchur & Phusavat, 2013). According to Sandhu, Jain, and Ahmed (2011), KS is the transfer of significant knowledge from the knowledge-holder to the knowledge-receiver. This knowledge is obtained through study, observation, or personal experience. According to Roba, Jimma, and Diriba (2016), KS is a process in KM that aims to provide accurate knowledge that is available to the appropriate people at the right time. Communities

of practice (CoPs), knowledge repositories, integrating ICTs into the KS process, and the sharing of implicit and explicit information from one person to another are some examples of KS practices (Hannover Research, 2013).

1.10.5 Knowledge management

O'Dell and Grayson (1998a) claim that KM is a method that is purposefully designed to deliver the relevant knowledge to the right audience at the appropriate time, thereby assisting people in putting knowledge into practice in a way that enhances organisational performance. In view of the management of information and its utilisation to maximise its worth, Pearce-Moses (2005) defines knowledge management as "the administration and monitoring of an organisations' intellectual capital."

1.10.6 Nurses

The International Council of Nurses (2020) states that nurses are responsible for providing healthcare to people of all ages, families, groups, and communities, whether they are ill or not, and in all contexts. Nurses care for the sick, disabled, and dying in addition to promoting health and preventing illnesses (International Council of Nurses, 2020).

1.10.7 Makhanda community

A community is a collection of individuals who live in a single, clearly defined area and who adhere to the same fundamental principles, interests, and institutions (Brieger, 2006). Between Port Elizabeth and East London, in the Eastern Cape province, is Makhanda. It is a small city that values culture and education and is home to some of the finest schools in the nation.

1.11 Structure of the study

Chapter 1: Introduction and background. The chapter provides a summary of the research. It includes the problem statement, purpose of the study, and study background and introduction, as well as its aims and objectives, definitions of important words, conceptual framework, research design, and organisational structure.

Chapter 2: Literature review and conceptual framework. This chapter discusses the relevant literature pertaining to the study covering knowledge management, KS, KS practice, KS in the healthcare practice, the sharing of COVID-19 knowledge among nurses, KS tools, factors affecting KS, and barriers to KS. The SECI model and the TAM, the conceptual frameworks for this study, are also discussed in this chapter.

Chapter 3: Research methodology. This chapter focuses on the research approach, design, and the population of study, as well as the data collection process and data analysis and presentation, ethical considerations, and the validity and reliability.

Chapter 4: Data analysis and discussion. The data analysis and discussion of the research findings are presented in this chapter.

Chapter 5: Summary, conclusion, and recommendations. This chapter presents an overview of the research process by clearly formulating the conclusions relating to the research problem and the recommendations arising from the study.

1.12 Summary

Chapter 1 provides an overview of the dissertation, establishes the research's scope, and describes the environment in which it was conducted. The chapter introduces Makhanda's background, which inspired the study, and explains the study's importance and justification. The research problem and the study's goals and questions are discussed. To increase the reader's understanding of the topic, key terms are defined. The research methodology is outlined, and ethical questions are addressed to highlight areas where the study's conclusions may be contested. The chapter concludes with an outline of each chapter's content.

CHAPTER 2

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 Introduction

Creswell and Creswell (2018) explain that the purpose of conducting a literature review is to provide the reader with an understanding of the research findings that are closely linked to the study being conducted. Through a literature review, researchers can bridge gaps and extend earlier studies, thereby connecting their research to the larger, ongoing conversation in the literature. This helps to establish the significance of the study and provides a standard against which to compare the results with other findings. The current chapter consists of a literature review on knowledge sharing (KS) practices among nurses during the COVID-19 pandemic, which provides the conceptual framework for the study. The literature review serves to achieve the study's objectives by assessing earlier research on the subject and deepening the researcher's understanding of the topic under investigation, as well as identifying gaps in the existing literature (Leedy, Ormrod & Johnson, 2019).

According to Pickard (2007), a literature review allows researchers to explore and combine what has already been published about the topic under investigation, sometimes for the first time. By identifying gaps in the literature and reporting on previous research, the researcher can become aware of the latest advances relating to the selected research topic. The literature review contributes to the researcher's case by enhancing the study's objectives. Additionally, the literature review is crucial for directing the researcher's understanding of the study's methodology and conceptual framework (Leedy et al., 2019).

The literature review for this study was formulated in line with the objectives of the study, which are:

- To inquire about the level of comprehension of KS practices among the nurses working in public hospitals and clinics in Makhanda.
- To understand what knowledge about COVID-19 is being shared by the nurses and why they are sharing it.
- To identify the challenges to implementing KS practices among nurses working in public hospitals and clinics in Makhanda.
- To provide recommendations regarding improving KS practices among nurses working in public hospitals and clinics in Makhanda.

The literature that is required to be reviewed covers a variety of topics, including knowledge management, KS tools, practices, factors that influence KS, barriers to KS, knowledge sharing among nurses, and the conceptual models that serve as the foundation for this study, the SECI model and the TAM.

2.2 Knowledge Management

In order to fully understand the concept of knowledge sharing, it is essential to explore knowledge management (KM) and its processes. Knowledge management has become a key topic in most organisations due to the constantly changing pace of organisational development, making it more challenging to manage organisations effectively (Jennex, 2007). If properly understood and implemented, knowledge management could be a crucial tool for transforming an organisation and gaining a competitive advantage. Indeed, knowledge management is the most critical instrument for achieving organizational goals (Hlatshwayo, 2019).

O'Dell and Grayson (1998a) define knowledge management (KM) as a systematic process that involves providing the right knowledge to the right people at the right time and facilitating the sharing and application of information among individuals to enhance organisational performance. Davenport and Prusak (1998) suggest that KM utilizes the existing organisational

resources such as information system management procedures, human resource management, and organisational change implementation to achieve value through the use and reuse of knowledge and information. KM is consciously and systematically utilised to manage an organisation's human resources, technology, processes, and structure in order to promote the creation, dissemination, and application of information, preserve important lessons learned, and store best practices in the organisational repository to support organisational learning (Dalkir, 2011).

According to Edoun (2016), it is recommended for organisations to use strategic planning methods to obtain the essential information needed to meet their goals. For nurses employed at healthcare facilities in Makhanda, appropriate knowledge sharing practices can be adopted to arrange, categorise, save, and exchange their accumulated knowledge with each other. This will enable them to efficiently utilise their knowledge and make it easily accessible, which is especially crucial during the current global COVID-19 pandemic that is affecting communities worldwide.

2.3 Knowledge sharing practices

According to Zheng (2017), knowledge sharing (KS) is the act of providing information or actions that assist others in acquiring knowledge. Ipe (2003) further explains that KS occurs when an individual's tacit knowledge is assimilated by others, comprehended, and then either used or shared with others. This indicates that KS is an intentional behavior that allows one person to impart knowledge to others. It is an individual action that involves two or more people, is voluntary, and is governed by environmental systems or procedures such as laws, moral principles, and codes of conduct. KS practices, which are knowledge-centered activities, can contribute to an organisation's knowledge application, creativity, and competitive advantage, according to Wang and Noe (2010). When employees share knowledge within a company, it allows the company to effectively utilise and maximise its knowledge-based resources. Despite significant efforts by many organisations to make KS a priority in their daily operations, it is estimated that Fortune 500 companies lose $31.5 billion annually due to inadequate KS practices among their employees (Zheng, 2017). Consequently, many organisations invest substantial resources to become knowledge-based and knowledge-driven

to take advantage of the benefits that KS offers for the development of their knowledge-based assets (Wang & Noe, 2010).

In the modern era, organisations have been compelled to revise their policies and strategies owing to various factors such as globalisation, heightened competition, technological advancements, and a growing ageing population, among others (Mohajan, 2019). Therefore, it has become necessary to consider new knowledge sharing (KS) practices to ensure sustainable growth for organisations (Mohajan, 2019). One approach to establish effective KS practices is through making knowledge sharing a requirement within the organisation (Beijerse, 1999). Successful knowledge sharing procedures have the potential to improve the quality of services offered by businesses (Rusuli & Tasmin, 2010). However, to gain and maintain a competitive advantage, employees within an organisation must be able to share knowledge and put it into practice (Hussein, Singh, Farouk & Sohal, 2016). It is important to note that the mere presence of knowledge resources does not guarantee successful knowledge sharing practices (Ahmad & Karim, 2019). Previous studies have shown that sharing knowledge can reduce costs, increase customer satisfaction, stimulate innovation, and improve overall performance (Ahmad & Karim, 2019).

In order to provide effective and secure care during the COVID-19 pandemic, professional nurses were required to expand their professional knowledge and competencies, keeping up with the swift changes in healthcare environments and advancements in technology (Babajani-Vafsi, Nouri, Ebadi & Zolfaghari, 2019). Previously, the emphasis had been primarily on enhancing interpersonal skills through learning to gain knowledge and abilities. However, collaborative learning through knowledge sharing (KS) practice is now considered one of the most successful and advanced methodologies (Babajani-Vafsi et al., 2019). Because tacit knowledge is often intangible, difficult to comprehend, and not easily transferable (Babajani-Vafsi et al., 2019), KS practices are essential to promote interactions and networking-based solutions such as information and communication technologies (ICTs) and communities of practice, to encourage nurses in healthcare facilities to share knowledge with each other (Babajani-Vafsi et al., 2019).

Buheji and Buhaid (2020) suggest that the COVID-19 pandemic crisis has created a substantial need for new expertise, posing ongoing knowledge requirements for healthcare professionals. The capacity of nurses to communicate evidence-based knowledge is critical (Buheji & Buhaid, 2020). Professional nurses from around the world, including retired nurses and undergraduate nursing students, have been requested to take on positions that require them to update their knowledge, practice their clinical skills, and acquire new experiences (Schwerdtle, Connel, Lee, Plummer, Russo, Endacott & Kuhn, 2020). To ensure that nurses follow the best practices for exchanging evidence-based knowledge on COVID-19 among themselves, knowledgeable experienced professional nurses with current techniques and technology know-how are required to step in and provide the much-needed expertise (Schwerdtle et al., 2020). Professional nursing practitioners in more advanced roles heavily influence the training and mentoring of new nurses (Schwerdtle et al., 2020). The new nursing care delivery model requires teaching and learning to prepare the nursing workforce quickly yet robustly, including training workshops, seminars, and group discussions to ensure appropriate knowledge sharing among professional nurses regarding COVID-19 (Schwerdtle et al., 2020). This will help reduce the risk of disease transmission, improve patient safety, and lessen the burden of constant supervision. Below is a discussion of literature on the practices that can be used to share knowledge within an organisation.

2.3.1 Communities of Practice

According to Bratianu (2015), communities of practice (CoPs) have been around for a long time, with artisan guilds during the Middle Ages performing a similar function to today's professional CoPs. Although CoPs disappeared during the Industrial Revolution, they continued to grow in many aspects of human life. Since the early 1990s, CoPs have gained attention in the field of social sciences and become a subject of empirical study, as noted by Aljuwaiber (2016). In educational settings, the term "community of practice" has been accepted as a social theory of learning, as described by Lave and Wenger (1991) and Aljuwaiber (2016). As a result, companies have adopted the phrase as part of their knowledge management (KM) strategies, according to Wenger (1998) and Aljuwaiber (2016).

According to Wenger, McDermott, and Snyder (2004), communities of practice refer to groups of people who share an interest, a set of issues, or a passion for a particular subject and continuously develop their expertise and skills in that area. People who participate in CoPs appreciate the opportunity to share their cognitive, emotional, and spiritual knowledge (Bratianu, 2015). Communities of practice provide an alternative to knowledge sharing practices that focus solely on technology or functionalism (Heizmann, 2009:5). As Brown and Duguid (1991) suggest, administrative or managerial authority alone does not guarantee effective knowledge sharing. By pursuing a collective endeavour, they highlight the existence of unconventional work practices within CoPs (Brown & Duguid, 1991; Wenger, 1998). The CoP approach emphasises the significance of informal knowledge and knowledge sharing practices among individuals engaged in similar fields of activity, rather than emphasising the formal codification of knowledge (Lindkvist, 2005).

According to Bratianu (2015), when individuals become part of Communities of Practice (CoPs), they engage in dynamic and complex interactions between their cognitive, emotional, and spiritual fields of knowledge. Participation in a CoP is based on cooperation rather than competition, which fosters dedication, motivation, and interest among members, and motivates them to share their expertise. Members also become more aware of each other's ability to access knowledge on a personal level. In today's rapidly changing organisational landscape, knowledge and learning are critical, as highlighted by Roberts (2006). Professional nurses, for example, are increasingly using social media to create virtual CoPs, such as those described by Babajani-Vafsi, Nouri, Ebadi and Zolfaghari (2019). Virtual CoPs are online groups that enable nurses to exchange tacit knowledge and discuss skills, co-creating new knowledge in the process.

2.3.2 Mentorship

Mentoring is a valuable KS practice for organisations to enhance productivity and career advancement by allowing staff members to share knowledge (David-West & Nmecha, 2019). While it can lead to career success, it also carries the potential for career mistakes (David-West & Nmecha, 2019). The main objective of mentoring is to assist less experienced individuals in developing their careers through interaction with those who possess greater knowledge

(Chopra, Arora & Saint, 2018; David-West & Nmecha, 2019). According to David-West and Nmecha (2019), effective mentoring occurs when those with knowledge interact with those lacking experience. Mentoring encompasses various tasks such as counselling, coaching, instructing, advocating, sponsoring, setting an example, promoting personal growth, and achieving work-life balance (Geraci & Thigpen, 2017). Additionally, mentoring aims to prevent the rehiring of retired employees who possess knowledge and expertise and might be brought back at higher salaries to impart their knowledge (David-West & Nmecha, 2019; Mavuso, 2007).

Abbajay (2013) and DeGrandpre (2010) suggest that mentorship is one of the most ancient and potent forms of knowledge transfer. Al-Alawi, Al-Marzooqi, and Mohammed (2007) and David-West and Nmecha (2019) have found that mentoring is an effective way to foster knowledge exchange and improve service delivery, particularly for new recruits, through training. By implementing mentoring programs, organisations can avoid the expense of rehiring retired personnel at high rates to impart their knowledge to new recruits (Mavuso, 2007). Typically, the mentor is an experienced staff member within the organisation, while the mentee is a new employee or an employee seeking to acquire new knowledge or skills (David-West & Nmecha, 2019). Mentoring is an ongoing process within an organisation that evolves as the mentor and mentee gain more experience and the mentee's self-assurance grows (DeGrandpre, 2010; Sucuoglu, 2018; Tahleho, 2016).

The goal of mentoring is to increase both the mentor’s and the mentee’s experience through sharing knowledge within an organisation. This ultimately increases the mentee’s confidence and their capacity to further share the knowledge they have acquired over the course of the mentoring process (Sucuoglu, 2018). Mentoring must be spontaneous and based on the mentee and mentor’s compatibility and mutual respect (Sucuoglu, 2018). The mentoring process is a procedure that encourages competent and experienced employees to impart their knowledge and expertise to less-experienced ones so that the latter might advance within the organisation (David-West & Nmecha, 2019). There must be mutual respect and chemistry between the mentor and mentee for mentorship to be successful (David-West & Nmecha, 2019).

2.3.3 Storytelling

Since the dawn of humanity, storytelling has played a significant role and, in a way, contributes to defining our essence (Tobin & Snyman, 2008). Over the course of thousands of years, stories such as myths, legends, and folktales have served as vehicles for transmitting wisdom, knowledge, and cultural heritage (Tobin & Snyman, 2008). Gabriel (2000) perceives storytelling as a skilful craft that involves weaving and constructing narratives based on intimate knowledge. Stories not only help us navigate our emotions and make sense of complex situations but also co-evolve with the culture of organisations (Mitchell, 2005). Today, organizations are recognising the power of storytelling in facilitating the sharing of knowledge and experiences among their workforce. The literature on knowledge management frequently emphasises the significance of stories and their role in promoting knowledge sharing, sparking a growing interest in the art of storytelling (Mitchell, 2005). As part of endeavours by individuals, groups, and organisations to exchange their expertise, the use of storytelling has emerged as a potentially potent approach for enhancing knowledge sharing (Tobin & Snyman, 2008).

According to Sole and Wilson (2002), utilising stories and storytelling as a means of knowledge sharing presents a valuable opportunity to leverage a traditional mode of communication. Numerous techniques and approaches have been reported on how this can be achieved or how stories can be effectively employed. Storytelling proves to be a potent tool for capturing tacit knowledge, as it is an inherent and direct behavior (Sole & Wilson, 2002). Stories serve as a bridge between tacit and explicit knowledge, as they convey the storyteller's moral stance (Linde, 2001). Noteworthy examples of storytelling being used for knowledge sharing include Apple, which employed stories to reinforce its culture of innovation within the organization (Tobin & Snyman, 2008). Eskom, South Africa's electricity generation company, utilised storytelling in their Imbizo sessions to encourage knowledge sharing practice among its employees (Tobin & Snyman, 2008). LeBlanc and Hogg (2006) state that the Walt Disney Company recognised storytelling as an integral part of various professions and saw the internet as a suitable medium for storytelling.

Storytelling serves as a potent method for revealing tacit knowledge, effectively presenting it in a manner that facilitates its assimilation and adaptability by the recipient. Shaw, Brown, and Bromiley (1998) emphasize that a compelling story possesses a clear point that emerges through its narration, defining relationships, a sequence of events, cause, and effect, and establishing priorities among various elements – all of which are likely to be retained as a cohesive whole. Introducing storytelling into the workspaces of professional nurses in public healthcare facilities in Makhanda has the potential to cultivate a sense of cohesion among the nursing staff. This is accomplished by fostering the belief that sharing narratives of past experiences and work-related encounters contributes significantly to a collective sense of unity and shared purpose among the nursing team.

2.3.4 Job rotation

According to Lu and Yang (2015), knowledge has emerged as one of an organisation's most crucial strategic resources in the current knowledge economy. Utilising tacit knowledge through job rotation is one way in which employees can transfer knowledge within the company (Lu & Yang, 2015). Providing staff with necessary new knowledge or abilities, job rotation is the process whereby employees in an organisation are occasionally shifted to different departments or given different jobs for a set period of time (Kaymaz, 2010). Most businesses are currently struggling with the term "multitasker" being applied to their employees (Peariasamy & Mansor, 2008). When workers multitask, they manage a number of tasks that are outside the scope of their regular duties (Peariasamy & Mansor, 2008). Such personnel are capable of completing any task that is given to them, giving the organisation the assurance that they can be relied upon even when other employees are not present (Peariasamy & Mansor, 2008).

According to Canadian Research Policy Networks (2006), job rotation provides employees in an organisation with ample opportunity to experiment with various skill sets, to complete various tasks, and to exercise more control over their work. Job rotation encourages innovation and exposes workers to a variety of organisational duties (Peariasamy & Mansor, 2008). Job rotation is primarily intended to increase employees' flexibility and maintain their interest in retaining them in their employment (Gava, Favilli, Bartolini & Brunori, 2017). Job rotation

promotes KS practice by transforming staff into adaptable persons who obtain a greater understanding by learning from others (Hislop, Bosua & Helms, 2018).

2.3.5 Knowledge repositories

According to Leibowitz (2012), knowledge repositories refer to online storage systems that contain expertise and documentation specific to a particular field or discipline. These repositories can take the form of intranets, wikis, or knowledge bases, serving as centralised databases where individuals can store and retrieve information, best practices, guidelines, and lessons learned (Swierstra & Efstathiou, 2020). Knowledge repositories are commonly employed within organisations to capture and reuse solutions to common problems, facilitating employees' access to existing knowledge within the repository (Gray & Durcikova, 2006). In their quest for sustainability and competitiveness, organisations are increasingly recognising their role as custodians of the resources they possess, with knowledge being a resource that has garnered significant attention. Consequently, firms are undertaking various initiatives under the umbrella of knowledge management to enhance the returns on their knowledge assets (Gray & Durcikova, 2006). Organizations that foster a robust culture of knowledge sharing can benefit from decentralized methods of capturing and disseminating information, which prove to be highly efficient. This entails implementing reliable systems that ensure a unified format for content and facilitate swift storage and sharing (Janus, 2016). Consequently, such organizations are empowered to efficiently maintain and manage their knowledge repositories, making them readily accessible and applicable whenever the need for knowledge sharing practices arises.

Janus (2016) highlights the importance of knowledge repositories being not only easily searchable and accessible to address immediate operational needs but also serving as valuable resources for training both new and existing staff members. Additionally, these repositories play a crucial role in fostering knowledge-sharing relationships with other departments within the organisation. The Lagos Metropolitan Area Transport Authority (LAMATA) serves as a prime example of an organization effectively implementing knowledge sharing (KS) practices through the use of a knowledge repository. LAMATA equips its employees with the most up-to-date knowledge derived from real-world experiences, ensuring that operational insights and

lessons learned are systematically captured (Janus, 2016). To achieve this, knowledge management officers from various departments gather knowledge assets and package them for uploading to a dedicated space on the organisation's intranet (Janus, 2016). Consequently, LAMATA's employees gain easy access to these knowledge assets, which significantly facilitates and encourages their practice of knowledge sharing.

2.3.6 Job-shadowing

Job-shadowing is crucial for knowledge transfer between individuals (Izu, 2020). Job-shadowing allows employees the opportunity to observe how other team members complete activities that they may not be entirely familiar with or capable of performing (Heathfield, 2020). Job-shadowing, according to Heathfield (2020), is a form of on-the-job employee training in which a new employee, or an employee who wishes to get acquainted with a different task, follows, and watches a more skilled and experienced employee as the latter works. Job-shadowing enables the observer to observe and become familiar with a specific job or task (Heathfield, 2020). A deeper grasp of the duties and responsibilities of individuals within the organisation can be gained through job-shadowing (Heathfield, 2020). Through job-shadowing, new employees, and seasoned employees wishing to advance their careers in an organisation, obtain up-to-date information from the person being observed. Like mentorship, job-shadowing entails the one seeking new information following the more seasoned person and observing what they do (Maestro, 2020). Employees can gain greater experience of the responsibilities of and behaviours involved in a job using this observation-based approach they can study the duties by doing them (Maestro, 2020).

Job-shadowing is useful for learning both general and specialised information (Izu, 2020). To become more skilled in specific areas of their employment, specialists may observe other specialists in action (Maestro, 2020). The amount of time needed to acquire the necessary expertise determines how long a work shadowing assignment typically lasts (Izu, 2020). People vying for higher positions might profit from job-shadowing by becoming more familiar with the role; it allows them to quickly learn more about the job’s requirements and expectations rather than having to wait to learn on the job (Heathfield, 2020).

2.3.7 Expertise location

Organisations are able to locate experts to help them access the critical knowledge they require to meet their organisational goals in a global economy (Dzandu, Boateng & Tang, 2014). Organisations look for ways in which people can share knowledge and expertise with others when they begin to recognise the limitations in their knowledge repositories (Ackerman & Halverson, 2003). Finding the right person to answer the right questions or finding someone to properly compliment a team is referred to as expertise location (Ackerman & Halverson, 2003). When organisations conduct talent audits, new demands appear and must be considered (Ackerman & Halverson, 2003). Expertise location is a productive process, according to Hameed, Basheer, Iqbal, Anwar, and Ahmed (2018), which entails the identification of human expertise, an assessment of the status of vital resources, and the fusion of the expertise with organisational interaction processes.

Maintaining a detailed record of abilities, geographic positioning, availability, and other factors is crucial to the usage of the expertise that is obtained via expertise-location (Guo, Jia, Huang, Kumar & Burger, 2015). Due to organisations' pursuit and accumulation of high levels of intellectual capital, the locating expertise is continuously becoming more crucial (Dzandu et al., 2014). This is the reason some academics, such Hameed et al. (2018), have referred to expertise location as an "employee knowledge network solution." The process of aligning expertise and talent within organisations is now called expertise location (Kommey, 2020). Organisations can fully improve their KS practice capabilities by locating people with the appropriate knowledge at the right moment through expertise location (Dzandu et al., 2014). Expertise location entails tasks such as running mentoring programmes, spotting knowledge gaps, assisting with performance, and monitoring formal organisational actions (Hameed et al., 2018).

2.3.8 Teamwork

When people cooperate with one another, this is referred to as teamwork (Peariasamy & Mansor, 2008). According to research by Jamshed, Nazri, Bakar, and Majeed (2018), KS practice and team performance are positively correlated. Teamwork is a system that promotes work performance, and, according to Salas & Cannon-Bowers (2001) it needs to be aptly supported. Organisations must ensure that they set up training courses so that team members can cooperate and practice knowledge among themselves (Khattak, Shah & Shah, 2020). Regarding the provision of information or knowledge relating to a task, team members who possess the necessary abilities can be trusted to do so (Khattak et al., 2020). In their research on the effects of cooperation on worker performance in Jakarta, Indonesia, Kelemba, Chepkilot, and Zakayo (2017) demonstrates that teamwork improves worker performance because it enhances KS practice. Driskell and Salas (1992) assert that the interdependence of an organisation's workforce in terms of information sharing is the most significant consequence of teamwork performance. Because of this, social interaction behaviour is visible while discussing team performance (Jamshed et al., 2018).

2.4 Knowledge sharing strategies

In order to gain a deeper comprehension of knowledge sharing practices, it is crucial to examine the strategies employed by individuals within an organisation to facilitate this process. Considering the social nature of knowledge sharing, the decision-making process for knowledge workers to adopt a knowledge sharing tool is influenced by both cognitive factors and emotional considerations (Lee, Wang, Yeoh & Ikasari, 2020). As per Ramesh Babu and Gopalakrishnan (2008), several strategies have been developed to promote knowledge generation, diffusion, and KM within various organisations or communities through knowledge sharing practice There is not a single universally effective knowledge sharing strategy that can be used (Tsui, Chapman, Schnirer & Stewart, 2006). Knowledge sharing experts emphasize the significance of avoiding a rigid 'one-size-fits-all' approach, as it could lead to inadequately tailored content, timing, setting, and format when sharing knowledge with diverse audiences (Tsui et al., 2006). When organisations carefully assess what information they should share and identify the most suitable platforms for sharing, they gain better control over both the knowledge itself and the channels used for dissemination (Tsui et al., 2006).

2.4.1. Knowledge sharing environment

Promoting knowledge sharing in the workplace can encounter varying levels of receptivity among employees (Belin, 2021). While some individuals possess strong communication skills and willingly engage in sharing knowledge, others may be more reserved (Belin, 2021). Therefore, fostering an environment that naturally encourages knowledge exchange within the team becomes crucial (Belin, 2021). To achieve this, it is essential to incorporate diverse activities into daily work routines (Belin, 2021). These activities might include fostering increased interactions, team building exercises, quizzes, and collaborative efforts (Belin, 2021). Additionally, assigning groups of people to work together and encourage idea and knowledge sharing can be beneficial (Belin, 2021). To motivate knowledge sharing among employees, implementing a contribution campaign can be effective (Belin, 2021). For instance, setting aside an hour each week dedicated to team members discussing specific topics can be fruitful (Belin, 2021). Documenting and preserving these discussions as part of the organization's knowledge repository enables others to access valuable insights on various subjects (Belin, 2021). Moreover, organizing trips and picnics can play a role in strengthening bonds among co-workers (Belin, 2021). Such informal gatherings automatically foster small talk and promote a culture of sharing knowledge (Belin, 2021).

2.4.2 Recognising and rewarding knowledge sharing

Sajeva (2014) states that recognition and rewards are commonly employed as tools to promote knowledge sharing (KS) among employees. However, researchers are still debating whether both extrinsic and intrinsic forms of recognition and rewards significantly influence knowledge sharing practices (Sajeva, 2014). The purpose of establishing recognition and reward systems is to motivate employees to achieve organisational objectives through exemplary performance and behavior (Sajeva, 2014). Aligning such systems with knowledge sharing, as suggested by Al-Alawi et al. (2007), can enhance KS practices within organizations. Positive reinforcement, as emphasised by Belin (2021), is effective across various contexts, including organisations, and it becomes crucial to acknowledge and reward employees who actively engage in knowledge sharing (Belin, 2021). This acknowledgment can positively influence other employees, encouraging them to adopt KS practices by demonstrating the associated benefits

(Belin, 2021). The types of recognition and rewards may vary and can include bonuses, gifts, free coupons, and shout-outs on internal social media platforms (Belin, 2021).

2.4.3 Manage communication barriers between employees

Smooth functioning within an organization relies heavily on effective communication among employees (Belin, 2021). When communication barriers exist, it can lead to demotivation and disengagement, creating a toxic workplace atmosphere (Belin, 2021). To prevent this, it is crucial for employees to feel a natural inclination to interact with their colleagues, whether for casual conversations or work-related matters, as clear communication is the cornerstone of a successful organization (Belin, 2021). Ideally, when communication hurdles between employees are effectively managed, knowledge sharing (KS) becomes a seamless process (Belin, 2021). To facilitate this, organizations should establish online forums or activities that promote easy communication (Belin, 2021). Through such channels, employees can gain new insights, receive tips, obtain recommendations, and share suggestions about their work, task management, or industry-specific knowledge (Belin, 2021). The more informed the workforce is within an organization, the better equipped they are to develop creative ideas that contribute to business growth (Belin, 2021).

2.4.4 Encourage the use of knowledge sharing tools

Enhancing the process of knowledge sharing (KS) and knowledge transfer is increasingly vital to equip all employees with the necessary knowledge and prepare them for its application (Al-Qahtani & Aksoy, 2022). The effectiveness of KS practice relies on the appropriate utilization of knowledge sharing tools in relevant settings (Al-Qahtani & Aksoy, 2022). To reinforce the positive impact of knowledge exchange, organizations must identify and improve KS tools that are embraced and implemented by users (Al-Qahtani & Aksoy, 2022). Given that KS activities are not limited to a single location, having a remote team with access to tools facilitating remote KS practices is essential (Belin, 2021). Microsoft Teams, webinars, blogs, podcasts, and Slack are among the KS tools that enable remote knowledge sharing within an organization (Belin, 2021). Encouraging the use of these tools is crucial to motivate employees to leverage their benefits (Belin, 2021). Such knowledge sharing tools streamline information access, facilitate

seamless communication, and enable employees to seek guidance from one another (Belin, 2021).

2.5 Knowledge sharing tools

Information technology has been developed in a variety of innovative ways as a means of promoting KS practice in organisations (Babu & Gopalakrishnan, 2008). Information and communication technologies are used by many organisations in one way or another to share knowledge (Egbu & Botterill, 2002). Such technologies are mostly used to store and communicate explicit knowledge which is not limited to computer-based knowledge (Egbu & Botterill, 2002). Since tacit knowledge is, to put it simply, a form of socialisation as described by Nonaka and Takeuchi (1995c), tools such as video conferencing, social networking platforms, emailing, blogging, online virtual meetings, and teleconferencing are helpful for the transmission of tacit knowledge. Some people do not think technology is an essential KS tool (Babu & Gopalakrishnan, 2008). These people may be partially correct because the core of KS practice is people rather than technology (Babu & Gopalakrishnan, 2008). Technology enables people to communicate through channels that do not require face-to-face contact and the sharing of knowledge can be done remotely over long distances in cases where individuals are not together (Babu & Gopalakrishnan, 2008).

Organisations adopt KS practice initiatives using a range of ICT platforms, including intranets, extranets, wikis, and e-discussion systems (Janus, 2016). The top-down information transfer strategy used in the development of these platforms maximises the use of the knowledge assets required to exploit the more intricate networks involved in KS practice (Janus, 2016). Asking staff members whether they use the various ICTs, what they believe is missing, and how the technology can be enhanced is an excellent way to gauge whether technologically based KS tools can fulfil their potential in an organisation (Janus, 2016). Innovations in ICT have completely changed how individuals communicate knowledge in organisations (Balubaid, 2013). Compared to the pre-ICT era, organisations today have access to a wealth of information that enables them to make consistent decisions based on facts, especially in the wake of the explosion of the World Wide Web's, which has become one of the most efficient and practical ways to communicate knowledge (Balubaid, 2013). The basis and importance of KS

practice among people in an organisational structure are supported by technology. (Balubaid, 2013).

2.5.1 Web 2.0 technologies

Since its introduction in the early 2000s, a Google search history would reveal a growing interest in the term "Web 2.0" (Bebense, Helms & Spruit, 2012). Usman and Oyefolahan (2014) highlight that Web 2.0 technologies play a crucial role in facilitating social interaction, and various terms such as "read and write," "make and share," "like and remark," and "customer content creator" have been used to describe its functionalities. These designations accurately depict how Web 2.0 has transformed people's interactions, collaborations, and information exchange. The shift has enabled individuals from diverse social and cultural backgrounds, as well as different parts of the world, to readily share their knowledge and experiences (Usman & Oyefolahan, 2014).

Web 2.0 technologies, as outlined by Usman and Oyefolahan (2014), mark a significant advancement in the utilisation of applications and designs on the World Wide Web. These technologies encompass a blend of concepts, innovations, and trends that empower users to connect, share, communicate, collaborate, and generate content online (Usman & Oyefolahan, 2014). The term "Web 2.0" was first coined by Tim O'Reilly during a web conference in 2004, organized by O'Reilly Media and Media Live International (Bong, 2008). Stuart (2010) simplifies Web 2.0 technologies as sites that facilitate sharing, while Macaskill and Owen (2006:14) describe them as web-based platforms enabling users to access, contribute, describe, harvest, tag, annotate, and bookmark web content in various formats like text, video, audio, pictures, and graphs. Prominent examples of Web 2.0-based platforms include Facebook, Twitter, Last.fm, Flickr (a photo-sharing platform), YouTube (a video-sharing platform), and various social networking sites such as Twitter (Balubaid, 2013).

2.5.2 Intranets

Natarajan (2008) states that intranets represent a highly effective method for transferring knowledge. These internal networks function as the nervous and circulatory systems of an organization, facilitating both organizational activities and information flow (Natarajan, 2008). Intranets incorporate dynamic social features such as wikis and blogs, making them web-based applications designed to share knowledge within the organization (Forcier, 2013). Essentially, an intranet is a private computer network utilizing the data communication protocols and capabilities of the public internet (Natarajan, 2008). Averweg (2008) describes it as a network created to fulfil an organization's internal information requirements using internet concepts and tools, establishing common channels for communication and knowledge sharing (Averweg, 2008). Brelade and Harman (2003) further explain that intranets act as both a "push" mechanism, presenting knowledge to individuals within the organization, and a "pull" mechanism, allowing employees to search for and retrieve knowledge themselves. As asserted by Tiwana and Ramesh (2001), the intranet's ability to facilitate distribution, networking, and publishing makes it a strategic instrument in the knowledge-sharing practice domain.

An organisation’s employees can display data and information, collaborate, and generate and share knowledge using an intranet (Averweg, 2011). According to Tiwana and Ramesh (2001), an intranet should be seen as a crucial component of an organisation’s knowledge management system and should be created and fashioned to improve the KS practices in the organisation. Organisations may efficiently manage their information and knowledge by using an intranet (Averweg, 2011). Employees are encouraged to share knowledge since the intranet gives them a central location to find and identify organisational knowledge (Averweg, 2012:1). Utilising the intranet for business communications like emails, online chat, video conferencing, and official notes can significantly increase KS practice (Sayed, Jabeur & Aref, 2008). Any organisation’s capacity to build successful KS practices depends on its ability to administer the intranet (Sayed et al., 2008).

2.5.3 The internet

The internet and KS practice are not novel ideas, claim Abbas and Sharma (2020). In most organisations, the internet has become a crucial instrument for knowledge transfer and sharing (Abbas & Sharma, 2020). Employees within the organisation can be empowered by using the internet as a KS tool (Abbas & Sharma, 2020). The internet enables businesses to offer a variety of methods for managing and transferring data, information, and expertise (Abbas & Sharma, 2020). The internet is a system of connected computer networks that is accessible to many users worldwide (Otieno, 2011). In the current knowledge and information era, the internet has become crucial to most organisations for communication, social interaction, learning, and KS in general (Otiango, 2016). The internet offers a number of ways for knowledge to be easily and quickly shared (Tahleho, 2016). It can be used to immediately and remotely respond to inquiries from various employees inside a company without the need to go through time-consuming and stringent processes (Lesly, 2015). Due to the ease and convenience, it offers, employees within the organisation can learn and exchange knowledge online (Izu, 2020). When the employees of a company use an internet connection, such as Web 2.0 platforms, to share knowledge, this is referred to as KS practice (Harden, 2012).

2.5.4 Electronic mail

Individuals can interact quickly, effectively, and efficiently with email (Jackson & Tedmori, 2004). Email, according to Freeman (2009), is the exchange of digital messages over the internet or through any other computer system. It is referred to as a process by Sennewald and Baillie (2016) which uses telecommunication networks to send, receive, forward, and store digital information. The internet allows for the transmission of email outside of business networks and for the posting of messages on bulletin boards (Sennewald & Baillie, 2016). The sharing of files and programmes relevant to the themes of interest that are posted on computer networks for review facilitates the exchange of knowledge (Sennewald & Baillie, 2016).

Individuals inside an organisation can generate, organise, exchange, and quickly access information and expertise by using email (Dei, 2017). A virtual team's members can convey knowledge using email, which is a crucial tool (Tedmori, 2008). Emails include information

that can be read instantly, responded to immediately or after a while and shared to other people who might need the information (Swaak, De Jong & Van Joolingen, 2004; Tedmori, 2008). Sirorei (2017) and Tahleho (2016) have found that emails can be used to convey knowledge, particularly tacit knowledge, both inside and outside of the organisation. According to Manamela (2018), archiving emails written by employees within a company can result in the creation of a repository that is dedicated to KS.

2.5.5 Wikis

Currently, most businesses create their own internal local area networks (LANs) and anticipate that faster and more varied network connection will improve internal KS practice (Hu, Zhao & Zhao, 2007). Such a network, however, is insufficient for KS practice (Hu et al., 2007). Organisations still require fully functional KS systems to achieve the best results from KS practice when these are combined with contemporary groupware technologies and related software (Hu et al., 2007). In this light, it is crucial that businesses adopt wiki technology to enable internal KS practice through a LAN (Hu et al., 2007). Individuals within a knowledge-intensive organisation can voice their opinions, have discussions among themselves whenever they choose, and conduct brainstorming sessions on entirely open-source wikis (Hu et al., 2007).

The term "wiki" originates from the Hawaiian word "wiki wiki," which means "quick" (Bakardjieva & Gradinarova, 2012). Ward Cunningham developed the wiki in 1995 as a knowledge-sharing resource for software developers (Taylor, 2005; Bakardjieva & Gradinarova, 2012). Wikis are considered Web 2.0 collaboration tools that enable users to contribute, modify, or remove content within a shared web environment, as noted by Hadjerrouit (2014). Grace (2009) and Parker and Chao (2007) describe wikis as collaboration and communication tools that offer autonomy, ease of use, accessibility, and straightforward and consistent online navigational rules, akin to a knowledge organization system. Additionally, wikis serve as sources of knowledge and information while providing a platform for collaborative authoring, facilitating knowledge sharing among employees within an organization (Hu et al., 2007).

2.5.6 Blogs

Knowledge sharing practice is viewed as an action of social construction that takes place between two or more people in their quest to share knowledge (Chu, Kwan & Warning, 2012; McDermott, 1999). Most organisations have quickly embraced blogging, largely because of its potential as a tool for knowledge sharing, education, and collecting links and comments (Chu et al., 2012). Blogs can help organise information and spread ideas (Mortensen & Walker, 2002). Additionally, blogs are useful for fostering social connections and verbal learning (Fiedler, 2003). Individuals can organise knowledge exchange through blogging and create and maintain personal networks (Chu et al., 2012). Blogging offers a setting that is somewhat more sophisticated than face-to-face interaction in terms of KS practice and the use of related technology that serves to facilitate it (Chu et al., 2012). Blogging gives users unlimited control over their online content (Chu et al., 2012).

A "blog", which is a contraction of "weblog" is a web page that incorporates discrete posts (Rettberg, 2014). While they typically present the most recent post at the top of the screen, blogs typically preserve a chronological order (Rettberg, 2013:1). Compared to other forms of writing, blogs are typically shorter and less formal (Rettberg, 2014). Blogs are a type of online publishing that can be personal, artistic, academic, or professional. They are intended to produce knowledge, exchange research, create social networks, advance one's career, or record one's personal development (Rettberg, 2014). As blogs are simple to set up, manage, and use, people do not need much technical ability to take full advantage of all of their features (Tahleho, 2016). Text, photographs, videos, and links to other websites or web pages are all included in blog posts (Iglesias-Pradas, Hernandez-Garcia & Fernandez-Cardador, 2017).

In order to obtain an advantage in the highly complicated and competitive world of organisational management, businesses that are implementing new technologies in their workplaces have started to include blogs in their normal set of working tools (Iglesias-Pradas et al., 2017). Blogs facilitate communication, document sharing, community member discovery, collaboration, and shared feedback, as well as the sharing of expertise for the acquisition of tacit knowledge. They also facilitate the sharing of personal opinions, social connections, and the gathering of data from outside sources by subject-matter experts (Iglesias-

Pradas et al., 2017). According to Chai and Kim (2010), adopting blogging technology alone does not lead to successful KS in an organisation, nonetheless, to achieve successful KS practice, participating in the creation and sharing of knowledge through blogs must be encouraged. Prior research has demonstrated that building trust between people is essential for fostering KS practice in the workplace (Chai & Kim, 2010).

Numerous studies have demonstrated the benefits of using blogs as KS tools in a variety of organisations (Izu, 2020). According to a study by Chigada (2014) conducted in the banking industry, employers frequently use blogs to share knowledge with one another. The study concluded that improving KS practice among banking industry employees required frequent usage of blogs for KS (Chigada, 2014). The availability of necessary technologies, such as desktop and laptop computers are crucial for the efficient use of blogs as a KS tool (Chigada, 2014). Izu (2020) points out, however, that a lack of blog usage is caused by a lack of awareness of the use and significance of blogs to support effective KS practice, rather than a lack of access to associated technologies among employees in an organisation. Utilising KS tools effectively within an organisation depends heavily on the relevant variables at play (Dikotla, 2016). Having examined the instruments for KS practice in the sections above, it is necessary also to examine the variables that affect KS. Some of these factors which previous research has shown to influence KS practice will be discussed in the next section.

2.6 Factors that influence knowledge sharing practices and the challenges thereof

Previous research has identified numerous variables that affect KS practice in various business and industrial sectors (Razmerita, Nielsen & Kirchner, 2016). Individual characteristics, organisational culture, organisational structure, technical variables, attitude and perception, and KS culture are a few examples of the factors that influence KS practice.

2.6.1 Individual factors

Self-determination theory has frequently been used to analyse KS practices among diverse employees in various organisations and what motivates them to share knowledge (Deci & Ryan, 2000). Extrinsic and intrinsic motivation are two categories of motivation that drive behaviour, according to Deci and Ryan (2000). Motivation has been acknowledged as a significant determinant of general behaviour, information technology adoption behaviour, and work-related behaviour, and there is evidence that it is the primary motivator for KS practice among individuals, according to Lin (2007).

Extrinsic and intrinsic motivation have been recognised and investigated as distinct elements in a variety of circumstances (Lin, 2007). The performance of a task that results in a positive consequence is referred to as extrinsic motivation (Razmerita et al., 2016). Goal-oriented motivation, such as a concern for money and job advancement, is the emphasis of extrinsic motivation (Deci & Ryan, 2000). Extrinsic drive typically stems from an understanding of the effort (cost) and reward associated with information sharing (Razmerita et al., 2016). It is expected that KS practice among people will occur if the benefits are greater than or equivalent to the costs (Razmerita et al., 2016). In light of this, several organisations have created incentive programmes to encourage staff to share knowledge (Razmerita et al., 2016). Employees' sense of the value of KS practice serves as the foundation for extrinsic motivation to share knowledge within an organisation (Lin, 2007). Extrinsic factors that significantly influence KS practice among employees in an organisation include the anticipated organisational rewards and associated advantages (Lin, 2007).

People who are motivated by intrinsic factors engage in behaviour out of self-interest, pursuit of an interest, or the sense of enjoyment and fulfilment gained from the experience (Lin, 2007). For instance, in KS practice, people might feel satisfied by boosting their self-efficacy, or by their confidence in their capacity to contribute knowledge that will benefit the organisation (Lin, 2007). People have an opportunity to assist others by sharing their knowledge on online forums (Lin, 2007). Previous research on altruism has demonstrated that some people find satisfaction in assisting others (Lin, 2007). Additionally, these numerous studies have recognised the significance of intrinsic motivators in explaining human behaviour in a variety

of contexts, including KS practice (Lin, 2007). Legault (2016) defines intrinsic motivation as dedication to a behaviour that is inherently pleasant or enjoyable. A self-motivated action, intrinsic motivation is independent of any outcome that can be distinguished from behaviour itself (Legault, 2016). With intrinsic motivation, the goal and the means are the same (Legault, 2016). For example, a child might like engaging in physical activities like running, skipping, and jumping outdoors simply because they are enjoyable and fundamentally rewarding (Legault, 2016).

As it promotes the creation and transmission of tacit information in circumstances in which extrinsic motivation fails, intrinsic motivation is crucial for individuals to share tacit knowledge in the workplace (De Almeida, Lesca, & Canton, 2016). Knowledge is shared when people are intrinsically motivated (De Almeida et al., 2016). The Intrinsic Motivation Inventory (Ryan, 1982) has been used to measure the intrinsic motivation to share knowledge, and it has also been examined in numerous studies (Deci, Eghrari, Patrick, & Leone, 1994). The desire to assist others, knowledge self-efficacy, and anticipated organisational rewards and reciprocal benefits are among the personal characteristics that influence KS practice among employees within an organisation, according to Razmerita et al (2016). Self-efficacy is the confidence in one's ability to plan and carry out the necessary steps to deal with potential scenarios one might face (Razmerita et al., 2016). Among the many barriers fear has been recognised as a key deterrent to KS (Razmerita et al., 2016). Several forms of fear have been discussed in written research, including the fear of being exploited, the fear of receiving negative feedback, and worries about looking foolish or lying to fellow individuals (Matschke, Moskaliuk, Bokhorst, Schummer & Cress, 2014). Lack of time or the time required for KS practice has also been cited in a number of studies as a significant issue that influences how frequently knowledge is shared via social media (Razmerita, Kirchner & Sudzina, 2009).

Additionally, trust is acknowledged to be a factor influencing KS practice (Razmerita et al., 2016). The belief that another person will perform appropriately and not take advantage of the circumstance is a personal trait referred to as trust (Razmerita et al., 2016). The extent to which people wish to communicate with one another and exchange knowledge with one another is influenced by their level of trust in one another (Razmerita et al., 2016). Trust can be

identification-based trust, which refers to the freedom to freely discuss sensitive personal issues and the expectation of a positive response; and information-based trust, which is the belief that shared information will not be misused (Razmerita et al., 2016).

2.6.2 Attitude and perception

Eagly and Chaiken (1993) provide a definition of attitude, describing it as a "psychological inclination demonstrated by evaluating a specific entity with varying degrees of approval or disapproval." Consequently, practice is perceived as a voluntary procedure rather than an enforced one (Muchaonyerwa, 2015). Research on attitude and perception has identified several factors that influence individuals' inclinations to share knowledge (Szulanski, 1996; O'Dell & Grayson, 1998b; Yang, 2007). According to Young (2007), most individuals fail to comprehend the benefits of knowledge sharing and undervalue the exchange of information. Personal uncertainties, like the fear of job loss or status reduction, tend to prompt attitude shifts (Muchaonyerwa, 2015). Sharing knowledge is often seen as a form of demotion that could harm one's position or career (Muchaonyerwa, 2015), hence the notion that "knowledge is power." Cultivating a positive attitude towards knowledge sharing is essential for individuals within an organization to enhance their intellectual capital (Yang, 2007).

Fullwood, Rowley, and Delbrige (2013) found that professors in UK institutions had a positive view of KS, believing that it strengthened their relationships with other academics and provided opportunities for internal promotion and external appointments. Al-Dossary et al. (2020) investigated Saudi Arabian nurses' perceptions of the COVID-19 pandemic and found that the nurses were well-informed about the disease's causes and how it spread. This was due to their responsibility to stay informed about ongoing COVID-19 updates posted on the Ministry of Health's website. Jabr (2007) conducted a study which found that physicians shared knowledge with individuals they deemed important and professional, in order to solve crucial medical issues and reduce medical errors, particularly in diverse communities. Jacobs and Roodt (2011) examined the impact of knowledge sharing (KS) practices on the turnover intentions of registered professional nurses in South Africa. They discovered that these nurses were motivated to leave their organisations due to a lack of motivation and faith in their employer, which led to a loss of qualified nurses' knowledge and expertise. According to the study, the

nurses' willingness to transfer knowledge was affected by their perceptions of their environment, as well as their expectations for personal and organisational outcomes. The study showed that the nurses' attitudes were influenced by a number of factors, including a desire to share, a sense of power associated with KS, reciprocity, and a relationship with the recipient based on concerns such as trust (Jacobs & Roodt, 2011).

Several studies have explored individuals' perceptions and attitudes towards knowledge sharing (KS) practices through the lens of information and communication technology (ICT) (Syed-Ikhsan & Rowland, 2004; Kim & Lee, 2005). The knowledge sharing capability model of employee perceptions (Kim & Lee, 2006) has demonstrated the critical role of ICT applications in improving KS practice. Users' acceptance of technology is influenced by their attitude towards using ICT applications for knowledge sharing, which ultimately affects their judgment of the value of these applications (Muchaonyerwa, 2015). The success of ICT applications depends on individuals' perceptions of their benefits and usability. Negative attitudes and perceptions towards the use of ICT applications can hinder KS practice in an organisation (Muchaonyerwa, 2015). Chen, Chen, and Kinshuk (2009) argued that social networks are vital for the production and sharing of knowledge. Thus, it is expected that online social networking and the goal of online KS practice would result in positive attitudes and perceptions (Muchaonyerwa, 2015).

2.6.3 Organisational culture

The notion of organizational culture pertains to the core and widely embraced standards that organizations acquire as they adjust to their surroundings and tackle issues of internal cohesion and external adaptation. These standards are conveyed to new employees as the appropriate approach to dealing with various matters (Al-Alawi et al., 2007). Over time, organizations develop a distinct culture that defines their identity through both evident and imperceptible elements (Al-Alawi et al., 2007). The imperceptible aspect of organizational culture comprises underlying values that influence individual behaviors and perceptions within the organization, while the visible aspect is manifested in the organization's mission, philosophy, and objectives (McDermott & O'Dell, 2001). Based on the type of cultural component that is practiced, disparities in KS practice in organisations are expected (Areekkuzhiyil, 2016). According to

Gupta and Govindarajan (2006), the six primary components that make up organisational culture are information systems, people, processes, leadership, reward systems, and organisational structure. Organisational culture entails a shared understanding of each other's perspectives, memories, values, and attitudes, and it helps to develop self-identity, enhance group commitment, strengthen social cohesiveness, and enable individuals to comprehend the inner workings of the organisation (Sannwald, 2000). Numerous studies have shown that culture has a significant impact on KS practice (Kim & Lee, 2006), and Ragsdell (2009) found that organisational culture supports KS practice by fostering shared commitment and understanding among people.

Phillips, Goodman, and Sackmann (1992) explain that organisations consist of both internal personnel and external cultural elements that are influenced by the country, location, industry, and profession in which they exist. People are shaped by various cultural institutions, such as family, society, education, country of origin, and life experiences, prior to joining an organisation (Prystupa-Rzadca, 2021). Organisations reflect the cultures in which they are situated and operate (Prystupa-Rzadca, 2021).

Multiple cultural factors at individual, social, and organisational levels influence the practice of knowledge sharing among groups, as indicated by several studies on organisational culture (Terra & Gordon, 2002). Terra and Gordon (2002) note that trust within a culture plays a crucial role in determining how people interact with each other and share information within an organisation. The use of information and communication technologies (ICT) affects knowledge sharing practices at the social level by capturing and disseminating both implicit and explicit information (Freeman, 1999). Meanwhile, the impact of organisational structures on knowledge sharing practices is examined through the lens of organisational culture (Walczak, 2005). In a study on corporate culture and knowledge management in university libraries, McManus and Laughridge found that corporate culture significantly affects how staff members view attempts to implement knowledge sharing practices, and that the knowledge sharing practices implemented in the libraries were ineffective, with staff members struggling to share knowledge amongst themselves (Muchaonyerwa, 2015).

Finestone and Snyman (2005) conducted studies on knowledge sharing practices in South African businesses and discovered that cultural differences still exist in most businesses. Their research indicates that the legacy of capitalism, which includes self-interest, self-preservation, and competition, continues to influence managerial practices. Some employees in organisations choose not to share their knowledge due to the fear of losing their jobs, even though they have accumulated knowledge over the years they have worked in the organisation (Muchaonyerwa, 2015). Additionally, some corporations in South Africa strictly prohibit the sharing of valuable knowledge, and employees who share confidential information with unauthorized personnel can easily be fired (Finestone & Snyman, 2005).

Jacobs and Roodt (2011) investigated the connection between organizational cultures, knowledge sharing (KS), and turnover intentions among nurses working in private and public hospitals in South Africa. The results of their study revealed a positive correlation between organizational culture and knowledge sharing. Nurses showed a higher propensity for engaging in knowledge sharing activities when they believed it would lead to favourable outcomes (Muchaonyerwa, 2015). According to the knowledge sharing capability model proposed by Kim and Lee (2006), there exists a positive relationship between culture and employees' inclination to share knowledge (Muchaonyerwa, 2015). An ideal knowledge sharing culture comprises several key components such as trust, openness, teamwork, risk-taking, tolerance of mistakes, autonomy, a common language, courage, and allocated time for learning (Chigada, 2014).

2.6.4 Organisational structure

According to Kim and Lee (2004), unintentional hindrances to collaboration and knowledge sharing practices across boundaries within an organisation are frequently a result of its organizational structure. The arrangement of organisational resources, such as people, buildings, information, and technology components, depends on the organization's structure (Al-Hawamdeh, 2002). Organisational structure considers how tasks are carried out inside the organization and how personnel are expected to work in compliance with organisational rules, policies, procedures, and regulations (Syed-Ikhsan & Rowland, 2004). Al-Alawi et al. (2007) note that organisations that attempt to implement knowledge sharing practices without proper

administrative structures are likely to face issues with any supposed benefits. Organisational systems that have complex lines of authority and layers hinder knowledge from flowing freely through all levels (Al-Alawi et al., 2007).

Organizational structure comprises centralization, formalization, and performance-based compensation, as highlighted by Kim and Lee (2006). Despite a lack of empirical research on the impact of organizational structure on employees' knowledge-related activities, numerous scholars have stressed its significance (Kim & Lee, 2006). Creed and Miles (1996) argue that the hierarchical nature of the public sector hampers active knowledge sharing among employees. In contrast, O'Dell and Grayson (1998a) suggest that flexible organizational structures are essential to foster knowledge sharing practices. Nonaka and Takeuchi (1998c) propose that a combination of formal and non-hierarchical, self-organizing structures would enhance knowledge sharing. Additionally, performance-based rewards also influence knowledge sharing practices (Kim & Lee, 2006). Leonard (1995) points out that organizational reward structures affect the collection and dissemination of information within an organization. Centralization, as noted by Tsai (2002), can create barriers to inter-unit exchange, potentially decreasing interest in knowledge sharing practices between organizational units.

Academics argue that effective KS practice requires flexibility and less emphasis on job norms (Holsapple & Joshi, 2001). Low formalisation promotes KS practice by allowing for openness and variation, as identified by Damanpour in 1991. Jarvenpaa and Staples (2000) suggest that individuals within an organisation can transfer knowledge among themselves despite the absence of official means of doing so. However, an organisational structure that places a strong emphasis on centralisation, rules and regulations, and control mechanisms may impede the development of KS communities within organisations (Kim & Lee, 2006). Performance-based incentive systems collect, process, and transmit data on the effectiveness of organisational units, activities, processes, goods, and services, and aim to promote involvement and communication among all organisational sections in targeted settings (Neely, 1998). Kogut and Zander (1992) found a positive relationship between KS practice and human resource management practices when workers perceive that doing so will help them perform their jobs

more efficiently, keep their jobs, develop professionally, and receive performance rewards and professional recognition.

2.6.5 Technological factors

According to Kowitlawakul, Chan, Pulcini, and Wang (2015), organisations can effectively share knowledge by adopting the latest technology. The study by Tsui and Malhotra (2005) suggests that technology plays a vital role in transforming the organisation into a knowledge-intensive one and improving the knowledge sharing process among employees (Alshamsi & Ajmal, 2018). While some strongly advocate for the use of technology in knowledge sharing practices, others are sceptical of its role in KS practice, according to Supar (2012). However, the third perspective views technology as a complementary factor to other variables such as culture and social networks (Supar, 2012). Currently, there is a growing perception that technology is both necessary and beneficial for KS practice (Supar, 2012).

Supar (2012) identifies four key technological aspects of knowledge sharing (KS) practice: IT infrastructure, IT for collaborative KS, codification, and expert versus distributed models. The provision of IT infrastructure is essential in making KS practice easier, which includes networks, personal computers, databases, and software. Previous research has demonstrated the importance of IT infrastructure in KS practice, with a significant impact on individuals who engage in KS. In addition, the deployment of IT applications has been found to significantly influence employee KS practices by Kim and Lee (2006). Soo's study (2006) found that IT can be a motivating factor if it is easy to use and is an important facilitator in KS practice.

In the past, individuals in various organisations had limited access to information and therefore made decisions and formed opinions based on a narrow set of data (AlShamsi & Ajmal, 2018). However, recent research by Kowitlawakul et al. (2015) suggests that organisations can enhance their knowledge sharing (KS) strategies by adopting advanced technology. The significance of technology in KS practice is increasingly emphasised, with a particular focus on information and communication technology (ICT) tools, as they provide diverse channels for knowledge transfer (Noor, Hashim & Ali, 2014). The impact of technology on KS has been

well documented in various studies (Izu, 2020). Dikotla (2016) notes that organisations that effectively use ICT tools to share knowledge have a competitive edge over those that do not, as the latter may encounter obstacles in sharing knowledge. Kim and Lee (2006) suggest that organisations must deploy user-friendly, well-designed technical systems that streamline processes and reduce the time it takes for employees to share ideas, thereby reducing the costs associated with KS practice. According to Dewah (2011), ICT tools can function as platforms for capturing, sharing, and retaining knowledge, thereby facilitating internal communication and KS practice, and removing obstacles to these processes (Muchaonyerwa, 2015).

2.7 Barriers to knowledge sharing practices

Due to the increasing expansion of knowledge sharing, researchers have begun to examine the obstacles to KS practice in various organisational and industrial contexts (Yesil & Hirlak, 2019). The majority of research on the obstacles to KS practice has primarily concentrated on poor and underdeveloped countries (Vajjhala & Vucetic, 2013). The things that prevent people from sharing their knowledge within an organisation are known as KS barriers (Kommey, 2020). The sub-sections that follow describe each of these obstacles.

2.7.1 Individual barriers

Chilton and Bloodgood (2010) state that organisations that possess advanced knowledge systems have a greater chance of outperforming their competitors who do not have such systems. The use of knowledge resources by individuals to fulfil organisational commitments, make decisions, and perform other job tasks is a crucial factor that significantly affects the utilisation of these resources (Nadason, Saad & Ahmi, 2017). Individuals are considered the most valuable asset in the context of KS practice because they are the primary means of transmitting and retaining tacit knowledge (Nakano, Muniz & Batista, 2013; Nadason et al., 2017). Therefore, individuals play a critical role in the sharing of tacit knowledge. Explicit information sharing has a strong correlation with organisational effectiveness, as noted in a study by Harlow (2008). However, Harlow (2008) stresses the importance of understanding the significance of tacit knowledge in modern organisations and how it is required to gauge a firm's innovation and financial performance.

The obstacles that impact people's knowledge sharing practices are referred to as individual barriers or personal inhibiting factors. These factors, which can include personality traits, trust issues, power dynamics, knowledge hoarding, communication skills, and time constraints, have been shown to affect knowledge sharing practices in any organisation. According to research by Kommey (2020) and Cadger et al. (2016), personal barriers can hinder employees from sharing knowledge within the organisation. Furthermore, individual variations, fear, uncertainty, and a preference for explicit knowledge over tacit knowledge are among the other impediments that can impact knowledge sharing practices (Rosenberry & Vicker, 2017).

2.7.2 Cultural barriers

The organisational culture is shaped by the individual national cultures of its employees and the culture that develops within the organisation, as per Hayduk (1998). According to this idea, the culture of the workplace will determine whether any positive changes in knowledge sharing, utilisation, or application are accepted. The culture of the organisation, rather than the policies and plans implemented by management, influences organizational behavior (Nadason et al., 2017). The practices of an organisation culminate in its culture, which is the key to good performance (Nadason et al., 2017). Trust among employees, communication, information systems, incentives, and organisational structure are all important factors in defining the culture of knowledge sharing practices within an organisation (Al-Alawi, Al-Marzooqi & Mohammed, 2007). These elements are vital in defining employee interactions and providing opportunities to overcome obstacles to knowledge sharing practices (Nadason et al., 2017).

According to McDermott & O'Dell (2001), certain organisational cultures can continuously impede effective knowledge sharing practices. Nadason et al. (2017) assert that organisations with deeply ingrained knowledge sharing practices may be resistant to altering their cultural practices to support their knowledge management endeavours. An organisation's culture can influence how individuals behave, according (Navarro & Hautea, 2014). The interaction between the organisation and its staff members is dynamic, and the language and customs that employees bring to the workplace reflect their societal culture, which has an impact on the organisational culture, according to Hayduk (1998). Language can thus affect an individual's values, attitudes, presumptions, and expectations with regard to knowledge sharing practices.

The implementation of new systems via the rituals practiced at work also impacts the organisation's culture (Hayduk, 1998). How employees engage with the management's systems, structures, and processes affects all the components that make up an adaptable element, which, in turn, affects the organisation's culture in terms of knowledge sharing practices (Hayduk, 1998).

2.7.3 Organisational barriers

Riege (2005) suggests that the appropriate organisational setting and conditions are essential for facilitating knowledge sharing (KS) within the organisation. Research has identified several effective strategies for exchanging individual and social knowledge within organisations (Riege, 2005). Insufficient allocation of resources such as competent personnel, financial resources, and information and communication technology (ICT) may impede the development of an effective KS environment (Riege, 2005). Chini (2003) emphasizes that a successful KS program, along with the appropriate infrastructure and resources to support KS both within and between functional areas, is critical for promoting effective KS practices among employees within an organisation. Conversely, when there is a dearth of KS practices and basic infrastructure, KS initiatives are likely to fail even before implementation (Gold, Malhotra & Segars, 2001).

Riege (2005) argues that policies and methods which were once successful in achieving specific goals can become obsolete as organisations grow and change over time. The importance of KS practices has been emphasised by Davenport (1997), and adequate resources must be allocated to promote knowledge sharing and collaboration within an organization (Riege, 2005). The success or failure of integrating a KS policy into an organisation's objectives and plans is determined by Doz and Schlegelmich (1999), and Master (1999) emphasises that the most effective KS programs are those that are closely linked to an organisation's strategic goals. Therefore, senior management must transparently communicate the aims and initiatives to all employees to win their support (Riege, 2005). However, oftentimes, the communication and decisions taken by management are either too vague or too specific, which fails to give employees clear direction or appropriate guidance (Riege, 2005).

2.7.4 Technological barriers

Organisations may face significant technological barriers when inadequate or incompatible technology is used, or when there is resistance to using certain technology (Kukko, 2013). The integration of technological systems and procedures is essential for employees to perform their duties effectively, and the lack of such integration can be a major obstacle to knowledge-sharing (KS) practices (Yesil and Hirlak, 2019). KS practice can also be impeded by insufficient technological support and inefficient ICT tools (Ganguly, Chatterjee, & Talukdar, 2019). To overcome these barriers and promote KS practice, hybrid solutions that facilitate interaction between people and technology are necessary (Davenport, 1996). Ruddy (2000) stresses the importance of integrating technology with cultural and behavioral awareness to improve KS practices within an organisation.

Numerous organisations encounter difficulties when it comes to establishing conducive environments for fostering knowledge exchange among individuals (Riege, 2005). Technology can assume a pivotal role in advancing practices of knowledge-sharing (KS) by facilitating remote communication and providing unrestricted access to extensive volumes of data and information (Riege, 2005). However, it remains imperative to identify and implement suitable technological systems that harmonize with both individuals and organizations, given that a technology effective in one context might not yield the same results in another (Riege, 2005). While employing technology for communication in KS practices offers advantages, it also presents certain challenges, including the potential for misconstruing concepts due to the absence of customary visual and verbal cues inherent in face-to-face interactions (Gupta & Govindarajan, 2006). This misinterpretation risk could unfairly cast doubt on the credibility of the knowledge source, thus creating reluctance in individuals to share information out of fear of being misunderstood (Hew & Hara, 2007).

2.8 Knowledge sharing practices in the healthcare sector

The healthcare sector contains a vast amount of information, but it is often underutilised due to operational and functional barriers, particularly at the point of service (Abidi, 2007). Healthcare knowledge is created frequently, taking various forms such as research-based publications, discussions of problems, and experience-based insights (Abidi, 2007). A wide

range of healthcare industry players, including experts, doctors, nurses, therapists, psychologists, and others, produce and consume knowledge in this field (Abidi, 2007). The aggregate knowledge of healthcare professionals significantly affects the quality of services provided by healthcare organisations, which primarily focus on delivering proper medical care and high-quality healthcare services related to patient admission, diagnosis, and treatment (Sabeeh, Mustapha & Muhamad, 2017). Given healthcare's close relationship to people's quality of life and general well-being, governments, investors, medical professionals, and academics are now utilising the best available strategies and developing new methods for managing healthcare information to meet the growing demand for high-quality, affordable healthcare services (Alder-Milstein et al., 2014).

Tabrizi and Morgan (2014) argue that healthcare organisations now recognise the importance of sharing medical knowledge with patients and professionals as well as managing it. Inadequate or poor knowledge sharing practices in the healthcare sector can lead to medical errors (Tabrizi & Morgan, 2014). Knowledge sharing practices in healthcare are now considered a "must-have" process, rather than a "nice to have" one (Tabrizi & Morgan, 2014). Many studies have been conducted to understand and analyse the significance of knowledge sharing practices in healthcare, mainly concerning the nature of knowledge, knowledge sharing methods, and governance frameworks (Tabrizi & Morgan, 2013:48). According to Lin and Hsieh (2006), communication of specific categories of knowledge, such as medical knowledge, scientific knowledge, incident knowledge, and experience knowledge, is crucial for providing patients with high-quality care. Scientific knowledge refers to the application of research findings, incident knowledge is the learning from medical errors, and experience knowledge involves experienced healthcare professionals training and educating less experienced ones. Medical knowledge refers to the information used for diagnosis and treatment (Tabrizi & Morgan, 2014).

Although knowledge is valuable, it can be difficult to share, as people may perceive it as a source of power and thus be hesitant to share it with others or receive it from them (Kankanhalli, Tan & Wei, 2005). Despite research efforts in the healthcare sector, our understanding of how information is created, accessed, and exchanged by healthcare

organisations remains limited (Tabrizi & Morgan, 2014). The concept of "knowledge in the head" and "knowledge in the world" was introduced by Norman (1998) to describe the internal and external information that informs decision-making in healthcare practice (Tabrizi & Morgan, 2014). While most decisions are based on the knowledge of healthcare providers, some decisions are also influenced by their peers (Sim et al., 2001). To improve the quality of their medical services, healthcare organisations should cultivate cultures that promote the utilisation, sharing, and accessibility of healthcare professionals' knowledge, skills, and expertise, which can help accelerate workflows and improve overall services (Alajmi, Marouf & Chaudhry, 2016).

Understanding the relationship between knowledge sharing (KS) practices across various functional lines in the healthcare sector is crucial (Alajami et al., 2016). Healthcare professionals are investing in innovative tools to promote collaboration and improve knowledge transfer (Alajami et al., 2016). Social networks and Web 2.0 applications have facilitated collaboration and improved KS practices by enabling healthcare organisations to enhance their services and communicate with patients (Alajami et al., 2016; Barberia, Franco & Haase, 2012). The use of online and ICT tools is essential, but in-person gatherings, training, and communities of practice are equally important (Tabrizi, 2013; Alajami et al., 2016). Enabling culture is crucial in encouraging knowledge transfer and fostering trust and cooperation (Radaelli, Mura, Spiller & Lettieri, 2011). Researchers and healthcare professionals agree that KS practice is one of the best methods for boosting competition and enhancing organisational performance (Wu, Yeh, & Hsiao, 2011). The activity of KS practice provides opportunities for idea exchange, enhances learning procedures, and strengthens working connections (Alajami et al., 2016). Therefore, healthcare professionals should prioritise raising awareness of the importance of KS practices to provide necessary and appropriate healthcare services.

2.9 Knowledge sharing practices among professional nurses

Improving nursing performance has recently become a top priority (Ajanaku & Mutula, 2018) due to the crucial role that nurses play in the provision of healthcare services, as they are the primary caregivers in most healthcare settings (Ghosh & Scott, 2007). Patients' experiences

and outcomes are heavily influenced by the quality of nursing care, making it essential to optimise nursing knowledge and skills (Burhans & Alligood, 2010). However, the nursing profession faces challenges in implementing effective knowledge sharing practices (Ajanaku & Mutula, 2018). Addressing the shortage of nurses is also critical in meeting the increasing demand for healthcare services (Siu, 2015). Failing to obtain and utilise current and relevant knowledge could result in substandard care (McGlynn et al., 2003). Inefficient collaboration across organisational boundaries and fragmented medical knowledge make it difficult for professional nurses to provide high-quality healthcare services (Cruz & Ferreira, 2016). Thus, it is imperative to develop strategies that promote knowledge sharing and collaboration among nurses to improve their performance and, ultimately, enhance patient outcomes.

There have been several studies that have emphasised the importance of KS practice in improving productivity and performance in the healthcare sector (Zaid, Hussein & Hassan, 2012). It is essential to encourage and facilitate nurses' actions to enhance information flow in healthcare facilities to deliver high-quality healthcare (Ajanaku & Mutula, 2018). Healthcare managers need to adopt KS approaches that include knowledge discovery, acquisition, retrieval, sharing, and evaluation to promote and enhance KS practice among nurses (Yoo, Zhang & Yun, 2019). To support nurses in making quick and accurate decisions in clinical settings, healthcare management and supervisory nurses must combine explicit and implicit information, best practices, and critical standard procedures (Yoo et al., 2019). Additionally, compensating nurses for their efforts in KS practice can also be a way to promote KS practice among nurses (Yoo et al., 2019).

Nurses are required to make various decisions in relation to nursing procedures and management (Yoo et al., 2019). In order to do so, they need to exercise good judgment and appropriate conduct (Yoo et al., 2019). Clinical decision-making is a cognitive process that involves the identification of patients' problems and the application of necessary interventions to achieve optimal care (Yoo et al., 2019). Nurses, as both producers and consumers of knowledge, rely on this knowledge to inform their decision-making processes (Yoo et al., 2019). Evidence-based practice and the personal knowledge and experience of the nurse, which have been gained in clinical settings, are both essential components of nursing decision-making

(Hwang, 2012). Clinical decision-making, which is a cognitive domain of nursing practice, is the primary nursing activity that links a nurse's comprehension with behaviour (Wang et al., 2012). Effective clinical decision-making is critical to providing high-quality nursing care because it facilitates an accurate understanding of a patient's problem and the selection of appropriate interventions (Yoo et al., 2019). Previous research has consistently shown that nurses' knowledge significantly influences their decision-making behaviour (Razieh et al., 2018). Moreover, nurses with higher levels of clinical expertise and knowledge exhibit greater clinical decision-making intuition (Abdi Assadi, Mohammadyari & Miri, 2015).

The practice of knowledge sharing is crucial to enhancing nurses' ability to exercise clinical judgement (Yoo et al., 2019). In order to promote knowledge sharing practice among nurses, healthcare institutions must adopt strategies that involve identifying, acquiring, retrieving, sharing, and evaluating knowledge assets held individually or collectively by the institution (Yoo et al., 2019). To facilitate nurses' decision-making processes in clinical settings, senior management in healthcare institutions should organise explicit and implicit knowledge, best practices, and essential standard processes (Yoo et al., 2019). Healthcare facilities may consider implementing incentive systems to encourage nurses to continuously develop and share knowledge to provide high-quality care (Yoo et al., 2019). Additionally, healthcare institutions may establish leadership training programs for top nursing supervisors to underscore the importance of knowledge sharing among nurses (Yoo et al., 2019).

According to Asemahagan (2014), studies conducted in Ethiopia have revealed that nurses lack adequate knowledge sharing practices. Rather than utilising KS methods, many nurses simply rely on handouts and their prior education while performing their duties in healthcare facilities (Asemahagan, 2014). Various factors have been identified as contributing to this issue, including inadequate peer education, ineffective management, a lack of internet services, a weak KS culture among nurses, inadequate infrastructure for KS, and inadequate KS competencies (Asemahagan, 2014). Knowledge gaps, a competitive environment, government requirements, and patient inquiries motivate nurses to seek out up-to-date health-related information (Asemahagan, 2014). Another study conducted in Ethiopia also found that the lack of effective KS practices among nurses working in public healthcare institutions is caused by

insufficient KS mechanisms, inadequate infrastructure, limited organisational support and motivation, insufficient resource allocation, and limited communication channels (Asemahagan, 2014).

2.10 Types of knowledge shared about COVID-19

Sharing information regarding COVID-19 prevention strategies, attitudes, and knowledge is crucial for managing and preventing the spread of the virus (Nwagbara, Osual, Chireshe, Bolarinwa, Saeed, Khuzwayo & Hlongwana, 2021). The first instances of COVID-19 were recorded in Wuhan, China, in December 2019, and it rapidly spread to other parts of the world, eventually becoming a global pandemic (Tien et al., 2021). On March 11, 2020, the World Health Organisation (WHO) declared COVID-19 a global epidemic (Tien, Tuyet-Hanh, Linh, Phuc & Nhu, 2021). As of the time of writing, over two years have passed since COVID-19 first emerged, resulting in more than 230 million cases of illness and over five million deaths (Worldometer, 2021). Nurses are among the many healthcare professionals at the forefront of the fight against the virus, providing care for COVID-19 patients and suspected cases (Tien et al., 2021). However, due to their frequent exposure to COVID-19 patients, nurses are at a higher risk of contracting the virus (Tien et al., 2021). Recent investigations have shown that nurses experience a high infection rate with COVID-19 (Nathavitharana, Patel, Tierney, Mehrotra, Lederer, Davis & Nardell, 2020).

Hubert (1996) categorizes knowledge into two main types: tacit and explicit knowledge. Tacit knowledge includes personal views, thoughts, and perspectives that are difficult to communicate to others (Blackman, Kennedy & Ritchie, 2011). In contrast, explicit knowledge consists of facts, formulas, and detailed instructions that can be accurately recorded and saved for future use (Sharma & Dey, 2018). In the context of the COVID-19 pandemic, it is essential to implement appropriate knowledge sharing practices to ensure that scientifically proven knowledge is disseminated (Edgheim, Guo, Bridge & McAreavey, 2021; Orlikowski, 2007). This requires two things: first, that the knowledge is formalised, explicit, and up to date; and second, that it is vital for nurses and must be shared (Edgheim et al., 2021).

According to Edgheim et al (2021:175), the knowledge that is specifically needed and was required to be shared among nurses during the COVID-19 pandemic is as follows:

1. Physical and mental health knowledge on COVID-19 prevention strategies, the tools required to fight the COVID-19 pandemic, and the wellbeing of people in the various communities affected by the COVID-19 pandemic.
2. Intermediate management techniques that help keep things running while overcoming challenges that arose with the outbreak of by COVID-19.
3. Knowledge of the various COVID-19 vaccines that can be given to people in local communities and provinces.

Understanding COVID-19 is essential for influencing nurses' attitudes, behaviours, and KS practice (Tien et al., 2021). Lack of awareness of COVID-19 and poor procedures lead to delayed diagnosis, ineffective treatment, and a higher risk of additional transmissions (Tien et al., 2021). The vast amount of COVID-19 data being generated and shared can be used to boost infection prevention methods (Nathavitharana et al., 2020). The rapid intensification of KS practices of COVID-19 among nurses should be imitated in successful cases (Nathavitharana et al., 2020). According to Manyaapelo, Mokhele, Sifunda, Ndlovu, Dukhi, Sewpaul, Naidoo, Jooste, Tlou, Moshabela, Mabaso, Zuma, and Reddy (2021), gaining sufficient knowledge about COVID-19 has a beneficial impact on confidence. Nurse's general understanding of COVID-19 enhances their capacity to deliver the best medical treatment (Manyaapelo et al., 2021). Since nurses are among the professions most at risk from infection, it is crucial that they share knowledge about COVID-19 and put it into practice (Manyaapelo et al., 2021). Recent studies on nurses' understandings of the COVID-19 pandemic has revealed that a number of nations had inadequate levels of knowledge regarding the pandemic (Manyaapelo et al., 2021). However, in a few cases, the use of news media as a source of information on COVID-19 coupled with sufficient levels of knowledge among people 40 years of age or older were the subject of studies on the COVID-19 pandemic in Uganda (Manyaapelo et al., 2021). The results

showed that individuals that are 40 years or older had acquired sufficient knowledge about the COVID-19 pandemic through media such as radio, television, and online sources (Manyaapelo et al., 2021).

Governments and organisations often struggle to effectively share the necessary knowledge to combat pandemics due to inadequate preparation and contingency planning (Jennex & Raman, 2009). Unlike natural disasters such as earthquakes and floods, pandemics are characterised by constantly changing circumstances that require careful attention (Bdeir, Hossain & Crawford, 2012). Given their limited experience in pandemic management, most governments and organisations rely on expert data that must be disseminated effectively to the public (Edgheim et al., 2021). Effective knowledge sharing (KS) practices are necessary for coordinating catastrophe management and relief efforts and play a crucial role in mitigating the impact of disasters by ensuring that reliable and accurate knowledge is available and accessible when needed (Seneviratne, Amaratunga, Haigh, & Pathirage, 2010).

2.11 Conceptual framework

A theory is utilised to explain and predict the possible connection between independent and dependent variables (Creswell & Creswell, 2017). The use of a conceptual framework allows for the development of a research study by comprehending the core concepts and their interrelationships (Creswell & Creswell, 2017). According to Grant and Osanloo (2014), a conceptual framework acts as the "blueprint" for the entire research inquiry. It establishes the foundation on which a study can be built and provides researchers with a structure for defining their philosophical, epistemological, methodological, and analytical approaches to the study as a whole (Grant & Osanloo, 2017). Eisenhart (1991:205) describes a conceptual framework as "a structure that guides research by relying on a formal theory derived from applying an established, coherent explanation of particular events and relationships." As a result, the conceptual framework is composed of chosen theories that guide the researcher's thinking on how to comprehend and plan research on a topic, as well as the concepts and definitions from that theory that are relevant to the study (Lovitts, 2005).

In this study, the SECI model of knowledge generation, which comprises socialisation, externalisation, combination, and internalisation, is utilised as the basis for knowledge conversion theory (Nonaka & Takeuchi, 1995a). Additionally, the Technology Acceptance Model (TAM, Davis, 1989) is employed to supplement the SECI model, positing that individuals' perceptions of information technology's perceived value and ease of use can forecast whether they will accept and utilize it (Ma & Liu, 2005). The TAM has been extensively examined across various applications in several studies since its inception and has become one of the most widely used models for determining user acceptability and usage (Ma & Liu, 2005).

2.11.1 The SECI model of knowledge creation

Organisations aim to create new knowledge by exchanging explicit and tacit knowledge (Nonaka, Toyama & Konno, 2000). The process of converting between these two categories of knowledge is known as knowledge conversion (Nonaka et al., 2000). As the conversion process progresses, the quality and quantity of both tacit and explicit knowledge improve (Nonaka et al., 2000). The four models of knowledge conversion are socialisation (tacit-to-tacit), externalisation (tacit-to-explicit), combination (explicit-to-explicit), and internalisation (explicit-to-tacit) (Nonaka et al., 2000). According to Nonaka and Takeuchi (1995a), intellectual capital of an organisation may contain some tacit knowledge, while explicit knowledge is typically stored in files, collections, or databases (Muchaonyerwa, 2015). Accessing tacit knowledge, such as abilities, creativity, and experience, which is stored in people's minds over time, can be challenging (Muchaonyerwa, 2015). The SECI model considers managerial support for KS practice, IT, organisational culture, and other intrinsic factors (Muchaonyerwa, 2015).

The SECI model has become a crucial aspect of knowledge transfer theory, as noted by Faith and Seeam (2018). Socialisation refers to face-to-face knowledge exchange, while externalisation involves transforming tacit knowledge into explicit knowledge that can be easily shared through written materials or codification (Faith & Seeam, 2018). When explicit knowledge is transformed back into tacit knowledge through internalisation, it results in

combination (Faith & Seeam, 2018). A graphic illustration of Nonaka and Takeuchi's cyclical model of knowledge conversion can be found in Figure 2.1 below.

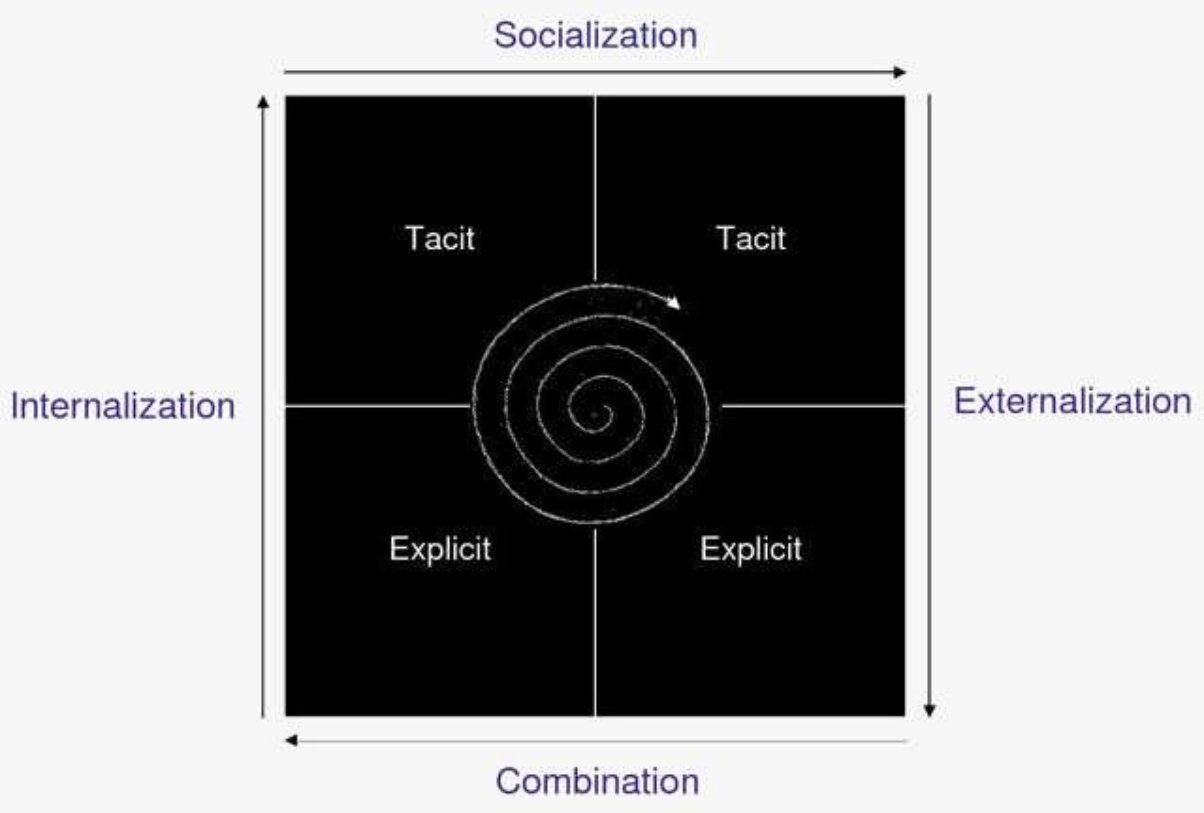


Figure 2.1: The SECI model (Source: Knowledge Management Tools, 2018)

Nonaka and Takeuchi (1995a) suggest that organisations can prevent knowledge loss by implementing mechanisms such as employment rotation rules, IT infrastructure, and mentoring, as well as by developing human resources and subject matter experts. Effective job rotation policies, talent transfers, and knowledge sharing can be achieved within an organisation (Nonaka & Takeuchi, 1995c). An IT platform is necessary for facilitating communication and collaboration among employees within an organisation (Nonaka & Konno, 1998). Mentoring programmes also provide an opportunity for senior management and more experienced employees to transfer their skills to less experienced employees (Nonaka, 1994).

2.11.1.1 Socialisation

Sharing newly acquired tacit knowledge through common experiences is the basis of socialisation (Nonaka et al., 2000). Nonaka and Takeuchi (1995a) propose that the interaction between tacit and explicit knowledge is an ongoing process that leads to knowledge creation. According to the SECI model, socialisation involves the exchange of tacit knowledge during team meetings or other group activities (Muchaonyerwa, 2015). Face-to-face interactions are critical for knowledge sharing to take place, and nurses working in Makhanda's healthcare facilities can share knowledge with each other through various means, such as forums, chat rooms, and attending conferences, workshops, or seminars. Apprenticeships are also an example of socialisation, as apprentices gain tacit knowledge through practical experience rather than through written instructions or textbooks (Nonaka et al., 2000). Socialisation can also occur in informal settings outside the workplace, where shared tacit information can be developed, including worldviews, mental models, and mutual trust (Nonaka et al., 2009). Through socialisation, a culture of knowledge sharing practice is fostered, which reduces the loss of knowledge that occurs when employees retire or leave an organisation by transferring skills and experiences through tacit knowledge. As a result, new employees are better able to maintain organisational knowledge (Gurteen, 2009).

2.11.1.2 Externalisation

Externalisation, as described by Nonaka et al. (2000), is the process of converting tacit knowledge into explicit knowledge, which can be shared more easily within an organisation. This process involves translating tacit knowledge into a form that can be easily communicated and understood by others. To enable knowledge sharing across various departments within an organisation, explicit knowledge needs to be in a clear and concise format (Nonaka & Takeuchi, 1995). The externalisation process transforms tacit knowledge into a crystallized form of explicit knowledge that can be widely shared and serves as the foundation for generating new knowledge (Nonaka et al., 2000). This conversion can be achieved through various means, including writing, diagrams, presentations, workshops, and other forms of media (Nold, 2009). Using metaphor, analogy, and models are essential to facilitate the conversion of tacit knowledge into explicit knowledge. When transformed into explicit

knowledge, it can be stored in databases and on paper for future use and retrieval (Muchaonyerwa, 2015). Organisations can implement procedures to maintain the vitality of their knowledge assets and make them accessible to others (Tan, Lye, & Lim, 2010).

2.11.1.3 Combination

The act of combination involves the merging of explicit knowledge to create more refined and structured sets of explicit knowledge (Nonaka et al., 2000). New explicit knowledge is derived from both internal and external sources, then combined, refined, or processed (Nonaka et al., 2000). The newly processed explicit knowledge is then shared throughout the organisation (Nonaka et al., 2000). ICT tools and databases are useful in facilitating this type of knowledge sharing (Nonaka et al., 2000). Combination is accomplished by combining multiple explicit knowledge components obtained through various activities such as meetings, workshops, face-to-face interactions, and document exchanges (Binz-Scharf, 2003). By organising the existing knowledge in the organisation and the knowledge created through externalisation into structures, it is possible to create systematic knowledge (Muchaonyerwa, 2015).

2.11.1.4 Internalisation

Nonaka et al. (2000) assert that while explicit knowledge is assimilated, tacit information is internalised. Explicit knowledge can be shared among individuals within an organisation, and through the process of internalisation, it can transform into tacit knowledge. This internalisation process involves learning through completing tasks, such as participating in orientations or training sessions, which provide explicit knowledge that can later be transformed into tacit knowledge. By reading materials related to their job and organisation, new recruits can broaden their tacit knowledge base. When knowledge is shared among people through socialisation, it can become part of an individual's tacit knowledge, which can turn into a valuable asset. If tacit knowledge is effectively shared among individuals, it can lead to a new spiral process of knowledge generation.

2.11.2 Synthesis of the SECI model

Nonaka et al. (2000) emphasise that the four knowledge conversion processes work together in a spiral rather than a circle. During knowledge production, the relationship between tacit and explicit information is strengthened through these processes. In the context of nursing, understanding the SECI model is essential for comprehending how knowledge is created, recorded, and distributed among nurses. The SECI model facilitates the sharing of knowledge among nurses and can initiate a new spiral of knowledge generation that spreads throughout an organisation. This model is beneficial not only because it enables the investigation of exchanges at various system levels, from individuals to teams and organisations, but also because it is particularly sensitive to the interactions that occur across different levels of the organization (Nasir, Robert, Fisher, Norman, Murrells & Schofield, 2013).

Nonaka and Takeuchi (1995a) suggest that knowledge sharing practices among nurses can be categorised into three modes: the humanistic/individual mode, the information mode, and the collaboration mode. Individual knowledge, defined as knowledge that exists in an individual's brain and skills, is a critical part of organizational knowledge (Lam, 2000). The humanistic/individual mode involves the sharing of knowledge or experiences among individuals, while the information mode involves transferring knowledge from an individual to a database (Mitchell, 2005). Sharing knowledge is essential for organisations to retain their knowledge capital, especially as people do not hold jobs for life (Gurteen, 2009). Healthcare facilities aim to connect and share knowledge with people from diverse backgrounds through advancements in ICTs. However, the effectiveness of ICT tools is limited in healthcare facilities that lack a knowledge-sharing culture, which can lead to resistance from healthcare workers when it comes to sharing knowledge through such systems (Mitchell, 2005).

In the collaboration mode, KS practice is accomplished through the use of integrated systems such as intranets and LANs (Mitchell, 2005). Medical records, reports, statistical reports, policies and procedures, brochures, notices and news, activities, training manuals, and job opportunities can all be shared by the nurses in this manner. Tacit knowledge is shared and transmitted through communication (Muchaonyerwa, 2015). Brainstorming activities among nurses can be started to generate new ideas and knowledge. These procedures can convert

explicit knowledge into tacit knowledge, increasing the efficiency of nursing operations (Nonaka & Takeuchi, 1995c). Nurses in the healthcare industry must learn KS skills to better position themselves in an ever-changing environment (Foos, Dana, Torben & Mia, 2002). Organisational culture is an important factor that can influence nurses' ability to share knowledge among themselves, especially if KS practice support strategies are in place. As collaboration and training are important strategies for sharing knowledge, healthcare facilities should organise training sessions to enable nurses to acquire proper KS skills (Nonaka & Takeuchi, 1995b).

Edmonson (2010) stated that the bulk of knowledge in any organisation is made up of tacit knowledge, which is largely stored in the minds of employees. Therefore, sharing and transmitting tacit knowledge among collaborating individuals is crucial. Jia, Song-Gen, and Shin (2012) conducted research in China using the SECI model to examine KS practices in libraries and found that communication was an effective means of sharing and transmitting tacit knowledge stored in an individual's brain. A similar study was conducted by Parirokh, Daneshgar, and Fattahi (2008) in Iran, using the SECI model to identify KS requirements in academic libraries. This study found that most libraries welcomed KS and that most librarians understood the importance of KS practice. Muchaonyerwa (2015) reported that the majority of knowledge shared among the library staff was tacit in nature.

Nurses play a crucial role in the healthcare system, which aims to prevent and cure illnesses while promoting overall health and rehabilitation of patients (Mutiarasari, 2018). Knowledge is an indispensable component of their work, especially for interpreting medical records and reports related to patient care. It is vital to document the knowledge generated in healthcare facilities and establish policies and mechanisms for effective sharing among nurses. The SECI model can help to elucidate the knowledge acquisition processes and the practices of knowledge sharing among nurses in healthcare settings (Mutiarasari, 2018). To improve medical and non-medical services, healthcare institutions must develop knowledge management systems that rely on converting both tacit and explicit knowledge into a foundation for KS practice among nurses (Kurniawan, Prabowo & Budiastuti, 2016). Knowledge sharing in healthcare centers involves treating knowledge as an asset and ensuring

that nurses have access to the right knowledge promptly so they can apply it to enhance services and performance (Kurniawan et al., 2016).

Nurses' knowledge sharing practice involves a structured approach to managing information and knowledge, with the aim of enhancing the value of healthcare services offered (Kurniawan et al., 2016). Wahyanto et al. (2019) suggest that socialisation is a method of converting tacit knowledge, which takes place through sharing experiences and social interactions among employees within an organisation. To ensure that nurses possess the necessary skills to effectively share knowledge among themselves, top management in healthcare facilities must provide regular KS training (Wahyanto et al., 2019). Nurses can engage in dialogue, discussion forums, and sharing of tacit knowledge, resulting in improved services in healthcare facilities through properly implemented socialisation activities (Wahyanto et al., 2019). The SECI model's spiral of knowledge sharing becomes a continuous process when nurses actively share their tacit knowledge among themselves. Since nurses rely heavily on tacit knowledge obtained through education and training, their competence is crucial to providing high-quality nursing care (Wahyanto et al., 2019). Therefore, it is essential to develop skilled and experienced leaders among nurses to guide and motivate them to share their tacit knowledge through socialisation.

The knowledge acquired through socialisation would be ineffective if it remained tacit and was not externalised (Wahyanto et al., 2019). Despite the benefits of socialisation, some individuals struggle to articulate their ideas explicitly, which limits the potential for sharing knowledge (Wahyanto et al., 2019). To overcome this challenge, management in healthcare facilities must encourage nurses to communicate their tacit knowledge through various channels such as reports, emails, discussions, and training manuals (Wahyanto et al., 2019). Additionally, incentives such as salary bonuses, promotions, and other prizes can be offered to encourage nurses to externalise their knowledge and make it accessible to others (Wahyanto et al., 2019). However, some professional nurses may be resistant to participating in knowledge sharing due to a lack of motivation, insufficient infrastructure, or a lack of necessary skills, which can hinder the success of knowledge sharing initiatives (Wahyanto et al., 2019).

According to Grant and Grant (2008), Nonaka's work is the most widely referenced material in the field of Knowledge Management (KM). Nonetheless, there are criticisms from some academics regarding the SECI model that Nonaka and Takeuchi (1995) proposed. For example, Adler (1995) argues that the SECI model's limitation is that it was created specifically for knowledge-creating organizations in Japan, which rely heavily on tacit knowledge (Andreeva & Ikhilchik, 2011). Despite these criticisms, the SECI model is still valuable in explaining knowledge creation, as noted by Muchaonyerwa (2015). The SECI model's various processes aim to enhance knowledge-sharing effectiveness among nurses (Muchaonyerwa, 2015).

2.11.3 The technology acceptance model

Over the past thirty years, the use of information technology (IT) has become increasingly widespread (Ma & Liu, 2004). Several theoretical models have been proposed to explain the end-user's acceptance behavior, including the Technology Acceptance Model (TAM) proposed by Davis (1989), which has been widely applied and empirically tested (Ma & Liu, 2004). The TAM is believed to be more parsimonious, predictive, and robust than other models and is based on the theory of reasoned action, which has been modified to address the broader needs of IT research (Muchaonyerwa, 2015). The TAM is particularly useful in explaining individuals' intentions to use IT and their use of technological systems, particularly in the context of Knowledge Management (KM) (Marick, 2001). For instance, communities of practice support such technologies, such as structured and unstructured data indexing, and designated taxonomy manufacturing tools (Marick, 2001).

The TAM employs TRA variables, such as perceived usefulness (PU) and perceived ease of use (PEOU), to describe people's openness to using IT (Muchaonyerwa, 2015). Perceived usefulness refers to the extent to which people believe that using a specific system will improve their job performance, while perceived ease of use refers to the extent to which people believe that using a specific system will make their work easier (Davis, 1989). Individuals are more likely to use a system if they believe it will help them perform their work better (perceived usefulness), and their beliefs about the effort required to use the system can directly impact their behavior when using it (perceived ease of use) (Ma & Liu, 2001).

Gilbert, Balestrini, and Little Boy (2004) used the TAM to investigate why people prefer electronic delivery of government services over traditional methods. Their study found that time, cost, and personal interaction influenced a positive attitude toward KM practice using ICT tools, while experience, information quality, and trust influenced a negative attitude toward KM using ICT tools (Muchaonyerwa, 2015). Shah and Mahmood (2013) also used the TAM to study the knowledge sharing (KS) behavior of dairy farmers in Pakistan and found that social factors, such as demography, culture, and individual trust, influenced their KS behavior. The ease with which nurses can access knowledge has been used to predict their eventual intention to share knowledge using ICT tools (Watson & Hewett, 2006). However, the TAM is insufficient in addressing social factors and strategies that influence KS practice when ICT tools are used (Moon & Kim, 2001). As a result of this limitation, the SECI model of knowledge creation is now widely accepted as the most reliable model for understanding the strategies that enable employee KS practice (Muchaonyerwa, 2015).

2.11.4 Rationale for adopting the SECI model and the TAM

The process of creating knowledge is a crucial aspect of the knowledge sharing (KS) process, and Nonaka's SECI model is a widely recognised and comprehensive framework for knowledge creation. This model is used to transfer implicit and explicit knowledge, and it enables a deeper understanding of micro-processes and is easily understandable from the perspective of KS practice. The SECI model describes socialisation as the essence of KS practice, externalisation as the codification of shared knowledge, combination as the storage of shared knowledge, and internalisation as learning while sharing knowledge (Natek & Zwilling, 2016).

The SECI model enables professional nurses working in public healthcare facilities to convert tacit knowledge into explicit knowledge that can be shared effectively. Through socialisation, externalisation, combination, and internalisation, nurses can learn about COVID-19 and share this knowledge among themselves. The SECI model has gained widespread acceptance among management practitioners due to its intuitive logic and clear description of the KS process, and it encourages the flow of knowledge among professional nurses, improving both their tacit and explicit knowledge stocks.

Web 2.0 technologies have greatly facilitated virtual human social interactions, and perceived enjoyment plays a significant role in user acceptance of technology (Davis, Bagozzi & Warshaw, 1992). According to Lee and Paris (2013), the Technology Acceptance Model (TAM) has been widely used to explain people's attitudes toward new systems or technology, and it has been used to investigate common tasks in various organisational settings. The TAM acknowledges KS factors such as trust, relationship strength, and perceived enjoyment when using ICT tools (Lee & Paris, 2013).

The TAM has been utilised in this study to shed light on the processes that determine technology acceptance by nurses in Makhanda's public healthcare facilities. The goal is to predict their behavior, provide a theoretical explanation for the successful implementation of ICTs to help them share knowledge about the COVID-19 pandemic in an appropriate and efficient manner. Organisational culture, structure, attitude and perception, ICT applications, mutual trust, incentives/rewards, and KS strategies (mentoring, job rotation policies, staff training, and IT infrastructure) are crucial variables for studying KS practices among nurses during the COVID-19 pandemic.

While the TAM does not cover social elements and techniques that impact KS practices that utilise ICTs, the SECI model is a reliable framework for analysing employee KS practices. Overall, the SECI model and the TAM are valuable conceptual models for understanding and improving knowledge sharing practices among nurses during the COVID-19 pandemic.

2.12 Synthesis of the literature review

In today’s knowledge-driven economy, organisations recognise the importance of knowledge sharing as a critical factor for sustaining competitive advantages and fostering innovation (Hlatshwayo, 2019). According to Zheng (2017), knowledge sharing practices among individuals in an organisational context have garnered significant attention from researchers seeking to understand the factors influencing successful knowledge transfer. This literature review synthesis aims to provide a comprehensive overview of the key themes and findings from various scholarly works on knowledge sharing practices among professional nurses

working in public healthcare hospitals. The literature consistently highlights the crucial role of knowledge sharing practices in enhancing an organisation's overall performance and effectiveness. It fosters a culture of learning and collaboration, enabling employees to access valuable information, expertise, and experiencies across different departments and hierarchical levels (Hussein et al., 2016). The literature also reveals that motivational factors influence individual's willingness to share knowledge. Intrinsic motivations, such as the desire for recognition, personal growth, and a sense of accomplishment, play a significant role in encouraging employees to share their knowledge (Deci and Ryan, 2000). Extrinsic motivators, including rewards, recognition, and career advancement opportunities, can also positively impact knowledge-sharing behaviours.

The literature also reveals that trust is a critical determinant of knowledge sharing practice among individuals within an organisation. A supportive and open organisational culture, where trust is fostered, encourages employees to share knowledge without fear of negative consequences (Al-Dossary et al., 2020). Conversely, lacking trust or a competitive work environment may inhibit knowledge exchange. The literature also reveals that effective communication channels and technological platforms are crucial facilitators of knowledge-sharing practices. Collaborative tools, social media platforms, and knowledge repositories enhance accessibility and ease of sharing knowledge, promoting real-time interactions and seamless knowledge transfer and locations (Chen et al., 2009). Despite recognising the importance of knowledge sharing practices, organisations often face various barriers that impede effective knowledge transfer. Common challenges include a lack of time, a fear of knowledge hoarding, hierarchical barriers, and a reluctance to share due to concerns about job security or power dynamics.

The literature also emphasises the role of social networks and communities of practice (CoP) as vehicles for informal knowledge sharing. Employees actively participating in these networks are more likely to access and share tacit knowledge, ultimately enhancing organisational learning and innovation (Aljuwaiber, 2016). Strong leadership and management support are essential for promoting a knowledge-sharing culture. Leaders who value and actively encourage knowledge sharing set the tone for their employees to follow suit, establishing a collaborative and knowledge sharing mindset throughout the organisation (Aljuwaiber, 2016).

Practical knowledge sharing ensures that professional nurses have access to relevant and up-to-date information, enabling them to deliver proper services. Moreover, KS practices promote a culture of continuous learning, leading to improved job satisfaction and retention rates among professional nurses. Several barriers hinder knowledge-sharing practices among professional nurses in public healthcare facilities, such as organisational culture, hierarchical structures, time constraints, and lack of recognition for knowledge-sharing efforts (Yesil & Hirlak, 2019). Technological challenges and concerns about information security may also discourage nurses from actively participating in knowledge-sharing initiatives. In order to foster a conducive environment for KS practices, healthcare organisations can implement several facilitators such as supportive leadership that emphasises the value of KS, providing dedicated time for information exchange, and recognising and rewarding individuals for their contributions are some effective facilitators (Razmerita et al., 2016). Leveraging technology, such as secure communication platforms and electronic health records, can also enhance knowledge sharing practice among nurses.

The literature also reveals that effective knowledge sharing practices significantly impact patient care in public healthcare facilities. Professional nurses who actively engage in knowledge sharing practice are better equipped to make informed decisions, leading to improved patient outcomes, reduced hospital stays, and increased patient satisfaction (Tabrizi & Morgan, 2014). Furthermore, the dissemination of best practices and clinical guidelines through knowledge sharing positively influences standardised care delivery (Tabrizi & Morgan, 2014). Knowledge sharing practices are closely linked to organisational learning in public healthcare facilities (Alajami et al., 2016. Organisations that actively promote KS create a learning culture that encourages creativity and problem solving. In turn, this leads to improved organisational performance and adaptability to changes in the healthcare landscape. Knowledge sharing practice among professional nurses in public healthcare facilities is a crucial element for delivering high quality patient care, promoting professional development, and fostering organisational learning. To overcome barriers and maximise the benefits of knowledge sharing, healthcare organisations must prioritise creating a supportive environment, recognising, and incentivising knowledge sharing efforts, and leveraging technology effectively (Asemahagan, 2014). By doing so, public healthcare facilities can enhance the overall healthcare experience and outcomes for both patients and healthcare providers.

The study applied the socialisation, externalisation, combination, and internalisation (SECI) which was complimented by the Technology Acceptance Model (TAM) as the conceptual framework. The SECI model and the TAM are two prominent conceptual frameworks that offer valuable insights into knowledge sharing behaviours among individuals employed in an organisation (Ma & Liu, 2005). The SECI model, developed by Nonaka and Takeuchi, focuses on the conversion and sharing of tacit and explicit knowledge within an organisation (Faith & Seeam, 2018). while TAM focuses on the factors influencing individuals' acceptance and adoption of new technologies, which play a crucial role in knowledge sharing practices (Shah & Mahmood, 2013). The SECI model and TAM are complimentary in understanding KS practices among organisational employees. The SECI model provides insights into the dynamic processes of knowledge creation and sharing, emphasising the importance of interpersonal interactions and informal networks (Nonaka and Takeuchi, 1995a). On the other hand, TAM focuses on the role of technology in facilitating knowledge sharing and highlights the significance of user perception in technology adoption (Shah & Mahmood, 2013). The synthesis of the SECI model and TAM conceptual frameworks provides a comprehensive understanding of knowledge sharing practices among organisational employees. By recognising the importance of both interpersonal interactions and technology acceptance, organisations can foster a culture of KS that leverages the strengths of individual employees while utilising appropriate tools and platforms to facilitate seamless knowledge exchange. Embracing this integrated approach can lead to improved innovation, problem-solving, and overall organisational performance.

2.13 Summary of chapter two

Chapter 2 provides a comprehensive literature review of similar investigations, focusing on various aspects of knowledge sharing (KS) such as methods, tools, variables that influence KS practice, impediments to KS practice, KS practice in the healthcare sector, KS practice among nurses, KS practice during the COVID-19 pandemic, and knowledge management (KM). The review also delves into the SECI model and the Technology Acceptance Model (TAM), which serve as the conceptual framework for this study. Specifically, this research aims to examine how Makhanda nurses collect, produce, and learn tacit and explicit knowledge through socialisation, externalisation, combination, and internalisation (Nonaka & Takeuchi, 1995a).

The SECI model is the most appropriate framework for understanding KS practices among Makhanda nurses working in public hospitals and clinics, while the TAM (Davis, 1989) complements the SECI model. The subsequent chapter will discuss the research methodology in detail.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The process of research methodology involves examining, depicting, and clarifying the research topic through a scientific lens. According to Patel and Patel (2019), it is the process by which a study is conducted. Research methodology encompasses the beliefs, concepts, and techniques associated with a particular research approach (Patel & Patel, 2019). It delineates the research topics that can be investigated, the hypotheses that can be tested, and how a problem can be structured to be examined through specific designs and methods of inquiry, as well as how to select and create appropriate data collection techniques (Creswell & Tashakkori, 2007). The reasons behind the employment of specific methods to gather data are explained by research methodology (Pandey & Pandey, 2015)). During problem analysis, a researcher must follow multiple stages and rationales (Pandey & Pandey, 2015)), and must comprehend the study's methods and approaches. The following sections explain the approach and stages of this study.

This research investigated the Knowledge Sharing (KS) practices among professional nurses employed at eight out of 11 public healthcare facilities in Makhanda city during the COVID-19 pandemic. The purpose of this study is to examine knowledge sharing practices among professional nurses working in public healthcare facilitates during the COVID-19 pandemic in Makhanda formerly known as Grahamstown. The study aims to achieve several goals, including assessing the nurses' comprehension level of KS practices, identifying the types of knowledge that the nurses share about COVID-19 and the reasons for sharing that information, identifying the obstacles to KS practices faced by nurses in Makhanda, and proposing recommendations for improving KS practices among nurses in Makhanda's public hospitals and clinics.

Research Methodology Roadmap

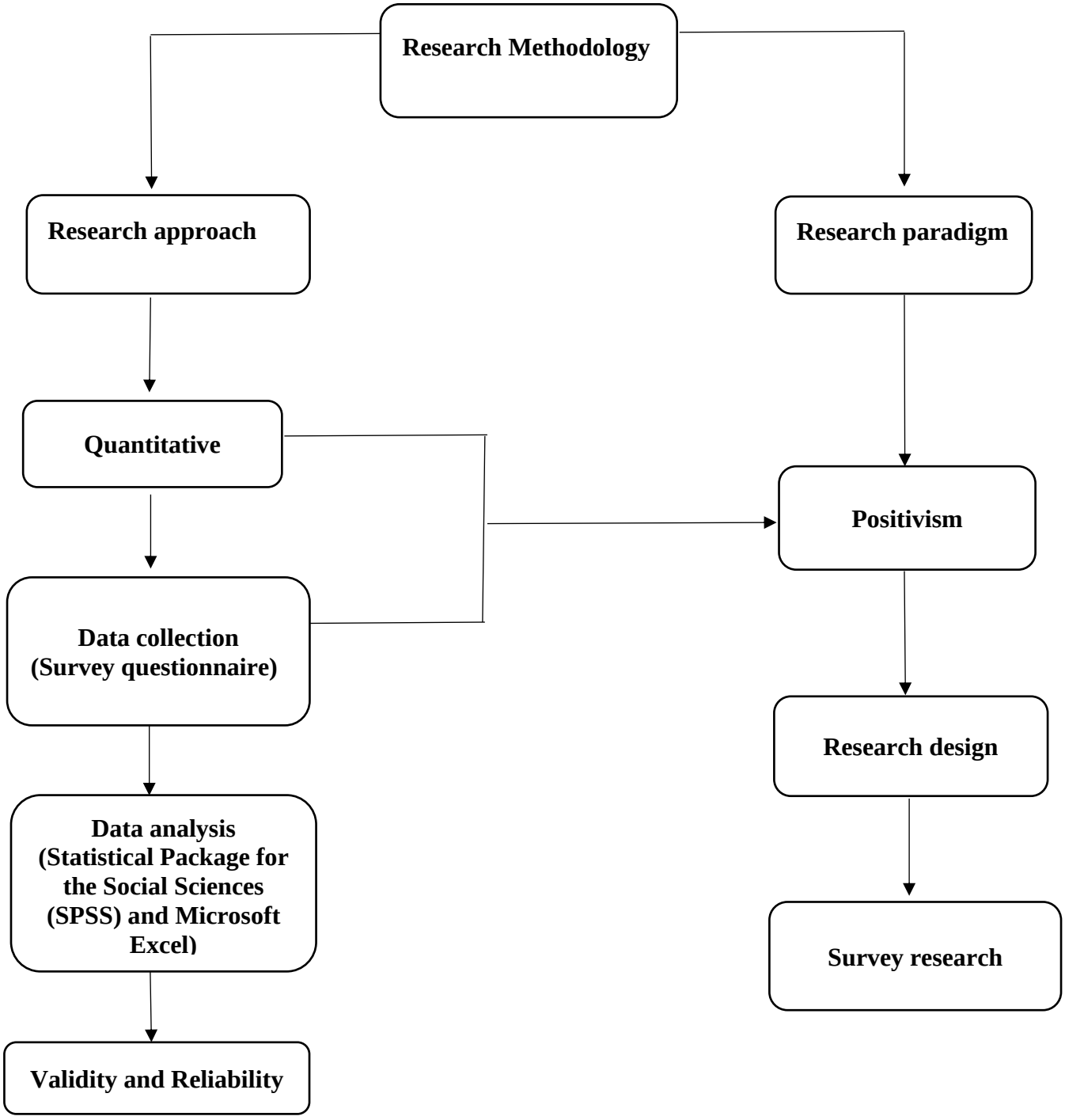


Figure 3.1: Research methodology roadmap

3.2 Research paradigm

According Antwi and Hamza (2015), a research paradigm refers to an established approach or model for conducting studies that has undergone extensive testing over many decades or more. The foundation of a research paradigm is formed by the scientific consensus on ethical issues, epistemology, ontology, and technique, as explained by Denzin and Lincoln in 2017. The four primary types of research paradigms are positivism, interpretivism, post-positivism, and pragmatism, as identified by Antwi and Hamza in their 2015 work. In educational research, the term paradigm denotes a researcher's "worldview" as described by Kivunja and Kuyini in 2017. This worldview represents the perspective, thoughts, school of thought, or set of shared ideas that can influence the interpretation and understanding of research data. Essentially, a research paradigm reflects the researcher's beliefs about their current and desired world. It comprises abstract beliefs and principles that shape how the researcher perceives the world and acts within it. A paradigm consists of four essential elements: epistemology, ontology, methodology, and axiology, which constitute the fundamental expectations, beliefs, norms, and values held by each paradigm. In this particular study, the positivism worldview was adopted to explore the knowledge sharing practices among professional nurses working in public healthcare facilities in Makhanda city during the COVID-19 pandemic.

3.2.1 The positivism paradigm

Positivism relies on the hypothetico-deductive approach to validate pre-established assumptions, often expressed quantitatively, where practical connections can be established between underlying factors (independent variables) and outcomes (dependent variables) (Park, Konge & Artino, 2020). Positivism explores the social reality with the belief that the best understanding of human behavior can be attained through observation and rational thinking (Nel, 2016). Put differently, positivism asserts that only concrete and observable facts serve as the basis for scientific inquiry (Nel, 2016). According to the positivist paradigm, factual knowledge is founded on sensory experiences and can be attained through systematic study and experimentation (Nel, 2016). Positivism heavily relies on the principles of determinism, empiricism, parsimony, and generality (Nel, 2016). 'Determinism' involves understanding causal links between events and their underlying circumstances, crucial for prediction and

control; 'Empiricism' relies on verifiable empirical evidence to support theories and hypotheses; 'Parsimony' emphasizes describing phenomena in the most efficient way possible; 'Generality' entails generalizing specific observations to the broader world context (Nel, 2016).

According to Nel (2016), knowledge is derived from human experience and the researcher is seen as being independent from the study and follows a deductive approach. Therefore, positivism arranges the knowledge generation procedure with the help of quantification, which is important to improve accuracy in the explanation of parameters and the sensitivity of the relationship among them (Nel, 2016). A positivist approach to knowledge is based on a real objective interpretation of the data that is at a researcher's disposal (Nel, 2016). Such information can be transferred in tangible form and is often obtained from observation (Nel, 2016). Positivism is a philosophy of knowing, also called epistemology, which believes that only knowledge gained through direct observation is factual and trustworthy (Nel, 2016). The choice of positivism as the underpinning paradigm for this study was because the study used a quantitative methodology with a survey design and a questionnaire as the data collection tool. Data collected needed to be valid, reliable, and representative, a characteristic that is most common with the positivism paradigm.

3.3 Research approach

Several research methods are available for conducting research. Three of these methods, qualitative, quantitative, and mixed methods, are most often employed (Creswell, 2013). Quantitative research entails the collection of data with the goal of verifying a hypothesis; the data collected is numerical and may be turned into useful statistics (Byrne, 2016). Qualitative research seeks to explain a phenomenon by elucidating its underlying causes, attitudes, and motives. Using unstructured or semi-structured methodologies, qualitative research is used to show patterns in thinking and views and to go further into a subject by analysing individuals or groups (Byrne, 2016). Both qualitative and quantitative techniques may be used in a research, resulting in the third strategy, known as the mixed-method approach, which combines the collecting and analysis of both qualitative and quantitative data to test or gain a deeper understanding of the topic under investigation (James & Slater, 2014).

This study used quantitative research methodology to acquire participants insight via a survey questionnaire. In order to gather data and to evaluate and comprehend the study's findings, it was thought acceptable to use a quantitative methodology for this study. The purpose of the research was to determine the views and sentiments of the nurses towards KS practice during a pandemic outbreak such as COVID-19. To ensure the research's validity, study participants were required to fill out a survey questionnaire that consisted of mostly closed-ended and a few open-ended questions on their KS practices among themselves during COVID-19. The participants of the research were the professional nurses who work in eight public health facilities in Makhanda city. The quantitative methodology required the researcher to gather data primarily through a survey questionnaire.

3.3.1 The quantitative research approach

Quantitative research methodology deals with measuring and analysing variables in order to obtain results (Apuke, 2017). Quantitative research methods involve the use and analysis of numerical data using specific statistical techniques to answer questions such as who, how much, what, where, when, when, how many, and how (Apuke, 2017). Quantitative research methods rely on the compilation and analysis of numerical data to describe, explain, predict, or control variables and phenomena of interest (Gay, Mills & Airasian, 2009). One of the fundamental principles of quantitative research is a logical belief that our world is comparatively stable and consistent, such that we can measure and recognise it as well as make comprehensive generalisations about the world (Gay et al., 2009). Of not is the stark difference between this principle and those of qualitative research, namely, that the world is always shifting, and the role of the researcher is to adjust to and observe the continuous changes (Gay et al., 2009). Quantitative research approaches employ strategies of inquiry such as experiments and surveys and gathers data on predetermined instruments that yield statistical data (Creswell, 2003).

The utmost strength associated with quantitative research is that its methods produce reliable and quantifiable data that can possibly be generalised to a large population (Creswell, 2018). To further add, quantitative research methods are suitable for testing and confirming already assembled theories about how and why a phenomenon occurs through testing the hypotheses

that are constructed before the data is collected (Creswell, 2018). For this study, the quantitative research approach was used to answer the research questions:

1. What is the level of understanding of KS practices among nurses working in public hospitals and clinics in Makhanda?

2. What kind of knowledge about COVID-19 is shared by the nurses and why?

3. What are the challenges faced by nurses working in public hospitals and clinics in Makhanda in implementing KS practices?

4. What recommendations can be suggested to improve KS practices among the nurses working in public hospitals and clinics in Makhanda?

Since the study employed a survey questionnaire with closed-ended questions and some open-ended questions, it was deemed important that a quantitative research approach be applied to this study. Survey questionnaires that employ closed-ended questions are data collection tools that are mostly used by studies that employ quantitative research approaches. The research was carried out during the COVID-19 pandemic when strict social distancing measures were in place. Opting for a quantitative approach was deemed more suitable due to the ease of data collection through survey questionnaires without the need for direct contact with the study participants, given the necessity of adhering to social distancing guidelines. Moreover, the participants were professional nurses working in public healthcare facilities, and the pandemic period was exceptionally demanding for them as frontline workers, responsible for caring for the sick and preventing infections. Consequently, a quantitative approach utilizing questionnaires was the preferred choice to minimize face-to-face interactions and potential exposure to COVID-19 risks. The nurses' hectic schedules during the pandemic made a qualitative approach, involving interviews as a data collection tool, impractical. Therefore, the quantitative approach served as the most appropriate research methodology.

3.4 Research design

Leedy and Ormrod (2010) define a research design as a plan or strategy that specifies the selection of respondents, the data collection procedures to be used, and the data analysis to be performed. The researcher's beliefs, research skills, and research practices influence his or her choice of study design, as well as the manner in which he or she collects data (Leedy and Ormrod, 2010). Researchers can choose from a variety of research designs that complement their philosophical assumptions and are best applicable for collecting data that is pertinent to solving the identified research objectives (Tayie, 2005).

3.4.1 Survey design

A survey design was adopted for this study, with most closed-ended questions and a few open-ended questions. According to Creswell and Creswell (2018), a survey design provides a quantitative description of trends, attitudes, and opinions of a population, or tests for associations among variables of a population. Further, Creswell and Creswell (2018) stated that survey designs help researchers answer three types of questions: (a) Descriptive questions; for example, what percentage of nurses engage in knowledge-sharing practices? (b) Questions about the relationship between variables; for example, is there a positive relationship between nurses' knowledge-sharing practices and services offered in healthcare facilities? (c) Questions about predictive relationships between variables over time; for example, does hospital management support for knowledge-sharing practices among nurses predict better knowledge-sharing practices? A survey design was used for this study because of its flexibility in gathering data in difficult situations, such as a pandemic outbreak where access to the nurses as the respondents was not easy due to the COVID-19 restrictions that were in place.

Providing them with a survey questionnaire and having them fill it out helped avoided direct contact with the researcher, and also helped limit the time the researcher would have spent with the respondents in a face-to-face interview. The decision to employ a survey design was

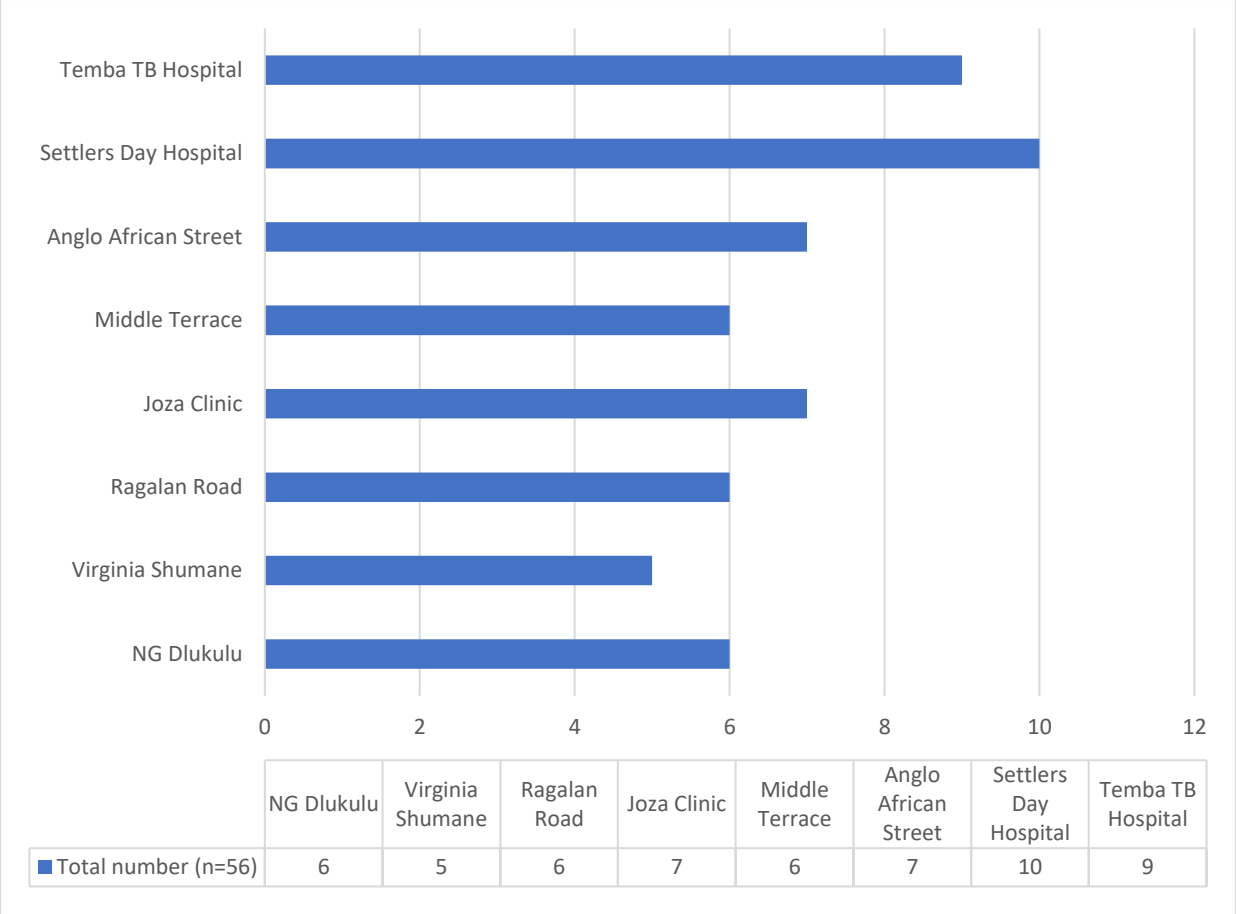
primarily driven by its ability to generate quantitative data, which can be analysed using statistical techniques. This quantitative approach enables researchers to draw objective and measurable conclusions from the data collected (Avedian, 2014). Additionally, surveys offer respondents a degree of anonymity, fostering an environment where they feel comfortable providing honest and candid responses, especially when addressing sensitive or personal subjects (Avedian, 2014). In the context of this study on knowledge sharing practices, a survey design was crucial due to the sensitive nature of the topic, particularly in public institutions like hospitals and clinics. Maintaining anonymity through surveys ensured that respondents were more willing to share their insights openly, making it the ideal research method for this investigation.

3.5 Population and census method

This section defines the population and census method and discusses how it was used in this study.

3.5.1 Population

A population is a depiction of individuals or items used to derive conclusions. The term population often refers to the distinct cases a researcher plans to examine (Pandey & Pandey, 2015)). The target population for this study were all the 56 professional nurses working in eight public healthcare facilities in Makhanda city where the study was conducted. The figure below provides a description of the total number of nurses working in each of the eight public healthcare facilities in Makhanda that formed the study.



	NG Dlukulu	Virginia Shumane	Ragalan Road	Joza Clinic	Middle Terrace	Anglo African Street	Settlers Day Hospital	Temba TB Hospital
Total number (n=56)	6	5	6	7	6	7	10	9

Figure 3.2: Population of the study

The study involved professional nurses from a total of 11 public healthcare facilities located in Makhanda. However, only 8 out of the 11 facilities agreed to participate in the study. Regrettably, nurses from the remaining 3 public healthcare facilities opted not to take part. As a result, the researcher had to collect data solely from the nurses working in the 8 public healthcare facilities that agreed to be involved in the study. Using data obtained from the Makana Municipality Health Sub-District office, it was determined that there was a total of 56 professional nurses working in the eight public healthcare facilities, of which 47 (84%) participants responded. Out of the total participants, 9 individuals, representing 16% of the population, did not return the survey questionnaire, despite the researcher's efforts to obtain their responses. Unfortunately, attempts to encourage these participants to fill out the questionnaire did not yield any results. It is worth noting that in survey studies, the target population is typically larger than the actual study population in this research, which refers to

the individuals who were accessible and willing to participate in the study. In this particular study, the researcher could only work with the population that was available and willing to take part in the research, which resulted in the final sample size. Despite the low number of participants, the data collected from the participants who did take part still provides valuable insights for the study.

3.5.2 Census method

Since this study employed a census method, no sampling was necessary. The census method, also known as a complete enumeration survey, involves selecting every item in the universe for data collection (Vedantu, 2023). This could include a specific location, group of people, or any locality that comprises the entire set of items of interest in a given situation (Vedantu, 2023). The census method is commonly used by governments for national population, housing, and agriculture censuses, among others, where extensive knowledge of these fields is required (Vedantu, 2023). The census method involves the statistical compilation of all units or members of the survey's target population (Vedantu, 2023). It is also applicable for small fields of investigation, as it is more accurate and reliable and eliminates the possibility of personal biases (Vedantu, 2023). In her investigation into the status of electronic teaching within South African library and information science (LIS) education, Majanja (2020) used the census method because the target population was all academics in nine universities offering LIS education in South Africa. When data from eight Heads of the LIS schools were combined for Majanja's study, it was discovered that a total of 79 LIS educators were employed by the eight universities as of June 2019 (Majanja, 2020).

According to Vedantu (2023), the census method in research methodology is achieved through the following steps: The first step in a census is to define the population of interest. The population could be any group of people or objects that the researcher wants to study. For example, the population could be all residents of a city, all students enrolled in a university, or all employees of a company. Once the population is defined, the next step is to develop a census instrument, such as a questionnaire or survey, to collect data on all members of the population. The instrument should be designed to elicit the information that the researcher

wants to collect and should be tested for reliability and validity. The third step involves data collection which involves administering the census instrument to every member of the population. This can be done in a variety of ways, such as through face-to-face interviews, mail surveys, or online surveys. The goal is to collect data on every member of the population, so it is important to ensure that the census instrument is accessible to everyone in the population.

The fourth step is data processing which involves coding the data, entering it into a database, and running statistical analyses to identify patterns and relationships. It is important to ensure that the data is accurate and reliable, and to guard against errors or biases that may have been introduced during the data collection process. Finally, the results of the census should be reported in a clear and concise manner. This can involve writing a report, creating charts and graphs to visually represent the data, and presenting the findings to stakeholders. The results of the census can be used to inform decision-making, evaluate programs or policies, or contribute to the knowledge base in a particular field.

The study's target group consisted of professional nurses working in 11 public healthcare facilities in Makhanda city. However, nurses from three of the public healthcare facilities declined to participate, resulting in eight facilities being included in the research. The researcher opted for a census approach due to the manageable population size, as all 56 professional nurses from the eight facilities were willing to take part in the study, making sampling unnecessary. Out of the 56 nurses who received the survey questionnaire, 47 completed it, while the remaining nine did not respond despite the researcher's repeated attempts to encourage their participation. By employing the census method, potential biases that could arise from a sampling approach were eliminated, ensuring the survey's findings were accurate and dependable.

Table 3.1: Total population and total number of professional nurses that responded

Name of public healthcare facility	Total number	Percentage	Number that responded	Percentage response rate
NG Dlukulu	6	10.7%	6	12.7%
Virginia Shumane	5	9%	5	10.6%
Raglan Road	6	10.7%	6	12.7%
Joza Clinic	7	12.5%	6	12.7%
Middle Terrace	6	10.7%	6	12.7%
Anglo African Street	7	12.5%	4	8.5%
Settlers Day Hospital	10	17.8%	7	15%
Temba TB Hospital	9	16%	7	15%
Total	**56**	**100%**	**47**	**100%**

The professional nurses were directly involved in the fight against the COVID-19 pandemic, and their knowledge-sharing practices were important in determining how KS was being practiced among the nurses working in the public healthcare facilities in Makhanda city.

3.6 Data collection process, methods, and tools

Data collection is one of the key phases of research, according to Taherdoost (2021). Finding answers to the study questions is made easier through data collection (Taherdoost, 2021). Data collection is the process of gathering data with the intention of learning more about the topic of the research (Taherdoost, 2021). Data collection as the primary research phase might increase the quality of obtaining results by reducing the likelihood of errors occurring throughout a research project (Taherdoost, 2021). As a result, in addition to developing an effective research design for the study, a lot of time should be spent carefully gathering the necessary data to ensure that the findings are accurate (Kabir, 2016). On the other hand, while a strong data collection strategy aids in planning a good research, it cannot always ensure the success of a research project as a whole (Olsen, 2012). The sort of data needed for the study should be identified before choosing a method for collecting data (Kabir, 2012). The various

data collection techniques are document review, observations, interviews (face-to-face, online), questionnaires and surveys, and focus group discussions.

3.6.1 Data collection tool

The two basic categories of data collection methods are primary data collection and secondary data collection (Taherdoost, 2021). The systematic process, procedures, and tools used to collect data is known as the data collection method (Taherdoost, 2021). In order to generate thorough results for the survey design, the study applied a quantitative method by using a questionnaire as the primary data collection tool.

3.6.1.1 Survey questionnaire

For this quantitative study, a questionnaire was distributed to all the 56 professional nurses working in the eight public healthcare facilities that formed the study in Makhanda city. A questionnaire is a data collection tool composed of a number of question items (and occasionally potential answers) intended to elicit information or data from study participants (Pattern & Newhart, 2017). A questionnaire, according to Nardi (2018), is the most common method of data collection because it is quick and inexpensive at gathering information from a sample of people. The majority of questionnaires are self-administered, and they are often directly sent or emailed to respondents (Nardi, 2018). A self-administered questionnaire has the advantage that it allows respondents to exercise their right not to answer questions they do not want to, and responses are assumed to be anonymous and confidential. However, the drawbacks of a self-administered questionnaire include the possibility of a low response rate because respondents might take their time to complete and return the questionnaires, as well as a lack of control over the responses' content, which could lead to bias, errors, or incompleteness (Babbie & Mouton, 2001). Since only a questionnaire was used for this study, it was not possible to overcome these limitations.

For this study, the questionnaire had mostly closed-ended questions with both the Likert scale and the Yes-No type questions. The questionnaire also had statements that required the respondents to indicate by ticking on the appropriate answer or answers. The 5-point Likert scale ranged as follows; 1 = Strongly agree, 2 = Agree, 3 = Not sure, 4 = Disagree, 5 = Strongly disagree. The Likert scale is defined by Pickard (2007) as a "bipolar scaling technique, which allows respondents to select a choice that best demonstrates their level of agreement with a given statement". Additionally, the questionnaire included a few open-ended questions that gave respondents freedom to express their opinions. The few open-ended questions enabled the researcher to request context-specific responses from the respondents. Therefore, the few open-ended questions allowed the respondents to provide their own views on KS practices among themselves during COVID-19.

The questionnaire comprised six sections:

- Section A focused on demographic information which included the name of the public hospital/clinic where the nurses' worked, and their job designation, department/section, gender, age, highest level of education, and work experience.
- Section B comprised questions on KS.
- Section C's questions were about KS strategies.
- Section D comprised questions about KS tools.
- Section E comprised questions about the attitudes and perceptions of the nurses towards KS.
- Section F's questions were on the factors affecting KS among the nurses.

3.6.2 Data collection process

The process of collecting data was done between March and August 2022 and later between February and March 2023. After obtaining ethical clearance from the University of South Africa and the Eastern Cape department of Health, the researcher proceeded to seek permission from the Makana health sub-district office to approach the different public healthcare facilities that are located in Makhanda. The researcher made sure that the work of the nurses at the

various public healthcare facilities was not affected at any point. In order to observe the COVID-19 protocols, the researcher made sure that they only meet with the managers of the public healthcare facilities that meeting the entire group on nurses in a particular facility. This was done to ensure that the COVID-19 restrictions are adhered to and observed.

Once the researcher visited the public healthcare facilities on the arranged dates and times for each facility, a meeting was then sought with the manager and an explanation was given on the purpose of the study and what was required of them. The researcher needed to recruit all 56 professional nurses from the eight public healthcare facilities. A printed questionnaire was provided for the nurses to fill. The researcher requested that the participants at least answer the questionnaire to the best of their knowledge and where they did not feel comfortable to answer the questions, they were free not to. The researcher kindly requested the participants to take a minimum of a week to fill out the questionnaire if they were able to and then call the researcher on their cell phone to come and collect the completed questionnaire.

3.7 Data analysis and presentation

Through the use of the Statistical Package for Social Sciences (SPSS), version 26 software and the Microsoft Excel application, the data was analysed using descriptive statistics. Coding the participants' questionnaire responses into the SPSS software was the initial step in the data analysis process. In order to translate the responses into a language that the software can understand, the coding was done by assigning numbers to each response on the questionnaire. Based on the questionnaire, an interpretation was given to each coded number. For example, the codes for each participant ranged from nurse 1, nurse 2. Nurse 3 up to nurse 47 to assist the software in processing the data, the coding gave each of the figures meaning.

Conducting descriptive statistics on the respondents' responses followed after the coding was done. In quantitative data analysis, descriptive statistics is used to describe or display data in a form that is understandable (James & Simister, 2017). In other words, by using this analytical

approach, researchers can clarify and summarise an observation (James & Simister, 2017). In frequencies and percentages, the descriptive data was presented to estimate the patterns in the data. The data was also presented in tables. Descriptive statistics was also used to analyse research questions. Following the data analysis, the information was analysed for meanings, summarised, and recommendations made.

The data analysis process also involved analysing a few open-ended questions using thematic analysis, alongside primarily quantitative data. Thematic analysis, according to Clarke and Braun (2017), entails identifying, analysing, and interpreting patterns of meaning (themes) within qualitative data. It is a flexible tool applicable across different theoretical frameworks and research paradigms, not limited to specific methodologies. Notably, there are versions of thematic analysis tailored for use within positivist frameworks that emphasise coding reliability (Guest, MacQueen, & Namey, 2012). Thematic analysis provides accessible and systematic procedures for generating codes and themes from qualitative data, as emphasized by Clark and Braun (2017). Codes represent the smallest units of analysis, capturing significant aspects of the data relevant to the research question.

In this study, the data obtained from open-ended questions served as a means for participants to freely express their thoughts, opinions, and experiences relevant to the research topic. These questions were included in a survey questionnaire administered to the participants. The responses were written by the participants, and the researcher familiarized themselves with the data by identifying patterns, recurring ideas, and potential themes that emerged from the responses. Each participant was assigned concise codes that captured the essence of their respective responses. The coded data was then analysed to identify commonalities, patterns, and connections among the codes. The researcher took care to clearly and precisely define each theme to ensure its representativeness of the data. The themes were further reviewed to ensure they accurately reflected the underlying data. The responses from the few open-ended questions were reported verbatim.

3.8 Ethical considerations

Sieber (2009) provided a framework consisting of three guiding principles for human research. These principles include the maximisation of positive research results while minimising risks, harm, or wrongdoing, known as beneficence; the preservation of individual autonomy and provision of extra care and respect for those who lack autonomy, known as respect for participants; and the use of fair methods that are reasonable, non-exploitative, and thoroughly examined, known as justice. Additionally, Sieber (2009) identified other ethical considerations, such as protecting people's privacy, maintaining the secrecy of data, and ensuring anonymity by removing all identifiers, which are crucial to every thesis and are recommended. Two letters were attached as appendices to demonstrate that ethics clearance had been granted, including the Ethics approval certificate from UNISA (Appendix 3) and the Research approval letter from the Eastern Cape Provincial Department of Health (Appendix 4).

3.9 Validity and Reliability

Validity in a quantitative study refers to the accuracy of measuring a concept (Heale & Twycross, 2015). Another aspect of quality in such research is reliability, which pertains to the consistency and accuracy of the instrument used. In simpler terms, it assesses whether a research tool yields consistent results when applied in the same context multiple times (Heale & Twycross, 2015). Both validity and reliability are crucial considerations in conducting or evaluating research (Heale & Twycross, 2015). To ensure validity in this study, a survey design with a questionnaire as the data collection tool was adopted. Content validity, which examines whether the instrument adequately covers all relevant content, was achieved as most survey items were carefully adapted and modified to suit the study's requirements. Many of the questionnaire items were derived from previous studies with established validity, such as those by Diriba, Jimma, and Roba (2016) and Skaik and Othman (2014). For instance, items assessing preferred channels of communication and factors affecting KS among nurses were adapted from Diriba et al. (2016), while attitudes and perceptions of nurses towards KS and factors affecting KS among nurses were measured using items from Skaik and Othman (2014).

Indeed, the survey questionnaire employed in this study was constructed based on pre-existing research, where the items had been verified to be valid.

Reliability pertains to the capacity of producing consistent outcomes when employing the same instrument on diverse occasions or with different individuals from the identical population (Maree, 2016). Bryman and Bell (2016) delineate three key elements crucial in determining the reliability of a measure, specifically stability, internal reliability, and inter-rater reliability. To establish reliability, the questionnaire underwent a pilot test involving 20 experienced nurses, aiming to uncover possible concerns and evaluate the research design's feasibility. This process facilitated the researcher in refining the methods and procedures before proceeding with data collection.

3.10 Summary of chapter 3

The research techniques employed in this study have been described in detail in Chapter 3. These include the research approach, study paradigm, research design, population and sampling, data collection methods, data analysis techniques, ethical issues, and validity, reliability, and trustworthiness.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

Data analysis in research involves transforming raw data into meaningful facts that can be used to answer research questions. In this study, the data was obtained through a self-administered questionnaire, and the quantitative research method was employed. The study aimed to investigate the knowledge sharing practices among nurses during the COVID-19 pandemic, with a specific focus on nurses working in public healthcare facilities in Makhanda, located in the Eastern Cape Province of South Africa. The data collection process was aligned with the study objectives, which were to:

1. To examine the level of understanding of KS practices among the nurses working in public healthcare facilities in Makhanda.
2. To understand what knowledge about COVID-19 is being shared by the nurses, why they are sharing it, and how it is shared.
3. To investigate if there are challenges in implementing KS practices among nurses working in public healthcare facilities in Makhanda.
4. To suggest recommendations about what can be done to improve KS practices among these nurses.

The data presentation is discussed in detail in the next section.

4.2 Findings from the data

A self-administered questionnaire was distributed to all 56 professional nurses working in eight out of 11 public healthcare facilities in Makhanda city. Out of the 56 respondents, 47 (84%) were able to complete and return the questionnaire. The healthcare facilities included in the study were N.G. Dlukulu Clinic, V. Shumane Clinic, Raglan Road Clinic, Joza Clinic, Middle Terrace Clinic, Temba T.B. Hospital, Settlers Hospital, and Anglo African Clinic. The questionnaire consisted of six sections, which are as follows:

1. Section A comprises the demographic information that included the name of the public hospital/clinic where the nurse worked, job designation, department/section, gender, age, highest level of education, and work experience.
2. Section B comprises questions on the nurses' level of comprehension of KS.
3. Section C questions concern KS practices.
4. Section D comprises questions about knowledge sharing tools.
5. Section E comprised of questions about the nurses' attitudes to and perceptions of KS.
6. Section F questions were on the challenges of KS among the nurses.

The questionnaire was specifically designed to gather information that would help answer the research questions and achieve the study objectives. The questionnaire was self-administered, and the nurses voluntarily completed it.

4.2.1 Demographic details of the respondents

The researcher aimed to explore the characteristics of the respondents, which included their job designations, the departments, or sections they worked in within the public healthcare facility, their gender, age, highest educational qualifications, and work experience. The name of the healthcare facility where they worked was also recorded. This information is presented in Table 4.1 below.

Table 4.1: Demographic information

Variable	Item	Number	Percentage (%)

Gender	Male	7	15%
	Female	40	85%
Total		**47**	**100%**
Age	18-30 years	18	38.3%
	31-40 years	23	49%
	41-50 years	4	8.5%
	Over 51 years	2	4.2%
Total		**47**	**100%**
Education	Less than senor high school	0	0%
	Senior high school (matric)	0	0%
	Diploma	15	32%
	University degree or higher	32	68%
Total		**47**	**100%**
Department / Section	Primary healthcare	26	55.3%
	Personnel section	2	4.2%
	Pharmacy	4	8.5%
	Rehabilitation	2	4.2%
	Intensive care	7	15%
	Administration	2	4.2%
	Medical records	2	4.2%
	Labour ward	2	4.2%
Total		**47**	**100%**
Job designation	Nursing practitioner	10	21.2%
	Nursing manager	4	8.5%
	Registered nurse	8	18%
	TB Specialist	2	4.2%
	Nursing supervisor	7	15%
	Emergency room nurse	7	15%

	Charge nurse	2	4.2%
	Labour and delivery nurse	5	10.6%
	Nursing assistant	2	4.2%
Total		**47**	**100%**
Public healthcare facility	NG Dlukulu	6	12.7%
	Virginia Shumane	5	10.6%
	Raglan Road	6	12.7%
	Joza Clinic	6	12.7%
	Middle Terrace	6	12.7%
	Anglo African Street	4	8.5%
	Settlers Day Hospital	7	15%
	Temba TB Hospital	7	15%
Total		**47**	**100%**
Work experience	0-5 years	12	25.3%
	6-10 years	21	44.6%
	11-15 years	8	17%
	16-20 years	4	8.5%
	21-25 years	2	4.2%
	Over 25 years	0	0%
Total		**47**	**100%**

Based on the demographic data provided, it can be observed that the majority of the participants were female, accounting for 85% of the total, while males constituted 15%. Among the age groups, 31-40 years represented the highest percentage of the participants at 49%, whereas those aged over 51 years were the least represented, making up only 4.2% of the total.

Moreover, the educational background of most professional nurses was noteworthy, as 68% held a university degree or higher, and 32% possessed a diploma. Regarding their areas of specialization, the primary healthcare sector was the most common work setting, employing 38.3% of the nurses, followed by the labor ward with 21.2% of the participants. When considering the specific roles, nursing practitioners constituted the largest group of participants at 21.2%, while registered nurses comprised 18%. In terms of the facilities involved in the study, two public healthcare institutions, namely Settlers Day Hospital and Temba TB Hospital, contributed the most participants. Finally, the distribution of work experience showed that 44.6% of the participants had 6-10 years of experience, while only 4.2% had the most extensive experience.

OBJECTIVE 1

4.2.2 Knowledge sharing

This section aims to determine the level of understanding of knowledge sharing (KS) practices among nurses working in public healthcare facilities in Makhanda. In the context of this study, KS practice involves the exchange of knowledge between individuals or groups of individuals (Abu-Shanab, Haddad & Knight, 2014). It also entails providing support, information, and knowledge to assist others and collaborating with others to solve problems, generate new ideas, or implement policies and procedures (Abu-Shanab et al., 2014). The objective of this study is to gather nurses' opinions on KS and to assess whether it has helped them to address healthcare-related problems.

4.2.2.1 Knowledge sharing opinion

To assess the opinion of knowledge sharing (KS) among professional nurses, they were surveyed about their general perspective on KS. The findings revealed that 28 respondents (60%) considered KS to be crucial for service delivery, 16 respondents (34%) believed it offered advantages to the organization, and three respondents (6%) stated they were unfamiliar with it. According to Okonedo and Popoola (2012), KS facilitates the sharing of insights and experiences among professional nurses, leading to efficient and effective service provision in public healthcare facilities. Kamal, Manjit, and Gurvinder (2007) have emphasized that knowledge is a key driver in the economic landscape, serving as a valuable and strategic asset that enables organizations to gain a competitive advantage and adaptability (Dube & Ngulube, 2012). Additionally, Christensen (2007) asserts that continuous KS positively impacts organizational performance, as it involves transferring knowledge to those with less expertise. The survey results, with 28 respondents (60%) considering KS important for service delivery and 16 respondents (34%) acknowledging its organizational advantages, reinforce the belief among professional nurses that sharing relevant knowledge enhances service delivery and equips public healthcare facilities with a competitive edge, particularly during challenging times like the COVID-19 pandemic.

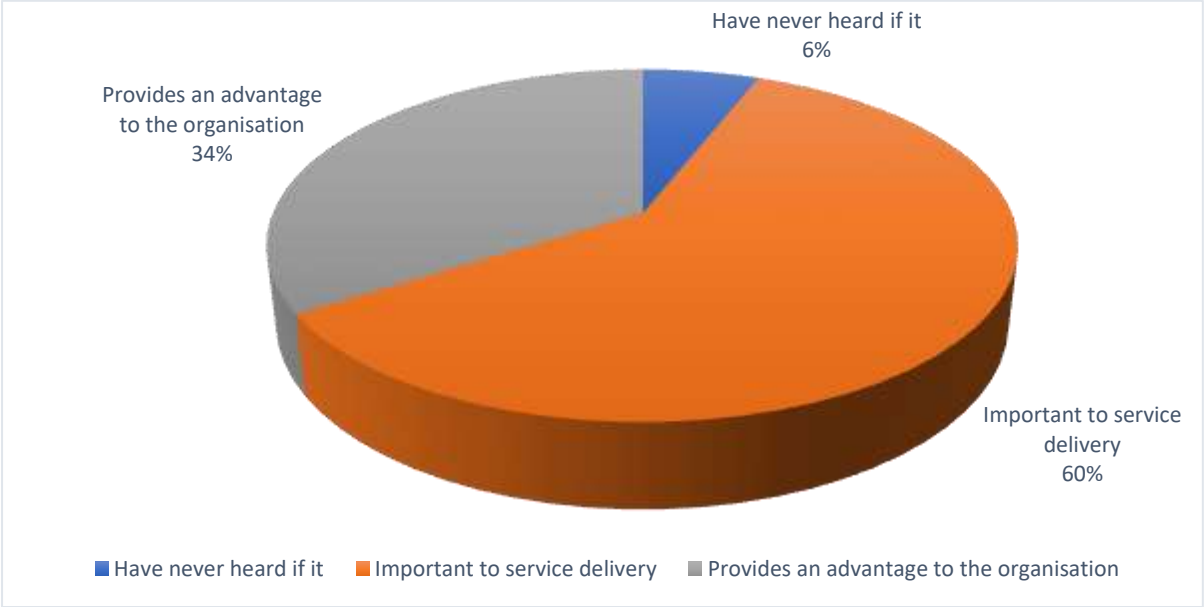


Figure 4.1: Respondents opinions regarding knowledge sharing practices

4.2.2.2 Knowledge sharing in terms of helping nurses solve healthcare related problems

To obtain further information on the respondents' views on KS, they were asked if they thought KS may help nurses solve healthcare related problems by indicating their answer with either a yes or no (Table 4.3 below). A total of 43 (91.5%) respondents believed KS may help the nurses solve healthcare related problems, compared to 4.2% who indicated no, whereas another 4.2% did not respond to this question. The fact that most of the respondents are of the view that KS may help them solve healthcare related problems is in line with what Christensen (2007) notes, that if knowledge is shared, it helps solve problems that individuals are working on in an organisation. In a public healthcare facility, duplication happens when, for example, a nurse on one shift makes the same mistakes that another nurse of a previous shift had already made.

Table 4.2: Knowledge sharing practices helping nurses to solve healthcare related problems

Does KS help nurses solve healthcare related problems?	**Frequency**	**Percentage**
Yes	43	91.5%
No	2	4.2%
No answer provided	2	4.2%
Total	**47**	**100%**

The respondents who answered yes to the question regarding how KS helps professional nurses solve healthcare related problems were requested to further explain why they indicated yes. Below are some the explanations provided by the respondents.

"I think knowledge sharing practice will help nurses in diagnosing and treating patients effectively." [Nurse 8]

"Knowledge sharing practice helps us enhance our skills and to know things we did not know." [Nurse 17]

"All nurses will be on the same level of understanding while it helps uplift competence and safe practice." [Nurse 4]

"Through knowledge sharing nurses will be equipped to make decisions which will help them prevent health problems, protect their patient's health, and manage health problems when they arise." [Nurse 11]

"By voicing your concerns…. Nurses can't solve healthcare related problems alone, the system must be flexible and reachable." [Nurse 3]

"Assist health workers to understand the condition and use same treatment for all the patients." [Nurse 13]

"Because the experienced nurses have generated wisdom and knowledge to share with the new generation of nurses." [Nurse 20]

"The more informed the nurses are, enables them to make sound decisions related to healthcare services." [Nurse 16]

"It is important because the nurses come to understand which knowledge is important." [Nurse 27]

"The right knowledge can be applied to fight COVID-19 within the community." [Nurse 38]

"Knowledge sharing affects the manner in which the nurses are able to provide adequate community-based healthcare." [Nurses 41]

"COVID-19 caused a lot of problems in terms of knowledge and the information that the nurses obtained helped in knowing what was going on in the communities that were affected." [Nurses 33]

"Some nurses are shy about sharing their knowledge with the other nurses." [Nurse 22]

From the above opinions, most professional nurses believe that KS is important when it comes to solving healthcare related problems.

OBJECTIVE 2

4.2.2.3 Respondents' knowledge sharing practice regarding COVID-19

It is important to understand what type of knowledge about COVID-19 the nurses share, how they share it, the sources from which they obtain their COVID-19 knowledge, the amount of COVID-19 knowledge they obtain, and how it is shared. The following sub-sections deal with the nurses' sources of COVID-19 knowledge, the amount of COVID-19 knowledge that each nurse possesses, and the type of COVID-19 knowledge they shared among each other.

Table 4.3: Sources of COVID-19 information

Sources of COVID-19 information	**Frequency**	**Percentage**
Television	21	44.7%
Newspapers	1	2.1%
Internet	15	32%
Department of Health Website	3	6.3%
Colleague	5	10.6%
Other	2	4.2%
Total	**47**	**100%**

The table shows the various sources from which respondents obtained their information about COVID-19. The majority of respondents (44.6%) relied on television, followed by the internet (32%), the Department of Health website (6.3%), colleagues (10.6%), and other sources (4.2%). Only one respondent (2.1%) used newspapers as their information source. Tien et al. (2021) suggest that access to adequate and accurate information sources can lead to useful knowledge and appropriate COVID-19 knowledge-sharing (KS) strategies. Given that television is the most common source of information, it might have a significant impact on the knowledge and KS practices of the nurses working in public healthcare facilities in Makhanda. The study also highlights that a lack of information can lead to stigma, discrimination, and inappropriate preventive behaviors related to COVID-19. It implies that having access to accurate and sufficient information can help combat misconceptions and misconstrued ideas surrounding the pandemic, leading to more informed and responsible actions among the nurses. The findings emphasise the importance of accurate and adequate information about COVID-19, especially for healthcare workers like nurses. Having reliable sources of information can help them stay updated with the latest developments, protocols, and guidelines, enabling them to provide better care and support to patients and the community (Opele, 2022). The study

indicates that providing nurses with access to credible information sources and ensuring they have sufficient knowledge about COVID-19 can positively influence their attitudes and practices, contributing to more effective control of the COVID-19 epidemic and better healthcare outcomes in public healthcare facilities in Makhanda.

Table 4.4: Amount of COVID-19 knowledge

Amount of COVID-19 knowledge	**Frequency**	**Percentage**
Too little	3	6.3%
Sufficient	38	80.9%
Too much	4	8.5%
Not sure	2	4.2%
Total	**47**	**100%**

One of the objectives of this study was to understand what knowledge about COVID-19 the nurses shared among themselves, why they shared it and how it was shared. The question aimed at finding out the amount of COVID-19 knowledge the professional nurses. The findings presented in Table 4.4 above reveal that the majority of respondents (38, 80.9%) had a sufficient level of knowledge about COVID-19. Three respondents (6.3%) had too little knowledge about COVID-19, while four respondents (8.5%) reported having too much knowledge about it. Two respondents (4.2%) were unsure about their level of COVID-19 knowledge. The knowledge of nurses regarding COVID-19 is crucial in combating the epidemic and achieving the desired results in the face of the outbreak (Aydin & Balci, 2020). Previous studies on the H1N1 influenza pandemic in 2009 have shown that most healthcare workers had adequate knowledge about the pandemic (Aydin & Balci, 2020).

The respondents were also asked to indicate the type of knowledge they shared among themselves about COVID-19 and why they shared it. Below are some of the responses.

"I share knowledge about prevention of the spread of the disease (infection control), how to take a COVID-19 test and COVID-19 vaccination. To empower others and for smooth running of services." [Nurse 3]

"I share knowledge on pre-controlling measures, to prevent spread of infection." [Nurse 19]

"The knowledge I shared was about the COVID-19 vaccine that I administered, relating to the minimal side effects it gave me." [Nurse 10]

"Cough technique + isolation of index clients, education about signs + symptoms of COVID plus what families must do when an index client is at home plus further testing of contacts." [Nurse 15]

"I shared knowledge on the importance of hygiene practices to help reduce spread of the virus, and the importance of following COVID-19 regulations." [Nurse 17]

"Symptoms, signs, preventive measures. To protect clients against re-infection infecting others." [Nurse 6]

"How the virus spreads (through droplets that might land in the eye, nose, or mouth), the symptoms too (headache, shortness of breath, fever, coughing, loss of taste/smell). Look out for these and how to prevent the spread of COVID." [Nurse 12]

"Signs and symptoms – so that there will be early detection and prompt treatment that's including lifestyle or protocols." [Nurse 2]

"How COVID-19 is transmitted. How to manage the symptoms. Ways to prevent being infected by COVID-19." [Nurse 18]

"I share information on prevention, control, wearing masks, social distancing, and treatment." [Nurse 30]

"The knowledge I share is about prevention, treatment, and how to care for COVID-19 patients." [Nurse 25]

"How to take care of sick patients from the coronavirus and how to not get contaminated from the disease." [Nurse 37]

Based on the responses provided, the majority of the knowledge shared about COVID-19 pertained to preventive measures that can be used to mitigate the impact of the epidemic. The reasons for sharing this knowledge ranged from protecting patients from infection to empowering nurses with knowledge about the COVID-19 pandemic. Sharing knowledge about the pandemic enables professional nurses to efficiently preserve, retrieve, and reuse the knowledge, provided there is an organisational policy and program in place for preserving knowledge for future use (Chereka, Gashu, Fentahun, Tilahun, Fikadie & Ngusie, 2022). Additionally, COVID-19-related knowledge and skills improve caregiver interactions, relationships, and performance, enabling them to better meet the needs of COVID-19 patients (Chereka et al., 2022). Effective knowledge sharing practices among nurses regarding the COVID-19 pandemic provide healthcare organisations with a competitive advantage in evidence-based clinical decision-making (Chereka et al., 2022). It has been reported that healthcare workers often rely solely on the knowledge gained during their education without accessing the knowledge of their peers (Chereka et al., 2022). This can create problems when

providing treatment to patients based on new evidence. Sharing the correct COVID-19 knowledge among professional nurses is important as it creates better understanding and a sense of commitment (Chereka et al., 2022). Effective connectivity among professional nurses in different healthcare settings can also be established through the sharing of practices, norms, and values (Chereka et al., 2022).

4.2.3 Knowledge sharing strategies

This section seeks to understand the KS strategies that the nurses working in the public healthcare facilities in Makhanda employed. It also seeks to understand how the knowledge is shared among the nurses.

4.2.3.1 Organisational structure in relation to knowledge sharing

The respondents were asked to indicate which organisational structure of KS was being used in the healthcare facilities where they worked. Below are the responses.

Table 4.5: Respondents response to the question on the organisational structure of knowledge sharing

Organisational structure of knowledge sharing	**Frequency**	**Percentage**
Centralised	30	63.9%
Formalised	9	19.1%

Integrated	4	8.5%
Not sure	4	8.5%
Total	**47**	**100%**

The most common elements of organisational structure are centralisation, formalisation, and integration (Raziq, Ahmad, Iqbal, Ikramullah & David, 2020). According to the findings presented in Table 4.5, 30 respondents (63.9%) indicated that knowledge sharing is a centralised process. Centralisation pertains to the status of decision-making in an organisation (Raziq et al., 2020). A highly centralized decision-making authority that is limited to a few people within an organisation significantly limits the decision-making of subordinate workers, as they are expected to act in ways that are approved by management (Raziq et al., 2020). Research has shown that a highly centralised environment can lead to less participation and knowledge sharing among individuals within an organisation (Raziq et al., 2020). The above findings indicate that most decision-making is done by senior management, and professional nurses have little say in how to practice knowledge sharing among themselves.

The findings reveal that nine (19.1%) respondents believed that KS is formalised in their workplaces. Formalisation refers to the degree of standardisation of rules, policies, and procedures that guide the behavior of people in an organisation (Raziq et al., 2020). If the organisation has a highly formalised structure, workers will be expected to follow strict rules and procedures, which can hinder KS practice among nurses, especially if they do not support KS. The findings also indicate that four (8.5%) respondents indicated that the organisational structure of KS was integrated. Integration refers to the level of inclusion among workers within the organisation with regard to the tasks they perform (Germain, 1996). Integration can be vertical or horizontal (Raziq et al., 2020). Vertical integration refers to the level of interrelated tasks that workers perform with their superiors, and horizontal integration refers to the interrelated work that individuals perform with their fellow workers on the same hierarchical level (Chen & Huang, 2007). Studies have shown that a high level of integration enables social interactions and KS in an organisation (Raziq et al., 2020). Lastly, four (8.5%) respondents were not sure which organisational structure of KS was used in their workplace.

4.2.3.2 Position of knowledge sharing practices in the public healthcare facilities

Respondents were asked to indicate the position of KS in the public healthcare facilities where they worked. The study's goal is to discover the status of KS in these different healthcare settings in order to determine which KS strategies were being used.

Table 4.6: Respondents' opinions on the position of knowledge sharing practices in the public healthcare facilities

Opinion	**Frequency**	**Percentage**
There is a KS policy/strategy	29	61.7%
KS is practiced in an ad hoc manner	8	17.1%
KS is not practiced at my workplace	2	4.2%
There is a system in place for retaining knowledge from experienced nurses	5	10.6%
None of the above	0	0%
Not sure	3	6.3%
Total	**47**	**100%**

The findings (presented in Table 4.6 above) reveal that 29 respondents (61.7%) reported that the facilities where they worked had a knowledge sharing (KS) policy or strategy in place. Eight respondents (17.1%) indicated that KS was practiced in an ad hoc manner, two (4.2%) indicated that KS was not practiced in the workplace, and five (10.6%) indicated that there was

a system in place to retain knowledge from experienced nurses, such as encouraging them to record and store their knowledge in computerized databases for future use. Three respondents (6.3%) were unsure of the position of KS in the public health facility. It is important for organisations to have a clearly defined position on KS to facilitate knowledge growth and retention (Yang & Wu, 2008). Based on the responses above, it appears that most public healthcare facilities in Makhanda have a well-defined position on KS, such as communities of practice, ICT policies, and strategies to promote KS practices that allow nurses to share their experiences and ensure the retention of new knowledge.

4.2.3.3 Preferred channels of communication when practising knowledge sharing

Respondents were asked which communication channels they prefer to use when exchanging knowledge. They had to indicate the extent to which they agreed or disagreed with the statements presented to them.

Table 4.7: Preferred communication channels

Statement	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
I prefer using social networks such as Facebook, Twitter, wikis, WhatsApp, Instagram, and blogs to share knowledge	14(29.8%)	27(57.5%)	2(4.2%)	3(6.3%)	1(2.1%)
I use video conferencing to share knowledge with my fellow workers	5(10.6%)	3(6.3%)	1(2.1%)	18(38.3%)	20(42.6%)
I use the internet and knowledge repositories to share knowledge with my fellow workers	4(8.5%)	8(17.1%)	4(8.5%)	25(53.1%)	6(12.7%)

I prefer to share knowledge through storytelling	28(59.6)	10(21.2%)	2(4.2%)	6(12.8%)	1(2.1%)

Kim and Lee (2006) found that employees are most likely to share knowledge when there are clearly identified channels for informal communication within the organisation. According to the findings (presented in Table 4.7 above), respondents are most likely to share knowledge through storytelling (28, 59.6%) and are less likely to share knowledge with each other through video conferencing (20, 42.6%). The results also show that informal communication channels are the ones most used by the respondents to share knowledge. Storytelling is an informal communication channel that provides employees with an opportunity to interact with one another and share their work-related experiences and understand how to generate new ideas (Kim & Lee, 2006). Storytelling is an important means of acquiring and sharing knowledge, as stories stimulate the imagination and provide reassurance by offering moral education (Koskinen, 2008). The fact that respondents use stories to share knowledge may reflect their belief that such stories are relevant to their workplace, since storytelling involves sharing experiences. The use of social networks such as Facebook, WhatsApp, and Twitter were the second most common communication channels used by the respondents to share knowledge.

Chan, Chu, Lee, Chan, and Leung (2013) found that blogging and Facebook are increasingly recognised as tools to support online information sharing and management. Healthcare facilities are increasingly using social networks as communication channels (Chan et al., 2013). In the United States of America, the Food and Drug Administration and the Centres for Drug Control and Prevention used social media to share knowledge during the preparations for the H1N1 flu pandemic (Chan et al., 2013). Examining social media use and adoption in US hospitals has provided a framework for future studies examining the impact of social media on patient outcomes, including links between social media use and KS practices (Chan et al., 2013).

4.2.3.4 Intranet

The respondents were asked whether their healthcare facilities have an intranet. The aim was to determine whether the respondents used the internet to share knowledge or to perform their required daily tasks.

Table 4.8: Whether the public healthcare facility has an intranet.

Does your healthcare facility have an intranet?	**Frequency**	**Percentage**
Yes	15	32%
No	32	69%
Total	**47**	**100%**

According to the results presented in Table 4.8, a majority of public health facilities in Makhanda lack an intranet. Out of the respondents, only 15 (32%) confirmed that their healthcare facility had an intranet, while 32 (69%) stated that theirs did not. An intranet is a private computer network utilised within an organisation or company to foster communication and collaboration between employees, and grant access to shared resources and information (Abbas & Sharma, 2020). Unlike the internet, which is publicly accessible, an intranet is exclusive to those who belong to the organisation operating the network. This provides a secure environment for information sharing and access by employees (Abbas & Sharma, 2020).

An intranet typically offers various applications and tools for supporting business operations and enhancing productivity, such as messaging, document sharing, email, and project management tools. Due to the lack of intranets in most public health facilities in Makhanda city, sharing knowledge through communication channels such as video conferencing, online databases, and emails becomes difficult for nurses. Therefore, an intranet is a crucial tool for improving communication and collaboration, streamlining business processes, and boosting productivity in organisations. It is also customizable to meet the distinct requirements of different teams and departments within an organisation. The respondents who indicated that

their facility had an intranet were asked to state the type of content that was uploaded to it. Some of the responses were recorded as follows:

"Employment opportunities, health programme guidelines, etc." [Nurse 8]

"All updates about all + new programmes e.g., PrEP." [Nurse 15]

"All health system related issues, e.g., statistics etc." [Nurse 3]

"Administrative reports, patient records, and shift schedules." [Nurse 11]

"Healthcare related notices." [Nurse 25]

"Work schedules, patient information, administration notices." [Nurse 32]

"Patient files, work timetable, and important notices." [Nurse 29]

Table 4.9: Resignations of nurses in the preceding five years

Have there been any resignations of nurses at your healthcare facility in the last five years?	**Response**	**Percentage**
Yes	32	68%
No	10	21.2%
Not sure	5	10.7%

Total	**47**	**100%**

The aim here was to determine whether there had been any resignations in the various public health facilities during the preceding five years of the study. In response to the question, Table 4.9 shows that 32 respondents (68%) stated that there had been resignations, 10 respondents (21.2%) stated that there had not been any resignations in the previous five years, and 5 respondents (10.7%) were unsure whether there had been any resignations.

In continuation of the previous question, respondents who reported that there had been resignations in the previous five years were asked whether those who resigned were interviewed to retain their knowledge (as shown in Figure 4.2 below). The findings revealed that 9 respondents (19.1%) agreed that departing employees were interviewed, 30 respondents (63.9%) answered "no" to the question, and 8 respondents (17%) were unsure.

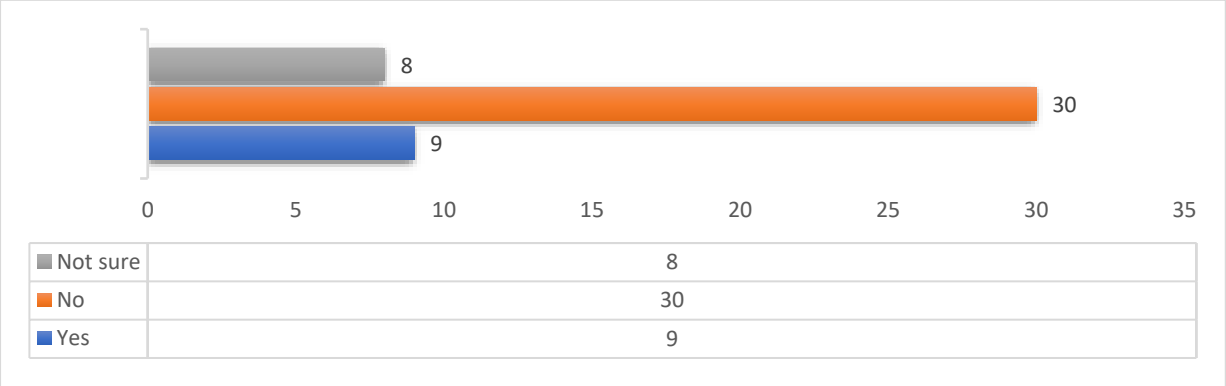


Figure 4.2: Whether the nurses who have resigned have been interviewed to retain their knowledge

It is concerning that most respondents felt that nurses who resigned were not interviewed to retain the knowledge they acquired during their tenure in public healthcare facilities in Makhanda. According to Bessick and Naicker (2013), in circumstances where knowledge sharing is not the norm, employees may become the sole keepers of domain knowledge, and this information is lost when employees leave the organisation. When nurses resign, retire,

move to another healthcare facility, or change careers, they take with them the professional knowledge they have acquired during their tenure in a particular healthcare facility (Asogwa, 2012). The loss of this knowledge, which could provide the healthcare facility with a competitive advantage, is significant (Asogwa, 2012). Therefore, it is essential for the various public healthcare facilities in Makhanda to initiate a knowledge management (KM) strategy to harness the wealth, wisdom, expertise, and experiences embedded in the minds of nurses before they resign or retire (Asogwa, 2012).

4.2.4 Knowledge sharing tools

It is important to identify the tools that the respondents use to share knowledge. Knowledge sharing (KS) practices promote the easy flow of knowledge within an organisation. Such knowledge flows can involve interactions between individuals or references to codified knowledge (Bou-Llusar & Segarra-Ciprés, 2006). Knowledge sharing practice tools include both human-based and technology-based tools.

4.2.4.1 Technology-based tools

This section seeks to understand the role of the technology-based KS tools as the apply to the nurses working in the various public healthcare facilities.

4.2.4.1.1 Computer literacy

The respondents were required to state if they considered themselves computer literate as shown in Figure 4.3

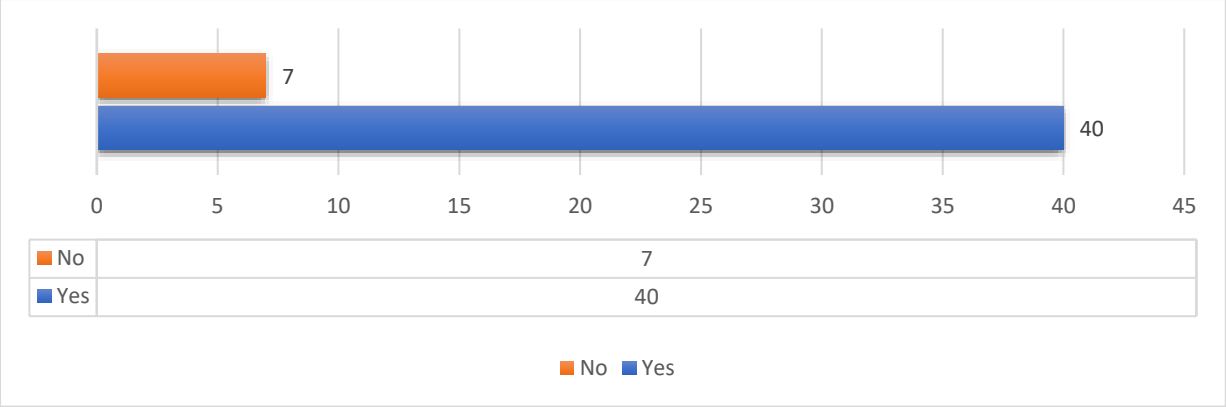


Figure 4.3: Respondents responses regarding whether they are computer literate.

According to Figure 4.3, 40 out of 47 respondents (85.1%) answered yes, indicating that they have the necessary skills to use a computer, while seven (14.9%) answered no. The aim of this question is to determine whether nurses possess the essential computer skills. Computer literacy can certainly encourage knowledge sharing within an organisation. When employees are computer literate, they have the skills and knowledge needed to use various tools and applications that are commonly used in the workplace, such as email, messaging, and document sharing platforms (Hoffman & Blake, 2003). This makes it easier for them to communicate and share information with their colleagues and other stakeholders within the organisation. Moreover, computer literacy also enables employees to quickly and easily access information that is stored in digital formats, such as databases and online resources. This facilitates knowledge sharing and collaboration, as employees can quickly find and access the information, they need to complete their work. In addition, computer literacy can also encourage employees to engage in online communities and social networks that are relevant to their work, allowing them to connect with other professionals in their field and share information and best practices.

Overall, computer literacy plays an important role in facilitating knowledge sharing within an organisation. Hoffman and Blake (2003) state that when employees are comfortable using digital tools and resources, they are better able to communicate, collaborate, and share knowledge with their colleagues, which can lead to increased productivity, innovation, and success for the organization. Asogwa (2012) suggests that the combination of computers,

databases, and telecommunications, particularly the internet, enables professionals to share ideas, resources, and information effectively. Ramirez (2007) notes that the use of computers can facilitate knowledge sharing but cautions that it does not necessarily encourage individuals to share their knowledge. Although public healthcare facilities may have the necessary tools, there is no guarantee that nurses will use them effectively, and thus, the human aspect of knowledge sharing tools remains vital (Ramirez, 2007). This is encouraging, as the vast majority of nurses demonstrated computer literacy

4.2.4.1.2 Internet connection

Respondents were asked to indicate whether the public health facilities where they worked had an internet connection.

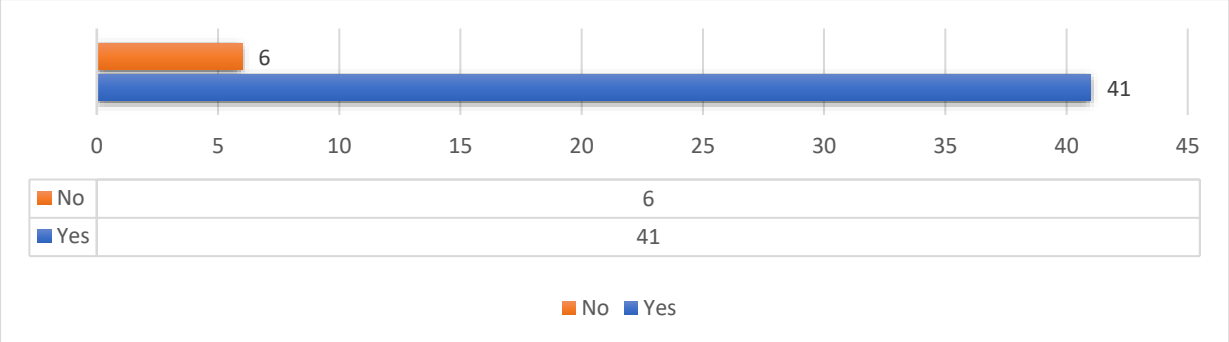


Figure 4.4: Results for internet connectivity

Out of the total of 47 respondents, 41 (87.2%) indicated that their healthcare facilities have an internet connection, while six (12.8%) respondents reported that their facility did not have an

internet connection. The internet plays a significant role in information sharing practice. With the internet, people can easily access vast amounts of information on almost any topic from anywhere in the world. This has made it possible for individuals and organisations to share information and knowledge on a global scale, breaking down geographic barriers and enabling collaboration and communication among people and groups that might not have been possible otherwise (Avasia & Gosh, 2002). The internet has also made it easier for organisations to share information with their stakeholders, including customers, partners, and employees. For example, businesses can use websites and social media platforms to provide information about their products and services, as well as to engage with customers and gather feedback (Lueg, 2003). In addition, the internet has created new opportunities for knowledge sharing through online communities and forums.

These platforms bring together people with common interests and expertise, allowing them to share information and collaborate on projects and initiatives (Lueg, 2003). Knowledge sharing becomes easier as people who may be hesitant about sharing knowledge face-to-face can use alternative platforms like online group chats or email to share and receive knowledge (Lueg, 2003). Overall, the internet has transformed the way that people and organisations share information and knowledge. It has made it easier and faster to access and share information on a global scale, enabling collaboration and innovation that can benefit individuals working in an organisation.

As a follow up question, the respondents who answered "yes" were required to indicate whether the internet connection was accessible to all. Below are some of their responses.

"Yes, it is accessible to all." [Nurse 10]

"Not accessible to all nurses as it is only accessible to certain staff members."

[Nurse 3]

"No, only to data capturers and facility managers." [Nurse 8]

"If any information is needed, we can access it easily." [Nurse 20]

"Yes, it is accessible to all nurses." [Nurse 13]

"Most consultation rooms have a computer; for the ones without the computer, we have a tablet with access to the internet for easy access to clients' results when hard copy is not available." [Nurse 1]

"Yes." [Nurse 6]

"Yes, it is accessible to all nurses, every consulting room has a computer." [Nurse 18]

"Not accessible to all nurses." [Nurse 11]

"Yes, it available to the nurses." [Nurse 15]

Based on the responses provided, most of the respondents have access to the internet, and those who have access primarily use it for administrative purposes and accessing patient records. Some respondents reported that internet access is restricted to a few individuals, while others indicated that they do not have internet access at all. Although the majority of nurses have access to the internet, the responses suggest that it is not frequently used for knowledge sharing practices. Instead, it is primarily utilised for work-related activities and for accessing social media sites such as WhatsApp and Facebook.

4.2.4.1.3 Technologies used in the various public healthcare facilities

The aim of this question is to determine which information and communication technologies (ICTs) nurses use. According to the findings presented in Figure 4.5, 46 (98%) of the respondents indicated that they use WhatsApp, 12 (49%) reported that they use the internet, 42 (89.3%) use email, 36 (77%) use Facebook, four (8.5%) use video conferencing, 15 (49%) use the intranet, and 12 (25.5%) use Twitter. It is important to note that the respondents were only asked if they use these technologies, and not specifically if they use them for knowledge sharing practices. Nevertheless, the use of ICTs reaffirms what the literature suggests, that they facilitate knowledge sharing. Shanhong (2000) argues that Information and Communication Technologies (ICTs) play a crucial role in knowledge sharing practice. ICTs are tools and resources that are designed to facilitate communication, collaboration, and the sharing of information and knowledge. They include hardware, such as computers and mobile devices, as well as software, such as email, messaging apps, and social media platforms. Ramirez (2007) agrees with Shanhong (2000) by stating that while ICTs facilitate knowledge sharing, they may not always motivate individuals to share their knowledge.

The use of ICTs in knowledge sharing practice has several benefits, including:

1. Facilitating communication: ICTs make it easy for individuals and organisations to communicate and collaborate, regardless of their location. Email, messaging apps, and video conferencing platforms allow people to connect and share information in real time regardless of their physical location.

2. Improving access to information: With ICTs, individuals can easily access vast amounts of information on almost any topic from anywhere in the world. This makes it easier for them to stay informed and up to date on the latest trends and developments in their field.

3. Enhancing collaboration: ICTs allow individuals and organisations to work together on projects and initiatives, regardless of their location. They can use online platforms to share information, work on documents together, and track progress.

4. Enhancing communication: ICTs such as email, instant messaging, video conferencing, and social media platforms make it easier to share information and collaborate with people across different locations and time zones.

Overall, ICTs are an essential tool for knowledge sharing practice. They enable individuals and organisations to communicate, collaborate, access information, and innovate in ways that were not possible before. This can lead to increased productivity, better decision-making, and improved outcomes for individuals, organizations, and society as a whole. Given the significance of ICTs in knowledge sharing and the fact that the majority of nurses use them, it can be concluded that ICTs greatly enhance their knowledge sharing practices.

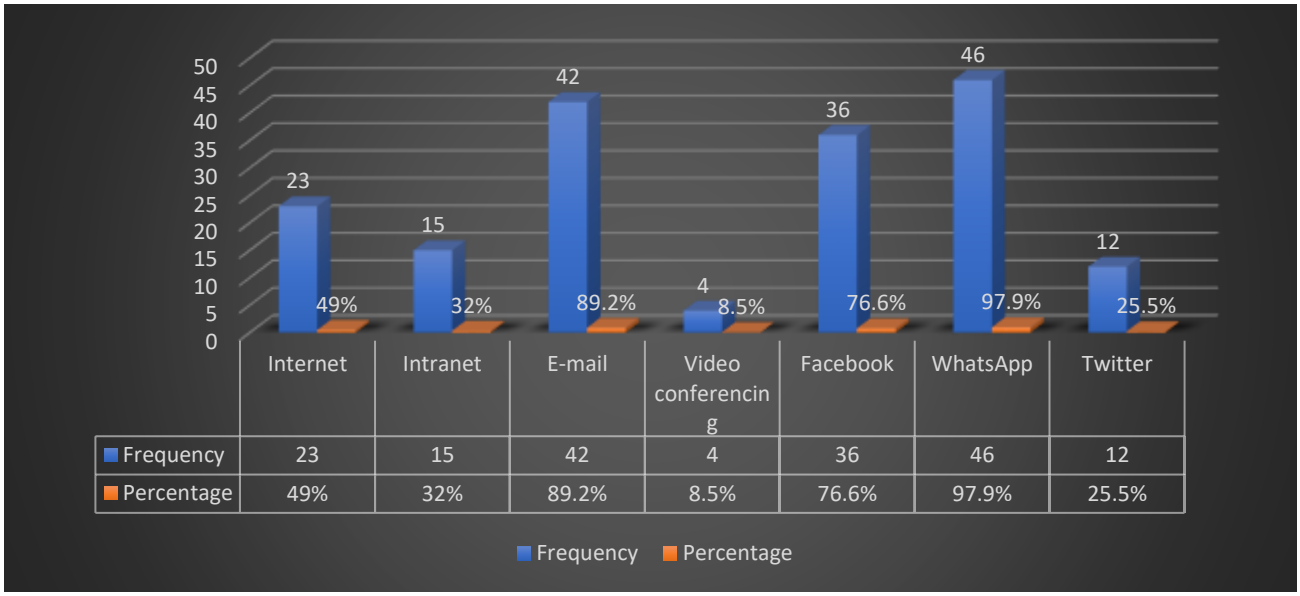


Figure 4.5: ICTs used in the various public healthcare facilities

4.2.4.2 Human-based knowledge sharing tools

One of the objectives of this study was to inquire about the level of comprehension of KS practices among the nurses working in public hospitals and clinics in Makhanda. Among the issues relating to this objective was to ascertain what human-based tools the nurses use when practising KS. The human-based KS tools identified in the literature review section are CoPs, mentorship, job rotation, storytelling, and job-shadowing. The aim of this objective is to

determine which human-based KS tools, such as CoPs, mentorship, job rotation, storytelling, and job-shadowing, are used at the various public healthcare facilities.

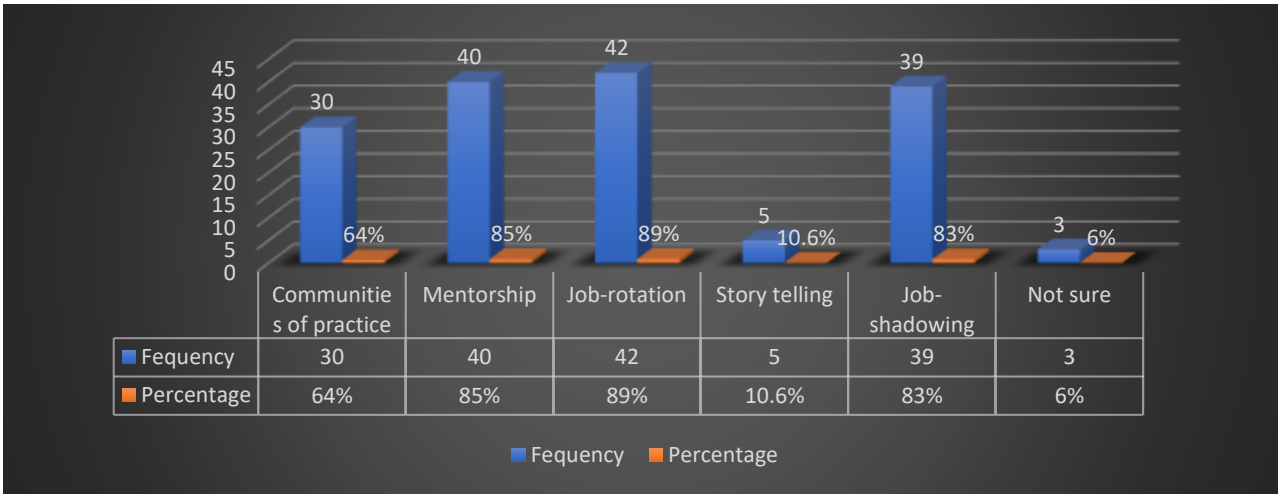


Figure 4.6: Human based tools used for knowledge sharing

As shown in Figure 4.6, the findings indicate that the majority of respondents (42, 89%) use job rotation as a human-based tool to share knowledge. Job rotation is considered one of the most effective ways to transfer tacit knowledge (Lu & Yang, 2015). The Canadian Research Policy Networks (2006) state that job rotation provides more opportunities for workers to use their skills, perform different tasks, and have more influence over their functions. It also helps workers understand the work of others and how everyone contributes to the organisation (Peariasamy & Mansor, 2008). With proper planning and scheduling, workers can learn from each other about how tasks are performed through job sharing (Peariasamy & Mansor, 2008). In the nursing profession, group work is common, and the establishment of social relationships in hospitals and clinics can influence collaboration dynamics, contributing to both the satisfaction and stress experienced by nurses (Pinhatti, Vannuchi, Sardinha, & Haddad, 2017). Such group cohesion can improve work team functionality and enhance knowledge sharing, primarily through job rotation.

Mentorship is the second most popular activity for KS, with 40 (85%) of participants engaging in it. A study on newly enrolled nurses transitioning to professional practice found that they

are most attracted to friendly, supportive, and encouraging experienced nurses as mentors (Ferguson, 2011). The study revealed that informal mentoring relationships were successful as newly enrolled professional nurses developed connections with more experienced nurses over time, who were more welcoming and showed an interest in sharing their professional knowledge (Ferguson, 2011). In another study by Ferguson (2012) on newly graduated nurses, it was discovered that novice nurses received support from informal mentors who were often experienced nurses in the wards. Furthermore, Ferguson's (2011) research shows that novice nurses sought to work with professional nurses who had a strong knowledge base in clinical practice and were interested in helping them apply critical thinking to various nursing situations. Many respondents believe that mentoring provides an opportunity to acquire knowledge from experienced nurses, which can be shared in various public healthcare facilities in Makhanda city.

The study also found that storytelling was the least used activity, with only five participants (10.6%) engaging in it. However, in some organisations, storytelling has become the preferred medium for human relationships among workers (Denning, 2004). Storytelling draws on characteristics of human nature that individuals may be unaware of, using delivery systems as old as civilisation itself (Boje, 2008). The benefits of storytelling for nurses include the sharing of knowledge through lived experiences, which can be incorporated into primary healthcare practices (Schwartz & Abbott, 2007). Stories offer a means of understanding and can be useful for the education and development of nurses, supporting their rich experiences and the value of connections with their colleagues (Schwartz & Abbott, 2007). The fact that only five respondents indicated the use of storytelling as an activity to share knowledge suggests that this activity is not viewed as an important tool among the professional nurses in Makhanda's public healthcare facilities. Among the activities identified that relate to sharing knowledge, mentorship, job rotation, and job-shadowing were the ones with which most respondents identified. Three (6%) of the respondents were unsure about which activity for KS was used.

4.2.4.2.1 Knowledge sharing process

Based on Table 4.10, a considerable portion of participants (38.2%) express agreement or strong agreement regarding the provision of a mentor for newly hired nurses. However, a higher percentage (51.1%) disagrees or strongly disagrees with this assertion, suggesting potential areas for enhancing mentorship programs for newcomers in nursing. A significant majority of respondents (68%) disagree with the idea that retired nurses are being recalled to assist with nursing activities due to the inadequacy of current nurses. Merely a small fraction (8.4%) either agrees or strongly agrees, indicating that the problem of inadequacy may not be widespread. Most participants (59.6%) do not believe that resigned nurses are called back to assist due to inadequacy; nevertheless, a notable percentage (29.8%) either agrees or remains uncertain, hinting at the possibility of some nurses being recalled after resignation. The vast majority of respondents (89.3%) strongly agree or agree that formal groupings exist in public healthcare facilities in Makhanda, implying these establishments likely have well-structured organizational systems. A considerable proportion of participants (68%) agree or strongly agree that nurses are rotated across different departments, potentially benefiting their professional growth and overall effectiveness. An overwhelming majority (89.3%) either agrees or strongly agrees that nurses in public hospitals or clinics actively share knowledge through various channels, underscoring a culture of collaboration and knowledge exchange among the nursing staff.

Table 4.10: The knowledge sharing process

Statement	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**	**Total**
Whenever new nurses are hired, they are allocated a mentor	13 (27.6%)	5 (10.6%)	5 (10.6%)	20 (42.6%)	4 (8.5%)	**47 (100%)**
Retired nurses have been recalled to assist with nursing activities because the current nurses are unable to perform them adequately	1 (2.1%)	3 (6.3%)	8 (17.1%)	32 (68%)	3 (6.3%)	**47 (100%)**

Nurses who have resigned have been called back to assist with nursing duties because the current nurses are unable to perform them adequately	-	5 (10.6%)	8 (17.1%)	28 (59.6%)	6 (12.7%)	**47 (100%)**
There are formal groupings at the public healthcare facilities in Makhanda	6 (12.7%)	36 (76.6%)	2 (4.2%)	3 (6.3%)	-	**47 (100%)**
The nurses in your public hospital or clinic are usually rotated in various departments such as anaesthesiology, critical care, surgery, and general patient care	6 (5%)	26 (55.3%)	8 (17.1%)	5 (10.6%)	2 (4.2%)	**47 (100%)**
The nurses in your public hospital or clinic share knowledge by way of e-mail, social media, word of mouth, formal and informal meetings, conferences, and by telephone	10 (21.2%)	32 (68.1%)	3 (6.3%)	2 (4.2%)	-	**47 (100%)**

4.2.5 Attitudes and perceptions of nurses towards knowledge sharing practice

The section aims to determine what attitudes and perceptions the nurses had towards KS practice.

Table 4.11: General attitudes and perceptions of the nurses towards knowledge sharing practices

Statement	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**	**Total**
Sharing knowledge with my fellow nurses is good	40 (85.1%)	5 (10.6%)	2 (4.2%)	-	-	**47 (100%)**
Sharing knowledge with my fellow nurses is not good	-	-	3 (6.3%)	36 (76.6%)	8 (17%)	**47 (100%)**
Sharing knowledge with my fellow nurses is pleasant	35 (74.4%)	8 (17.2%)	3 (6.3%)	1 (2.1%)	-	**47 (100%)**
Sharing knowledge with my fellow nurses is unpleasant	-	3 (6.3%)	7 (14.9%)	35 (68.1%)	5 (10.6%)	**47 (100%)**
Sharing knowledge with my fellow nurses is wise	38 (81%)	6 (13%)	3 (6%)	-	-	**47 (100%)**
Sharing knowledge with my fellow nurses is unwise			3 (6.3%)	36 (76.6%)	8 (17%)	**47 (100%)**

The results of a survey on the attitudes of nurses towards sharing knowledge with their colleagues revealed that the majority of respondents believe it is important and beneficial to

share knowledge with fellow nurses. Specifically, 40 respondents (85.1%) strongly agreed that sharing knowledge is good, 5 (10.6%) agreed, and only 2 (4.2%) were unsure. When asked about how pleasant it is to share knowledge, 35 (74.4%) strongly agreed that it is pleasant, 8 (17.2%) agreed, and 3 (6.3%) were unsure. Moreover, most respondents believed that sharing knowledge is wise, with 38 (81%) strongly agreeing, 6 (10%) agreeing, and 3 (6%) being unsure. The survey aimed to better understand the attitudes of nurses towards sharing knowledge and to identify any barriers or challenges that may exist.

When asked about the statement that sharing knowledge is not good, 36 respondents (76.6%) disagreed, while eight (17%) strongly disagreed, and three (6.3%) were unsure. In addition, only five respondents (10.6%) strongly disagreed with the notion that sharing knowledge with fellow nurses is unpleasant, while 32 (68.1%) disagreed, seven (14.9%) were unsure, and three (6.3%) agreed. Furthermore, when asked if it is unwise to share knowledge with fellow nurses, eight respondents (17%) strongly disagreed, 36 (76%) disagreed, and three (6.3%) were unsure. Overall, these findings indicate that the majority of the respondents hold a positive attitude and perception towards knowledge sharing (KS).

According findings into the attitudes and perceptions of nurses regarding knowledge sharing with their colleagues, shows that the majority of nurse's view knowledge sharing positively and consider it to be a good and pleasant practice. On the other hand, there is some uncertainty and disagreement about whether sharing knowledge could be considered unwise or unpleasant.

4.2.5.1 Perceived use of information communication technologies (ICTs) in knowledge sharing practices

The participants were asked to provide their perceptions on the use of Information and Communication Technologies (ICTs) for Knowledge Sharing (KS). The results presented in Figure 4.6 reveal the participants' views on the use of ICTs for KS.

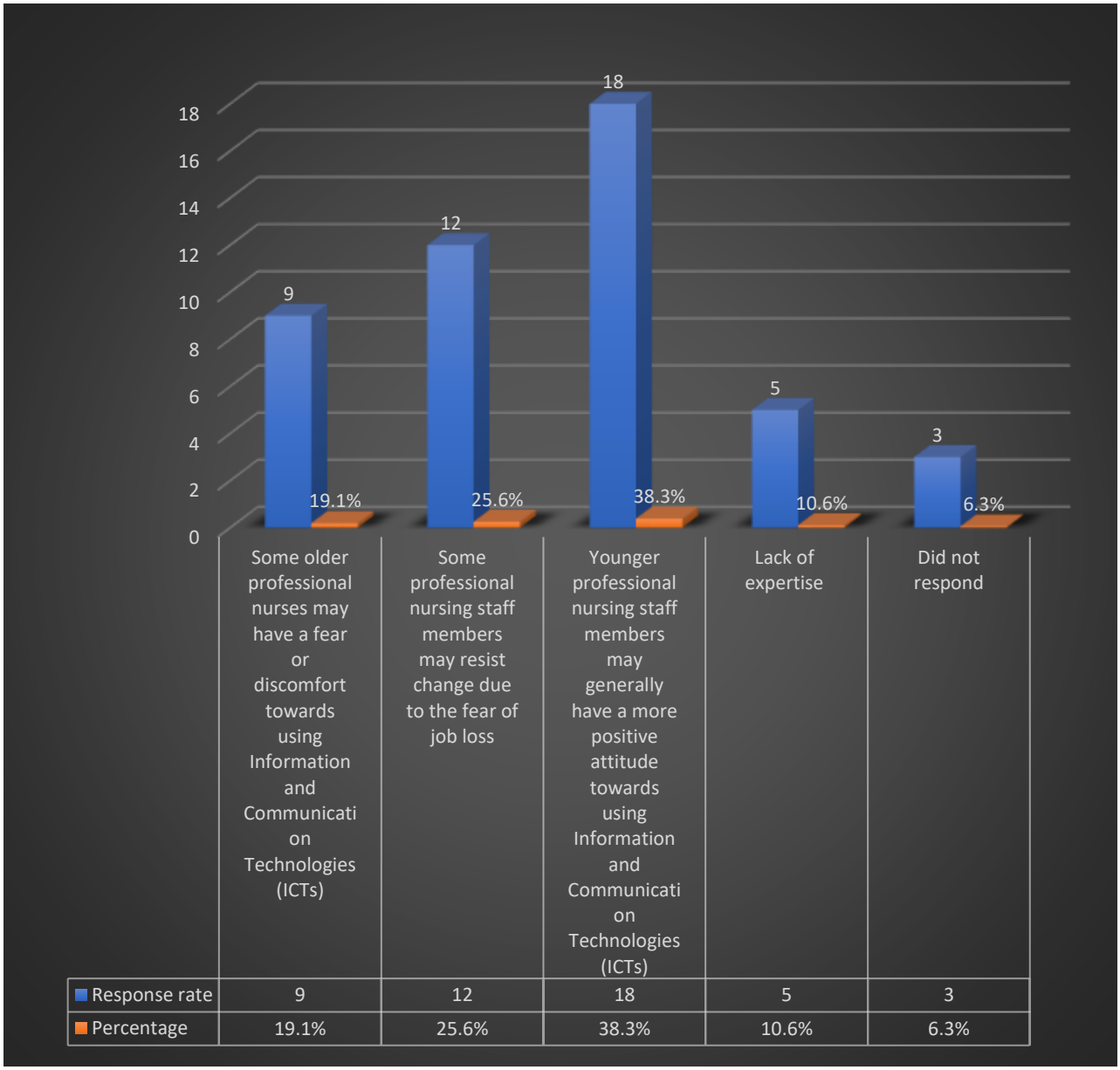


Figure 4.7: Perceived use of ICTs for knowledge sharing practices

The aim here was to understand the perceptions of professional nurses working in public healthcare facilities in Makhanda city towards the use of Information and Communication Technologies (ICTs) as a means of knowledge sharing. According to the practice capability model (Kim & Lee, 2006), an individual's perception of the use of ICTs can influence their intention to use or reject them, thereby affecting their attitude and perception of their usefulness. Of the responses received, 19.1% of participants indicated that some older professional nurses may be afraid or have discomfort towards using ICTs, 25.6% indicated that

some professional nursing staff members may resist change due to fear of job loss, and 30% indicated that younger professional nursing staff members generally have a positive attitude towards using ICTs. In addition, 10.6% of respondents indicated a lack of expertise, while 6.3% did not provide a response. The findings suggest that while ICTs play an important role in knowledge sharing, they do not guarantee its practice among professional nurses, particularly among older professional nurses.

4.2.5.2 Sharing of knowledge and skills

This section discusses the findings on the skills and expertise that the professional nurses share with each other. The results, as presented in Table 4.12, indicate that nurses working in public health facilities in Makhanda city actively share their skills and expertise with one another.

Table 4.12: Skills and expertise for knowledge sharing practices

Statement	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly agree**	**Total**
I share work related skills with my fellow nurses	15 (32%)	30 (63.8%)	2 (4.2%)	-	-	**47 (100%)**
I share knowledge and expertise on using healthcare-based practices with my fellow nurses	21 (44.7)	25 (53.2%)	1 (2.1%)	-	-	**47 (100%)**
My fellow nurses share new skills in nursing practice with me	15 (32%)	31 (69.5%)	1 (2.1%)	-	-	**47 (100%)**
My fellow nurses share with me new working skills they have acquired	3 (6.3%)	26 (55.3%)	3 (6.3%)	15 (32%)	-	**47 (100%)**

From table above, most respondents agreed that their fellow nurses share new working skills with them (26 or 55.3%). Three respondents (6.3%) strongly agreed, while three (6.3%) were not sure, and 15 (32%) disagreed. When it comes to sharing their own work-related skills, 15 respondents (32%) strongly agreed, 30 (64%) agreed, and 2 (4.2%) were not sure.

According to Alkhaqani (2022), communication and cooperation among nurses are crucial for teamwork and patient safety. Sharing skills helps to ensure the safety and reliability of patient care, as it reflects the nurses' knowledge, way of thinking and feeling, and capabilities. In terms of sharing knowledge and expertise related to healthcare practices, 21 respondents (44.7%) strongly agreed, 25 (53.1%) agreed, and 1 (2.1%) was not sure. Sharing knowledge and expertise can improve the work experience and success of a healthcare organisation, as nurses can exchange ideas and clinical experiences through socialization (Shehab et al., 2019).

When it comes to fellow nurses sharing new skills related to nursing practice, 15 respondents (32%) strongly agreed, 31 (65.9%) agreed, and 1 (2.1%) was not sure. By sharing new skills, the nurses can enhance their ability to diagnose problems and apply the skills they have learned to solve healthcare issues (Li-Ying et al., 2016). The skills shared by the nurses in work groups can be tacit, codified, or embodied in routines.

From the data, it appears that a significant proportion of nurses agree or strongly agree with the statements related to knowledge sharing and collaboration. However, there are also some respondents who are unsure or disagree with certain aspects of knowledge sharing among their fellow nurses.

OBJECTIVE THREE

4.2.6 Factors affecting knowledge sharing practices among the nurses

The third objective of this study aimed to identify the challenges faced by the professional nurses working in public healthcare facilities in Makhanda city while practicing knowledge sharing among themselves. The overarching goal was to evaluate the extent to which knowledge sharing is being practiced among the nurses. The results of these findings will be discussed below.

4.2.6.1 Organisational knowledge sharing practices

In this section, the participants were asked to indicate the extent to which they agree or disagree with the organisational knowledge sharing within their various workplaces.

Table 4.13: Organisational knowledge sharing practices

Statement	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**	**Total**
There is a knowledge sharing culture at my workplace	7 (14.9%)	30 (63.8%)	3 (6.3%)	**7** (14.9%)	-	**47 (100%)**
My fellow nurses share their working experience and knowledge	6 (12.7%)	30 (63.9%)	6 (12.7%)	5 (10.6%)	-	**47 (100%)**
I share my knowledge with my fellow nurses in teams or groups	10 (21.2%)	32 (68.1%)	5 (10.6%)	-	-	**47 (100%)**

I share knowledge with my fellow nurses if I believe it is relevant and helpful	12 (25.5%)	35 (74.4%)	-	-	-	**47 (100%)**
I am willing to share knowledge with my fellow nurses	15 (31.9%)	30 (63.8%)	2 (4.2%)	-	-	**47 (100%)**

Sharing knowledge within an organisation's culture is crucial for creating new knowledge by utilising both shared and existing knowledge, as noted by Kim and Lee (2006). Organisational knowledge sharing practice refers to the processes, strategies, and activities that are used by organisations to facilitate the sharing of knowledge and information among their employees, stakeholders, and customers (Kim & Lee, 2006). Organisational knowledge sharing involves the exchange of tacit and explicit knowledge that can be used to improve the organisation's performance, solve problems, and create new opportunities. Organisations that promote knowledge sharing typically have a culture that values collaboration, openness, and continuous learning. They use a variety of tools and techniques to support knowledge sharing, including such as communication tools, knowledge management systems, communities of practice, training and development and rewards and recognition (Kim & Lee, 2006).

According to survey findings, the public healthcare facilities in Makhanda City possess a culture of knowledge sharing, with the majority of respondents expressing optimism about their organisation's culture in this regard. Specifically, 63.8% of respondents agreed that a knowledge sharing culture exists in their workplace, with 14.9% strongly agreeing, 6.3% unsure, and 14.9% disagreeing. Additionally, 63.8% of respondents agreed that sharing working experience and knowledge among colleagues was important, with 12.8% strongly agreeing, 6.3% unsure, and 10.6% disagreeing. As healthcare providers, nurses operate in an environment characterized by caring for patients and providing healthcare, making the sharing of work experience and knowledge essential to providing adequate healthcare (Hallin & Danielson, 2007).

Regarding knowledge sharing within teams or groups, 68.1% of respondents agreed and 21.2% strongly agreed, while 10.6% were unsure. In professional nursing, constant communication and interaction among team members is necessary for effective practice, with the formation of teams and groups playing a crucial role in managing work streams and shifts (Hallin & Danielson, 2007). The survey data indicates that nurses do share knowledge in teams or groups, with all respondents indicating that they share knowledge if they believe it to be relevant or helpful, and a majority of 74.4% agreeing. This is significant, given that nurses require accurate and scientific knowledge to treat patients effectively. The survey also revealed that respondents were willing to share knowledge with their fellow nurses, with 63.9% agreeing and 31.9% strongly agreeing, and only 4.2% were unsure. Overall, the findings suggest that nurses have a subconscious inclination to share knowledge, even if they are not consciously aware of doing so, due to the nature of their profession. This level of knowledge sharing appears to be generally adequate, with more than half of respondents agreeing or strongly agreeing that they freely share knowledge.

4.2.6.2 Organisational structure

This section presents the statement that addresses the organisational structure. To determine whether the organisational structure of the public hospitals and clinics surveyed had an impact on knowledge sharing among nurses, respondents were asked to indicate their level of agreement or disagreement, or whether they were unsure whether the organisational structure of their public healthcare facility was rigid.

Table 4.14: Organisational structure

Statement	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**	**Total**
The organisational structure at my place of work is rigid	13 (27.6%)	22 (46.8%)	7 (14.8%)	3 (6.3%)	2 (4.2%)	**47 (100%)**

The majority of respondents in public healthcare facilities reported that the organisational structure in which they operate is inflexible and does not facilitate knowledge sharing (KS) effectively, as shown in Table 4.14. Specifically, 46.8% of respondents agreed, 27.6% strongly agreed, 14.8% were not sure, 6.3% disagreed, and 4.2% strongly disagreed. To foster a culture of KS in an organisation, it is essential to integrate the knowledge infrastructure into the organisation's structure. The knowledge infrastructure combines the organisation's framework with its structure, making it easier to practice KS (Momeni et al., 2013). Based on the survey results, the organisational structure of public healthcare facilities in Makhanda city does not facilitate nurses' KS practice. The structure created obstacles for the free flow of knowledge, with junior nursing staff having restricted access to information. The management/leadership styles were also viewed as inflexible, with a rigid bureaucracy that requires line managers' approval for decision-making.

4.2.6.3 Challenges to knowledge sharing practices

In this section, the respondents were asked to indicate the extent to which they agree or disagree with what they think are the factors affecting knowledge sharing.

Table 4.15: Challenges to knowledge sharing practice

Statement	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**	**Total**
Inadequate or lack of opportunities for education and training	8 (17%)	34 (72.3%)	5 (10.6%)	-	-	**47 (100%)**
Lack of rewards and recognition systems that would motivate the nurses to practice knowledge sharing	16 (34%)	25 (53.1%)	3 (6.3%)	3 (6.3%)	-	**47 (100%)**

Lack of formal and informal activities to cultivate a culture of knowledge sharing at my place of work	9 (19.1%)	30 (63.8%)	5 (10.6%)	3 (6.3%)	-	**47 (100%)**
There is a general lack of mentoring sessions among the nurses at my place of work	14 (29.8%)	23 (49%)	6 (12.7%)	4 (8.5%)	-	**47 (100%)**
There is a lack of interaction between the nurses who need knowledge and the nurses who can provide the knowledge	6 (12.7%)	31 (66%)	6 (12.7%)	4 (8.5%)	-	**47 (100%)**
There is no system to identify the nurses with whom I need to practice knowledge sharing	12 (25.3%)	23 (49%)	6 (12.7%)	6 (12.7%)	-	**47 (100%)**
Lack of resources	9 (19.1%)	22 (46.8%)	4 (8.5%)	8 (17%)	4 (8.5%)	**47 (100%)**
Physical work environment and layout of work areas restrict effective knowledge sharing practice at my workplace	6 (12.7%)	30 (64%)	4 (8.5%)	7 (14.8%)	-	**47 (100%)**
Some nurses at my workplace do not practice knowledge sharing because of the fear that it will be misused	3 (6.3)	6 (12.7%)	3 (6.3%)	32 (68.1%)	3 (6.3%)	**47 (100%)**
The nurses at my workplace do not practice knowledge sharing because of their different cultural backgrounds	-	-	5 (10.6%)	39 (83%)	3 (6.3%)	**47 (100%)**

According to the presented data, a considerable number of respondents either strongly agreed or agreed that limited education and training opportunities could adversely affect their

knowledge sharing practices. Specifically, 17% of respondents strongly agreed and 72.3% agreed, whereas 15% were uncertain. This implies that nurses perceive insufficient education and training opportunities as a barrier to effectively managing their knowledge resources, which ultimately impairs their ability to share knowledge.

The data presented in this section indicates that many respondents agree that their workplaces lack adequate rewards and recognition systems, as well as formal and informal activities to promote knowledge sharing practices. Specifically, 34% of respondents strongly agreed and 53.2% agreed that their workplaces lack such systems, while 6.3% were uncertain and 6.3% disagreed. This suggests that nurses feel that their knowledge sharing practices are not being adequately incentivised or recognised. Additionally, 19.1% of respondents strongly agreed and 63.8% agreed that their workplaces lack activities to cultivate a culture of knowledge sharing, while 10.6% were uncertain and 6.3% disagreed. Furthermore, 29.8% of respondents strongly agreed and 49% agreed that their workplaces lack mentoring sessions for knowledge sharing practices, while 12.7% were uncertain and 8.5% disagreed. These findings highlight the importance of implementing rewards and recognition systems, as well as formal and informal activities and mentoring sessions, to promote and incentivise knowledge sharing practices in healthcare facilities.

Brčić and Mihelič (2015) state that knowledge sharing involves the exchange of information between individuals, such as mentors and mentees. The authors suggest that mentoring provides a safe space for learning and experimentation, allowing for the development of skills and the evaluation of competence based on skill acquisition rather than adherence to a set curriculum. The authors further emphasise that the willingness to share knowledge and display comprehension is a crucial aspect of a successful mentoring relationship.

The results of the survey reveal that there is inadequate interaction between nurses who require knowledge and those who can provide it. Approximately 12.7% of the participants strongly agreed with this statement, while 66% agreed, 12.7% were unsure, and 8.5% disagreed. Concerning identifying the nurses who need knowledge, 25.3% of the respondents strongly

agreed that the current systems in place are insufficient. In contrast, 49% agreed, 12.7% were unsure, and 12.7% disagreed. The survey also showed that 19.1% of the participants strongly agreed that a lack of resources is a barrier to effective knowledge sharing, while 46.8% agreed, 8.5% were unsure, 17% disagreed, and 8.5% strongly disagreed. Furthermore, 12.7% of the participants strongly agreed that the work environment and physical layout of their workplace restricts knowledge sharing practices, while 64% agreed, 8.5% were unsure, and 14.8% disagreed. The work environment plays a crucial role in fostering knowledge sharing among individuals in an organisation. If the workplace does not encourage knowledge sharing, it can hinder the ability of individuals to share knowledge effectively. A practical solution to improving the work environment and physical layout is to create a workspace that promotes constant interaction among nurses, rather than isolating them in closed office spaces.

According to the survey results, the fear of knowledge misuse by other professional nurses is not a significant barrier to knowledge sharing among the respondents. Specifically, 6.3% of the respondents strongly disagreed with this statement, 12.7% agreed, 6.3% were not sure, 68.1% disagreed, and 6.3% strongly disagreed. These results suggest that the majority of respondents were not afraid to practice knowledge sharing and did not believe that their knowledge would be misused by their colleagues.

In terms of cultural barriers to knowledge sharing, most respondents (82.9%) disagreed with the statement that nurses do not share knowledge due to cultural differences, while 10.6% were not sure and 6.3% strongly disagreed. The demographics of the public healthcare facilities in Makhanda city reflect the larger cultural groupings in the area, with the majority of nurses being isiXhosa-speaking people who share similar cultural beliefs. However, there are also professional nurses who are Afrikaans-speaking and belong to the coloured community, who are primarily placed in public healthcare facilities serving coloured and white Afrikaans-speaking patients. Overall, these findings suggest that cultural differences are not a significant barrier to knowledge sharing among the nurses in the study.

4.2.6.4 Cultural barriers to knowledge sharing practices

This section of the survey questionnaire focused on the cultural barriers to knowledge sharing (KS) among nurses working in public hospitals and clinics in Makhanda. According to Kim and Lee's (2006) knowledge sharing capability model, cultural barriers within an organisation can hinder KS, especially when individuals come from different cultural backgrounds. In this survey, respondents were asked to identify any cultural barriers that they thought affected KS in their workplace. The selected cultural barriers are shown in Table 4.16.

Table 4.16: Cultural barriers to knowledge sharing practices

Responses	**Responded**	**Did not respond**
Lack of trust	46.8%	53.1%
Fear of criticism	34%	66%
Lack of incentives	68%	32%
Language barriers	19.1%	80.8%
Cultural differences	25.5%	74.4%

The majority of respondents (68%) viewed a lack of incentives as a cultural barrier to knowledge sharing. If there is no incentive for people to share their knowledge, they may be less likely to do so. This can happen when there is a culture that values individual achievement over collaboration, or when there are no rewards or recognition for sharing knowledge. The lack of trust was indicated as the second most cultural barrier to knowledge sharing at 46.8%. According to Patterson, Kerrin, Gatto-Roissard and Crowley (2009), when people do not trust each other, they may be less willing to share knowledge. This can happen when there is a competitive or political culture, or when people are concerned about their own reputation or

job security. Fear of criticism was viewed as the third most cultural barrier to knowledge sharing at 34%.

People may be hesitant to share their ideas or knowledge if they are afraid of being criticised or ridiculed. This can happen when there is a culture of blame or punishment for mistakes, or when people are afraid of being seen as incompetent (Patterson et al., 2009). Cultural differences are the fourth barrier to knowledge sharing cited by the respondents at 25.5%. Cultural differences in communication styles, values, and beliefs can also create barriers to knowledge sharing. For example, in some cultures, it may be considered rude or inappropriate to speak up or challenge authority, while in other cultures, open debate and discussion are encouraged (Patterson et al., 2009). Lastly, language barriers were least viewed by 19.1% of the respondents as a cultural barrier to knowledge sharing. If people speak different languages or have different levels of proficiency in a shared language, it can be difficult to communicate and share knowledge effectively (O'Dell and Grayson, 1998a).

Additionally, if the nurses were aware of any cultural barriers to knowledge sharing at their places of employment, they were asked to list them. However, most respondents did not provide a response, and the few that did listed their responses as follows:

"Attitudes, i.e. I think sometimes we forget the value of information sharing." [Nurse 12]

"Staff shortages, overworked, burn out syndrome, performing work which is not part of your job description e.g., cleaning and mopping due to not having a cleaner." [Nurse 7]

"The culture of my clinic does not encourage the sharing of knowledge because of the lack of formal channels to enable us share the knowledge adequately." [Nurse 17]

"No coordination of activities at my clinic." [Nurse 2]

"Most of the knowledge comes from the manager, we just have to listen and implement it and only are few discussions between the nurses." [Nurse 11]

"Knowledge sharing is not encouraged in my section and some nurses do not know what it is." [Nurse 28]

The answers provided above demonstrate that there are cultural and organisational issues preventing nurses from sharing knowledge in Makhanda's public healthcare facilities. Ineffective coordination between departments has resulted in a lack of support for knowledge sharing practices among nurses, particularly in regard to COVID-19 information.

4.2.6.5 Contributions of knowledge sharing towards the nurses' development

The respondents were asked whether knowledge sharing helped them develop in their places of employment. Based on the responses in Table 4.17, the majority of the respondents believe that sharing information aids in their personal development.

Table 4.17: Contribution of knowledge sharing to the professional nurses' development

Statement	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**	**Total**
Knowledge sharing emphasises awareness of the public health facility's objectives and mission.	44.6%	51%	4.2%	-	-	**100%**
Sharing knowledge enhances the nurses' ability to perform their jobs.	55.3%	42.5%	-	-	2.1%	**100%**
Knowledge sharing keeps nurses abreast of current trends.	68%	32%	-	-	-	**100%**
Through codification and tacit knowledge, knowledge sharing aids in the retention of individual knowledge.	12.7%	55.3%	32%	-	-	**100%**

According to the data presented above, 68% of the respondents strongly agreed that KS keeps nurses informed of current trends, while 32% of the respondents simply agreed. Moreover, 44.6% of the respondents strongly agreed that KS emphasizes the understanding of the goals and mission of the public health center, while 51% agreed with this statement, and only 4.3% of the respondents were unsure. Sharing knowledge improves nurses' capacity to do their work, according to 55.3% of the respondents who strongly agreed, 42.5% who agreed, and 2.1% who strongly disagreed. Additionally, 12.7% of the respondents strongly agreed with the assertion that KS helps with the retention of individual information through codification and tacit knowledge, while 55.3% of the respondents agreed, and 3.2% of the respondents were not sure. The findings reveal that, generally, most respondents agreed that knowledge sharing contributes to the development of the nurses.

4.2.6.6 Ways to improve knowledge sharing practices

In the open-ended component of the survey, respondents were invited to provide their thoughts on what they believed needed to be done to increase KS practice among nurses. Below are the opinions that were shared by the respondents who provided responses.

"Regular in-service training to be given. Team building strategies to be applied. Training on computers for everyone." [Nurse 1]

"Trainings, workshops, internet installation." [Nurse 17]

"To afford training to all nurses so that they are well informed and will be able to store knowledge confidentially." [Nurse 9]

"To have more in-service training in our institution to equip ourselves with latest information. Clear communication between employees and employer (transparency). Update on reviewed polices and regulations." [Nurse 14]

"In service days to be allocated every week, intranet and internet." [Nurse 5]

"Staff improvement, equipment, recognition, good working conditions, not thinking that nurses can turn stones into bread. If you need help, you must look for it yourself if system does not offer it. COVID-19 killed and demolished our souls." [Nurse 20]

"Through in-service training." [Nurse 10]

"Having and honouring scheduled meetings to facilitate information sharing; nurses must be reminded of the importance of sharing information; scheduled training; create an environment that is conducive for sharing information anytime there's a need to (sometimes the nurses attitudes get in the way)." [Nurse 3]

"The management must make sure that all the nurses are aware how the tools e.g., computer work. If some have little knowledge, they must try and improve them on programmes so that all nurses can access what is available in front of them e.g., guidelines or client's info on computer." [Nurse 19]

Based on the perspectives stated above, most respondents emphasised in-service training as a way to enhance nurses' KS practices. Pearíasamy and Mansor (2008) suggested that one way for employees to practice KS with one another is through in-service training, which can involve the assistance of mentors who share their best practices through a variety of methods, including coaching, training, talks, and counselling. The second-most commonly expressed opinion by the respondents was that the use of information and communication technologies (ICTs) can improve KS practice. Recent studies suggest that ICT use can have a significant impact on KS practices, improving the process, reducing KS barriers, and eliminating technical obstacles (Shahid & Alamgir, 2011).

4.3 Summary of Chapter 4

The presentation, analysis, and interpretation of data have been the focus of this chapter. The interpretation of the data makes it generally evident that, although professional nurses working in Makhanda's public healthcare facilities acknowledge the benefits of sharing knowledge, they hardly ever do so. Additionally, the data suggests that the nurses had little knowledge of what the term "knowledge sharing practice" entails. However, the nurses feel that sharing knowledge is beneficial both to themselves and to the provision of services. The final chapter will provide a summary of the key findings, conclusions, and recommendations of the study.

CHAPTER FIVE

SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1 Introduction

The research findings, conclusions, and recommendations of this study are summarised in this chapter. The goal of this study has been to investigate how nurses shared knowledge among themselves in the public healthcare facilities of Makhanda (Grahamstown), in the Eastern Cape, during the COVID-19 epidemic.

To reiterate, the objectives of this study have been to address the following research questions:

1. What is the level of understanding of knowledge sharing practices among professional nurses working in public healthcare facilities in Makhanda?
2. What kind of knowledge about COVID-19 is shared by the professional nurses and why?
3. What are the challenges faced by professional nurses working in public healthcare facilities in Makhanda in implementing KS practices?
4. What recommendations can be suggested to improve KS practices among the professional nurses working in public healthcare facilities in Makhanda?

5.2 Summary of the research findings

In Chapter 1, the researcher highlighted the important role of nurses in preventing and treating COVID-19, as discussed in the study by Rathnayake et al. (2021). However, during the pandemic, it was observed that nurses working in public healthcare facilities in Makhanda (formerly known as Grahamstown) had poor knowledge sharing practices and rarely shared knowledge among themselves. In light of the study's objectives, the summary of the findings is presented below.

5.2.1 The level of comprehension of knowledge sharing practices among the nurses working in public healthcare facilities in Makhanda

The first objective of this study was to assess the level of understanding among professional nurses of knowledge sharing (KS) practices in public healthcare facilities in Makhanda. The majority of study participants indicated that they understood the concept of KS, suggesting that nurses have a competent understanding of KS practices. However, there was a significant difference between their perceived and actual engagement in KS practices. Despite being aware of its importance and benefits, the majority of nurses do not actively participate in KS. Nevertheless, most respondents believed that KS is essential to service delivery and could assist nurses in resolving healthcare-related issues. In terms of organisational structure, half of the respondents (10, 50%) indicated that decision-making around KS is centralized in most public healthcare facilities. This means that only a few individuals are responsible for deciding what knowledge should be shared among the nurses, leaving little room for nurses to have a say in how KS is practiced among themselves. In addition, KS tools and resources whether technology-based (such as intranet) or human-based (such as CoPs) are limited yet they help to enhance KS activities.

5.2.2 Understanding what knowledge about COVID-19 is being shared among the nurses and why they are sharing it

One of the objectives of the research was to determine what COVID-19-related knowledge the professional nurses were sharing among themselves and why. When asked to indicate the type of knowledge of COVID-19 they shared among themselves, most respondents indicated that they shared knowledge about preventive measures, although some respondents shared knowledge regarding COVID-19 vaccinations. The more appropriate reason regarding why most respondents indicated that they shared knowledge about preventive measures was that since they obtained most of their information from television (7, 35%), the message that was pushed the most concerned the prevention of COVID-19. It was the message being sent out especially in the midst of the pandemic when most people had not yet been vaccinated. Most respondents (7, 35%) indicated that they obtained their knowledge about COVID-19 from

television. The data demonstrates that the nurses did, in fact, share knowledge about COVID-19, and that they were aware of the knowledge they needed to share.

5.2.3 To identify challenges of knowledge sharing practices among nurses in the public healthcare facilities in Makhanda

The inflexible organisational structure in public healthcare facilities, identified as one of the challenges to knowledge sharing (KS) in this study, hinders nurses' ability to practice KS. Organisational structure refers to the system by which individuals within an organisation are expected to carry out duties according to the organisation's policies, procedures, and laws. This study examined the challenges that affect nurses' KS practices in Makhanda's public healthcare facilities, focusing on organisational structure. Survey data revealed that the organisational culture in public healthcare institutions was rigid, with most respondents indicating a lack of flexibility that limited nurses' ability to engage in KS. The study identified several cultural barriers to KS, such as a lack of trust, form of criticism, a lack of incentives, language barriers, and cultural differences.

5.3 Recommendations

In context of the above, the study suggests recommendations for improving the practice of KS practices among nurses working in public healthcare facilities in Makhanda.

5.3.1 Knowledge acquisition

In any organisation, acquisition of knowledge is crucial since it allows staff to expand their knowledge base (Sabeeh et al., 2017). Sarkheyli, Alias, Carlsson, and Kajtazi (2016) have highlighted the importance of knowledge acquisition in an organisation’s KS practice. The COVID-19 pandemic posed a variety of difficulties, including a lack of disease knowledge. This caused a dilemma for healthcare professionals, who had to do lengthy searches for knowledge about COVID-19. In order for the nurses to engage in sufficient and appropriate KS practice, the knowledge must be acquired and be relevant to the nature of the work tasks

they perform. The nurses at these facilities in Makhanda should have easy access to readily available knowledge and will be able to share it among themselves with less difficulty.

5.3.2 Identifying professional nurses and their roles in knowledge sharing practices

It is essential to identify the responsibilities of nurses practicing KS across various departments in public healthcare facilities in Makhanda. Professional nurses who are well-informed and possess the relevant knowledge to fulfil their duties are vital to the management of knowledge in the facilities where they work. Innovation within organisations is crucial and relies on the knowledge of its employees, who are expected to be inventive when exposed to relevant knowledge (Gunduz, 2016). To promote KS practices among nurses in facilities, nurses with relevant knowledge should be paired with those without the right knowledge to ensure adequate transfer of knowledge. Nurses who have obtained sufficient COVID-19 knowledge should be paired with those who have little or no knowledge of COVID-19 to facilitate the sharing of scientifically validated information.

5.3.3 Promoting a knowledge sharing culture

Establishing a culture of knowledge sharing is an important part of managing knowledge effectively in organizations (Sabeeh et al., 2017). Such a culture can improve individual and organisational performance (Alsam, Rehman & Imram, 2016). To encourage knowledge sharing in public healthcare facilities in Makhanda, management should promote mentorship, performance assessment systems, job rotation policies, and human resource development. Structural changes, such as reducing divisional borders between management and line staff, can also facilitate knowledge sharing practices (Marouf, 2015). Organisations should focus on resolving issues that limit knowledge sharing, such as the lack of mentoring programs, and considering reward-based performance management systems, open spaces, and funding to foster knowledge sharing.

5.3.4 Information communication technology to support knowledge sharing practices

Researchers and practitioners have emphasized the importance of utilising modern technology to improve knowledge sharing practices in organizations (Sabeeh et al., 2017). Organisations that encourage the use of technology are more likely to successfully implement effective knowledge sharing practices (Manus, 2016). The majority of survey respondents agreed that information and communication technology (ICT) tools promote connections that encourage knowledge sharing at their workplace. However, although most respondents considered themselves computer proficient and had access to the internet at work, they primarily used the internet for work-related purposes rather than knowledge sharing. To encourage nurses in Makhanda's public healthcare institutions to engage in knowledge sharing, it is recommended that organisations align ICT tools, such as emails, blogs, social media, videoconferencing, and virtual meetings, with knowledge sharing as an organisational objective.

5.3.5 Communities of practice (CoP)

According to Aljuwaiber (2016), communities of practice (CoPs) are groups of individuals who share a common interest or profession, gathering regularly to communicate, exchange knowledge, and learn from each other. These groups may be informal and self-organised, or they may be formalised within an organisation. CoPs can be an effective platform for sharing knowledge among professional nurses employed in public healthcare facilities in Makhanda. Through these communities, professional nurses can share their knowledge, experience, and best practices, leading to improved individual and collective performance in providing healthcare to the community. CoPs can also build a sense of community and identity among professional nurses, resulting in increased engagement and motivation. CoPs come in various forms, including in-person meetings, online forums or discussion groups, and social media groups (Aljuwaiber, 2016). The main advantage of CoPs is that they create a space for members to connect and engage with one another based on shared interests or professions.

5.4 Suggestions for future research

The focus of this study was to examine the knowledge sharing (KS) practices of professional nursing practitioners in healthcare facilities located in Makhanda city, rather than those of other healthcare practitioners such as physicians, dentists, pharmacists, and healthcare administrators. The researcher anticipated that the outcomes would adequately represent the nursing profession. However, it is important to note that the data was collected solely through a survey questionnaire, which may not have been adequate. Although South Africa's public healthcare facilities have faced various challenges over the years, this is not necessarily the case for well-managed and well-serviced private healthcare facilities in the country. A more comprehensive study that investigates the KS practices of all healthcare practitioners in both private and public healthcare facilities during a pandemic would be intriguing to obtain a more thorough understanding of KS practices among healthcare practitioners in South Africa.

5.5 Final conclusion

The objective of this study was to examine the practices of knowledge sharing among professional nurses who are working in public healthcare facilities in Makhanda city, located in the Eastern Cape Province of South Africa, during the COVID-19 pandemic. The focus of the study was on how nurses shared knowledge among themselves during this period. The study found that nurses seldom engage in knowledge sharing and that when they do, it is often informal. When nurses engage in knowledge sharing without being aware of it, they may not realise that they are sharing only a part of what they know or that their knowledge is incomplete. Additionally, there is a lack of formal channels for knowledge sharing among nurses in most workplaces, which makes it difficult for them to share information effectively. The rigid organisational structure of public healthcare facilities in Makhanda also makes it challenging for nurses to practice knowledge sharing effectively. Despite the availability of information and communication technologies in these facilities, nurses do not make full use of them for knowledge sharing purposes.

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APPENDICES

APPENDIX 1: LETTER OF INFORMED CONSENT

Dear Participant,

My name is Andrew Mugenyi, and I am a master's student at the University of South Africa (UNISA). I am investigating the **knowledge sharing practices among nurses during the COVID-19: a case study of Makhanda in the Eastern Cape Province of South Africa**. The purpose of the research is to examine knowledge sharing practices among nurses during COVID-19 and identify factors that influence knowledge sharing in public hospitals and clinics in Makhanda.

I am interested in knowing what your views, opinions, interpretations, and attitudes on the topic based on your experience as a nurse and individual real-life experience. My aim is to gather information on the above-mentioned topic using a quantitative research process. I am therefore kindly requesting for your consent to participate in my research by answering a series of questions. The questionnaire and interview will take you a week or less to complete. I kindly ask you take your time and answer the questions to the best of your knowledge. Please remember that your opinion is highly valued.

Please understand that your participation in this research is voluntary, and that you can terminate your participation at any time during the answering process. You are free to skip any question you find uncomfortable responding to in the process. You also have the right to ask me to exclude any information you provide for the study.

The information obtained from you is confidential and will be kept anonymous. Only findings in aggregate form will be submitted to relevant authorities. The Department of Information Science at the University of South Africa (UNISA) will maintain confidentiality and anonymity of records identifying you as a participant.

Should you need further clarification please feel free to contact me on the details below.

Thank you in advance for your participation in this study.

Yours Sincerely,

Andrew Mugenyi

Mobile: +27 836669741

Email: jabarichie@gmail.com.

APPENDIX 2: SURVEY QUESTIONNAIRE

SECTION A: DEMORGRAPHIC INFORMATION

1. Name of public healthcare facility

……..

2. Your job designation/position

…….

3. Department/Section

……

4. Gender: Female [ ] Male [ ]

5. Age: Please indicate by ticking in the appropriate box below.

18-30 years	
31-40 years	
41-50 years	
44-55 years	
Over 51 years	

6. Highest Educational Qualification: Please indicate by ticking in the appropriate box below.

Less than senior high school	
Senior high school (Matric)	
Diploma	
University degree or higher	

7. Work experience: Please indicate by ticking in the appropriate box below.

0-5 years	
6-10 years	
11-15 years	
16-20 years	
21-25 years	
Over 25 years	

SECTION B: KNOWLEDGE SHARING

8. What is your general opinion about knowledge sharing?

Please tick in the appropriate box

Have never heard of it ☐

Important to service delivery ☐

Provides an advantage to the organisation ☐

Other (please specify) …….

9. In your opinion, do you think knowledge sharing may help nurses solve healthcare related problems?

Yes [ ] **No [ ]**

If yes, please explain your answer

……..

……..

……

10. Where do you get your COVID-19 information from?

……

……

11. Please indicate how much knowledge you have of COVID-19

Tick in the appropriate box

Too little ☐

Sufficient ☐

Too much ☐

Not sure ☐

12. What type of knowledge have you shared about COVID-19 and why?

……

……

……

SECTION C: KNOWLEDGE SHARING STRATEGIES

12. Please indicate the organisational structure of knowledge sharing in your workplace

Tick in the appropriate box

Centralised ☐

Formalised ☐

Integrated ☐

Not sure ☐

13. How would you define the position of knowledge sharing in your hospital/clinic?

Tick in the appropriate box

The hospital/clinic has a knowledge sharing (KS) policy/strategy ☐

KS is practiced in an ad hoc manner ☐

KS is not practiced in my hospital/clinic ☐

My hospital/clinic has a system in place for retaining knowledge from experience staff members

Tick in the appropriate box

None of the above ☐

Not sure ☐

14. What communication channels do you prefer to use when sharing knowledge. Please indicate the extent to which you agree or disagree with the following statements by putting a tick in the appropriate box.

Statement	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
I prefer using social networks such as Facebook, Twitter, Wikis, WhatsApp, Instagram, Blogs to share knowledge					
I use video conferencing to share knowledge with my fellow workers.					
I use the intranet and knowledge repositories to share knowledge with my fellow workers.					

I prefer to share knowledge through story telling					

15. Does your hospital/clinic have an intranet?

Yes [ ] **No [ ]**

If your answer is yes, what type of content is uploaded on it?

……..

…….

…….

16. Has anyone resigned at your hospital/clinic in the last five years? (Please tick in the box)

Yes [ ] **No [ ]** **Not sure [ ]**

If the answer is yes to the above question, were they ever interviewed to retain their knowledge? (Please tick in the box)

Yes [ ] **No [ ]** **Not sure [ ]**

SECTION D: KNOWLEDGE SHARING TOOLS

TECHNOLOGY BASED TOOLS

17. Do you perceive yourself as computer literate?

Yes [ ] **No [ ]**

18. Does your hospital/clinic have an internet connection?

Yes [ ] **No [ ]**

If your answer is yes, is it accessible to all the nurses?

……

……

……

19. Which of the following ICT tools do you use in your hospital/clinic?

(Please tick in the appropriate box)

Internet	
Intranet	
E-mail	
Video conferencing	

Wikis	
LinkedIn	
Facebook	
WhatsApp	
Twitter	
Blogs	

HUMAN BASED

20. Which one of the following activities is used for sharing knowledge in your hospital/clinic?

(Please tick in the appropriate box)

Communities of Practice (CoPs)	
Mentorship	
Job rotation	
Storytelling	
Job-shadowing	

21. How far do you agree or disagree with the following statements?

Statement	**Strongly Agree**	**Agree**	**Not sure**	**Disagree**	**Strongly agree**
Whenever new nurses are hired, they are allocated a mentor					
Retired nurses have been recalled to assist with nursing activities because the current nurses are unable to perform them					
Resigned nurses have been called back to assist with nursing duties because the current nurses are unable to perform them					
There are formal groupings at the public healthcare facilities in Makhanda					
The nurses in your hospital/clinic are usually rotated in various departments such as Anaesthesiology, critical care, surgery, and transplantation					
Nurses at your public hospital/clinic share knowledge by way of E-mail, social media, word of mouth, formal and informal meetings, notices,					

training workshops, conferences, and telephonically.					

SECTION E: ATITUDES AND PERCEPTIONS OF NURSES TOWARDS KNOWLEDGE SHARING

22. What are the general attitudes and perceptions of the nurses towards knowledge sharing?

Please indicate the extent to which you agree or disagree with the following statements by putting a tick in the appropriate box.

Statement	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
Sharing knowledge with my fellow nurses is good					
Sharing knowledge with my fellow nurses is not good					
Sharing knowledge with my fellow nurses is pleasant					
Sharing knowledge with my fellow nurses is unpleasant					
Sharing knowledge with my fellow nurses is wise					
Sharing knowledge with my fellow nurses is unwise					

23. How do your fellow nurses perceive the use of ICT applications in sharing knowledge?

Please tick in the appropriate box

Some older professional nurses may have a fear or discomfort towards using Information and Communication Technologies (ICTs) ☐

Some professional nursing staff members may resist change due to the fear of job loss ☐

Younger professional nursing staff members may generally have a more positive attitude towards using Information and Communication Technologies (ICTs) ☐

Lack of expertise ☐

Not sure ☐

24. What skills and expertise do your share with your fellow nurses?

Please indicate the extent to which you agree or disagree with the following statements by placing a tick in the appropriate box.

Statements	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
I share work related skills with my fellow nurses					
I share knowledge and expertise on using healthcare-based practices with my fellow nurses					
My fellow nurses share new skills in nursing practice with me					
My fellow nurses share with me new working skills they have acquired					

SECTION F: FACTORS AFFECTING KNOWLEDGE SHARING AMONG THE NURSES

25. Knowledge sharing culture is the extent to which people share their views and exchange their beliefs and shared values which determine the expectations of behaviour within an organisation.

Please indicate the extent to which you agree or disagree with the following statements by placing a tick in the appropriate box.

Statements	**Strongly agree**	**Agree**	**Not True**	**Disagree**	**Strongly disagree**
There is a knowledge sharing culture in the hospital/clinic where I work					
My fellow nurses share their working experience and knowledge					
I share my knowledge with my fellow nurse in a team or group					
I share knowledge with my fellow nurses if I believe it is relevant and helpful					
I am willing to share knowledge with my fellow nurses					

26. How do you describe the organisational structure in your public hospital/clinic?

Please indicate the extent to which you agree or disagree with the following statement by placing a tick in the appropriate box.

Statement	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
The organisational structure of my hospital/clinic is rigid					

27. What do you think are the factors that affect knowledge sharing?

Please indicate the extent to which you agree or disagree with the following statements by putting a tick in the appropriate box.

Statement	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly agree**
Inadequate or lack of opportunity for education and training					
Lack of rewards and recognition systems that would motivate the nurses to share knowledge					
Lack of formal and informal activities to cultivate a culture of knowledge sharing at my place of work					

There is a general lack of mentoring sessions among the nurses at my place of work					
There is a lack of interaction between those who need knowledge and those who are can provide the knowledge					
There is no system to identify the nurses with whom I need to practice knowledge sharing					
Lack of resources					
Physical work environment and layout of work areas restrict effective knowledge sharing practice at my workplace					
Some nurses at my workplace do not practice knowledge sharing because of the fear that it will be misused					
The nurses at my workplace do not practice knowledge sharing because of different cultural backgrounds					

28. Which of the following do you think are cultural barriers to knowledge sharing in your hospital/clinic?

(Please place a tick on those which apply)

Lack of trust	
Fear of criticism	
Lack of incentives	
Language barriers	
Cultural differences	

If any other, please specify

…….

…….

…….

29. Does knowledge sharing contribute towards the development of nurses in your hospital/clinic?

Please indicate the extent to which you agree or disagree with the following statements by putting a tick in the appropriate box.

Statement	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**	**Total**
Knowledge sharing emphasises awareness of the public health facility's objectives and mission.						
Sharing knowledge enhances the nurses' ability to perform their jobs.						
Knowledge sharing keeps nurses abreast of current trends.						
Through codification and tacit knowledge, knowledge sharing aids in the retention of individual knowledge.						

30. In your opinion, what do you think must be done to improve knowledge sharing among the nurses?

……..

……..

……..

……..

APPENDIX 3: ETHICS APPROVAL CERTIFICATE

UNISA university of south africa

COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

31 January 2022

NHREC Registration # :
Rec-240816-052
CREC Reference # :
10369899_CREC_CHS_2022

Dear Mr. Andrew Mugenyi

Decision:
Ethics Approval from 31 January 2022 to 31 January 2025

Researcher(s): Name: Mr Andrew Mugenyi
Contact details: 10369899@mylife.unisa.ac.za
Supervisor(s): Name: Dr AN Zimu-Biyela
Contact details: zimuan@unisa.ac.za

Title: Knowledge sharing practices among nurses during COVID-19: A case study of Makhanda in the Eastern Cape, South Africa.

Purpose: MA

Thank you for the application for research ethics clearance by the Unisa College of Human Science Ethics Committee. Ethics approval is granted for three years.

The ***low risk application*** *was reviewed by* College of Human Sciences Research Ethics Committee, in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the

Open Rubric

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APPENDIX 4: RESEARCH APPROVAL LETTER FROM THE EASTERN CAPE PROVINCIAL DEPARTMENT OF HEALTH

Province of the
EASTERN CAPE
HEALTH

Enquiries: Yvonne Gixela Tel no: 079 074 0859

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

Date: 24 March 2022

Knowledge sharing practices among nurses during COVID-19: A case study of Makhanda in the Eastern Cape, South Africa. (EC_202203_016)

Dear Mr. A. Mugenyi

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

1. During your study, you will follow the submitted protocol with ethical approval and can only deviate from it after having a written approval from the Department of Health in writing.

2. You are advised to ensure, observe and respect the rights and culture of your research participants and maintain confidentiality of their identities and shall remove or not collect any information which can be used to link the participants.

3. The Department of Health expects you to provide a progress update on your study every 3 months (from date you received this letter) in writing.

4. At the end of your study, you will be expected to send a full written report with your findings and implementable recommendations to the Eastern Cape Health Research Committee secretariat. You may also be invited to the department to come and present your research findings with your implementable recommendations.

5. Your results on the Eastern Cape will not be presented anywhere unless you have shared them with the Department of Health as indicated above.

Your compliance in this regard will be highly appreciated.

SECRETARIAT: EASTERN CAPE HEALTH RESEARCH COMMITTE

2030 NDP

TOGETHER, MOVING THE HEALTH SYSTEM FORWARD