

**KNOWLEDGE AND PRACTICE OF PERSONAL PROTECTIVE EQUIPMENT BY
EMPLOYEES AT LAUNDROMATS IN SESHEGO INDUSTRIAL SITE, LIMPOPO
PROVINCE**

by

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DECLARATION

"I declare that the mini-dissertation hereby submitted to the University of Limpopo, for the degree of Master of Public Health, **Knowledge and Practice of Personal Protective Equipment by Employees at Laundromat in Seshego Industrial Site, Limpopo Province** has not previously been submitted by me for a degree at this university or any other university, that it is my work in design and in execution, and that all the material contained herein has been duly acknowledged".

A handwritten signature in black ink, consisting of stylized initials and a surname, written over a horizontal line.

17/04/2021

Date

DEDICATION

This dissertation is dedicated to my parents and siblings for their constant support and encouragement. This work is also dedicated to the mother of my child, Mpho and my son, Oratilwe for their unconditional love and support during the period of my study.

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I would like to express my profound appreciation and gratitude to the following:

- My supervisor, Mr Kekana MP for his assistance, guidance, advices, encouragement and patience during the period of my study.
- The laundromat management at Seshego Industrial Site for granting me permission to conduct a study.
- The employees at Laundromat for participating in the study.
- The department of Health for the permission to conduct the study.
- The statistician, Mr Tshabalala D for his assistance.

ABSTRACT

The purpose of the study was to assess the knowledge and practice of personal protective equipment amongst the employees at Laundromats in Seshego industrial site, Limpopo province.

A quantitative research study was conducted using a questionnaire to gather information from employees who were working at Laundromats and possibly exposed to occupational injuries and diseases. Fifty-two employees responded to the questionnaires.

The findings revealed that employees showed good knowledge (81%) about personal protective equipment but poor practice (52%) of personal protective equipment. The findings also revealed that the majority of employees (75%) did not receive training because it was not offered. Conclusion

Majority of employees had good knowledge. There was an appropriate response to the majority of questions relating to knowledge about PPE. However, majority of employees had poor practice of PPE. The lack of training might have led to poor practice.

Key concepts: Knowledge, Practice and Personal Protective Equipment.

DEFINITION OF TERMS

Employee - an employee refers to a person who has entered into or works under a contract of service with an employer, whether the contract is verbal or in writing and whether the payment is calculated by time or work is done (Compensation for Occupational Injuries and Disease Act 130 of 1993). In this study, an employee refers to any person who works for a salary at Laundromat in Seshego industrial site.

Employer - refers to any person, including the state, who employs an employee, also any person controlling the business of an employer (Compensation for Occupational Injuries and Disease Act 130 of 1993). In this study, an employer refers to the owners of Laundromat in Seshego industrial site.

Health - is a state of complete physical, mental and social well-being and not merely the absence of disease (World Health Organization, 2006). In the study, health will mean a person who is physically and mentally well.

Knowledge - refers to facts, information, understanding and skills acquired through learning and experience. It allows people to function effectively with daily activities (Mouton, 1997). In the study, the concept will refer to the facts, information, skills and information that respondents possess.

Laundromat - a place where people or organisation can take their laundry to be washed and ironed (Macmillan English Dictionary, 2002). Laundromat in the study refers to a place where laundry is cleaned and ironed.

Personal Protective Equipment (PPE) - is protective clothing made to protect employees from serious workplace injuries or illness. The hazards addressed by protective equipment include physical, electrical, heat, chemicals and biological. PPE includes gloves, earplugs, gowns, safety shoes and safety goggles (OHSA, 2009). In the study, PPE refers to any relevant protective equipment workers are supposed to use at work.

Practice – is defined as the actual way of doing something (Merriam Webster Dictionary, 2016). In the study, practice refers to emphasising a concern to use of personal protective equipment by worker.

LIST OF ABBREVIATIONS

COIDA: Compensation for Occupational Injuries and Disease Act

GDP: Gross Domestic Product

OHSA: Occupational Health and Safety Act

PPE: Personal Protective Equipment

SPSS: Statistical Package for Social Sciences

WHO: World Health Organization

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CHAPTER 1: OVERVIEW OF THE RESEARCH STUDY

1.1 INTRODUCTION AND BACKGROUND

According to safety and health at work report, occupational injuries and illness claim up to a total of 2 billion annually, (South African Department of Labour, 2017). The accidents and illness contribute 4% of the cost of the global economy of the Gross Domestic Product (GDP). World bank estimates that small and medium-size industries are responsible for 90% of those industries where poor working conditions are common. In South Africa, a total number of 313 million injuries are experienced by employees annually or 860000 injuries daily (South African Department of Labour, 2017). Therefore, Personal Protective Equipment (PPE) is made to protect workers from harmful work-related injuries and illness. Only 4.3 % of workers claim to wear appropriate PPE during their work. (Aguwa, Arinze-Onyia & Ndu, 2016). The use of personal protective equipment in the workplace plays a crucial role in reducing the exposure of different hazards (Johnson & Motilewa, 2016).

According to the Occupational Health and Safety Act (85 of 1993), working in a potentially hazardous environment requires the use of personal protective equipment. Failure to use PPE can expose employees to numerous health and safety hazards and risks that can lead to serious health implications (Ahmad et al, 2016). This may further lead to health and insurance claims, hefty fines, financial losses and absent from work due to occupational injuries that could have been prevented (Taha, 2000). Laundry services are regarded as small-scale industries with workers unaware of safety and health outcomes coming from the workplace exposures (Ahmad, Balkhyour, Abokhashabah, Ismail & Rehan, 2017).

The study done by Sabitu, Iliyasu and Dauda (2009) showed that workers in small industries such as welding, auto repair, body painting and laundry rarely use PPE and are exposed to fuels and chemicals daily that could be hazardous to their health.

Similarly, a study in Saudi Arabia reported that there is low use of PPE in small-scale industries (Ahmad, Balkhyour, Abokhashabah, Ismail & Rehan, 2017). In Nigeria, it was reported that some of the chemical products could lead to hand dermatitis and make respiratory symptoms worse, including asthma (Omoijiade & Okareh, 2018).

The low use of PPE in employees that work in a hot indoor environment without the provision of air conditioners will also be exposed to side effects of heat such as heat stress and low blood pressure (Heidari, Golbabaei, Shamsipour, Forushani & Gaeini, 2015). Besides, heat-related illness such as heat cramps, heatstroke, and heat shock are also direct adverse effects of heat on health risks (Jackson & Rosenberg, 2010).

Knowledge study is usually done to measure the knowledge and it informs the researcher of what participants know about a particular topic (Kilale, 2016). According to Sukumar and Karthiga (2014), the lack of operational knowledge of modern equipment, inadequate protective aids and basic safety guidelines contribute to occupational illness and injuries. Furthermore, the level of knowledge (68.7%) of the participants on safety issues was affected by safety training, work regulations and gender (Tetemke, Tefera, Sharma & Worku, 2014). Also, their knowledge of safety information, education and safety training affected the use of PPE (Aluko, Adebayo, Adebisi, Eweghemi, Abidoye & Popoola, 2016).

The nature of laundry workers includes weighing, sorting, folding, packaging and storage, which require standing for prolonged periods, which makes employees prone to musculoskeletal disorders. It was supported by a study done in Nigeria that prolonged standing and regular lifting of heavy loads are at risk of musculoskeletal problems (Sukumar & Karthiga, 2014). Furthermore, workers that are exposed to a high level of noise might lead to permanent changes in workers hearing threshold, headaches, tinnitus, decreased productivity and stress (Azevedo, Bernardo, Shing & Santos, 2010). Similarly,

work-related deafness has not been decreasing in work environments (Lopes, Otubo, Basso, Marinelli & Lauris, 2009).

Occupational Health and Safety (OHSA) 85 of (1993) permits the Minister of Labour to provide regulations of safety equipment and other facilities that need to be given by the employer. It is the responsibility of both the employer and employees to identify dangers in the workplace and develop measures to ensure that the work environment is safe. The employer should evaluate the hazards, select appropriate equipment and train employees to use personal protective equipment effectively.

Occupational Health and Safety Act (85 of 1993) regulates the use, processing, handling, storage or transport and exposure of potentially hazardous substances to employees. However, there is no clear oversight over industrial laundries and knowing if precautions are being taken. Some of these laundries offer services to both hospital and private clients under one facility, which means if some employees do not use personal protective equipment, can be contaminated by soiled linen from the hospital.

Despite the importance of using PPE in reducing exposure to various hazards in the workplace, there was no study about knowledge and practice of employees in the Laundromat at Seshego industrial site towards the use of PPE. This study will be carried out to determine the knowledge and practice of personal protective equipment by employees in the Laundromat at Seshego industrial site, Limpopo province.

1.2 RESEARCH PROBLEM

During the researcher's visit to a Laundromat at Seshego industrial site, it was observed that some of the employees were not using personal protective equipment. The Laundromat provides daily laundry for residents and local hospital and offers services like cleaning couches and carpentry. The use of personal protective equipment such as gloves, heat aprons and earplugs protects employees against exposure to workplace hazards. If hazards are not addressed, they may lead to work-related injuries and illness. Employees

in the Laundromat are exposed to physical (noise, heat,) chemical (liquid, solid) and biological (bacteria, fungi) hazards. The most common accidents in laundries involve slipping from wet floors, sharp objects in linen and heavy lifting of piles of sheets among others. This will compromise the employees' health and safety.

The employees in the Laundromat are provided with personal protective equipment as mandated by legislation and it comes with relevant information and instruction of use, but it seems as if others are not using them productively. The researcher was then prompted to find out the knowledge of employees towards the use of personal protective equipment in the Laundromats.

1.3 PURPOSE OF THE STUDY

1.3.1 Aim of the study

This study aimed to determine the knowledge and practice of personal protective equipment by employees at Laundromats in Seshego industrial site, Limpopo province.

1.3.2 Objectives of the study were

- To assess the practice of personal protective equipment amongst the employees at Laundromats in Seshego industrial site, Limpopo province.
- To assess the level of knowledge of employees regarding personal protective equipment at Laundromats in Seshego industrial site, Limpopo province.
- To assess the association between sociodemographic variables, practice and knowledge among laundromat employees.

1.4 RESEARCH QUESTION

What is the knowledge and practice of personal protective equipment by employees at Laundromats in Seshego industrial site, Limpopo province?

1.5 LITERATURE REVIEW

Literature relevant to knowledge and practice of personal protective equipment by employees at Laundromats was reviewed and will be discussed fully in Chapter 2.

1.6 METHODOLOGY

This account of the methodology is only a summary of what is comprehensively discussed in Chapter 3.

1.6.1 Study Site

The study was conducted in the Laundromats at Seshego industrial site, which is situated in the Capricorn district. It is approximately 13, 2 km North-West of Polokwane in Limpopo Province.

1.6.2 Research design

A quantitative and descriptive cross-sectional research approach and design were used to conduct the study.

1.6.3 Population and sampling

Purposeful random sampling method was used to select the study participants.

Data collection

Data collection is a process gathering information from all the relevant sources to find answers to the research problem and evaluate the outcomes (Dudovskiy, 2018). Data was collected using a questionnaire.

1.6.4 Data analysis

Data were analysed using the Statistical Package for Social Sciences version 26-computer software.

1.7 ETHICAL CONSIDERATIONS

Ethical clearance to conduct the study was granted by Turfloop Research and the Ethics Committee. Permission to collect data at Laundromats in Seshego industrial site was granted by the Limpopo Department of Health and Laundromats management. Consent was obtained from the participants before data collection.

1.8 BIAS

The researcher ensured that selection bias and information bias were done.

1.9 CONCLUSION

This chapter introduced the study, problem statement, the purpose and summarised how the study was conducted. Chapter two will review the literature relevant to this study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter focuses on how international and local authors have presented their views and findings on the knowledge and practice of personal protective equipment by employees. According to the World Health Organization (WHO) (2012), the major cause of illness and accident among industrial workers is due to exposure to different occupational hazards because of their working environment. PPE is one of measures that used to protect employee's exposure against hazards when engineering and administrative measures have already been placed. The hazards that are reduced by PPE include biological, physical, mechanical and chemicals.

2.2 Practice of PPE amongst the employees

A study of occupational health and safety measures in the laundry department of private tertiary care teaching hospital Bengaluru conducted by Kumar, Goud and Joseph (2014) reported that the ineffective use of personal protective equipment in different areas of laundry department at the linen receiving area, where workers were not wearing gloves or masks. Workers did not wear gloves or mask because they rarely come in contact with linen and it was also uncomfortable to wear the mask as they experience difficulties in breathing and communicating.). Similarly, the study done by Garbaccio and de Oliveria (2015) showed that the use of various types of personal protective equipment such as gloves, masks and goggles were generally low because the use of PPE was discomfort able, allergic, cost and non-provision.

A comparative cross-sectional study conducted in Nigeria about personal protective equipment compliance among laundry workers in secondary and tertiary health facilities showed that all the respondents of the private secondary and government tertiary hospitals who needed nose mask, hand gloves and coveralls for their duties were always given to them, whereas, all the respondents in the government secondary hospital reported that it was rarely given to them (Omoijiade & Evbuomwan, 2018). This is in contrast to a study done Tamene, Afework and Mebratu, (2020) about barriers to personal protective equipment use among laundry

workers in government hospitals who reported that no use of PPE was due to unavailability. Majority of respondents who failed to use nose mask, hand gloves and coveralls reported unnecessary, discomfort, imitating others, latex allergy as their reasons for non-compliance. Although all of the respondents in the private secondary and government secondary hospitals who needed googles for their duties were never given, as well as respondents in the government tertiary hospital who needed earplugs for their duties (Omoijiade & Evbuomwan, 2018). This was supported by a study conducted by Kumar, Goud and Joseph (2014) who noted that workers do not use earplugs because it was not available to them and further confirmed in a report by Kenya Ministries of Health and Intra-Health International (2013).

Another cross-sectional study was conducted by Tadesse, Kelaye and Assefa (2016) to assess the magnitude of personal protective equipment utilization and associated factors among textile workers at Hawassa Town, Southern Ethiopia showed that more than 17% of the workers reported that they did not use PPE during work. Similarly, Umoren, Ekanem, Johnson and Olugbemi (2016) reported that workers do not use PPE and their reason for non-use was discomfort, ignorance, wrong attitude and high cost of PPE. Tadesse, Kelaye and Assefa, (2016) reported that their reasons for not using PPE were lack of PPE, lack of practice and uncomfortable to use and lack of safety education. It was also found that the chances of using PPE among workers who served for more than 10 years were slightly less when compared to those who served for less than or equal to 10 years. The possible reasoning for this may be that those who served for a longer period could be accustomed to the work environment and developed false consciousness of safety, which made them not to comply with safety precautions including proper use of PPE. These findings are in line with a study done in Ethiopia about the knowledge, attitude and practice related to chemicals and personal protective equipment among workers which reported that their failure to use PPE was lack of supply of access to PPE, uncomfortable to use, PPE not useful and PPE easily damaged. Among workers, there was a common understanding that the availability of facemask has no protective value. Although permanent workers were significantly higher in PPE use than temporary workers. The permanent workers were motivated by their supervisor,

safety personnel, self-motivation and health professionals (Asgedom, Bratveit & Moen, 2019).

A study done by Honda and Iwata (2016) showed that non-compliance with PPE in the workplace should be punished. It will encourage other workers to comply and promote safety working environment. But using incentives such as a naming staff champions for complying with use of PPE has also proven to increase PPE use in the workplace.

Furthermore, a study done by Tamene, Afework and Mebratu (2020) reported that it should be compulsory for hospital laundry workers to use PPE to protect against illness or diseases. Another study was conducted in Ethiopia about the knowledge, attitude and practice towards infection control measures which reported that out of 135 respondents, most of the employees practised standard blood and body fluid precautions always at their working site, the remaining 23.4%, 17.1% and 17.0% practice standard blood and body fluid precautions usually less, frequently and rarely at their working site respectively. Almost all respondents had ever worn at least one type of PPE. Among the respondents who ever worn PPEs used apron, gloves, head cover, safety shoes, goggles, mask and gown. Their reasons for not wearing any required PPE was unnecessary, uncomfortable, out of stock and difficult to work with PPE. Among employees, 29.6% had needle stick injury while 70.4% of them never had needle injury. All of the respondents were aware that dirty needle and sharp materials could transmit diseases (Yakob, Lamaro & Henok, 2015). Similarly, a comparative study of the common health and safety complaints among laundry workers in secondary and tertiary health facilities in Nigeria reported that 20% of respondents had one needle stick injury while carrying out their job task (Omoijiade & Okareh, 2018).

2.3 Knowledge of employees regarding PPE

A study on personal protective equipment use among health care providers done by Archana-Lakshmi, Jennifer, Stanly and Paul (2018) showed that appropriate use of PPE among the workers was 18.1% due to unavailability of PPE and followed by unaware of the importance of PPE. The use of gloves was 100%; mask 96%, googles 4.4%, apron 62.3% and hair cover 58%. However, the use of shoe cover

and goggles was very low. The reason for the low use of them was that they were not available. According to the standard precaution guidelines, shoe cover should be used to avoid spill of blood and bloody fluids over the leg. In contrast, to a study done in Brazil about the adherence and knowledge about the use of PPE among workers showed that most respondents (71.5%) did not use PPE. The use of different types of PPE was generally low with gloves being (26.4%), a mask was (13.2%), the cap was (3.4%) and goggles was (3%) Their reasons for not using PPE were discomfort, allergy, cost and non-provision. (Garbaccio & de Oliveria, 2015).

A comparative cross-sectional study was conducted among 50 hospital workers in the Benin Metropolis of Edo state, Nigeria. The study was about PPE compliance among laundry workers in secondary and tertiary health facilities done by Omoijiade and Evbuomwan (2019) reported that all of the participants of the private secondary and government tertiary hospitals who needed nose mask, hand gloves, coveralls and goggles for their duties were given whereas all the participants in the government secondary hospitals were rarely given. Furthermore, 14.3% of participants in the private secondary, 20% of the participants in government secondary and none of the participants in the government tertiary reported that they always use nose masks when given. Similarly, a study of occupational health and safety measures in the laundry department of a private tertiary care teaching hospital done by Kumar, Goud and Joseph (2014) had stated that workers were not wearing hand gloves and mask. Workers felt that it was unnecessary to wear mask as it makes it difficult to breath and also for them not to wear gloves as they rarely come in contact with linen as they are placed at the receiving linen area.

Omoijiade and Evbuomwan (2019) further stated that the majority (77.1%) of those who failed to use them reported not necessary, whereas 17.1% reported discomfort and 5.7% reported that they were imitating the majority who were not compliant as their reasons. Also 28.6% of participants in the private secondary, none of those in government secondary and 57.9% of those in the government tertiary reported that they always use hand gloves whenever they are given. The majority (95.7%) of participants who failed to use they reported as not necessary and 4.3% reported latex allergy as their reasons for not complying with the use of hand gloves. Also 10% of participants in private secondary and none of the participants in the

government tertiary reported that they use safety boots as given. A majority (74.1%) of those who failed to use them reported discomfort, 14.8% reported as not necessary and 11.1% reported that the boots did not fit as their reasons for not complying. In contrast to a study done to assess the awareness regarding occupational health hazards among the employees in the laundry by Manuel, Daphnie, D'cunha and Suresh reported that all of the employees used PPE.

Umoren, Ekanem, Johnson and Olugbenmi (2010) reported that most respondents were aware of PPE. The majority (94%) of the participants knew at least one PPE. The most commonly known PPE by participants were protective coverall (68%.7), safety boots (62.7), gloves (51.8%) and safety goggles (39.8%). However, other types of PPE like facemask and helmet were poor. Earmuff was unknown to the participants as a protective tool though the noise was identified as one hazard and use of ordinary sunglasses.

2.4 The importance of PPE practice

A study of PPE use and occupational exposures in small industries at Saudi Arabia done by Balkhyour, Ahmad and Rehan (2018) showed that small industries employees are more vulnerable occupational group due to shortage of resources, lack of awareness, lack of education, ineffective legislation and non-use of PPE. This will put employees at risk of illness, injuries and other negative health outcomes. It was further supported by a study done by Ahmad, Balkhyour, Abokhashabah, Ismail and Rehan (2017) which stated that small industrial employees lack knowledge, understanding and information on the proper use of PPE which will result in negative health effects at workplaces. In addition, it is vital to ensure that employees are aware of PPE and use them effectively to prevent harmful situations (Ahmad, 2017).

A comparative study of the common health and safety complaints among laundry workers in secondary and tertiary health facilities done by Omoijiade and Okareh (2018) reported that chemical exposure, sharp objects left in soiled linen, slips from wet floors, exposure to pathogens in contaminated linen are the most common accidents in industrial laundries. Over half of the respondents in the secondary health facility reported that they had slipped while carrying out their duties in the past years unlike respondents in the tertiary health facility whereby only a few of them

reported to had slipped. This was supported by a study done by Iman, Alazab, Abdel-Wahed, Ghandour and Elsiady (2013) about risk assessment of physical health hazards at Al-Azhar University Hospital where 53.8% of workers reported that they had slipped.

Another study about preventing sharps injuries and blood borne pathogen exposures in the healthcare laundry done by Pyrek (2015) reported that laundry workers could be at risk for injuries if precaution is not taken, as they are responsible for processing thousands of contaminated reusable linens. Sharp injuries and blood-borne pathogens exposures could be some of the most injurious potential hazards in the healthcare laundry section to workers in terms of long-term treatment needed. In addition, control measures and precautions such as use of PPE, proper segregation and handling were useful to protect the health of workers (Manuel, Daphnie, D'cunha & Suresh, 2015)

Furthermore, a study on Rotaviral RNA found on various surfaces in a hospital laundry done by Fijan and Koren (2008) reported that laundry worker's walk through to each different working area to collect transport trolleys, bring sorted textiles to appropriate ironers and dispatch packed textiles. There are high chances of increasing microbial transmission through hands and uniforms especially if workers are allowed without changing uniforms and cleaning their hands. This was supported by a study on hospital textiles, which reported that adherence of micro-organism onto textiles during use is likely to cause airborne disease to workers (Fijan & Turk, 2012).

2.5 Conclusion

In this chapter, literature related to knowledge of employees towards PPE and practice regarding PPE was discussed. The following chapter will focus at the methodology used to conduct this study.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter focuses on the methodology of the study that includes research design, study site, sampling, inclusion and exclusion criteria, data collection, data analysis (reliability and validity), bias, ethical consideration and significance of the study.

3.2 Research design and method

➤ A cross-sectional design

. A cross-sectional design was applied in this study. According to Polit and Beck (2012) in cross-sectional study the data is collected on the whole study population at one point. The cross-sectional design was appropriate for this study because data was assessed at a single point.

➤ Descriptive design

A descriptive design is used to illustrate a situation in a natural setting without manipulation (Schmidt & Brown, 2009). In this study, data was collected from employees in a natural working environment.

• Quantitative approach

The quantitative research approach was used in this study to assess the knowledge and practice of personal protective equipment (PPE) by employees at Laundromats in Seshego industrial site. According to Kumar (2011), a quantitative research approach requires information from a larger number of respondents, while explaining the prevalence, extend, attitude and nature of issues. In this study, a quantitative approach was used to assess how many people have knowledge and practice of PPE.

3.3 Study Site

The study was conducted in the Laundromats at Seshego industrial site, which is situated in the Capricorn district. It is approximately 13.2 km northwest of Polokwane in the Limpopo province. The Laundromats have been operating for the past 6 years. The common occupational hazards include noise, heat, sharp objects, falls, contaminated laundry and electrical shock.




3.4 Population and Sampling

According to Welman, Kruger and Mitchel (2013), a research population describes a particular community from which a sample will be taken. The population of the study included males and females who are working in the Laundromat. Their duties include weighing, sorting, washing, folding, packaging, storage and transportation. The total population is comprised of 64 employees doing day and night duties of the two Laundromats that formed part of this study.

Sampling means to take a representative portion of the population for determining the characteristic of the whole population (Strydom, Fouche & Delport, 2011). The participants were selected using purposeful random sampling since the sample was small. The method was suitable because the participants were typical of the targeted population. Purposeful random sampling was used since there were only a limited number of employees who contributed to the study. According to Krejcie and Morgan, (1970), the sample size will 52.

Sample Size Formula (Krejcie & Morgan, 1970)

$$S = \frac{X^2 NP(1-P)}{D^2(N-1)+X^2 P(1-P)}$$

- S = required sample size.
- X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (**3.841**)  (**1.96 x 1.96 = 3.841**).
- N = the population size.
- P = the population proportion (assumed to be **0.50** since this would provide the maximum Sample size).
- D = the degree of accuracy expressed as a proportion (**0.05**).

Therefore,

$$\begin{aligned} S &= \frac{X^2 NP(1-P)}{D^2(N-1)+X^2 P(1-P)} \\ &= \frac{(3.8416)(64)(0.50)(1-0.50)}{0.05^2(64-1) + (3.8416)(0.50)(1-0.50)} \\ &= \frac{(3.8416)(32)(0.5)}{(0.0025)(63) + (3.8416)(0.50)(0.5)} \\ &= \frac{61.4656}{0.1575 + 0.961525} \\ &= \frac{61.4656}{1.19025} \\ &= 51.6409 \\ &= 52 \end{aligned}$$

$$S = 52$$

➤ Inclusion Criteria

Employees who are working in the Laundromats at Seshego industrial site gave consent to participate in the study. It also included Laundromat employees that are working day and night duties. All available employees were considered for the study because they might be exposed to occupational hazards and the researcher intended to check if they are using PPE, irrespective of age and gender.

➤ **Exclusion Criteria**

The two employees who had resigned from work and could not be reached were excluded from the study. It did not affect the sample size, as we still managed to get 52 employees. Employees who have been used during pilot study.

3.5 Data Collection

The researcher adopted and adapted a questionnaire for collecting data. The questionnaire used for the study was adapted from a study about personal protective equipment compliance among laundry workers in secondary and tertiary health facilities in Nigeria (Omoijiade & Evbuomwan, 2019). It was adapted for assessing knowledge. The questionnaire was translated and standardized into Sepedi (local language) with the assistance of Translation Discipline at the University of Limpopo. The questionnaire was preferred for the study because it allowed gathering information from a greater number of participants and it is less expensive. The questionnaire was distributed to the participants and was assisted by the researcher in completing the questionnaire if they needed assistance especially those who cannot read or write.

The questionnaire was consisting of three sections namely, demographic data,

Questions relating to the practice of PPE amongst employees, questions relating to knowledge of employees regarding PPE. The purpose of the questionnaire was to collect information about knowledge and practice of PPE by employees. The questionnaire was given to participants who fit the inclusion criteria. The aim and objectives of the study was explained to participants before they complete the questionnaire. All participants were required to sign a consent form before they participate in the study.

3.6 Pilot study

A pilot study is a small scale investigation conducted as a prelude to a larger scale study using a sample of the population (LoBiondo-Wood & Haber, 2010). The questionnaire was piloted at the selected laundromats and the results from the pilot study was used to modify the questionnaire accordingly.

3.7 Data analysis

Data analysis refers to breaking down of data into characteristics to find answers to the research question (Strydom & Fouche, 2011). The data was analysed by the statistician using the Statistical Package for Social Sciences (SPSS) version 26-computer software. The results were presented in the form of frequency tables and graphs. The Chi-square test was used to test for significant associations between socio-demographic variables, knowledge and practice of PPE among laundromat employees. P-value was considered statistically significant when p-value is less than 0.05. Due to small sample size, Fishers Exact test was also used to assess the association between groups.

3.8 Reliability and Validity

Reliability refers to the method of evaluating the questionnaire if it was to be used in different research participants at different time, it should confirm the original responses of the instrument (Terre-blanche, Durrheim & Painter, 2009). If someone had to repeat the research, he or she should be able to obtain the same results compared to the initially obtained results. A pilot study was conducted with 10 participants from the Laundromat to check if the questionnaire is clear and understandable. Participants that participated in the pilot study were not included in the study. The Cronbach alpha was used in this study to provide internal consistency of the scale which was 0.76 for practice of PPE (16 items) and 0.82 for knowledge regarding PPE (12 items). Lehman (2005) proposed the guideline of alpha coefficient to be alpha greater than 0.070 as a standard for strength. Based on the guideline of alpha coefficient, the internal consistency of the questionnaire is acceptable. According to Tavakol and Dennick (2011) described alpha as a measure of internal consistency. The internal consistency of a test helps to describes the extent to which all items in a test measure the same concept.

Validity shows how good a research tool measures what it is supposed to measure and it is important because the objectives of the study are represented in what the researcher is investigating (Welman, Kruger & Mitchell, 2013). The data collection tool was adapted from the validated instrument of Omoijade and Evbuomwan (2019). In this study, the data collection tool was adapted in consultation with a biostatistician.

- Content validity - The data collection tool was assessed by the researcher's supervisor and co-supervisor for the content and to find out if it addresses the objectives of the study.
- Criterion validity – the data collection tool was compared to other standardized tools that are related to the study.

3.9 Bias

- **Selection bias**

The Researcher ensured that the process of recruiting the participants meets the study aims and all subjects that were included.

To prevent selection bias in this study, the researcher used purposeful random sampling because there were only limited number of employees. The method used was because sample was small and typical of the targeted population.

- **Information bias**

Use a standardized measurement tool for collecting data like questionnaire, which assisted the researcher to collect data in a standardized manner.

3.10 Ethical consideration

The researcher wrote and submitted the research proposal to the Faculty of Health Science, Department of Public Health Senior Degrees Committee at the University of Limpopo for approval, after which it was presented to the Turfloop Research Ethics Committee (TREC) to obtain ethical clearance.

- **Permission to conduct the study**

Ethical clearance was sought from the Turfloop Research Ethics Committee (TREC) and permission to conduct the study was obtained from the Limpopo Department of Health and Laundromats Management.

- **Informed consent**

The research participants were informed about the nature of the study to be conducted and were given a choice to participate or not. They were informed that they are not forced to participate and that they will not be punished or victimized if they refuse to participate in the study. The purpose and objectives of the study were

explained to the participants and they were informed that they have a right to withdraw at any time if they wished to do so. The participants were informed that participation is voluntary. All participants that had agreed to take part in the study were given informed consent forms to sign.

- **Anonymity and Confidentiality**

Confidentiality refers to no divulge of information provided by a person. Participants have a right to remain anonymous. Confidentiality and anonymity were maintained by not using names of participants.

3.11 Significance of the study

The study is aimed at creating awareness among laundry employees of the possible occupational health hazards if they do not use PPE in the laundry industry. The study aimed at creating awareness of the importance of using PPE, which will assist the laundry industry to comply with OHSA. The study will also serve as a body of knowledge and basis for further studies.

3.12 Conclusion

In this chapter the methodology used in conducting this study was discussed. The chapter focused at the study design, sampling, inclusion and exclusion criteria, data collection and analysis, reliability and validity and ethical considerations. The following chapter will focus on the presentation of data and discussion of the study.

CHAPTER 4: PRESENTATION AND INTERPRETATION OF THE FINDINGS

4.1 Introduction

The previous chapter focused on the methodology used in the study. In this chapter, the results are presented. Data were analysed with the assistance of a statistician. The SPSS version 26 computer software was used to analyze data. A total number of 52 respondents participated in the study. In this chapter, the data was presented in the form of a pie chart, tables and bar graphs. Descriptive statistics for continuous variables were presented.. The results were categorized into four sections, namely:

Sociodemographic of the respondents, Practice of PPE amongst the employees, Knowledge of employees regarding PPE and the association between sociodemographic variables, practice and knowledge among laundromat employees.

4.2 Sociodemographic of the respondents

The demographic profile focused on age, gender, marital status, the highest level of education and the total number of years in the company.

Table 4.1 Sociodemographic results

Variable	Levels	Frequency (%)
Age group (in years)	20-25	7(13.5%)
	20-30	12(23.1%)
	31-35	12(23.1%)
	36-40	19(36.5%)
	41-45	2(3.8%)
Total		52(100%)
Gender	Male	13(25.0%)
	Female	39(75.0%)
Total		52(100%)
Marital Status	Single	31(59.6%)
	Married	21(40.4%)
Total		52(100%)
Education level attained	Grade 8-11	38(73.1%)
	Matric	14(26.9%)
Total		52(100%)
Total Number of years in the company	0-2 years	33(63.5%)
	3-5 years	19(36.5%)
Total		52(100%)

Table 4.1 showed that majority of respondents are between the age group of 36-40 years. The majority of respondents were females (N=39) than males (N=13). Majority of respondents were single (N=31) than married respondents (N=21). Majority of respondents (N=38) had grade 8-11 of the level of education. The majority of respondents (N=33) had worked for the company for a period of 0-2 year.

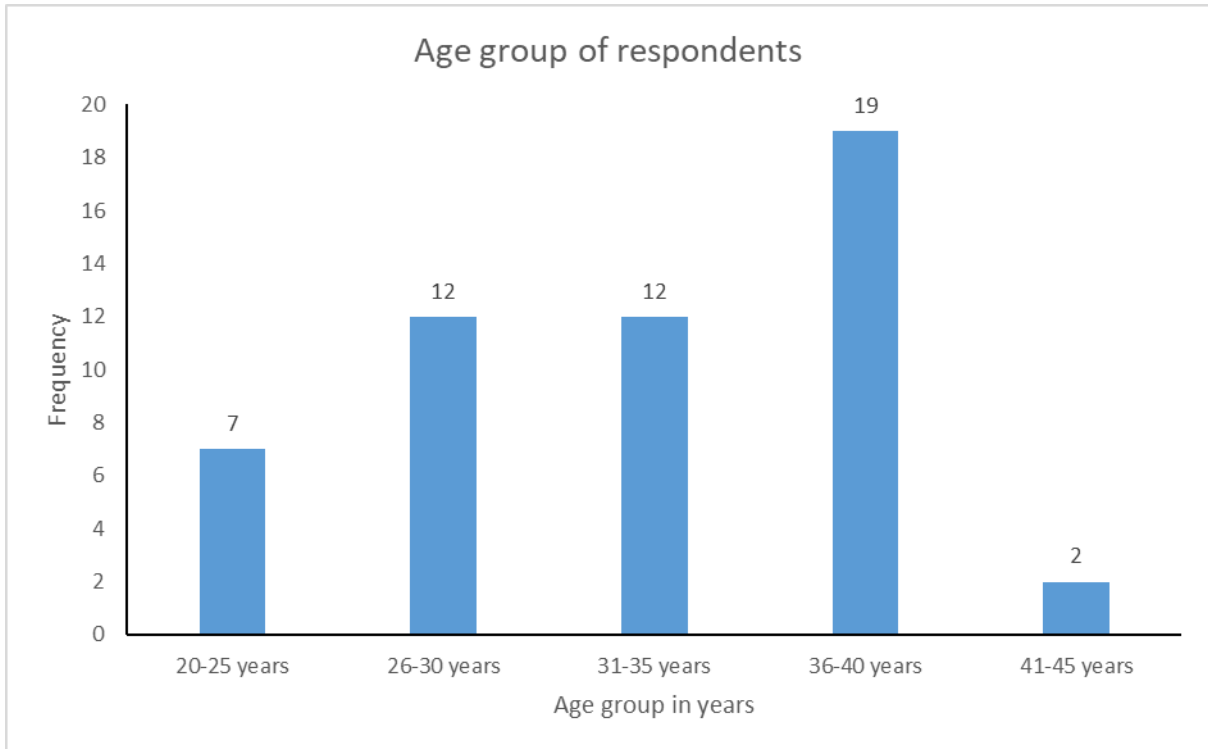


Figure 4.1 Age group of respondents

Figure 4.1 shows that the majority of respondents (N=19) were between the age group of 36-40 years and minority of respondents (N=2) were between the age group of 41- 45 years. The age group of 26-36 and 31-35 years had the same respondents (N=12).

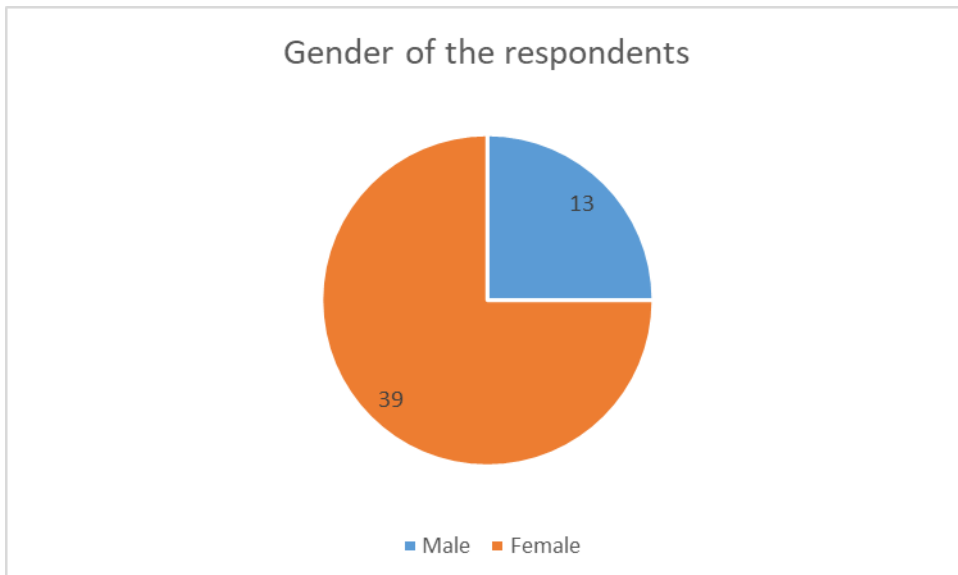


Figure 4.2: Gender of the respondents

Figure 4.2 shows that the majority of respondents were females (N=39) compared to males (N=13) that participated in the study.

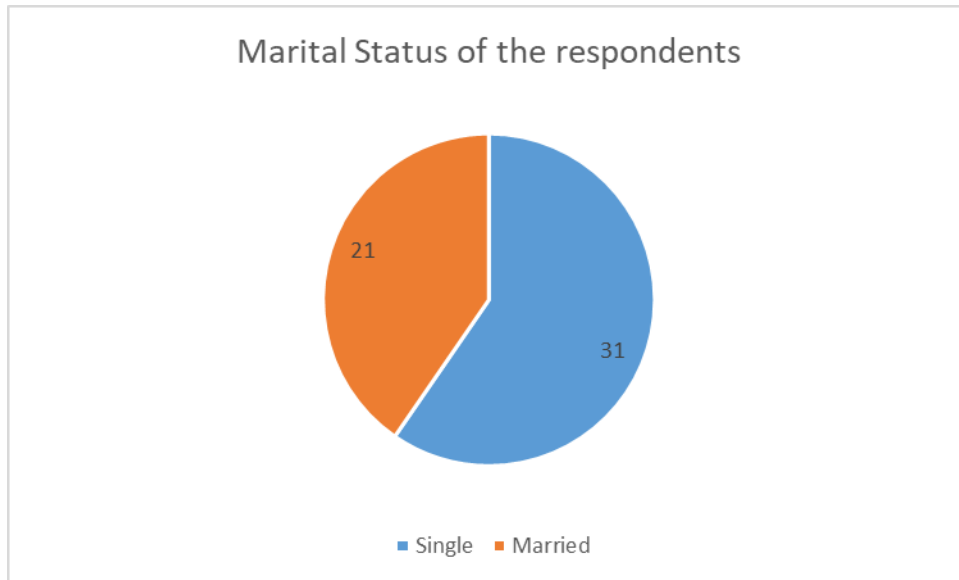


Figure 4.3 Marital status of the respondents

Figure 4.3 demonstrate that the majority of the respondents were single (N=31) compared to married (N=21) that participated in the study.

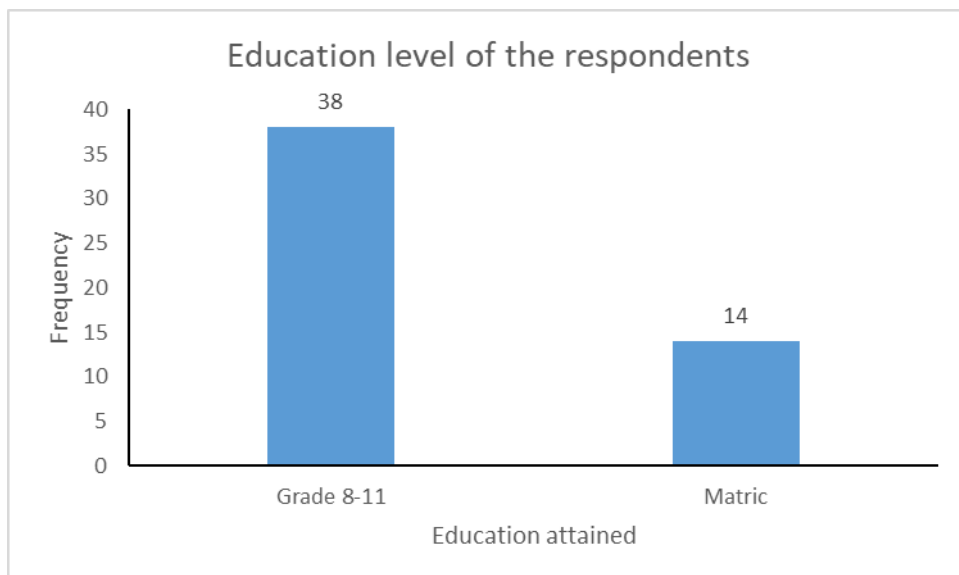


Figure 4.4: Educational level of the respondents

Figure 4.4 presents that majority of the respondents (N=38) had grade 8-11 level of education whereas 14 respondents had matric.

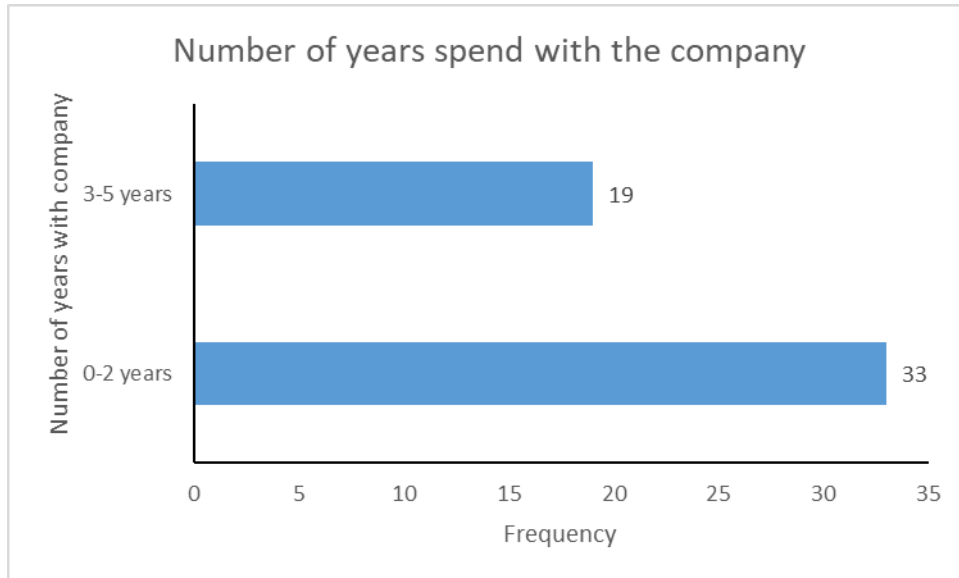


Figure 4.5 Total number of years in the company

Figure 4.5 shows that the majority of the respondents (N=33) worked for a period of 0-2 years whereas 13 respondents worked for a period of 3-5 years.

Table 4.2. Age by sociodemographic details of respondents

	Gender		Education		Marital Status		Number of years in the company	
	Female	Male	Grade 8-11	Matric	Single	Married	0-2 years	3-5 years
Frequency	39	13	38	14	31	21	33	19
Mean	33.15	31.15	33.32	30.86	29.29	37.62	29.58	38.00

Table 4.2 shows that the respondents who worked for 3-5 years had the highest mean age (38.00 years) of all the categories. The mean age of all 52 respondents

was 32.7 years. The mean age for females (33.15 years) was higher than that of the males (31.15 years). Those who had matric had a mean age of 30.86 years, which was lower than the ones who did not complete matric (33.32 years).

4.3 Conclusion

In this subheading, the sociodemographic of the respondents focused on age, gender, marital status, the highest level of education and the total number of years in the company were presented and interpreted. The following subheading will focus on the practice of personal protective equipment amongst the employees.

4.4 Practice of personal protective equipment amongst the employees

Table 4.4 Presents practice of personal protective equipment amongst the employees.

Variable	Levels	Frequency
Are hand gloves used?	Always	41 (78.8%)
	Sometimes	11 (21.2%)
	Never	0 (0%)
Total		52 (100%)
Are safety boots used?	Always	40 (76.9%)
	Sometimes	12 (23.1%)
	Never	0 (0%)
Total		52 (100%)
Do you use eye goggles?	Always	0 (0%)
	Sometimes	0 (0%)
	Never	52 (100%)
Total		52 (100%)
Do you use earplugs?	Always	0 (0%)
	Sometimes	0 (0%)
	Never	52 (100%)
Total		52 (100%)
Do you use facemask?	Always	52 (100%)
	Sometimes	0 (0%)
	Never	0 (0%)
Total		52 (100%)
Do you use overalls?	Always	42 (80.8%)
	Sometimes	8 (15.4%)
	Never	2 (3.8%)
Do you use gowns?	Always	0 (0%)
	Sometimes	0 (0%)
	Never	52 (100%)
Total		52 (100%)
Do you use helmets?	Always	0 (0%)
	Sometimes	0 (0%)
	Never	52 (100%)
Total		52 (100%)
Which type of PPE is used in your workplace?	Boots, Gloves, Masks and Overalls)	52 (100%)
Total		52 (100%)

Table 4.4 illustrate that the majority of the respondents (N=41) reported that they always wear gloves whereas few of them (N=11) reported that they sometimes wear gloves. The majority of the respondents (N=40) reported that they are always

wearing safety boots compared to 12 respondents who sometimes wear safety boots. All of the respondents (N=52) reported that they were not using eye goggles, earplugs, gowns and helmets. However, all the respondents (N=52) reported wearing facemasks every time they performed their tasks. Majority of respondents (N=42) reported that they always use overalls, whereas there are those who sometimes use them (N=8) and two of respondents reported never using them. All of the respondents reported which type of PPE is used in their workplace.

4.5 Conclusion

In this subheading, the practice of personal protective equipment amongst the employees were presented and interpreted. The following subheading will focus on the knowledge of employees regarding personal protective equipment.

4.6: Knowledge of employees regarding personal protective equipment

Table 4.6 Present knowledge of employees regarding personal protective equipment.

Variable	Levels	Frequency
Have you ever heard about PPE?	Yes	52 (100%)
	No	0 (0%)
Total		52 (100%)
It is necessary to always use PPE	Agree	52 (100%)
	Don't know	0 (0%)
	Disagree	0 (0%)
Total		52 (100%)
Have you ever received any training on PPE?	Yes	13 (25.0%)
	No	39 (75.0%)
Total		52 (100%)
If yes, when was it?	Last three months	0 (0%)
	Last six months	1 (1.9%)
	Last year	2 (3.8%)
	Last 2 years	10 (19.2%)
If no, why?	No training done	39 (75.0%)
	Not interested in training	0 (0%)
	Not allowed to attend	0 (0%)
Total		52 (100%)
Noise can damage your hearing.	Agree	51 (98.1%)

	Don't know	1 (1.9%)
	Disagree	0 (0%)
Total		52 (100%)
Inhaling chemicals can cause sickness?	Agree	48 (92.3%)
	Don't know	4 (7.7%)
	Disagree	0 (0%)
Total		52 (100%)
Safety boots protect against feet injuries	Agree	52 (100%)
	Don't know	0 (0%)
	Disagree	0 (0%)
Ear protective prevents hearing loss.	Agree	38 (73.1%)
	Don't know	14 (26.9%)
	Disagree	0 (0%)
Total		52 (100%)
Respiratory masks protect against lung disease.	Agree	38 (73.1%)
	Don't know	14 (26.9%)
	Disagree	0 (0%)
Total		52 (100%)
Gowns at the workplace protect against body injuries.	Agree	44 (84.6%)
	Don't know	8 (15.4%)
	Disagree	0 (0%)

Total		52 (100%)
Helmets protect from head injuries.	Agree	52 (100%)
	Don't know	0 (0%)
	Disagree	0 (0%)
Total		52 (100%)
Goggles protect against eye injuries.	Agree	50 (96.2%)
	Don't know	2 (3.8%)
	Disagree	0 (0%)
Total		52 (100%)
Gloves protect one from hand injuries.	Agree	52 (100%)
	Don't know	0 (0%)
	Disagree	0 (0%)
Total		52 (100%)

Table 4.6 demonstrate that all of the respondents (N=52) heard about PPE. Also all the respondents have agreed that it is always necessary to use PPE. Majority of respondents (N=39) reported that they had never received training on PPE whereas there are those who had received training (N=13) because it was never provided. Majority of respondents (N=51) agreed that noise can damage hearing whereas there was only one who did not know (N=1). Majority of respondents (N=48) agreed that inhaling chemicals can cause sickness whereas there are those who did not know (N=4). All of the respondents (N=52) agreed that safety boots protect against feet injuries, helmets from head injuries and gloves against hand injuries. Majority of respondents (N=38) agreed that ear protective prevents hearing loss while 14 of the respondents did not know. Majority of respondents (N=38) agreed that respiratory mask protect against lung disease whereas there are those who did not know (N=14). Majority of respondents (N=44) agreed that gowns at workplace protect against body injuries whereas there are those who did not know (N=8). Majority of

respondents (N=50) agreed that goggles protect against eye injuries whereas there are those who did not know (N=2).

4.7 Conclusion

In this subheading, the knowledge of employees regarding personal protective equipment were presented and interpreted. The following subheading will focus on the association between sociodemographic profile and knowledge regarding PPE and practice regarding PPE among laundromat employees.

4.8 The association between sociodemographic variables, practice and knowledge among laundromat employees.

In this section, the association between sociodemographic profile and knowledge regarding PPE and practice regarding PPE among laundromat employees are presented.

Table 4.8.1: presents the association between the age group of the respondents and knowledge of employees regarding PPE.

Age group	Knowledge		p-value
	Good knowledge	Moderate knowledge	
20-25 years	7	0	0.024
26-30 years	11	1	
31-35 years	9	3	
36-40 years	15	4	
41-45 years	0	2	

Table 4.8.1 show that the association between the age group of the respondents and knowledge about PPE in this study was significant. There was an association between age group and knowledge ($p=0.024$). It means knowledge of employees regarding PPE was influenced by age group. The age group of 36-40 was more knowledgeable.

Table 4.8.2: presents the association between the age group of the respondents and practice regarding PPE

Age group	Practice		p-value
	Poor practice	Moderate practice	
			0.506
20-25 years	3	4	
26-30 years	5	7	
31-35 years	5	7	
36-40 years	13	6	
41-45 years	1	1	

Table 4.8.2 show that there was no association between the age group of the respondents and practice regarding PPE ($p=0.506$). It means age group of employees did not influence practice regarding PPE.

Table 4.8.3: presents the association between gender of the respondents and knowledge regarding PPE

Gender of the respondents	Knowledge Status		p-value
	Good knowledge	Moderate knowledge	
			0.697
Male	10	3	
Female	32	7	

Table 4.8.3 show that there was no association between the gender of the respondents and knowledge regarding PPE ($p=0.697$). Whether a respondent was a male or female, did not have an influence on being knowledgeable or not.

Table 4.8.4: presents the association between gender of the respondents and practice regarding PPE

Gender of the respondents	Practice Status		p-value
	Poor practice	Moderate practice	
	8	5	0.528
Male	8	5	
Female	19	20	

Table 4.8.4 show that there was no association between the gender of the respondents and practice regarding PPE ($p= 0.528$). The gender of respondents did not have any impact on the practice regarding PPE.

Table 4.8.5: presents the association between marital status of the respondents and knowledge regarding PPE

Marital status of the respondents	Knowledge Status		p-value
	Good knowledge	Moderate knowledge	
	26	5	0.500
Single	26	5	
Married	16	5	

Table 4.8.5 show that there was no association between the marital status of the respondents and knowledge regarding PPE ($p=0.500$). The marital status of the respondents did not have influence on knowledge of PPE.

Table 4.8.6: presents the association between marital status of the respondents and practice regarding PPE

Marital status of the respondents	Practice Status		p-value
	Poor practice	Moderate practice	
Single	14	17	0.270
Married	13	8	

Table 4.8.6 show that there was no association between the marital status of the respondents and practice regarding PPE ($p=0.270$). The marital status of the respondents did not have effect on practice regarding PPE.

Table 4.8.7: presents the association between the educational level of the respondents and knowledge regarding PPE

The educational level of the respondents	Knowledge Status		p-value
	Good knowledge	Moderate knowledge	
Grade 8-11	30	5	0.710
Matric	12	5	

Table 4.8.7 show that there was no association between the educational level of the respondents and knowledge regarding PPE ($p=0.710$). The educational level of the respondents did not have influence on being knowledgeable regarding PPE.

Table 4.8.8: presents the association between the educational level of the respondents and practice regarding PPE

The educational level of the respondents	Practice Status		p-value
	Poor practice	Moderate practice	
Single	18	20	0.355
Married	9	5	

Table 4.8.8 show that there was no association between the educational level of the respondents and practice regarding PPE($p=0.355$). The educational level of the respondents did not have impact on practice regarding PPE.

Table 4.8.9: presents the association between the total number of years in the company and knowledge regarding PPE

Total number of years of the respondents in the company	Knowledge Status		p-value
	Good knowledge	Moderate knowledge	
0-2 years	28	5	0.467
3-5 years	14	5	

Table 4.8.9 show that there was no association between the total number of years in the company and knowledge regarding PPE ($p=0.467$). The total number of years in the company did not have effect on knowledge regarding PPE.

Table 4.8.10: presents the association between the total number of years in the company of the respondents and practice regarding PPE

Total number of years of the respondents in the company	Practice Status		p-value
	Poor practice	Moderate practice	
0-2 years	13	20	0.023
3-5 years	14	5	

Table 4.8.10 show that there was association between the total number of years in the company of the respondents and practice regarding PPE was significant. There was an association between the total number of years in the company and practice regarding PPE ($p= 0.023$). Workers who worked 0-2 years had better practice regarding PPE.

4.9 Conclusion

In this subheading, the association between sociodemographic variables, practice and knowledge among laundromat employees were presented and interpreted. The following chapter will highlight the limitation of the study, the findings will be discussed and compared to literature, draw conclusion from the results and make recommendations.

CHAPTER 5: DISCUSSION, LIMITATIONS, CONCLUSION AND RECOMMENDATIONS OF THE STUDY

5.1 Introduction

This chapter focuses on the discussion of the results, limitations, conclusion and recommendations of the study.

5.2 Sociodemographic of the respondents

The study documents that majority of respondents were between the age group of 36-40years. This finding was in contrast with the finding of Kumar, Goud and Joseph (2014) who found that majority of employees were less than 35 years of age. The majority of respondents were females (N=39) than males (N=13). This finding concurred with the finding by Omoijiade (2018) who found that the majority of respondents were females, which believed that females wash better when some laundries are done manually, leaving males to carry out the tasks of ironing and supervising. Majority of respondents were single (N=31) than married respondents (N=21). Majority of respondents (N=38) had grade 8-11 of the level of education. This finding is in contrast to a study by Sukumar and Karthig (2014) which revealed that the majority of respondents have completed their matric. The majority of respondents (N=33) had worked for the company for a period of 0-2 year.

5.3 Practice of personal protective equipment amongst the employees

In this study, the results revealed that majority of the respondents (N=41) reported that they always wear gloves whereas few of them (N=11) reported that they sometimes wear gloves. Those that sometimes did not wear gloves put themselves at risk of needles prick from dirty linen. It may lead to punctures and lacerations caused by needles and sharp objects found in dirty laundry. The use of gloves reduces the risk of injury by needles and sharp medical devices. Laundry workers are constantly exposed to needles and sharp objects which are hidden in contaminated laundry brought in from the operating theatre, wards and intensive care unit. Some of these linen is used for caring people infected with human immunodeficiency virus and methicillin-resistant staphylococcus aureus. This finding was similar to a study by Kumar, Goud and Joseph (2014) that revealed that workers were using gloves, but they were not consistent with usage. The gloves used by

employees were made of either rubber or latex which makes it difficult to grip and pull wet linen. In contrast, a study done by Tadesse, Meskele and Boltena (2016) reported that 226 of respondents did not wear gloves when performing their tasks. Workers experienced higher level of needle-stick and sharp injuries. Omoijade and Evbuomwan (2019) also reported that majority of respondents (N=80) who failed to use hand gloves mentioned necessity as the reason, whereas other 4 respondents mentioned latex allergy as the reason for non-compliance.

The majority of the respondents (N=40) reported that they are always wearing safety boots compared to 12 respondents who sometimes wear safety boots in the present study. They do so to avoid splash of chemicals, stepping on sharp pointed objects and walking in areas of wet surfaces and washrooms. Failure to wear safety boots will result in slipping from wet surfaces and getting injured. Safety boots can also protect against objects falling onto the feet of employees. The results of the study are consistent with a study done by Umoren, Ekanem, Johnson and Olugbemi (2016) which found that the majority of employees (N=52) wore safety boots. Omoijade and Evbuomwan (2019) also reported that in secondary and tertiary hospitals in Nigeria, the majority of laundry workers (N=60) wear safety boots.

The results of the current study revealed that all of the respondents were (N=52) reported not using eye goggles. Their reason for non-use was that eye goggles were unnecessary and non-provision by the employer. It puts them at danger of chemical splashes, debris and free fluids while sorting medically soiled linen. The results of the study are similar to a study done by Kumar, Goud and Joseph (2014) where they found that workers did not wear goggles while spreading the washed clothes as most of them thought it was not necessary. Omoijade and Evbuomwan (2019) also reported that all of the respondents in the private secondary and government secondary hospitals were not using eye goggles as they were never provided with them.

The current study reported that all respondents (N=52) were not using earplugs. Failure to use earplugs exposes them to high level of noise that might lead to either temporary or permanent hearing loss. Respondents did not use earplugs because

they were not provided to them and they also think that it was unnecessary. This is similar to findings by Hisam and Anua (2018) who reported that majority of the respondents (N=31) did not use earplugs despite being aware of occupational noise exposure. Tengku Hanidza, Jan, Abdullah and Ariff (2013) also reported poor use of earplugs among their respondents due to discomfort.

In the present study, all of the respondents (N=52) were not using gowns. The use of gowns helps to protect from free fluids while sorting medically soiled linen. Failure to use gowns might lead to contact with concentrated chemicals that can cause skin irritation and burns. This is in contrast to a study done by Archana-Lakshmi, Gladius, Meriton and Christina (2018) who reported that 470 of the respondents were using gowns.

The results of the study revealed that all of the respondents (N=52) were not using helmets. Helmets are used to protect head against overhead railing for soiled bags, soiled and wet slings. In a laundry setting, there are installed rails that carry a big load of laundry that can fall on top of the head of the employee. Workers wear helmets to avoid head injuries. The results of the study are in contrast to a study done by Tadesse, Kelaye and Assefa (2016) who found that majority of workers utilize helmets.

In the present study, all of the respondents (N=52) reported wearing facemasks every time they performed their tasks. This protects them against inhaling dangerous fumes as they work with chemicals. The results of the study are in contrast to a study done by Lankatilake, Samaranayake and Ranasooriya (2017) who reported that majority of respondents (N=14) did not wear mask. This is irrespective of the being provided with mask because they are used to working without them. Abiodun, Aturaka, Oladapo, Nwofe, Abiola, Olushola and Teniola (2018) also found that majority of respondents (N=60) reported not wearing while working (table 4.3).

In the present study, majority of the respondents (N=42) reported that they were always using overalls, whereas there are those who sometimes were using them (N=8) and two of respondents reported never using them to protect against

chemicals and virus particles from contaminated linen. A chemical exposure to the skin while working can lead to serious problems which can evolve into chronic dermatitis. The results of the study are consistent with a study done by Beyamo, Dodicho and Facha (2019) who reported that majority of respondents used overalls.

5.4 Knowledge of employees regarding personal protective equipment

The current study reports that all the respondents (N=52) have heard about PPE. When workers are aware of PPE, it may influence the use of PPE to prevent work related injuries. The results of the study are similar to a study done by Umoren, Ekanem, Johnson and Olugbeni (2016) who reported that the majority of respondents (N=166) were aware of PPE. The most common PPE known to the respondents were coveralls, safety boots, gloves and safety goggles.

The results of the study found that all of the respondents has agreed that it is always necessary to use PPE. It is necessary to use PPE to protect the worker against work-related injuries and illness. The results of the study are in contrast to study done by Kumar, Goud and Joseph (2014) who reported that majority of workers said that it is unnecessary to use PPE due to discomfort.

In present study, majority of respondents (N=39) reported that they had never received training on PPE whereas there are those who had received training (N=13) because it was never provided. This might affect PPE use as most of respondents did not receive training. The results of the study are in contrast to a study done by Tetemke, Alemu, Tefera, Sharma and Worku (2014) who reported that majority (N=293) had received training of PPE from safety officer or experienced worker. Asgedom, Bratveit and Moen (2019) also reported only 16 workers attended training of PPE. Majority of respondents (N=51) agreed that noise can damage hearing whereas there are those who did not know (N=1). It is important to use earplugs to prevent damage hearing. The results of the study are similar to a study done by Omoijiade (2018) who reported that exposure to noise can damage hearing. This is due to use of heavy machinery in the laundering process. Inam, Alazab and Abdet-

Wahed (2013) also reported that high levels of noise in the laundry above standard of OSHA can damage hearing.

The results of the study found that majority of respondents (N=48) had agreed that inhaling chemicals can cause sickness whereas there are those who did not know (N=4). Most of laundry detergents often contain harmful chemicals which lead to negative health effects. The results of the study are consistent to a study done by Abiodun, Aturaka, Oladapo, Nwofe, Abiola, Olushola and Teniola (2018) which reported that regular inhaling chemical can cause sickness.

The results of the current study revealed that all of the respondents (N=52) had agreed that safety boots protect against feet injuries, helmets from head injuries and gloves against hand injuries. The results are similar to a study done by Pyrek (2015) who reported that PPE such as safety boots, helmets and gloves can act as barriers to occupational hazards in the laundry.

In present study, majority of respondents (N=38) had agreed that ear protective prevents hearing loss. The results are similar to a study done by Fontoura, Goncalves, Lacerda and Coifman (2014) who reported that they had agreed that ear piece prevents hearing loss and recommend other administrative ways of limiting exposure such as the noise exposure time. Most employees in laundry works up to 12 hours than the normal 8 working hours which might aggravate the situation of noise exposure.

The results also revealed that majority of respondents (N=38) had agreed that respiratory mask protect against lung disease whereas there are those who did not know (N=14). Workers in laundries constantly come into contact with aggressive chemical products which can irritate the respiratory system and they can protect themselves by using PPE. These findings are consistent with a study done by Alkarn, Zayet, Mohammed, Rashed and Alkarn (2017) who found that majority (N=70) of laundry workers had chest problems with symptoms such as cough, phlegm, shortness of breath and wheezes.

In present study, majority of respondents (N=44) had agreed that gowns at workplace protect against body injuries whereas there are those who did not know (N=8). Workers in the laundry are exposed to contaminated linen and the use of gowns to prevent contact with the skin. These findings are consistent with the study done by Umoren, Ekanem, Johnson and Olugbeni (2016) who reported that majority of respondents (N=122) are aware that gowns can prevent work related injuries.

In present study, majority of respondents (N=50) had agreed that goggles protect against eye injuries whereas there are those who did not know (N=2). The use of goggles prevents workers to exposure of splashed body fluids and other potentially infectious materials that might come into the eyes. The results are similar to a study done by Maragakis (2019) who reported that goggles provide protection against virus-containing respiratory droplets from entering the eyes.

5.5 The association between sociodemographic variables, practice and knowledge among laundromat employees

5.5.1 The association between the age group, gender, marital status, educational level, the total number of years in the company of the respondents and knowledge of employees regarding PPE.

The current study revealed that the association between the age group of the respondents and knowledge about PPE in this study was significant. There was an association between age group and knowledge ($p=0.024$). It means knowledge of employees regarding PPE was influenced by age group. The age group of 36-40 was more knowledgeable. These findings are in line with the study done by Alao, Durodola, Ibrahim and Asinobi (2020) who reported that younger subjects of less or equal to 45 years were more knowledgeable about PPE. However, it was in contrast with a study done by Gaward (2017) who mentioned that there was no association between the age group and knowledge of workers.

In present study, there was no association between the gender of the respondents and knowledge regarding PPE ($p=0.697$). Whether a respondent was a male or female, did not have an influence on being knowledgeable or not. Majority of both

males and females had good knowledge hence there was no significance difference. The results are consistent with a study done by Asgedom, Bratveit and Moen (2019) who also reported that gender of respondents was not associated with knowledge. However, these findings are in contrast to a study done by Abukhelaif (2019) who reported that gender of the respondents and knowledge regarding PPE was significant.

The current study reported that there was no association between the marital status of the respondents and knowledge regarding PPE ($p=0.500$). The marital status of the respondents did not have influence on knowledge of PPE. These findings were in agreement with a study done by Haile, Engeda and Abdo (2017) who reported that workers' marital status was not significance to knowledge regarding PPE. Nwafor (2020) reported that marital status of the respondents was significant.

The present study found that there was no association between the educational level of the respondents and knowledge regarding PPE ($p=0.710$). The educational level of the respondents did not have influence on being knowledgeable regarding PPE. The results were consistent with a study done by Temke, Alemu, Tefera, Sharma and Worku (2014) who reported that educational level of the respondents did not have significance on knowledge regarding PPE. However, this was in contrast to a study done by Asgedom, Bratveit and Moen (2019) who mentioned that educational level was statistically significant to knowledge of PPE.

In present study, there was no association between the total number of years in the company and knowledge regarding PPE. The total number of years in the company did not have effect on knowledge regarding PPE. The results are in contrast to a study done by Gebrezgiabher, Tekemke and Yetum (2013) who reported that work experience hsignificant association with the knowledge of respondents. This was supported by Temke, Alemu, Tefera, Sharma and Worku (2014) who mentioned that work experience had significant association with knowledge.

5.5.2 The association between the age group, gender, marital status, educational level, the total number of years in the company of the respondents and practice regarding PPE

The results of the current study revealed that there was no association between the age group of the respondents and practice regarding PPE ($p=0.506$). It means age group of employees did not influence practice regarding PPE. The results are consistent with the study done by Sukumar and Karthiga (2014) who also reported that there is no significance age and practice of PPE. However, these findings are in contrast to a study done by Vinodhini and Bhooma Devi (2016) who reported that the association between age group and practice regarding PPE was significant.

In present study, there was no association between the gender of the respondents and practice regarding PPE ($p= 0.528$). The gender of respondents did not have any impact on the practice regarding PPE. These findings are in contrast to a study done by Temke, Alemu, Tefera, Sharma and Worku (2014) who reported that gender had a statistical significance with PPE use. Abukhelaif (2019) also reported that there was positive association between the gender of the respondents and use of PPE.

The current study found that there was no association between the marital status of the respondents and practice regarding PPE ($p=0.270$). The marital status of the respondents did not have effect on practice regarding PPE. The results are in contrast to a study done by Ataro, Bilate, Addisie, Mickael, Dinku and Mulatu (2017) who reported that marital status of the respondents were statistically significant with practice of PPE. This was supported by Sehsah, El-Gilany and Ibrahim (2020) who also mentioned that marital status of respondents was significant to PPE use.

The present study reported that there was no association between the educational level of the respondents and practice regarding PPE ($p=0.355$). The educational level of the respondents did not have impact on practice regarding PPE. These findings are consistent with a study done by Johnson and Motilewa (2016) who reported that educational level of the respondents did not show any significant association. Although this was not in agreement with a study done by Akintayo (2013) who reported that practice of PPE was significantly associated with level of education.

In present study the results revealed that there was association between the total number of years in the company of the respondents and practice regarding PPE was significant. There was an association between the total number of years in the

company and practice regarding PPE ($p= 0.023$). Workers who worked 0-2 years had better practice regarding PPE. The reason could be that those worked for longer period accustomed to work environment and developed a false sense of safety which might lead them not to comply with proper use of PPE. These findings are consistent with a study done by Tadesse, Kelaye and Assefa (2016) who reported that work experience were significantly associated with utilization of PPE. This was supported by Nwafor (2020) who also reported that work experience had significant association with PPE practice.

5.6 LIMITATIONS OF THE STUDY

Circumstances surrounding the ongoing Coronavirus (COVID-19) pandemic might have influenced the employees' response to PPE use. The respondents who were assisted by the researcher with filling the questionnaires might have responded in a way that the researcher might have wanted.

5.7 CONCLUSION

The respondents showed the poor practice of personal protective equipment such as helmets, goggles, gowns and earplugs. Personal protective equipment non-use was related to laundries management not providing them and an individual decision of thinking that is unnecessary to use them. Although employers must provide PPE to employees as mandated by legislation. Employees are also expected to show personal responsibilities by adhering to PPE protocols as required in the workplace. Majority of the respondents did not receive any training which could have led to poor practice of PPE. Also the level of education of most respondents was between grade 8-11 and combined with majority of them not receiving any training might be catastrophic. It is vital to note that workers in the laundry departments tend not to have adequate formal education in health care, so the need empower them with skills to use PPE properly will be an important factor in the training given.

All of the respondents mentioned that they have never had an injury on duty. This could give them a false sense of not being exposed and could easily result in compliance and high risk taking by not using personal protective equipment.

The findings also revealed that the majority of employees did not receive training because it was not offered. It is also the responsibility of the employer to ensure that training of PPE is provided to equip employees with knowledge about PPE and skills to use PPE effectively. However, the findings showed that the majority of respondents had good knowledge of PPE. There was an appropriate response to the majority of questions relating to knowledge about PPE.

5.8 RECOMMENDATIONS

Based on the findings and conclusions from the study, the researcher recommended the following:

PPE training should be provided frequently and should include all employees. Supervisors or safety officers should monitor the use of PPE and encourage employees to use PPE. Employees need to be informed of the consequences of not complying with PPE, for example, injury on duty or occupational disease claims might not be paid or taken into consideration by Compensation Commissioner. Provide incentives for appropriate PPE use by awarding prizes to employees who comply or punish those who are non-compliant. It is also the responsibility of the employer to ensure that training of PPE is provided to equip employees with knowledge about PPE and skills to use PPE effectively. Laundry workers should be provided with regular education sessions to strengthen awareness on the occupational health and safety risks associated with their occupation.

The current study demonstrated that training was not provided frequently, future studies may need to investigate the type and frequency of training, the content delivered. Lastly future research would also benefit from a larger sample sizes.

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APPENDICES

Appendix 1: Request to collect data

PO BOX 110
Mogodumo
Chuenespoort
0735

Industrial site
Stand no. 3936
Seshego
0742

Dear Sir/ Madam

I am humbly requesting to conduct my study at your company. I am a second-year student at the University of Limpopo and presently doing Masters of Public Health (MPH).

The researcher intends to do a study about the knowledge and practice of personal protective equipment by employees at the laundromat. I am kindly requesting you to permit me to collect data from employees in your company. I shall be collecting data using a questionnaire and it will require approximately 45 minutes or less to complete.

Please permit me to express my thanks in anticipation of your assistance.

Yours sincerely

Chuene K.P

Appendix 2: Time frame

Activity	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Submission to supervisor										
Class presentation										
Departmental presentation										
SREC										
FHDC										
TREC										
Request to collect data										
Data collection										
Data Analysis										

Appendix 3: Budget

Expenditure description	Budget	Justification for expenditure
A. Personal services 1. The Researcher and Research assistant 2. Statistician	R12,000	The Researcher will be responsible for coordinating all aspects of the research project but will need assistance with collecting data and analyzing the collected data.
B. Supplies and services 1. Stationery, Questionnaires, Laptop, Internet	R10,000	Stationery to be used for data collection purposes.
C. Travel and meetings	R8,000	Transport to and from the research site.
D. Accommodation and meals	R9,000	Researcher and Research assistant will need an accommodation during data collection closer to the research site.
Total	R39,000	

Appendix 4: Consent form

PART A: Informed consent

Participant/caregiver consent form

(For each participant/caregiver, please read and understand the document before signing)

Research title

The knowledge and practice of Personal Protective Equipment by employees at Laundromats in Seshego Industrial site, Limpopo Province.

Introduction

This is an invitation to participate in the study as a volunteer. This is to help you decide if you would like to participate and should there be any questions please feel free to ask the researcher.

The purpose of the study

To determine the knowledge and practice of personal protective equipment by employees at Laundromats in Seshego industrial site, Limpopo province.

The sample of this study will be 52

Before the study you will need to complete:

- This consent form and
- Short biographical information request

During the study, you are free to withdraw from the study without giving a reason, and that participation is voluntary.

The study aims to determine the knowledge and practice of personal protective equipment's by employees at laundromats in Seshego industrial site, Limpopo.

The study will take 2 months to complete.

Has the study received ethical approval?

This study will commence upon approval from the Turfloop Research Ethics Committee, Limpopo Provincial Department of Health and laundromats managers at Seshego industrial site.

Rights of participants of the study

Participation is voluntary and you have a right to refuse participation in the study. Refusal to participate will not in any way influence any future relationships with the school or the interviewer.

Are there any risks

There are no risks attached.

Discontinuation of participants in the study

No pressure will be exerted on the participant to consent to participate in the study and the participant may withdraw at any stage without penalization.

Any financial arrangements

There are no financial resources that participants can benefit from the study, and the researcher is not going to receive any incentives.

Confidentiality

All information provided to the research team will be treated as confidential.

PART B:

Informed consent form to be signed by the participants/caregiver

I hereby confirm that I have been informed by the investigator, Kgaugelo Philemon Chuene about the nature, conduct, benefits and risks of this study. I have also read the above information regarding this study.

I may withdraw my consent as well as my participation in the study and declare that I had sufficient opportunity to ask questions and therefore declare myself

prepared to participate in the study.

Participant/caregiver Name _____

Participant/caregiver' signature _____

Date _____

Investigator's name _____

Investigator's signature _____

Date _____

I, Kgaugelo Philemon Chuene herewith confirm that the above participant has been informed fully about the nature of the study.

Witness name _____

Witness signature _____ **Date** _____

Appendix 5: QUESTIONNAIRE

SECTION A. DEMOGRAPHIC DATA

Respond by filling in missing words or marking a tick (X) in the box of your choice.

1. Age:

2. Gender:

1.Male	2.Female
--------	----------

3. Marital status:

1.Single	2.Married	3.Divorced
----------	-----------	------------

4. Highest level of education:

1.No education	2.primary	3.Grade 8 to 11	4.matric	5.tertiary
----------------	-----------	-----------------	----------	------------

5. The total number of years in the company?

1. 0-2 years	2. 3-5 years	3. 6 and more years
--------------	--------------	---------------------

SECTION B. PRACTICE OF PPE AMONGST THE EMPLOYEES

1. Are hand gloves used?

1.Always	2.Sometimes	3.Never
----------	-------------	---------

1.1. If never, why?

1.Allergy	2.unnecessary	3.wrong size	4.imitating others	5.not provided
-----------	---------------	--------------	--------------------	----------------

2. Are safety boots used?

1.Always	2.Sometimes	3.Never
----------	-------------	---------

2.1. If never, why?

1.improper size	2.unnecessary	3.uncomfortable	4.imitating others	5.Not provided
-----------------	---------------	-----------------	--------------------	----------------

3. Are coveralls used?

1.Always	2.Sometimes	3.Never
----------	-------------	---------

3.1. If never, why?

1.improper size	2.unnecessary	3.uncomfortable	4.imitating others	5.Not provided
-----------------	---------------	-----------------	--------------------	----------------

4. Are eye googles used?

1.Always	2.Sometimes	3.Never
----------	-------------	---------

4.1. If never, why?

1.improper size	2.unnecessary	3.uncomfortable	4.imitating others	5.Not provided
-----------------	---------------	-----------------	--------------------	----------------

5. Are earplugs used?

1.Always	2.Sometimes	3.Never
----------	-------------	---------

5.1. If never, why?

1.Improper size	2.unnecessary	3.uncomfortable	4.imitating others	5.Not provided
-----------------	---------------	-----------------	--------------------	----------------

6. Do you use nose mask?

1.Always	2.Sometimes	3.Never
----------	-------------	---------

6.1. If never, why?

1.Not provided	2.Unnecessary	3.Difficult to talk	4.Imitating others	5.Uncomfortable
----------------	---------------	---------------------	--------------------	-----------------

7. Do you use safety boots?

1.Always	2.Sometimes	3.Never
----------	-------------	---------

7.1. If never, why?

1.Not provided	2.Wrong size	3.Too hot	4.Imitating others	5.Uncomfortable
----------------	--------------	-----------	--------------------	-----------------

8. Do you use coveralls?

1.Always	2.Sometimes	3.Never
----------	-------------	---------

8.1. If never, why?

1.Not	2. Wrong	3.Not	4.Imitating	5.Uncomfortable
-------	----------	-------	-------------	-----------------

provided	size	necessary	others	
----------	------	-----------	--------	--

9. Do you use eye goggles?

1.Always	2.Sometimes	3.Never
----------	-------------	---------

9.1. If never, why?

1.Not provided	2.Wrong size	3.Not necessary	4.Imitating others	5.Uncomfortable
----------------	--------------	-----------------	--------------------	-----------------

10. Do you use earplugs?

1.Always	2.Sometimes	3.Never
----------	-------------	---------

10.1. If never, why?

1.Not provided	2.Wrong size	3.Not necessary	4.Imitating others	5.Uncomfortable
----------------	--------------	-----------------	--------------------	-----------------

11. Which type of PPE is used in your workplace?

1.Gowns	2.Boots	3.Googles	4.Gloves	5.Helmet	6.Ear muffs	7.Mask
---------	---------	-----------	----------	----------	-------------	--------

12. Have you ever had an injury on duty?

1.Yes	2.No
-------	------

12.1. If yes, were you wearing PPE?

1.Yes	2.No
-------	------

13. What do you do if your PPE is torn?

1.Throw away	2.Collect new one	3.Use even if torn	4.don't know
--------------	-------------------	--------------------	--------------

14. Who encourages you to wear or use PPE?

1.Myself	2.Supervisor	3.No one	4.Safety officer
----------	--------------	----------	------------------

15. Employees who do not use PPE should be punished

1. Agree	2. Don't know	3. Disagree
----------	---------------	-------------

16. It should be compulsory for employees to use PPE?

1. Agree	2. Don't know	3. Disagree
----------	---------------	-------------

SECTION C: KNOWLEDGE OF EMPLOYEES REGARDING PERSONAL PROTECTIVE EQUIPMENT (PPE)

1. Have you ever heard about PPE?

1. Yes	2. No
--------	-------

2. It is necessary to always use PPE

1. Yes	2. No
--------	-------

3. Have you ever received any training on PPE?

1. Yes	2. No
--------	-------

3.1. If yes, when was it?

1. Last 3 months	2. Last 6 months	3. Last years	4. Last 2 years
------------------	------------------	---------------	-----------------

3.2. If no, why?

1. No training done	2. Not interested in training	3. Not allowed to attend
---------------------	-------------------------------	--------------------------

4. Noise damage hearing

1. Agree	2. Don't know	3. Disagree
----------	---------------	-------------

5. Inhaling chemicals cause sickness?

1. Agree	2. Don't know	3. Disagree
----------	---------------	-------------

6. Safety boots protects against foot injuries

1. Agree	2. Don't know	3. Disagree
----------	---------------	-------------

7. Respiratory masks protect against lung disease

1. Agree	2. Don't know	3. Disagree
----------	---------------	-------------

8. Ear protective prevent hearing loss

1. Agree	2. Don't know	3. Disagree
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9. Gowns at the workplace protect against body injuries

1. Agree	2. Don't know	3. Disagree
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10. Helmets protects from head injuries

1. Agree	2. Don't know	3. Disagree
----------	---------------	-------------

11. Goggles protects against eye injuries

1. Agree	2. Don't know	3. Disagree
----------	---------------	-------------

12. Protective gloves protect one from hand injuries

1. Agree	2. Don't know	3. Disagree
----------	---------------	-------------

Appendix 6: Ethics Committee Clearance



University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 3935, Fax: (015) 268 2306, Email: anastasia.ngobe@ul.ac.za

TURFLOOP RESEARCH ETHICS COMMITTEE
ETHICS CLEARANCE CERTIFICATE

MEETING: 05 November 2019

PROJECT NUMBER: TREC/388/2019: PG

PROJECT:

Title: Knowledge and Practice of Personal Protective Equipment by Employees at Laundromats in Seshego Industrial Site, Limpopo Province.

Researcher: KP Chuene

Supervisor: Mr MP Kekana

Co-Supervisor/s: N/A

School: Health Care Sciences

Degree: Master of Public Health


PROF P MASOKO

CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: REC-0310111-031

Note:

- i) This Ethics Clearance Certificate will be valid for one (1) year, as from the abovementioned date. Application for annual renewal (or annual review) need to be received by TREC one month before lapse of this period.
- ii) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee, together with the Application for Amendment form.
- iii) PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

Appendix 7: Department of Health Permission Letter



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

Department of Health

Ref : LP – 2019012 - 006
Enquires : Ms PF Mahlokwane
Tel : 015-293 6028
Email : Kurhula.Hlomane@dhsd.limpopo.gov.za

K P Kekana

PERMISSION TO CONDUCT RESEARCH IN DEPARTMENTAL FACILITIES

Your Study Topic as indicated below;

Knowledge and Practice of Personal Protective Equipment by Employees at Laundromats in Seshego Industrial Site, Limpopo province.

1. Permission to conduct research study as per your research proposal is hereby Granted.
2. Kindly note the following:
 - a. Present this letter of permission to the institution supervisor/s a week before the study is conducted.
 - b. In the course of your study, there should be no action that disrupts the routine services, or incur any cost on the Department.
 - c. After completion of study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
 - d. The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
 - e. The approval is only valid for a 1-year period.
 - f. If the proposal has been amended, a new approval should be sought from the Department of Health
 - g. Kindly note that, the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated


Head of Department


Date

Private Bag X9302 Polokwane
Fidel Castro Ruz House, 18 College Street, Polokwane 0700. Tel: 015 293 6000/12. Fax: 015 293 6211.
Website: <http://www.limpopo.gov.za>

The heartland of Southern Africa – Development is about people!

Appendix 8: Laundromat Permission Letter



<u>Physical Address</u>	<u>Postal Address</u>
Stand No. 3933	Suite No:45
Factory No. B58 123 rd Street	Private Bag X9716
Freedom Dr, Seshego Industrial	Polokwane
0742	0700
Tel : 0152230099 / 0840308984/0825561513	
Fax : 0865721028	
Email: evercleanservices32@gmail.com	

Reg No. 2016/060875/07
VAT No. Not Registered


Date: 25/ 02/ 2020

To whom it may concern

Permission to do a research study in our premise.

This letter serves to confirm that CHUENE K.P, a master of public health student in University of Limpopo has been granted permission to do his research study for academic purposes at Everclean laundry. The title of the study is Knowledge and Practice of Personal Protective Equipment by Employees at Laundromats in Seshego Industrial Site, Limpopo Province.

Yours faithfully



Mohale PL
Managing Director