

**KNOWLEDGE, ATTITUDE AND PRACTICES OF HEALTH CARE
PROVIDERS ON SMOKING CESSATION INTERVENTION – A CASE
OF SOL PLAAJTIE SUBDISTRICT - NORTHERN CAPE**

LIZWE CALVIN MUZA

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PROVIDERS ON SMOKING CESSATION INTERVENTION – A CASE
OF SOL PLAAJTE SUBDISTRICT, NORTHERN CAPE**

by

LIZWE CALVIN MUZA

**Extensive mini-dissertation submitted in partial fulfilment of
the requirements for the degree**

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Department of Family Medicine

School of Clinical Medicine

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Study Leader: Prof WJ Steinberg

DECLARATION

I, Lizwe Calvin Muza, hereby declare that the submitted extensive mini-dissertation and the content thereof is the result of my independent work. Where help and input were received, the acknowledgement was given. I also declare that this work is submitted for the first time at this institution, University of the Free State, towards a Master's degree in Medicine, specializing in Family Medicine. It has never been submitted to any other institution to obtain a qualification.

Dr L C Muza

January 2020

Lizwe Calvin Muza

Date

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TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGEMENTS.....	iii
TABLE OF CONTENTS.....	iv
LIST OF FIGURES.....	ix
LIST OF TABLES	xi
LIST OF ABBREVIATIONS.....	xiii
DEFINITIONS OF TERMS	xiv
ABSTRACT	xv
CHAPTER 1: INTRODUCTION.....	1
1.1 Background.....	1
1.2 Role of healthcare providers in smoking cessation intervention	4
1.3 Research Problem	5
1.4 Research gap	6
1.5 Justification of the study.....	6
1.6 Conceptual framework.....	6
1.7 Aim and Objectives	9
1.7.1 Main aim.....	9
1.7.2 Objectives	9
1.8 Statement of hypothesis	9
CHAPTER 2: LITERATURE REVIEW	10
2.1 Introduction.....	10
2.2 Background.....	10
2.3 Effects of smoking tobacco	13
2.4 Benefits of quitting smoking	15
2.5 Smoking cessation intervention strategies.....	16
2.5.1 Behavioural intervention strategies for quitting tobacco.....	18
2.5.2 Pharmacological interventions for quitting tobacco.....	18
2.6 Impact of behavioural smoking cessation interventions.....	19
2.7 Factors influencing provision of smoking cessation intervention by healthcare providers	21

2.7.1	Impact of clinician’s knowledge on healthcare provider on smoking cessation interventions.....	21
2.7.2	Impact of clinician’s attitude on healthcare provider on smoking cessation interventions.....	22
2.7.3	Barriers to smoking cessation interventions	23
2.8	Summary	24
CHAPTER 3: METHODOLOGY.....		25
3.1	Introduction	25
3.2	Research Design	25
3.3	Study area	25
3.4	Study population	26
3.5	Eligibility criteria	26
3.5.1	Inclusion criteria	26
3.5.2	Exclusion criteria	27
3.6	Sample size	27
3.7	Data collection	27
3.7.1	Research instrument	27
3.7.2	Questionnaire content	28
3.7.3	Questionnaire development	29
3.8	Validity	29
3.9	Reliability	30
3.9.1	Pilot Testing.....	30
3.9.2	Data collection procedures	31
3.10	Minimisation of errors and bias	31
3.11	Ethical considerations to	31
3.12	Data processing.....	32
3.13	Data analysis	32
3.14	Limitations of the study	33
3.15	Summary	33
CHAPTER 4: DATA PRESENTATION AND ANALYSIS		34
4.1	Introduction	34
4.2	Questionnaire response rate.....	34
4.3	Section A: Socio-demographic Characteristics	35
4.3.1	Gender frequency table.....	35

4.3.2	Age category.....	35
4.3.3	Employment category.....	36
4.3.4	Years of practice.....	37
4.3.5	Smoking status of the respondent health workers	37
4.4	Knowledge assessments	38
4.4.1	South Africa has smoking cessation clinical guidelines!	38
4.4.2	Patients should only be asked about their smoking history if they have a smoking related disease/illness.....	39
4.4.3	Smoking cessation is not a critical component in the management of Chronic Obstructive Pulmonary Disease (COPD)	39
4.4.4	Smoking cessation advice given by a health professional to a patient increases the patient's chances of quitting.	40
4.4.5	It is not necessary to assess nicotine dependence prior to initiation of Nicotine Replacement Therapy (NRT)	41
4.4.6	Counselling plus medication to treat nicotine withdrawal is more effective than intervention alone.	42
4.4.7	A common withdrawal symptom that occurs after quitting smoking is weight loss	43
4.4.8	Smokers who are highly nicotine dependent, have social stressors and psychiatric comorbidities, are less likely to be successful at quitting?	44
4.4.9	Time to first cigarette of the day	45
4.4.10	Most smokers will successfully quit smoking on their own without assistance	46
4.4.11	When advising patients to stop smoking, the advice should never be linked to the patient's current health/illness	46
4.4.12	Counselling patients on smoking cessation includes assisting the patient to set a quit date	47
4.4.13	Most withdrawal symptoms disappear within four weeks	48
4.4.14	It is imperative to speak to adolescents in the presence of their caregiver when encouraging smoking cessation	49
4.4.15	There is no need of advising elderly patients who smoke (those above 60 years) to quit as the damage from smoking is already present and cannot be reversed	49
4.4.16	Smokers have double the risk of developing TB and of dying of TB than non- smokers.....	50

4.4.17	Smoking during pregnancy is safe for the baby	51
4.4.18	There is no drug- drug interaction between Anti-retroviral drugs and medicines used for smoking cessation.....	52
4.4.19	Medications recommended for treating tobacco dependence in SA	53
4.5	ATTITUDES.....	59
4.5.1	Smoking cessation counselling is an important part of my job.....	59
4.5.2	It's not worth discussing benefits of smoking cessation with patients as patients already know they should quit	60
4.5.3	Smoking is a personal decision which does not concern a health worker.....	60
4.5.4	Patients acute health problems take precedence over smoking counselling.....	61
4.5.5	Patients are not receptive to receiving smoking cessation assistance from healthcare providers.....	62
4.5.6	Smoking cessation counselling negatively affects my relationship with patients.....	63
4.5.7	Clinicians should discuss smoking cessation with patients even if it is not the reason for the visit.	64
4.5.8	I do not have sufficient time to offer advice and counselling to all patients who smoke during routine consultation.....	65
4.5.9	It is uncomfortable to counsel my patients on smoking cessation	65
4.5.10	Patients don't comply with advice given on smoking cessation	66
4.5.11	Patients are not interested in receiving smoking cessation information.....	67
4.5.12	Smoking status should be included as one of the vital signs for patients attending primary care facilities	67
4.6	PRACTICES	68
4.6.1	Do you ask patients about their smoking status?.....	68
4.6.2	Do you ask patients on how many cigarettes they take a day?.....	70
4.6.3	Do you record the patients smoking history in their medical records?	70
4.6.4	Discuss the risks of smoking as well as benefits of quitting smoking	71
4.6.5	Do you advice patients to quit smoking!	73
4.6.6	Do you ask patients about previous attempts to quit smoking?	74
4.6.7	Do you assess the willingness of a patient to quit smoking?.....	75
4.6.8	Do you encourage the use of nicotine replacement therapy?	75
4.6.9	Do you assist a patient to set up target quit date?.....	76
4.6.10	Arrange follow up visits to discuss quitting?	76

4.6.11	Do you encourage patients not to smoke in presence of infants and children?..	77
4.7	BARRIERS	78
4.7.1	Lack of time	79
4.7.2	Lack of community-based tobacco cessation treatment centre to refer patients to.....	79
4.7.3	Lack of patient educational material (Pamphlets/brochures)	80
4.7.4	Lack of knowledge and training on smoking cessation counselling	81
4.7.5	Lack of smoking cessation guidelines at health facilities.....	81
4.7.6	Lack of pharmaceutical medication for NRT	82
4.7.7	Patients have more immediate health problems to be addressed.....	83
4.7.8	Some healthcare providers are smokers themselves.....	83
4.7.9	Quitting smoking is stressful to patients.....	84
4.8	Summary	85
	CHAPTER 5: DISCUSSION	86
5.1	Introduction	86
5.2	Knowledge of primary health care providers on smoking cessation	86
5.3	Attitude of primary health care providers on smoking cessation	89
5.4	Practices of primary health care providers on smoking cessation	90
5.5	Barriers to provision of smoking cessation	92
5.5.1	Limitations of the study	93
5.6	Conclusion	93
5.7	Recommendations	95
	REFERENCES	97
	APPENDICES	101
	Appendix A: Questionnaire.....	102
	Appendix B: Participant information sheet.....	109
	Appendix C: Letter of Approval: Health Sciences Research Ethics Committee	110
	Appendix D: Letter of Approval: Northern Cape Department of Health	111

LIST OF FIGURES

Figure 1.1:	Conceptual Framework	8
Figure 4.1:	Age category	36
Figure 4.2:	Employment category	36
Figure 4.3:	Years in practice	37
Figure 4.4:	Smoking status.....	38
Figure 4.5:	Relevance of smoking history on current health of patients	39
Figure 4.6:	Smoking cessation importance in managing C.O.P.D.....	39
Figure 4.7:	Impact of NRTs on smoking cessation:.....	42
Figure 4.8:	Effect of counselling and medication on nicotine withdrawal.....	43
Figure 4.9:	Weight loss as a symptom of smoke withdrawal	44
Figure 4.10:	Relationships between smoking and nicotine dependence	45
Figure 4.11:	Ability of smoker to quit smoking without assistance.....	46
Figure 4.12:	Linking smoking cessation advice to current illness/health	47
Figure 4.13:	Should a counsellor assist a patient to set a quit date	48
Figure 4.14:	Importance of counselling adolescents in the presence of their caregiver	49
Figure 4.15:	Necessity of advising patients over 60 years on smoking cessation...	50
Figure 4.16:	Safety of smoking during pregnancy	51
Figure 4.17:	Interaction between ARVs and medicines used for smoking cessation.....	53
Figure 4.18:	Is Nicotine gum recommended for treatment of tobacco dependence in SA	54
Figure 4.19:	Is nicotine lozenge recommended for treating tobacco dependence ..	55
Figure 4.20:	Is nicotine syrup recommended or not?	56
Figure 4.21:	Is Bupropion recommended for treating tobacco dependence or not?	56
Figure 4.23:	Is Clonidine recommended or not?	57
Figure 4.24:	Is Nortryptlyline recommended for treating tobacco dependency or not?:	58
Figure 4.25:	Is it worth discussing the benefits of quitting smoking with patients?..	60
Figure 4.26:	Patient's acute health problem takes precedence over smoking counselling	62

Figure 4.27: Patients are not willing to receive smoking cessation assistance from a healthcare provider	63
Figure 4.28: Smoking cessation advice should be offered whenever the opportunity arises.....	64
Figure 4.29: Time for counselling patients on smoking cessation during routine visits	65
Figure 4.30: Patients do not comply with advice given on smoking cessation	66
Figure 4.31: Patients lack interest in smoking cessation information	67
Figure 4.32: Smoking status should be included as one of the vital signs for primary care	68
Figure 4.33: Do you ask patients how many cigarettes they smoke a day?	70
Figure 4.34: Record the patients smoking history in their medical records	71
Figure 4.35: Do you discuss the risks and benefits of quitting smoking with patients?	72
Figure 4.36: Do you advise patients to quit smoking?	73
Figure 4.37: Do you ask patients about their previous attempts to quit smoking?...	74
Figure 4.38: Do you encourage use of NRT?	75
Figure 4.39: Do you arrange support for setting a quit date?	76
Figure 4.40: Do you arrange follow-up visits to discuss quitting smoking?	77
Figure 4.41: Is lack of time a barrier in terms of counselling patients to quit smoking?	79
Figure 4.42: Lack of patient educational material as a barrier.....	80
Figure 4.43: Lack of knowledge and training as a barrier to smoking cessation counselling	81
Figure 4.44: Lack of pharmaceutical medication for NRT.....	82
Figure 4.45: Patients have more immediate health problems to be addressed.....	83
Figure 4.46: Quitting smoking is stressful to patients	84

LIST OF TABLES

Table 2.1:	Medicines for treatment of tobacco related illness	19
Table 3.1:	Distribution of participating clinicians by employment category.....	26
Table 4.1:	Overall response rate	34
Table 4.2:	Gender composition	35
Table 4.3:	South Africa has a smoking cessation policy	38
Table 4.4:	Impact of advice on smoking cessation on smokers	41
Table 4.5:	Likelihood of quitting smoking on smokers who are highly dependent on nicotine	44
Table 4.6:	Period it takes for smoke withdrawal symptoms to disappear	48
Table 4.7:	High likelihood of smokers developing and dying from TB than non-smokers	51
Table 4.8:	Importance of medical officers and professional nurses explaining the effect of smoking on the unborn baby	52
Table 4.9:	Classes of smoking cessation medicines.....	53
Table 4.10:	Is Nicotine patch recommended for treatment of tobacco dependence in SA.....	54
Table 4.11:	Is Varenicline recommended for treatment of tobacco dependence in SA?	57
Table 4.12:	Are electronic cigarettes recommended for treatment of tobacco dependence in SA.....	58
Table 4.13:	Smoking cessation counselling is a vital part of my job.....	59
Table 4.14:	Smoking is a personal decision which does not concern a health worker	61
Table 4.15:	Smoking cessation counselling negatively affects one's relationship with patients	63
Table 4.16:	I am uncomfortable to counsel my patients on smoking cessation.....	66
Table 4.17:	Do you ask patients about their smoking status?	69
Table 4.18:	Comparing the practices between senior clinicians i.e. medical officers and professional nurses.....	69
Table 4.19:	Comparing the practice of senior medical officers and professional nurses on discussing benefits of quitting smoking	72

Table 4.20: Comparing the practice of medical officers and professional nurses on advising patients to quit smoking	74
Table 4.21: Do you assess the willingness of a patient to quit smoking?.....	75
Table 4.22: Do you encourage patients to avoid smoking in the presence of infants and children?	78
Table 4.23: Comparative analysis between medical officers and nurses on Practise 42	78
Table 4.24: Lack of community organisations to refer patients to	80
Table 4.25: Lack of smoking cessation guidelines	82
Table 4.26: Some healthcare providers are themselves smokers.....	84

LIST OF ABBREVIATIONS

COPD	-	Chronic Obstructive Pulmonary Disease
FCTC	-	Framework Convention on Tobacco Control
HCP	-	Health Care Providers
KAP	-	Knowledge, Attitude and Practises
SADoH	-	South Africa Department of Health
MO	-	Medical Officer
NACADA	-	National Campaign against Drug Use and Abuse
NRT	-	Nicotine Replacement Therapy
SA	-	South Africa
UK	-	United Kingdom
USA	-	United States of America
WHO	-	World Health Organisation

DEFINITIONS OF TERMS

Healthcare Provider:	A person who provides any form of healthcare (medical officer, professional nurse, enrolled nurse and enrolled nurse assistants)
Interventions:	Measures designed to improve health or change the course of disease, which negatively affects the well-being of a human
Behavioural intervention:	The verbal instructions issued to modify health related issues (healthcare issues).
Smoking cessation/quitting:	Discontinuing of smoking or inhaling of tobacco products.
Smoking cessation interventions:	Measures to assist in overcoming tobacco dependence e.g. brief advice, behavioural or pharmacological interventions.

ABSTRACT

Background:

Clinicians are crucial in influencing smokers to quit through provision of behavioural (counselling) or pharmacological smoking cessation interventions. Numerous studies conducted across different parts of the world indicate an increase in smokers who quit with assistance compared to those without. However in-order for healthcare providers to efficiently offer this advice; they need to be equipped with the right knowledge on smoke intervention and possess the right attitude and willingness to counsel their patients on smoking cessation.

Objective:

To determine the knowledge, attitude and practises of healthcare providers on smoking cessation intervention strategies in Sol Plaatjies Sub-district in the Northern Cape.

Methodology:

The researcher made use of a descriptive cross-sectional design with a self-administered questionnaire aimed at determining the knowledge, attitude and practises of health care providers on smoking cessation intervention. One hundred and sixty five participants were selected to participate in the study from four groups namely; medical officers, professional nurses, enrolled nurses and assistant enrolled nurses.

Results:

Responses were received from 156 participants constituting 95% of the targeted population. The results revealed that 52% had no knowledge of South African tobacco smoking cessation guidelines highlighting a lack of training on smoking cessation intervention whilst 87% knew the importance of counselling patients on smoking and its impact on quitting. Majority of them did not know the medicines recommended for tobacco treatment in South Africa. Three-quarters (75%) expressed that smoking cessation counselling is an important part of their jobs, but only half of them indicated that they made follow-up arrangements on those attempting to quit. They also cited a

number of barriers to smoking cessation interventions mainly due to lack of community-based tobacco cessation treatment centres for referrals as well as unavailability of educational materials among others.

Conclusions:

The study revealed that most of healthcare workers in the Sol Plaatje District are not aware of the existence of smoking cessation guideline. It was also observed that respondents agree that smoking cessation knowledge is an important element of their jobs and it's necessary to provide smoking cessation counselling. However, these healthcare providers do not consistently record patient smoke history and quit attempt. They also faced other challenges such as lack of time and unwillingness of patients to quit smoking.

Recommendations:

It is to improve training and development among healthcare providers in-order to adequately equip them with the right knowledge on smoking cessation as well making available material on smoking cessation; there is also need to open more community-based tobacco cessation treatment and referral centres for patients to avoid relapse.

CHAPTER 1: INTRODUCTION

1.1 Background

Tobacco use is a significant public health risk globally claiming more people than alcohol or accidents or other lifestyle risk factors combined.⁽¹⁾ It is associated with increased risk of developing chronic obstructive pulmonary disease, cancer, cardiovascular diseases and tuberculosis. It also affects unborn babies, causing IUGR, preterm deliveries amongst other negative effects. Smoking diseases are preventable but still claim large numbers of people globally – estimated to be 7 million per year.⁽³⁾

Stopping or 'quitting' is not easy because nicotine found in smoke is highly addictive which results in stress or other negative effects associated with tobacco withdrawal. The benefits of quitting, however, are almost immediate, with a rapid lowering of blood pressure and heart rate, improved taste and smell, and a longer-term reduction in risk of cancer, heart attack and COPD. ^(1, 2)

Internationally, policy makers and health practitioners have designed various strategies to curb tobacco smoking from the farming of the tobacco plant, processing and consumption thereof.⁽³⁾ Some countries impose embargoes as well as strict specifications for tobacco processing companies. They also impose heavy taxes (sin taxes) on cigarettes and smoking related products to discourage purchase and ultimately consumption. ⁽³⁾

Equipped with adequate knowledge, practices and the right attitude, healthcare providers are in a position to facilitate smoking cessation through the implementation of various interventions and strategies. ⁽⁴⁾ The African continent is considered the hub of tobacco farming and is increasingly recruiting new smokers. ⁽¹⁴⁾ The Academy of Science of South Africa estimates that without an integrated approach to smoking cessation from service providers, policy makers and direct practices, smoke prevalence will increase by 39% in Africa by 2030 from 15.8% in 2010 to 21.9%.⁽¹⁵⁾ In

light of these statistics, a number of African governments have taken active steps to promote smoking cessation.

In the South African context, the national statistics in the South African National Health and Nutrition Examination Survey showed that 17.6% of South Africans were smokers in 2012, a drop compared to 32% in 1993.⁽¹⁸⁾ The consumption of tobacco in South Africa is significantly high as compared to its African counterparts.^(18,19) In 2015/16 season alone a total of 27 billion tobacco stocks were manufactured. At least 8 million adult South Africans smoke cigarettes and every year tobacco related deaths claim more than 31,800 lives while 345,000 children and 569,000 adults continue to use tobacco every day in South Africa.⁽¹⁸⁾

Kenya is one of the African States which have adopted the World Health Organisation Framework Convention of Tobacco Control (FCTC) in 2004.⁽¹⁶⁾ which calls for service providers to be equipped with appropriate knowledge, skills and right mental attitude to promote the smoking cessation.⁽¹⁶⁾ Its healthcare service providers are equipped with smoking cessation knowledge during training and are expected to offer a number of cessation interventions ranging from brief counselling to pharmacological interventions.⁽¹⁶⁾ The positive attitude towards provision of smoking cessation practices and interventions of Kenyan healthcare providers was influenced by the depth of knowledge they receive towards smoking cessation.⁽¹⁶⁾

The negative effects of tobacco use have also been heavily felt within the SADC region, for example, Zimbabwe, a SADC country where no efforts have been made by the government to promote smoking cessation. In 2014 alone, Zimbabwe reportedly earned US\$774 million from tobacco farming and exports. Smoking statistics in Zimbabwe reveal that 21.2% of adults smoke tobacco whilst the youth from 15 years of age are prone to Tobacco smoking.⁽¹⁷⁾ National laws in Zimbabwe mandate health warnings to appear on tobacco packages describing the health effects of tobacco; it also provides for fines for those companies who violate such laws.⁽¹⁷⁾ The World Health Organisation report that there were no anti-tobacco mass media campaigns in Zimbabwe between July 2014 – 2016 and as of December 2016 little had been done to promote smoking cessation in Zimbabwe.⁽¹⁷⁾

In the United States of America, various health care service providers are involved in promoting smoking cessation making it one of the public health issues addressed in the Guide to preventive services.⁽⁵⁾ The American Dental Association has equipped its practitioners with smoking cessation knowledge and endorsed dentists' role in tobacco cessation efforts – to date American dentists are expected to discuss with their patients specific strategies for quitting, giving advice and counselling patients.⁽⁶⁾ The American smoking cessation guidelines revolve around: health care providers asking about tobacco use, advising patients to quit through clear personalised messages, assessing willingness to quit, assisting to quit and arranging follow up.⁽⁷⁾ They are also expected to promote and motivate smokers to quit during pregnancy.

Britain has been riddled by smoking for many decades with 1 in 5 adults said to be a smoker; it aims to create a smoking free generation by 2025.⁽⁸⁾ At least 66% of tobacco smokers in England start smoking before the age of 18 and factors contributing to smoking at such age are peer pressure and behavioural problems.⁽⁸⁾ The British government has come up with a range of strategies to reduce tobacco use such as: making tobacco products more expensive, prevention of the promotion of tobacco, regulation of tobacco products, increasing the awareness of tobacco effects and extremely reducing the exposure of people to second-hand smoke.⁽⁸⁾

Some of the smoking cessation strategies implemented by the British government are: tobacco control, regulation, provision of e-cigarettes, provision of referral routes and increasing awareness.⁽⁸⁾ These smoking cessation interventions are provided in collaboration with various stakeholders such as: provincial and local government, employers, social care providers and non-profit organisations to mention a few.⁽⁸⁾ Very Brief Advice (VBA) from service providers is responsible for triggering quitting attempts in the UK, however, limited knowledge among other service providers has been cited as one of the reasons why service providers don't deliver smoking cessation advice.⁽¹¹⁾

On the other hand, optometrists who are argued to be best positioned to offer smoking cessation advice (as smoking is related to a number of eye conditions) lack enough information on smoking cessation and thus offer little smoking cessation advice.⁽¹²⁾ Studies done in Britain among general practitioners and family physicians highlighted

that few clinicians had negative beliefs and attitudes towards the discussion of smoking cessation with patients, claiming that it was time consuming and ineffective.⁽¹³⁾

1.2 Role of healthcare providers in smoking cessation intervention

Smoking cessation counselling is guided by the National Smoking cessation guidelines.⁽¹⁹⁾ The key steps in the National Smoking cessation Guidelines are: identifying all smokers, alerting them to the harms of smoking and benefits of quitting, assessing readiness to initiate an attempt to quit, assessing the physical and psychological dependence to nicotine and smoking, determining the best combination of counselling/support and pharmacological therapy. In case a patient is willing to quit, setting a quit date and provide suitable resources and support, frequent follow-up as often as possible via text/telephone or in person, monitoring for side-effects, relapse and on-going cessation; and if relapse occurs, providing the necessary support and encourage a further attempt when appropriate.⁽¹⁹⁾

South Africa is making strides in encouraging tobacco smokers to quit; in 2015 29.3% tobacco smokers had been advised to quit smoking by a healthcare provider during the preceding year, 81.4% had noticed health warnings on tobacco packages, and 49.9% reported that the warning labels led them to consider quitting. In South Africa, healthcare providers have the responsibility of identifying smokers during the day to day consultations.⁽¹⁹⁾ A person who tries to quit smoking through the assistance of healthcare service providers has more chances of quitting smoking than those who use nicotine replacement therapy (NRT) alone or any other means.⁽¹⁹⁾

Healthcare service providers should introduce brief smoking cessation interventions to the smoker irrespective of the availability or access to specialised services to increase the willingness to quit smoking. The smokers can also be identified through the use of posters and stickers with contact information where they can receive counselling and referral of further cessation advice.⁽¹⁹⁾ After the identifying smokers, healthcare service providers need to provide adequate clinical interventions for cessation of smoking to the patient.⁽¹⁹⁾ Clinical interventions are successful if spread over a long period of time and provided by multiple service providers.⁽¹⁹⁾

Another strategy used is motivational interviewing which seeks to induce confidence to the smoker and enhance the intrinsic motivation to quit, which is sustainable in the long run.⁽¹⁹⁾ In the event of encountering smokers who are not prepared to quit, a healthcare provider must encourage them to think about the possibility of quitting and give room for follow-up.⁽¹⁹⁾ In the same vein, factors that are hindering one's willingness to quit should be investigated which could be a result of factors such as stress, social factors, depression among other issues.⁽¹⁹⁾ South African healthcare professionals have access to a host of pharmacological intervention strategies such as: the use of NRT, Antidepressants, Nicotine Receptors Agonists, Nicotine Vaccine, complementary medicines, electronic cigarettes, acupuncture and hypnotherapy to name a few.⁽¹⁹⁾ Due to the availability of these multiple options, it is the responsibility of the healthcare practitioner to come up with a combination that is suitable to the patient at hand.⁽¹⁹⁾

1.3 Research Problem

The magnitude of the problem posed by smoking warrants attention from all stakeholders in order to overcome the blight of tobacco related deaths. Regardless of the various articles or papers released on the dangers of smoking, evidence suggests that there is a gap still between theory and application of the various recommendations provided.

In a cross-sectional study done in 2015 to examine the extent of implementation of smoke intervention strategies in South Africa, it revealed that 13% of the 500 participants said they were screened for tobacco use and 29% were advised about smoking cessation.⁽¹⁹⁾ Although 81.4% of smokers had noticed health warnings on tobacco packages, only 49.9% reported that the warning influenced them to consider quitting. These studies also highlighted that healthcare providers rarely made use of normal consultations to offer brief advice as part of smoking cessation interventions.⁽⁶⁸⁾ This points out to the underuse of the South African tobacco cessation guidelines. In-order to provide adequate advice on smoking cessation, healthcare providers need to be knowledgeable possessing the right attitude which is key in offering any meaningful advice to their clients.⁽⁵⁾ This view imposes an assessment of healthcare providers' knowledge, attitude and practices on smoking cessation.

1.4 Research gap

To successfully understand the state of application of policy on smoking cessation, it was necessary to deduce the level of knowledge, attitude as well as practices of healthcare providers. Whilst there was a guideline done by Reddy, P. *et al*, 2015,⁽¹⁸⁾ and Zyl-Smit *et al* 2013⁽¹⁹⁾ to guide smoke cessation policy in the country, no research had been done to check knowledge on the guidelines by public health workers in Northern Cape (a province with the least population of 1.23 million people,⁽²⁰⁾ was the second highest in smoking statistics in the country at 31% after the Western Cape which had 32%).⁽²⁸⁾ The main objective of this study was to bring to light smoking cessation practises in Sol Plaatjie Sub-District, Northern Cape.

1.5 Justification of the study

This study helps assessing the knowledge, attitude and practice of primary health care nurses and doctors on smoking cessation interventions in Northern Cape, Sol Plaatjie sub-district as there is no study conducted in the province thus far. The Sol Plaatjie sub-district is part of Frances Baard District Municipality of the Northern Cape Province, South Africa, named after Sol T. Plaatjie.⁽²¹⁾ The information is crucial for crafting a tobacco cessation intervention strategy and highlight measures that are required to promote tobacco cessation in the sub-district.⁽²⁴⁾ The results can be used to evaluate the training needs of healthcare providers on smoking cessation strategies.

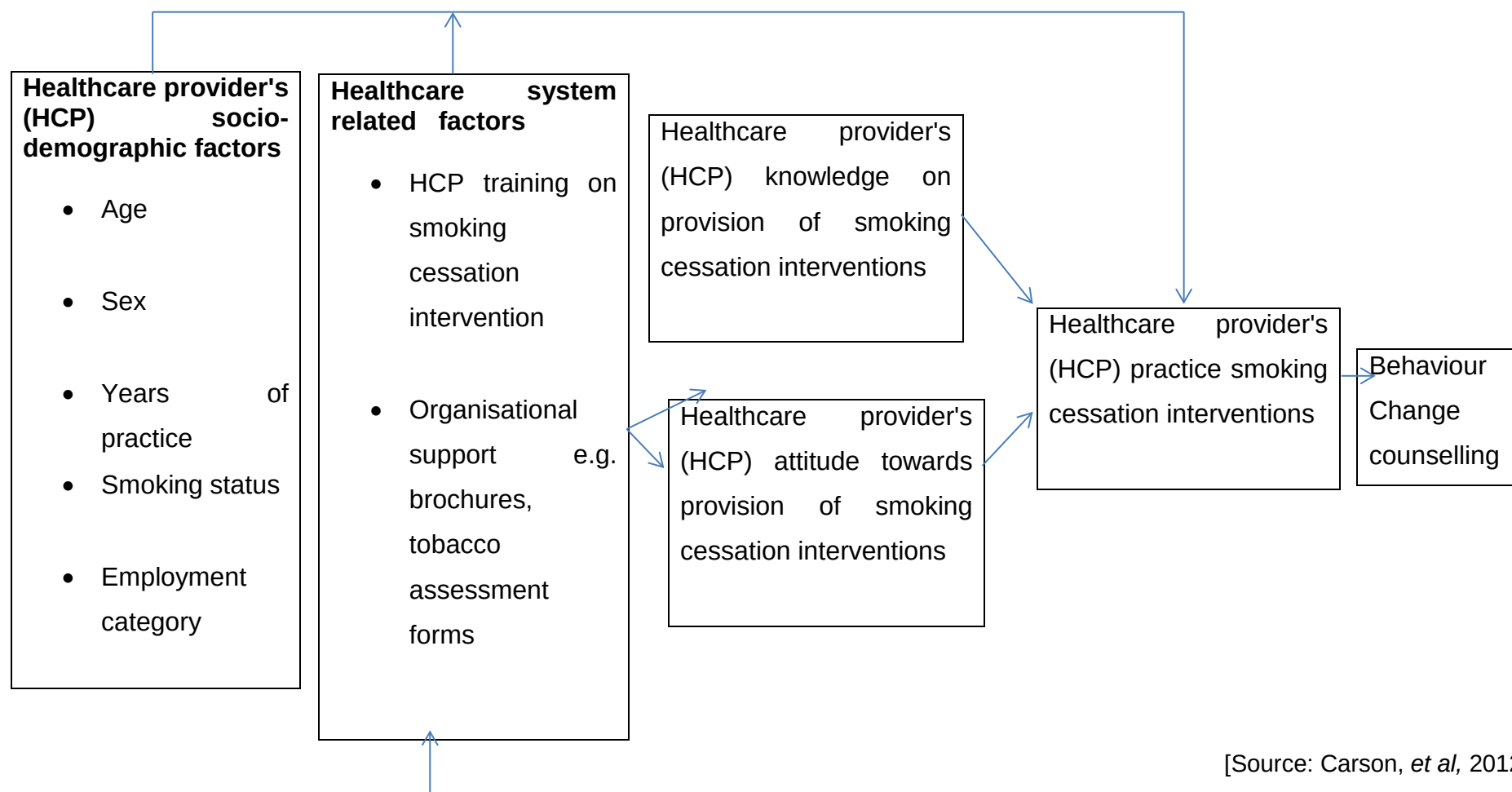
1.6 Conceptual framework

The clinician's knowledge on various aspects of smoking cessation determines the level of intervention that will be carried by a particular individual. Factors such as knowledge and attitude can influence their level of involvement in smoking cessation intervention.⁽³⁰⁾ Other factors that also have a bearing on the level of intervention provided by a healthcare provider include; the level of training they receive, availability of materials for example brochures and referral centres.

Various studies conducted in China showed that demographic factors such as age, gender, years of practice, smoking status impact on the level of knowledge, attitude

and practice of smoking cessation interventions.⁽³¹⁾ The link between demographic factors and the level of intervention is shown in Figure 1.1.

Figure 1.1: Conceptual Framework



[Source: Carson, *et al*, 2012]

1.7 Aim and Objectives

1.7.1 Main aim

To determine knowledge, attitude and practices of primary health care providers on smoking cessation interventions in Sol Plaatjie sub-district Public Health Facilities, Northern Cape, South Africa.

1.7.2 Objectives

1. To assess the knowledge of health care providers in Sol Plaatjie sub-district, Northern Cape on smoking cessation.
2. To describe the health care providers attitudes on smoking cessation.
3. To describe the practices employed by health care service providers on smoking cessation.
4. To identify barriers to the provision of smoking cessation intervention.

1.8 Statement of hypothesis

- i. There is no relationship between the healthcare provider's level of knowledge on smoking cessation and their practice towards smoking cessation interventions.
- ii. There is no relationship between the healthcare provider's attitude towards smoking cessation and their practice towards smoking cessation interventions.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter highlights what various authors have said on the effects of smoking on one's health. It will also discuss the benefits of smoking cessation, available interventions on smoking cessation, factors influencing smoking cessation interventions by healthcare providers and barriers to smoke intervention strategies.

2.2 Background

Smoking diseases are preventable but still claim many lives worldwide – estimated to be 7 million per year.⁽⁴³⁾ South Africa is faced with high smoking prevalence rates. A 2017 article published in South African Medical Journal, to highlight the health effects and attitudes towards tobacco control in South Africa revealed that 34% of adult South Africans smoke (52% males, 17% female).⁽³⁵⁾ The smoking prevalence of three provinces stood at 55%, 48% and 46% for Northern Cape, Western Cape and North-West respectively. The high proportion of smokers is a cause for concern which requires swift action by disseminating the knowledge on the effects of tobacco on active and passive smoking which needs to be improved to expedite behaviour change.⁽³⁵⁾

A survey of 10 000 of South African households in 2015 reviewed that, “17.6% of adult South Africans currently smoke tobacco.”⁽³⁶⁾ The statistics further reviewed that male smokers were four times (29.2%) than that for females (7.3%).⁽³⁶⁾ The provinces with the highest current tobacco smoking prevalence were the Western Cape (32.9%), Northern Cape (31.2%) and Free State (27.4%). The research revealed that whilst “29.3% current tobacco smokers had been advised to quit smoking by a healthcare provider during the preceding year (2014), 81.4% had noticed health warnings on tobacco packages, and 49.9% reported that the warning labels had led them to consider quitting.”⁽³⁶⁾

A survey on 689 smokers of 16 years and older on effects of Nicotine and Tobacco published in 2014 on the awareness of NRT among South African smokers and their

interest in using it for smoking cessation when provided for free revealed that, “26.1% of current smokers reported ever receiving tobacco cessation counselling from a health care professional,”⁽⁹⁴⁾ 67.7% of smokers were aware of NRT, with only 3.9% having ever used NRT. Only 77.6% of those aware of NRT were interested in using it for smoking cessation if offered for free. However the studies also revealed that many polytobacco users were willing to use NRT compared with exclusive cigarette smokers.⁽⁹⁴⁾

Further studies to determine the relationship between snuff smoking and cardiovascular diseases among black South African women showed that prevalence of snuff use and hypertension was 14.6% and 18.0% respectively.⁽⁹⁵⁾ The survey further highlighted that, “compared to non-users of snuff, snuff users more than eight times a day had significantly higher mean systolic (131 mmHg vs. 121 mmHg) and diastolic (84 mmHg vs. 77 mmHg) BP. Hypertension was more prevalent among snuff users than among non-users of snuff (23.9% vs. 17%; $p < 0.001$). However, after adjusting for potential confounders, although current snuff use as compared to non-current use produced a dose response, it was not associated with a statistically significant increased risk for hypertension (OR = 1.12; 95% CI: 0.84–1.50).”⁽⁹⁵⁾

From these statistics it is evident that tobacco use is highly prevalent in South Africa, thereby necessitating rigorous and continuous interventions, which include continuing PHC screening and counselling.⁽⁹⁶⁾ These clinical consultation in PHC provides opportunities for these activities but they are not well documented and literature highlights that PHC workers in South Africa are not intervening in their patients' tobacco use habits.⁽⁹⁶⁾

Many countries in Sub-Sahara Africa and BRICS block are also faced with the same problem being faced locally; these countries include Kenya, Malawi, Zimbabwe, India and Brazil among others. World Health Organisation report on the global tobacco epidemic 2019 reports that Malawi has an estimated 18% of the male adult population and 1.2% females of the adult female population who smoke.⁽⁴²⁾ The study cites that smoking rates among men and women declined from 25.5% and 6.1% in 2003 to 18% and 1.2% respectively in 2010. It also states that 5.8% of boys and 1.0% of

girls between ages 13 – 15 smoke cigarettes. This decline in the number of smokers is unsustainable if there is no active participation from policy makers to sustain it. Although Malawi's Tobacco Act regulates tobacco growing and exportation, it does not contain any restrictions on advertising, smoking in public places, or health warning label requirements and tobacco advertising, including tobacco sponsorship of sports teams. As Malawi is not a signatory to the FCTC there is little regulation of tobacco products. A sin tax on tobacco has not been effective in deterring smokers as they can roll their own cigarettes without buying a processed one.⁽⁴²⁾

Kenya is a signatory to the World Health Organisation Framework Convention of Tobacco Control (FCTC)⁽⁴⁶⁾ which calls for service providers to be equipped with appropriate knowledge, skills and right mental attitude to promote smoking cessation. The attitude of Kenyan healthcare providers is greatly influenced by the depth of knowledge they receive towards smoking cessation which influences their practises and intervention strategies.⁽⁴⁶⁾ Zimbabwe has 21.2% of the adult population who smoke and little has been done to promote smoking cessation (during the period July 2014 – December 2016) due to the export earnings it brings for the country (it earned more than US\$700m from tobacco sales in 2014).⁽⁴⁷⁾

India, one of the BRICS member states is also grappling with huge numbers of its populace who smoke. It has a long history of smoking dating back as early as 2000 BC when cannabis was smoked. Traditional practices such as Ayurveda prescribes Fumigation (dhupa) and fire offerings (homa) for medicinal purposes which has been their practice for at least 3 000 years while smoking, dhumrapana (interpreted "drinking smoke"), has been practiced for at least 2,000 years.⁽⁴⁹⁾ When tobacco was introduced in the 17th century it merged with existing practices of smoking (mostly of cannabis).

The World Health Organization (WHO) reports that India accounts for 12% of the world's smokers. Almost 120 million Indians smoke with more than 1 million people dying every year due to tobacco related illnesses.⁽³²⁾ The number of male tobacco smokers in India increased by 36% to 108 million, during the period 1998 and 2015. The Supreme Court in *Murli S Deora vs. Union of India and Ors.*, recognized the harmful effects of second hand smoking in public place,⁽³⁷⁾ stating that "tobacco is

regarded as one of the major public health dangers and is responsible directly or incidentally for an estimated eight million deaths annually in India.⁽³⁹⁾ The cost of treatment of tobacco related illness offsets the benefits accrued through employment in tobacco industries. The country loses an estimated Rs.13,500 crores annually, in productivity".⁽⁴⁰⁾ The Indian Heart Association (IHA), revealed that India accounts for 83% of the world's heart disease burden, despite having less than 20% of the world's population. The IHA identified reduction in smoking as a significant target of cardiovascular health prevention efforts.⁽³³⁾

2.3 Effects of smoking tobacco

Tobacco smoking is the practise of smoking and inhaling tobacco smoke which is made up of various dangerous particles and gaseous elements such as polonium 210, benzene and arsenic among others.⁽⁵²⁾ Tobacco is commonly consumed through smoking which releases additives in the tobacco leaf, the smoke is inhaled as active substances and absorbed through the alveoli in the lungs or orally through mucosa.⁽⁵³⁾ During tobacco smoking most of the nicotine is pyrolyzed but a substantial amount remains which causes slight somatic dependency and mild to strong psychological dependency.⁽⁵⁴⁾ The tobacco smoke also forms a harmane (a MAO inhibitor from acetaldehyde in tobacco smoke) which contributes to nicotine addiction by enabling a dopamine release in the nucleus accumbens.⁽⁵⁵⁾ The numerous substances in smoke activate a chemical responses in nerve endings which intensify heart rate, alertness, reaction time, among other effects; some of the chemicals released include Dopamine and endorphins.⁽⁵⁴⁾

Early 1920s, German scientists identified a link between smoking and lung cancer which was later reinforced by British researchers in the 1950s who exposed a relationship between smoking and cancer.⁽⁵⁵⁾ Tobacco use leads to common diseases that affect the lungs and heart.⁽³²⁾ It is also cited as the major risk factor for heart attacks, strokes, chronic, obstructive pulmonary disease (COPD), Idiopathic Pulmonary Fibrosis (IPF), emphysema as well as different types of cancer particularly lung, mouth, oesophageal and pancreatic cancer.⁽³²⁾ The USA Centres for Disease Control and Prevention explained that tobacco smoke is composed of more than 5,000 chemicals with 98 having toxicological properties making it the single most important

preventable risk to human health and a major cause for premature death in most developing nations.⁽⁵⁶⁾

Smoking is also associated with sarcopenia (age-related loss of muscle weight and strength),⁽⁵⁶⁾ aphrodisiac (erectile dysfunction) among other diseases. It was estimated that as of 2000 around 1.22 billion people were smoking and the number may increase to 1.9 billion by 2025.⁽⁵⁷⁾

Smoking is not only reserved to first hand but also includes passive smoking (also known as second hand smoking, which is involuntary consumption of smoked tobacco) or third hand smoking which includes inhaling smoke after the burning end has been stub out.⁽³³⁾ Pipe smoking involves lighting shredded pieces of tobacco being placed in a small chamber (bowl) for combustion of tobacco to be smoked and a stem known as a shank that connects with the mouth.⁽⁴⁹⁾ Another form of smoking is by using a device known as a vaporiser which used to channel the active ingredients of plant. The herbs are not burnt but are heated in a partial vacuum so as to vaporise active compounds contained in the plant; ⁽⁴⁹⁾ this is done as part of administering a medicine. Another form of smoking is known as 'roll-your-own' or 'roll-ups', which are cigarettes prepared from loose tobacco, cigarette papers or filters which are bought individually and are cheaper than traditional cigarettes.⁽⁴⁹⁾

Smoking is harmful for the unborn baby; the baby is exposed to harmful chemicals such as nicotine and carbon monoxide which limit the baby's supply of oxygen and delivery of nutrients. It increases the risk of low-birth weight baby, birth defects, miscarriage and still birth, pre-term labour, abruption placenta and placenta previa.⁽⁵²⁾ A baby who is exposed to smoke after birth is susceptible to illness and breathing problems, nicotine causes permanent damage to the baby's brain and lungs.⁽⁵²⁾

According to statistics released World Health Organisation in 2014, there are more than a billion smokers (a fifth of the world's population) with 800 million being men.⁽³⁸⁾ The report further states that smoking rates have levelled off in developed nations but more than 80% of all smokers live in countries with low or middle incomes.⁽³⁸⁾ smoking rates declined from 42% to 20.8% during the period 1965 to 2006 among adults and further decline to 18% by 2012. Young adults are the most likely age group to smoke

with a marked decline with increase in age.⁽³⁸⁾ The socio-economic status also negatively influences the smoking tendencies among youth, the most disadvantaged groups in society are at a higher risk of smoking, with higher number of smokers in rural areas than in urban areas.⁽⁵⁸⁾

Smoking has been known to cause a lot of diseases contributing to 90% of all lung cancer deaths, 80% of all deaths from chronic obstructive pulmonary disease (COPD) and more women die from lung cancer than breast cancer.⁽⁵⁹⁾ Smoking causes more deaths than HIV, alcohol among other causes. Smokers are at a higher risk of cardiovascular disease than non-smokers and it can make it harder for a woman to become pregnant.⁽⁶⁰⁾

2.4 Benefits of quitting smoking

Smoking cessation is a process of discontinuing tobacco smoking. Withdrawal from nicotine intake is difficult among smokers with only 50% of those interested in quitting actually succeeding in doing so.⁽³²⁾ There are numerous benefits of quitting compared to smoking such as significant decline in risk of dying from tobacco related diseases e.g. coronary heart disease, lung cancer or COPD.⁽⁶⁰⁾ The American Journal of Medicine cites a number of reasons of quitting smoking which include though not limited to; decrease in blood pressure and heart rate within minutes of quitting, decrease of carbon monoxide levels in blood within 12 hours as well as recovering of nerve endings responsible for smell and taste within 48 hours of quitting.⁽⁵⁹⁾

Other benefits of quitting smoking include improvement in circulation and lung function, decrease in cough and shortness of breath and cutting in half risk of coronary heart disease within 12 months. The risk of stroke also falls by 50% after 5 years of quitting; it also includes other types of cancers such as mouth, throat, esophagus, bladder and cervix.⁽⁵⁹⁾ The risk of dying from lung cancer is cut in half after 10 years and the risk of coronary heart disease drops to the level of a non-smoker.^(59,60) A study by the British Doctors revealed that smokers who quit before the age of 30 lived almost as long as people who never smoked.⁽⁶¹⁾ It also explained that these individuals had an increased life expectancy of 7 to 8 years among males whilst the among females

increased by 6 years to 7.5 years.^(60,61) Smokers who continued to smoke till their sixties added 2 years and 4 years among males females respectively to their life span.

Apart from the individual benefits obtained from quitting, governments also benefits from cost savings. The direct and indirect costs for smoking for cost South African taxpayers R59 128m in healthcare and lost productivity due to mortality and morbidity.⁽⁹⁷⁾ Cigarette advertising cost United States more than US\$8 billion in 2017 alone with more than 249 billion cigarettes being sold in the same year. Smoking related illness cost the country more than US\$300 billion, \$170 billion was incurred in medical costs whilst \$156 billion was incurred in lost productivity (US\$5.6 billion was as a result of second hand smoking).⁽⁶²⁾ Taxpayers bear 60% of the cost of smoking through publicly funded programmes implemented by the government. In light of these statistics it is in the best interests of the various governments to encourage smoking cessation among its populace.

2.5 Smoking cessation intervention strategies

Various countries have drafted policies to curb smoking; from farming of tobacco plant, processing and consumption thereof.⁽⁴³⁾ South Africa has had a tremendous decline in smokers from 32% in 1993 to 16.4% in 2012 (South African National Health and Nutrition Examination Survey). Despite the decline South Africa still has a high rate of smokers compared to other African nations.^(48,19) The National Smoking cessation guideline was formulated to provide guidance on the procedures taken to assist smokers to quit smoking, these steps include: identifying smokers, alerting them to the dangers of smoking as well as benefits of quitting, assessing their nicotine dependence levels and preparedness to quit smoking.

A draft tobacco bill (The Control of Tobacco Products and Electronic Delivery Systems Bill) for South Africa crafted in 2018, regarding smoking was amended to include a zero-tolerance policy on indoor smoking, cigarettes may no longer be publicly displayed, a ban on smoking in vehicles carrying a child under 18 years as or more than 1 passenger, a ban on smoking in any enclosed common areas of multi-residence, ban on smoking in any outdoor public area of public interest and strict

measures on branding with warning labels and accompanying images on tobacco products.

The Supreme Court of India banned smoking in public places as some of the measures to reduce – the harmful effects second hand smoking on non-smokers. The Prohibition of Smoking in Public Places Rules, 2008 and COTPA promulgated on 2 October 2008 only permits smoking to specific public places and restricts smoking at cinemas, hospitals, public transport, restaurants, hotels, bars, pubs, amusement centres, offices (government and private), libraries, among other places and inside one's home or vehicle.⁽³²⁾

Brazil also enacted some of the strictest anti-smoking laws in South Americas. Approximately 30 million people ages 18 and older currently smoke with the illegal sale of cigarettes reaching 41% of volume sales in 2016. It forbids smoking in all enclosed public spaces except for specifically designated smoking areas.⁽⁴¹⁾ It also came up with a host of other measures including prescribing the legal age for sale and consumption of tobacco as 18, restricting tobacco advertising to posters in shops, not on mass media channels such as television and radio. Mandating all cigarette packs to contain advertisements against smoking and warnings about possible adverse health effects of smoking.⁽⁴¹⁾ The government also proscribed using descriptions, such as "light", "low tar" and "ultra-light" in 2001. The São Paulo government (Brazil) educated 500 specialised agents to enforce these rules at all times. The government also increased sin tax on tobacco to 24.4% in 2013 as well as the average price of a pack of cigarettes from 2.19 reais in 2006 to 5.5 reais in 2013.⁽³⁴⁾ As a result of such drastic measures smoking rates have decreased from 18.5% in 2008 to 14.7% in 2013.

The American Dental Association trained its practitioners on smoking cessation knowledge and endorsed dentist's role in smoking cessation efforts – discuss strategies for quitting, advising and counselling patients.⁽²¹⁾ In Britain statistics show that 1 in 5 adults is a smoker; its government has come up with measures to ensure a smoke free generation by 2025.⁽⁴⁵⁾ These measures include making tobacco products expensive, preventing the promotion of tobacco, regulation of tobacco products,

increasing awareness and reducing exposure to second hand smoking among other measures.^(45,35)

Other smoking cessation intervention strategies that can be implemented can be classified as behavioural or pharmacological.

2.5.1 Behavioural intervention strategies for quitting tobacco

These strategies can be classified as intensive or brief behavioural cessation strategies. Intensive strategies are offered by trained specialists through individual, group or telephone counselling whilst brief behavioural strategies refer to smoking cessation advice and counselling delivered by healthcare providers during routine consultations whether or not that was the aim of their visit. This is done with the aim of motivating and supporting smoking cessation.

Brief behavioural strategies involve asking patients about their current smoking status, advising them to stop, offering assistance and arranging follow-up. This model is based on the 5As which are:⁽¹⁹⁾

- i. Ask – enquire about the smoking status of a patient and record the information
- ii. Advise – patients on the benefits of quitting compared to risks of continuing smoking.
- iii. Assess – check if the patient is motivated to stop smoking
- iv. Assist – offer counselling and assist the smoker to set a quit date. The clinician can also refer the smoker to other specialists.
- v. Arrange – a clinician must make follow-up on those patients who have set a quit date and offer brief motivations to those who have not yet committed themselves.

2.5.2 Pharmacological interventions for quitting tobacco

It involves using medicines to quit smoking. There are three classes of medicines used for tobacco treatment in South Africa.⁽¹⁹⁾ as shown in the table below:

Table 2.1: Medicines for treatment of tobacco related illness

CLASS	MEDICATION
Nicotine Replacement Therapy (NRT)	1. Nicotine patch 2. Nicotine gum 3. Nicotine lozenge 4. Nicotine inhaler 5. Nicotine nasal spray
Antidepressants	1. Bupropion 2. Clonidine 3. Nortryptiline
Nicotine receptor agonist	1. E-cigarettes 2. Varenicline

NRTs are used to temporarily replace nicotine from cigarettes to suppress the motivation to smoke thereby enabling transition from smoking to quitting. It uses products which do not contain toxins found in smoke (nicotine patch, nicotine gum, nicotine lozenge, nicotine inhaler and nicotine nasal spray) but supply low doses of nicotine. It reduces cravings for nicotine as well as symptoms of withdrawal.⁽⁵⁸⁾

Antidepressants are used to suppress craving for nicotine during smoking cessation by replacing the effect of nicotine and acting on the receptors which have a link to nicotine addiction.⁽⁵⁸⁾ Bupropion helps to reduce the pleasure of smoking, decreases withdrawal symptoms and limits weight gain.⁽⁵⁹⁾ A nicotine receptor agonist is an anticholinergic drug that hinders the action of acetylcholine receptors in the brain.⁽⁵⁸⁾ A meta-analysis study conducted to assess the effectiveness of varenicline revealed that it increases the chances of successful long-term smoking cessation two to three times compared to pharmacologically unassisted attempts.⁽⁵⁹⁾

2.6 Impact of behavioural smoking cessation interventions

Healthcare providers are at the centre of making a positive difference by engaging in various interventions aimed at reducing the scourge of smoking worldwide. Quitting

tobacco is essential for preventing non-communicable diseases. Healthcare providers understand the benefits from quitting smoking and their role in its implementation. Although some of them possess the knowledge and information related to smoking cessation they are unaware of effective methods and skills to consistently implement the smoking cessation strategies.⁽⁶⁸⁾

Clinicians can take advantage of visits by smokers during routine visits to give tobacco cessation advice. A short discussion around smoking cessation can assist in changing the behaviour of smokers even when a patient has no intention of attempting to quit during that particular time. These brief smoking cessation interventions can increase the likelihood of future quit attempts.⁽⁶⁸⁾ A meta-analysis to assess the effectiveness of advice from clinicians in promoting smoking cessation revealed a high probability of quitting after brief (2-3 minutes) advice against no advice or routine visits.⁽⁶⁹⁾ It was also observed that there was 1.37 times more chances of patients quitting smoking after intensive advice compared to minimal advice.⁽⁶⁹⁾

There have been limited studies locally on the opportunities for tobacco use screening and brief cessation advice however studies done by Ayo-Yusuf, *et al.* in South Africa on 500 participants, reported that only 12.9% of the participants were screened for tobacco use during their current visit among the 134 tobacco users, 11.9% reported being advised against tobacco use during the current visit and 35.1% during any other visit within the last year. Of the participants not screened, 88% indicated they would be 'very comfortable' with being screened.⁽⁹⁴⁾

Studies done in Chichester, UK highlighted that interventions among pregnant women achieved substantial progresses in smoking cessation rates thereby reducing low birth weight among other negative effects. Random control trials for among pregnant women produced quit rates ranging between 8 - 12% more than control groups receiving routine care.⁽⁷⁰⁾ There has been a visible recognised cognitive behavioural intervention such as counselling from physicians and brief education material for pregnant women.⁽⁷¹⁾

A study carried out in Washington DC, USA on 2,151 high school smokers on the effect of adolescent smoking cessation intervention into young adulthood revealed

positive results in increasing quit attempts. The participants were categorised into two groups of experimental (motivational interviewing, cognitive behavioural skills training and telephone counselling intervention) and control condition (no intervention).⁽⁷²⁾ It was observed that there was a prolonged abstinence in the experimental group of 14.2% against 8% in the control condition; reduction in the number of days smoked increased as well as the length of the longest quit attempt. The learners in the experimental group were likely to quit smoking in half a year and had a significantly more attempts to quit compared to those neither screened nor advised.⁽⁷²⁾ These various studies have highlighted that if all clinicians systematically advise their patients to quit smoking it will reduce smoking greatly.⁽⁷³⁾

2.7 Factors influencing provision of smoking cessation intervention by healthcare providers

There are several factors that can influence the provision of smoking cessation by clinicians which include; healthcare provider's knowledge, attitude of healthcare providers among others.

2.7.1 Impact of clinician's knowledge on healthcare provider on smoking cessation interventions

Smoking cessation interventions by physicians are effective for quitting smoking in patients, however healthcare providers are less likely offer smoking cessation counselling due to lack of confidence which can be caused by inadequate exposure to smoking cessation guidelines.⁽⁷⁴⁾ The lack of knowledge may also be a result of missing programs that educate clinicians on how to help smokers to quit. Enhanced training in didactic and practical smoking cessation intervention education programs enables healthcare providers to offer better advice to their patients on smoking which also enables them to gain the necessary competence and motivation needed to provide smoking cessation interventions.⁽⁷⁵⁾

Lack of knowledge on recommended behavioural and pharmacological smoking cessation interventions; knowledge on benefits of smoking cessation; knowledge on assessing and managing nicotine dependence or withdrawal symptoms are some of

the of the knowledge gaps known to negatively affect healthcare providers in smoking cessation interventions.^(76,74) The lack of knowledge prevents nurses is a major barrier in offering smoking cessation counselling, studies done in India revealed that 16% of the clinicians advise their patients to use nicotine replacement therapies (NRT) whilst more than 61% of those interviewed professed ignorance about NRTs.⁽³³⁾

A similar study done among nurses in South Korea also highlighted similar statistics where 14% of the nurses interviewed advised their patients to use NRTs whereas more than 56% were not aware of them.⁽⁷⁴⁾ Adequate knowledge on smoking cessation guidelines assists the healthcare provider in making use of the 5As of smoking cessation⁽⁴⁹⁾, but inadequate knowledge hampers efforts to assist smokers to set quit dates or other counselling services.⁽⁷⁰⁾ In line with results from South Korea, studies done in New South Wales, Australia among nurses showed that some of the healthcare providers possessed knowledge about the health effects of smoking but they lacked strategies to aid in quitting. As a result of this, they limited their smoke intervention efforts to patients who showed willingness to quit and 21% of the nurses felt competent to discuss cessation with patients and identified skills training as necessary. ⁽⁷⁶⁾

Confidence levels are affected by lack of knowledge; which reduces physician's level of involvement in provision smoking cessation interventions. In light of this, there is need to provide training in the provision of smoking cessation counselling and modify policies to support provision of smoking cessation interventions by providing healthcare providers with time, access and enticement to embark on such undertakings.⁽⁷⁷⁾

2.7.2 Impact of clinician's attitude on healthcare provider on smoking cessation interventions

Attitudes play a significant role in smoking cessation interventions; primary health care providers who are favourably disposed towards smoking cessation counselling obtain higher rates of quit attempts from their patients.^(76,77) The attitude and perception of clinician's role in in smoking cessation affect the intervention strategies, negative attitudes such as concern over breakdown in doctor-patient relationship after

counselling, lack of interest among patients to receive smoking cessation advice are some of the factors that hinder smoking cessation efforts.

Some medical officers pointed that smoking reduces patient stress, whilst others highlighted that a person with 4th stage cancer will benefit from smoking by reducing stress;⁽⁴⁶⁾ they further explained that current smokers were less willing to assist smokers in quitting and some oncologists would even advise a patient in intensive care to smoke as a means to reduce post-surgical complications.

In other studies conducted by Association of American Medical Colleges, it was revealed that healthcare providers are not familiar with 5A's or 5R's guideline of quitting tobacco, whilst majority do not know how to impart the knowledge they have. It has been proved that pharmacotherapies almost double quit rates yet it is clear from the study that only one third of doctors regularly use pharmacotherapies.⁽⁷⁸⁾ However in other studies conducted among US health professionals on attitude on smoking cessation, it was discovered that individuals with a positive attitude about the effectiveness of advice were more likely to advise their patients to quit.⁽⁷⁹⁾

2.7.3 Barriers to smoking cessation interventions

The British doctors revealed that people in different levels of society smoke for a variety of reasons. They carried a research among people with a socioeconomic status, indigenous groups, people who are mentally challenged, homeless people, prisoners and youth.⁽⁸⁰⁾ It was revealed that these groups used smoking for managing stress or to compensate for inadequate support from health and other services providers; or acceptability of smoking in vulnerable communities.

However there were other barriers which were unique to various groups which were also identified for example people with mental issues used smoking to maintain mental health, while indigenous groups used tobacco smoke as part of their culture and historical norms, prisoners used it due to living conditions and homeless people had other competing priorities and youth were susceptible due to peer pressure.⁽⁸⁰⁾ These results were supported by studies released in the Journal of American Board of Family Medicine which classified the barriers into five themes which are; lack of time, patient

unwillingness to change, inadequate patient resources, inadequate provider resources and inadequate cessation skills.⁽⁸¹⁾

Healthcare providers indicated that they will be addressing a number of health challenges during patient consultation which takes up most of the time and lack time to provide smoking cessation counselling. Most young people who were asked about the reasons they keep smoking highlighted that they could not handle stress and withdrawal cravings as some of the barriers to quit smoking.⁽⁸¹⁾

2.8 Summary

Smoking cessation interventions require holistic approach from the knowledge, practices and attitudes of healthcare providers to address the various concerns from different groups within the society. Clinicians need to be adequately equipped with the requisite training in smoking cessation interventions in-order to empower them with the knowledge needed to assist smokers.

CHAPTER 3: METHODOLOGY

3.1 Introduction

Research methodology explains the way in which the researcher came out with the stated objectives; the research designs that were used to gather information, the instruments that were used and the population sampling, that is the target population and the sampling techniques that were employed to carry-out this study.

3.2 Research Design

A research design is a series of systematic steps used to accomplish the purpose of the study; it is a process of obtaining information and solutions to the identified problem.⁽⁸²⁾ It can be seen as a specification of the most adequate operation to be performed in order to test specific hypothesis under given conditions. The researcher used a cross sectional study that used a self-administered questionnaire aimed at determining the knowledge, attitude and practices of health care providers on smoking cessation intervention from 01 June to 28 June 2019. This study design was selected because it focuses on describing characteristics and behaviour of certain group of people towards a particular idea.⁽⁸⁴⁾

3.3 Study area

The study was carried out in public health centres within Sol Plaatjie Municipality in the Francis Baard District, Northern Cape. Sol Plaatjie district comprise 13 clinics namely; Galeshewe Community Health Centre, Masakhane, Beaconsfield, Betty Gaetsewe, Florianville, Mapule Matsepane, City Clinic, Dr Windston Torres, Greenpoint, Ritchie, Platfontein, Phutanang and Madoyle Clinic.

Northern Cape is the least populated province in South Africa with 1 225 600 people (estimate) as at 2018. Thirty one percent of the populace is younger than 15 years, 64% are between 15-64 years and 5% are over 60 years. The province has the largest land area in the country area with a surface area of 372 889km².⁽⁸⁵⁾ Even though Northern Cape is the least populated province in South Africa, it has one of the highest

smoking prevalence rates in the country coming in at number two with 31% after Western Cape which has just over 32%.

3.4 Study population

A study population can be defined as the total number of individuals or units from which the research is designed to collect information.⁽⁸³⁾ It can further be classified as the target population and accessible population. The researcher targeted a population of 165 individuals taken from the human resource database from the 13 clinics in Sol Plaatjie District Municipality. The accessible population is the population that the researcher could get in touch with and from which the findings were obtained. The accessible population consisted of participants from all the 13 clinics in Sol Plaatjie District.

Table 3.1: Distribution of participating clinicians by employment category

Category	Target population	Accessible population
Medical Officer	18	18
Professional nurse	99	94
Enrolled nurse	13	12
Enrolled nurse assistant	35	32
Total	165	156

3.5 Eligibility criteria

3.5.1 Inclusion criteria

To be included as part of the sample, a healthcare provider had to meet the following conditions:

- Be a medical officer, professional nurse, enrolled nurse or enrolled assistant nurse.
- Working in one of the 13 public clinics in Sol Plaatjie District Municipality
- Providing healthcare to patients
- Agree to participate in the study

3.5.2 *Exclusion criteria*

The following individuals were automatically excluded;

- Healthcare providers not directly involved in providing primary care
- Anyone who did not consent to the study

3.6 **Sample size**

A sample is a selected representative part of the target population with characteristics that reflect the population under study.⁽⁸⁴⁾ The researcher did not conduct any selection but chose everyone who satisfied the inclusion criteria; however feedback was received from 156 participants i.e. response rate of 95%. There remaining 5 of the sample could not be reached as some were not feeling well and were absent during visits to their respective clinics whereas 4 were away on official duty during time of visit.

3.7 **Data collection**

The quality of data can be expressed in terms of its representative features of the reliability which can be ensured by usage of fitting data collection method.⁽⁸³⁾ Self-administered questionnaires were used to gather data from participants. The questionnaire comprised of close ended questions in English which negated the need for translation as everyone was assumed to understand the language.

3.7.1 *Research instrument*

Online or computer data collection tools such as internet survey or Google forms provide unique advantages such as covering a wide geographical areas at relatively low cost within a short space of time compared to other forms,⁽⁹³⁾ however they posed a number of challenges such as uncertainty of data validity, difficulty in generating a sample online and some respondents did not have access to computers or were computer illiterate, etc.⁽⁹³⁾ The researcher used questionnaires to collect data; this instrument was adopted after consideration of reliability and time taken to collect the data.

3.7.2 Questionnaire content

A questionnaire is a set of formulated questions to probe and obtain responses from respondents or a systematic compilation of questions submitted to a sample population from which information is desired.⁽⁸²⁾ The instrument contains structured questions that are close-ended. Closed questions allow the respondents to provide responses within predetermined parameters. The Questionnaire was a standard one modified to the local situation. (See Appendix A)

The questionnaire consisted of 5 sub-sections designed to assess the following:

- i. Healthcare provider's demographic characteristics (gender, age, employment category, years of practise and smoking status).
- ii. Knowledge on smoking cessation intervention
- iii. Attitudes towards smoking cessation
- iv. Practises on smoking cessation
- v. Factors that act as barriers to smoking cessation interventions in their opinion

The '*knowledge*' section contained 19 questions designed to evaluate the clinician's level of knowledge on smoking cessation intervention in the following areas: (1) smoking cessation methods; (2) benefits of smoking cessation interventions; (3) nicotine dependence and withdrawal symptoms; (4) effect of smoking on an unborn child; (5) medications recommended for treatment of tobacco dependence in SA. Majority of the questions were statements which required respondents to state 'true', 'false' or 'don't know'.

The '*attitude*' section consisted of 12 questions designed to assess the following; (1) the role of healthcare provider in smoking cessation intervention; (2) priority between health concerns and smoking cessation intervention; (3) attitude of smokers to smoking cessation advice; (4) time constraints to provide smoking cessation advise during routine consultations; (5) smoking status to be included as one of the vital signs for patients attending primary care centres. Respondents were asked to highlight if they agree or disagree with the statements.

The '*practise*' section was based on the South African tobacco smoking cessation clinical practice guideline particularly the 5A's strategy for provision of smoking cessation i.e. Ask, Alert, Assess, Assist and Arrange follow-up. The interviewees were asked to state the frequency with which they performed the individual components of the 5A's strategy in their day-day interactions with patients using the scale 'Always', 'Sometimes', and 'Always'.

In assessing barriers in smoking cessation interventions, the interviewer used a series of questions which required the interviewee to rate each barrier as either as, 'not a barrier', 'somewhat a barrier' or 'important barrier'.

3.7.3 Questionnaire development

The tool used was validated in prior studies(outside of SA) which assessed knowledge, attitudes and practises of healthcare providers in smoking cessation intervention but was modified to suit this study. The modification was done using South African smoke cessation guidelines. The studies used are; Questionnaire on physician behaviour and patterns related to smoking cessation by the Association of American Medical Colleges in collaboration with the centre for Health Workforce Studies, School of Public Health, Albany University;⁽⁸⁶⁾ the Smoking, Knowledge, Attitudes and Practises.⁽⁸⁷⁾ other questions were formulated using clinical practise guidelines on treatment of tobacco use and dependence by the U.S Department of Health and Human Sciences.⁽⁸⁸⁾ No further validation in South Africa was done as sufficient evidence from prior studies exist on the dangers of smoking,⁽⁵²⁾ however there was need to adjust the geographical spread and focus on conditions in Sol Plaatje District.

3.8 Validity

Data validity is the correctness and reasonableness of data. There are several types of validity that contribute to the overall validity of a study. The two main dimensions are Internal and External validity.⁽⁸³⁾

Internal validity is concerned with the degree of certainty that observed effects in an experiment are actually the result of the experimental treatment or condition (the cause), rather than intervening, extraneous or confounding variables. It is enhanced by increasing the control of these other variables.⁽⁸³⁾

External validity is concerned with the degree to which research findings can be applied to the real world, beyond the controlled setting of the research, it is a matter of generalization. Attempts to increase internal validity are likely to reduce external validity as the study is conducted in a manner that is increasingly unlike the real world.⁽⁸³⁾

3.9 Reliability

Reliability is an essential pre-requisite for validity. It is possible to have a reliable measure that is not valid however a valid measure must also be reliable. Inter-Rater or Inter-observer reliability was used to assess the degree to which different raters/observers agree when measuring the same phenomenon simultaneously.⁽⁸⁴⁾

Parallel-forms or Alternate-Forms reliability was used to assess the consistency of the results of two similar types of test to measure the same variable at the same time. Tests for homogeneity or internal consistency individual items in an instrument measuring a single construct should give highly correlated results which would reflect the homogeneity of the items.⁽⁸⁴⁾ This can be tested using the split-half form, whereby the items are divided into two halves and the correlated with the Spearman-Brown formula.⁽⁸³⁾

The questionnaires were hand delivered to make certain that they were completed by the respondents thereby requesting their assistance in each case. Explanation on the nature and purpose of the research was also given. The structure of the questionnaires was relatively short to avoid vagueness and effort was made to avoid too many open ended questions.

3.9.1 Pilot Testing

It is paramount to test questionnaires because mistakes or vagueness in the questionnaires can lead to false responses and recommendations once the main data collection phase has been started. It also helps obtain an assessment of the questions and reliability of the data collected as well as to hone questionnaires so that respondents would not have difficulty in answering them.

The pilot test was done at Kimberley hospital in the week of May 2019 prior to commencement of actual data collection. A medical officer, two professional nurse, two nurse assistants and five enrolled nurse assistants completed the questionnaires. They were then interviewed individually with regards to the clarity and appropriateness as well as length of the questionnaire and amendments were done where necessary.

3.9.2 Data collection procedures

The self-administered questionnaires were distributed to participants at the respective clinics. Participants were selected based on information in the respective human resource department. Group meetings were conducted shortly after their morning briefings to explain the purpose of the survey. At times individual meetings were done to clarify any sticking points. The questionnaires were collected from participants at their work stations during the same day and other participants who could not provide immediate feedback managed to submit 24 hours later. A 95% response rate was achieved within seven days.

3.10 Minimisation of errors and bias

In-order to avoid errors and minimise bias the following things were done;

- a) A standard set of questionnaires was used
- b) Questionnaires were pre-tested in-order to ensure the clarity and completeness and suitability of questions.
- c) All clinicians were selected from a population of the study to get a broad view of the responses.

3.11 Ethical considerations to

1. The protocol was approved by the Ethics Committee of the Faculty of Health Science, UFS (Ethics clearance #: UFS-HSD2018/1351/2901) and permission to conduct the study was given by Northern Cape Province ethics committee.
2. The participants were given information sheet which also served as a consent form. It was assumed that completion of the form after reading the information

sheet was consenting to participate in the study. Some clauses contained in these forms included but were not limited to;

- a) Participation in the project was voluntary and one could refuse to participate
 - b) The participants were informed that by completing the forms they were consenting to engage in the study
 - c) No participant was injured or harmed physically or emotionally
 - d) The results may be published in a journal
3. All information received from the study was treated with confidentiality and used only for intended purposes. All questionnaires were assigned a unique identification number (1 – 156) and no names of participants were recorded in order to maintain anonymity.
 4. Completed questionnaires were stored in safe and secure place only accessible to the researcher to prevent unauthorised access.
 5. Further approval for participation was obtained from the various Medical Officers in charge of the respective health facilities.

3.12 Data processing

During data entry each field entry was assigned a unique number from 1 – 156. It was proof read and counter checked for missing information, duplicate responses and inconsistencies before being captured into an excel spread sheet. The computer was password protected to prevent unauthorised access.

3.13 Data analysis

Data analysis is a process of inspecting, cleaning, converting, and modeling data with the goal of highlighting useful information, suggesting conclusions, and supporting decision making.⁽⁸²⁾ Data was presented using both qualitative and quantitative methods using Microsoft Office tools (Excel and Word 2016). This was done in-order to present meaningful and logical information on the results of the survey.

Other data presentation techniques included the use of tables, pie charts, bar graphs to convert data collected into meaningful and useful information. This was achieved with the assistance from the Department of Bio Statistics at University of Free State.

3.14 Limitations of the study

1. The study focused on healthcare providers working in Sol Plaatjie District and cannot be generalised to all health care providers in the country without assumptions.
2. The study focused on individual accounts of healthcare providers in assessing knowledge, attitude, and practises of healthcare providers. Some level of under/over reporting may therefore have affected the study results.
3. Some questionnaires had incomplete sections as some of the respondents were not aware of what was required, thus making it difficult to tell which respondent had not completed his/her questionnaire due the numbering system of the questionnaire.

3.15 Summary

The chapter presented information on sources of data that is primary and secondary, research instruments. Also explained are the research design, population, sample size and population as well as sampling techniques. The next chapter looks at data presentation and analysis findings in the research.

CHAPTER 4: DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The preceding chapter highlighted the research methodology, this chapter will focus on data presentation and analysis. In this chapter all the research findings will be presented and critically analysed using both quantitative and qualitative techniques.

4.2 Questionnaire response rate

The researcher managed to get a 95% response rate from the questionnaires sent. The questionnaires were targeting medical officers, professional nurses, enrolled nurses as well as enrolled nurse assistants. This information is provided in Table 4.1 below.

Table 4.1: Overall response rate

Category	Response rate %
Medical Officer	100%
Professional nurse	95%
Enrolled nurse	92%
Enrolled nurse assistant	91%
Overall	95%

A 100% response rate was achieved from medical officers who are based in the Francis Baard District (Northern Cape Province). However a 95% response rate was achieved from professional nurse's category as some of them were on their annual breaks or had other commitments which made it difficult for the interviewer to get a 100% response rate. The interviewer also managed to get a 92% and 91% response rate from enrolled nurses and enrolled assistant nurses respectively after conducting follow-up interviews.

It should be noted that there was a low number on the enrolled nurse category as the Department of Health is in the process of phasing out this category and migrating to

enrolled nurse assistant. This will eventually result in the category being entirely phased out.

4.3 Section A: Socio-demographic Characteristics

The interviewer was targeting respondents from different demographic characteristics as well as years in practice. This gave the interviewer an opportunity to get an unbiased opinion from the respondents. This information is below:

4.3.1 Gender frequency table

Table 4.2: Gender composition

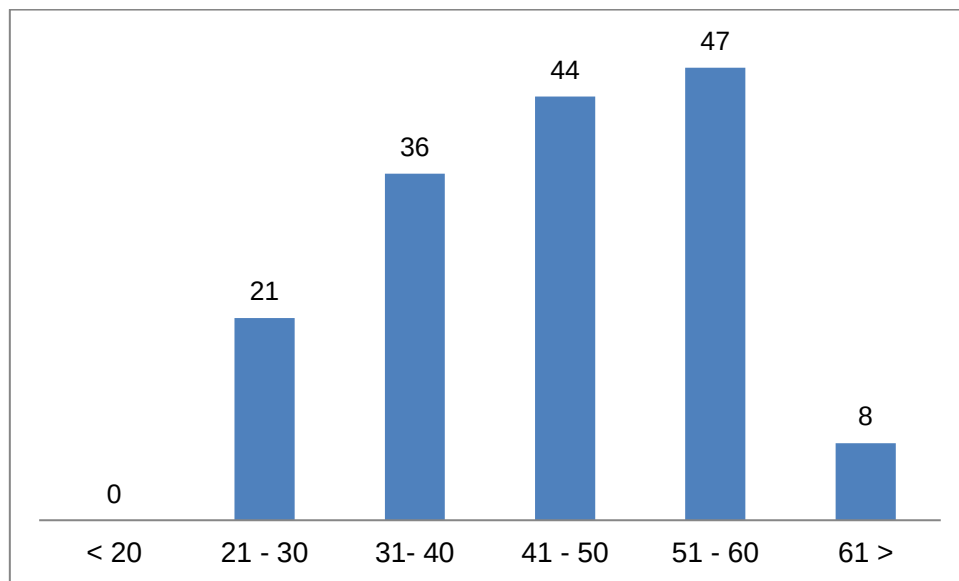
Gender	Frequency	Percent	Cumulative frequency	Cumulative frequency	Cumulative percentage
Male	29	18,59	18,59	29	18,59
Female	127	81,41	100,00	156	100,00

The information obtained highlights that majority of the clinicians are females who make up 81% while their male counterparts make up 19%.

4.3.2 Age category

Though the researcher had made provision to include 20 years and below age group, there was no clinician who was within that age group, this could be attributed to the fact that most of these will still be acquiring their tertiary qualifications. The 61 years and above age group constituted only 5% (8/156) of the entire population. The remainder of the composition is shown in the figure below.

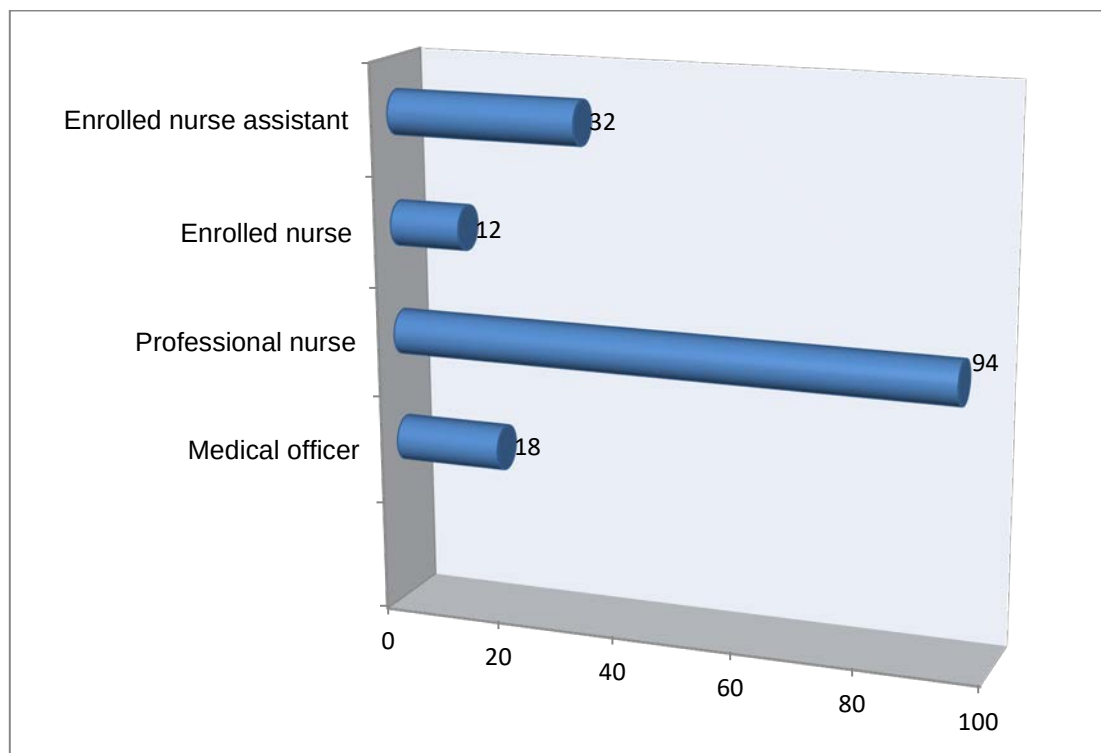
Figure 4.1: Age category



4.3.3 Employment category

This analysis was necessary to get the demographic composition of the population.

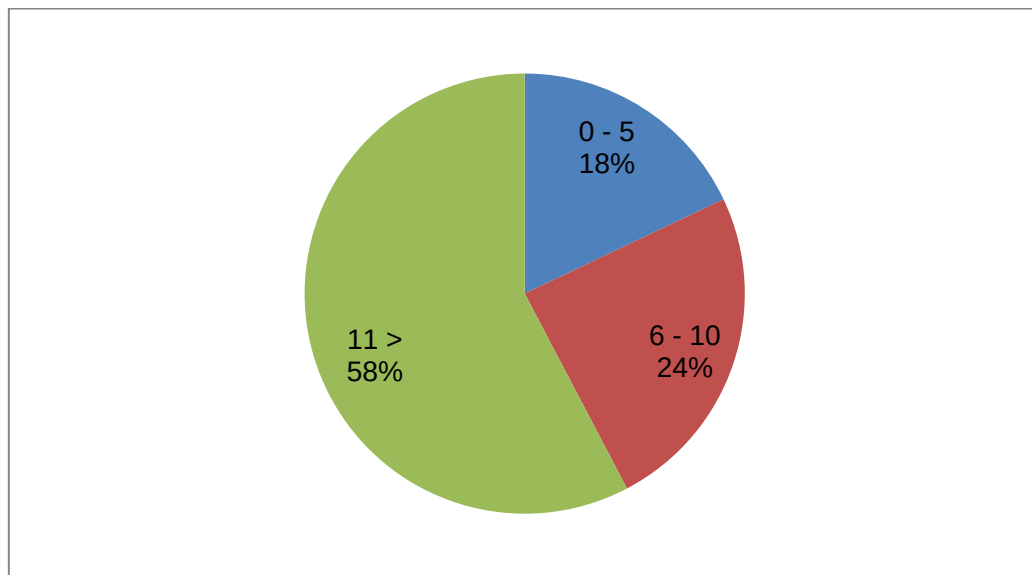
Figure 4.2: Employment category



4.3.4 Years of practice

It can be noted that majority of the interviewees who had 0 – 5 years' and 5 –10 years' experience were found between 20 – 30 years and 31 – 40 years age group whilst the majority who had over 10 years' experience was found in the 41 years and above. The pie chart below reflects this data.

Figure 4.3: Years in practice

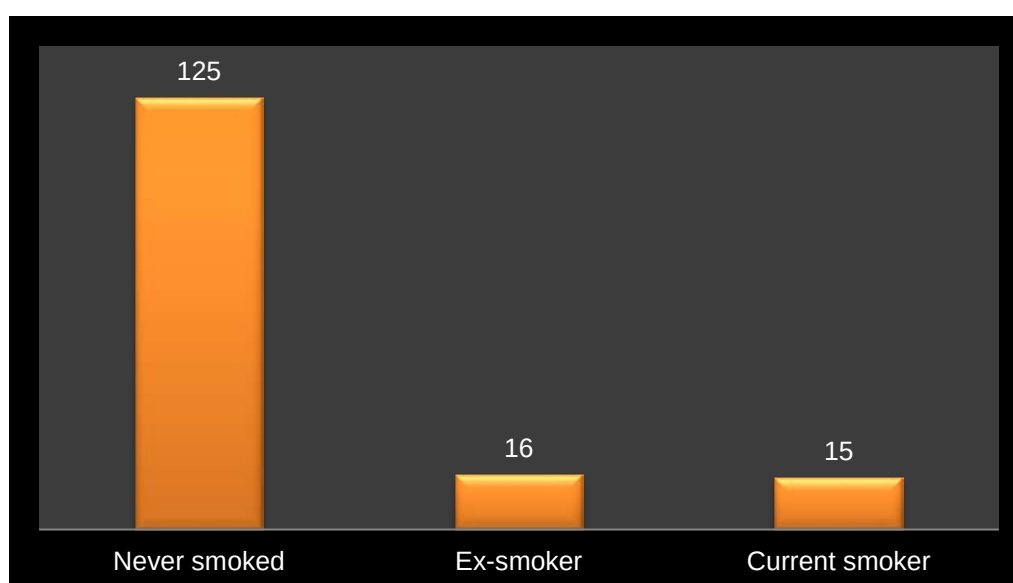


4.3.5 Smoking status of the respondent health workers

The author sought to comprehend the respondent's status on smoking, it is worth noting that 125/156 (80.13%) of them highlighted that they had never smoked before with 16/156 (10%) underlining that they had smoked before and the remaining 15/156 (10%) pointed out that they are current smokers.

This information directly influence the information that is provided in counselling sessions as clinicians may be biased towards or against smoking during counselling depending on whether they smoke or don't.

Figure 4.4: Smoking status



4.4 Knowledge assessments

4.4.1 South Africa has smoking cessation clinical guidelines!

To understand if the respondents knew whether the country has guidelines or policies on smoking cessation, the interviewer asked the respondents to indicate whether they knew the existence of such policy or guideline.

Table 4.3: South Africa has a smoking cessation policy

TRUE	FALSE	DON'T KNOW	TOTAL
72	11	73	156
46.15%	7.06%	46.79%	100.00%

Table 4.3 above shows that 72/156 (46.15%) are aware of the existence of the South African tobacco smoking cessation clinical practice guideline Vol. 103 No. 11, which was issued in November 2013; 11/156 (7.05%) said that the country did not have such a policy or guidelines, whilst the remaining majority 73/156 (46.79%) were not aware if such a policy or guideline existed.

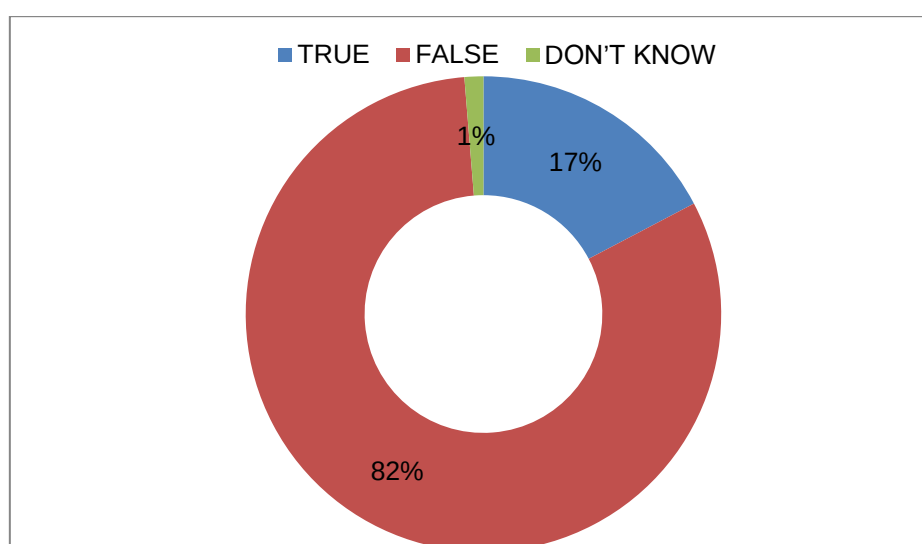
There is need to bring awareness to the clinicians on the availability of this guideline since most health professionals are not aware of its existence.

4.4.2 *Patients should only be asked about their smoking history if they have a smoking related disease/illness.*

The results indicate that a minority (27/156)(17%) of the interviewees feel that it is not essential to ask such questions whilst a minute figure (2/156)(1%) highlighted that they didn't know the relevance of asking such questions when faced with such cases but the overwhelming majority (127/156)(82%) rejected the notion that a patient should only be asked about their smoking history if they have a smoke related illness.

Figure 4.5 illustrates these findings.

Figure 4.5: Relevance of smoking history on current health of patients



The results indicate that many health practitioners feel it is important to ask on smoking history during patient consultation irrespective of type of illness.

4.4.3 *Smoking cessation is not a critical component in the management of Chronic Obstructive Pulmonary Disease (COPD)*

The researcher sought to establish if the respondents were aware of the health benefits of smoking cessation in managing Chronic Obstructive Pulmonary Disease as outlined in the South African tobacco smoking cessation clinical practice guideline.⁽⁹²⁾

Figure 4.6: Smoking cessation importance in managing C.O.P.D

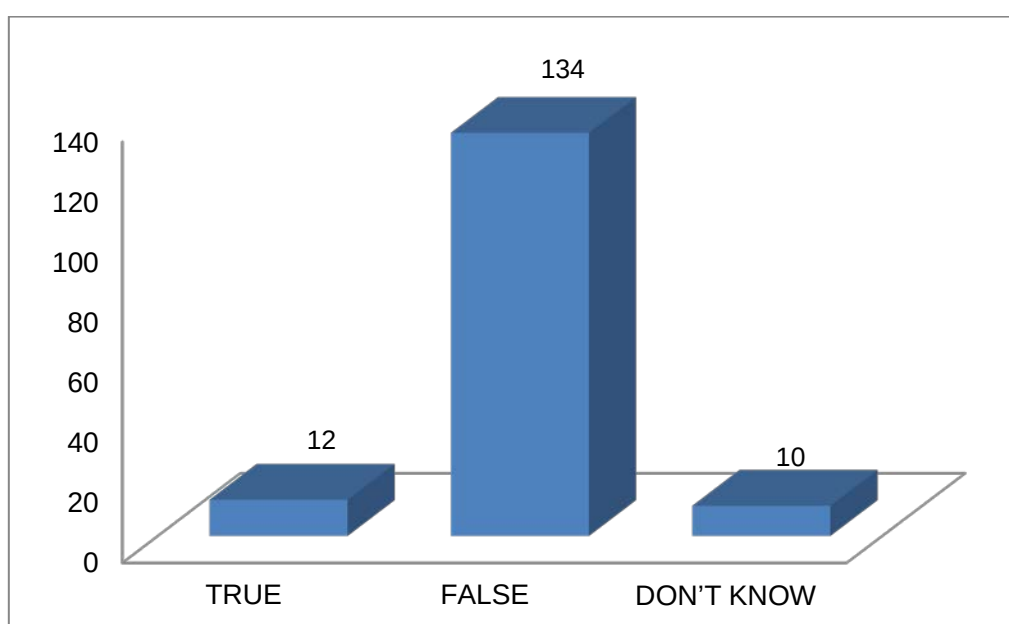


Figure 4.6 illustrates that over 85.90% (134/156) of the interviewed health professionals revealed that smoking had no influence on chronic obstructive pulmonary disease whereas 6.41% (10/156) are not aware of the direct benefits of smoking cessation on reducing the risk of chronic obstructive pulmonary disease. A marginal 7.69% (12/156) highlighted the importance on smoking cessation on reducing the COPD.

These results indicate a correlation to results shown in Table 4.3 where majority of the interviewees highlighted that they were not aware any guideline or policy on smoking cessation in country. Such statistics are a cause for concern, as they are the ones responsible for disseminating information to the patients.

4.4.4 *Smoking cessation advice given by a health professional to a patient increases the patient's chances of quitting.*

In a view to establish the impact of giving advice to patients on the benefits of quitting smoking the researcher asked the health professionals to indicate their thought on the advice that they gave to patients as well as its impact on them.

The results are shown in the table below:

Table 4.4: Impact of advice on smoking cessation on smokers

TRUE	FALSE	DON'T KNOW	TOTAL
136	8	12	156
87.18%	5.13%	7.69%	100.00%

Table 4.4 above shows that 136/156 agree that if patients are given the necessary advice it would increase their chances of quitting smoking whereas 8/156 disagreed on the impact of such advice to a patient and a remaining 12/156 didn't know the impact on of advising patients on quitting smoking.

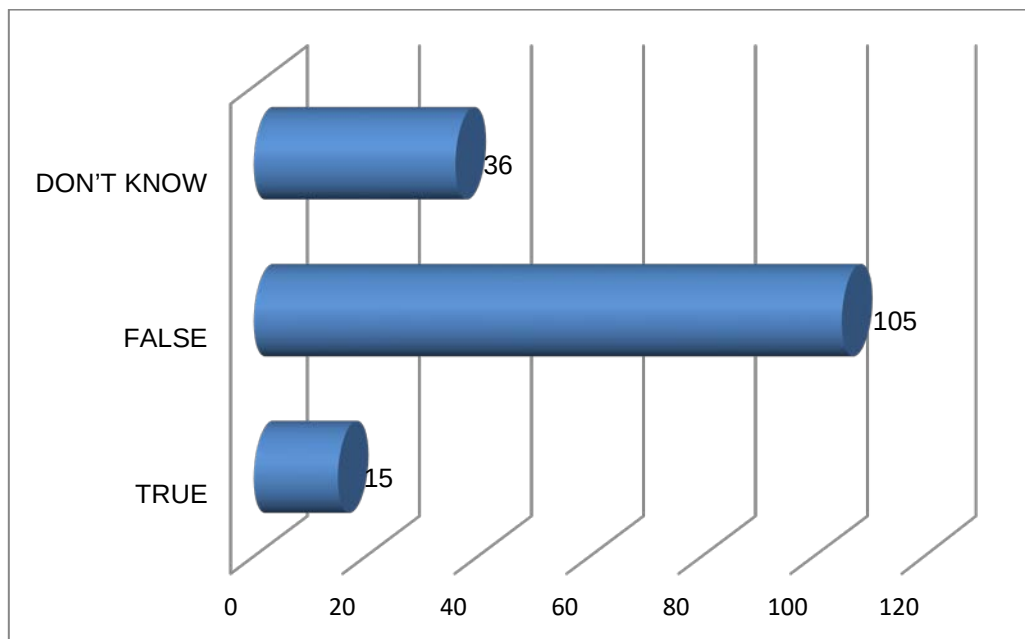
The figure shows that the majority of health workers in Sol Plaatjie district believe that advice on smoking cessation is beneficial to smoking cessation.

4.4.5 *It is not necessary to assess nicotine dependence prior to initiation of Nicotine Replacement Therapy (NRT)*

This refers to strategies available to assist in smoking cessation by reducing addiction. The information collected indicates that only 15 of the respondents agree that NRT play a significant role in smoking cessation, and 105 reject this assertion. This is in line with the results contained in the smoking cessation guideline Vol. 103 which states, “...both classes of drug are an aid to smoking cessation, and they have little or no effect on the underlying addiction and do not address the psychological factors that cause a person to smoke.”⁽⁶⁶⁾

This information is shown on Figure 4.7 below:

Figure 4.7: Impact of NRTs on smoking cessation:



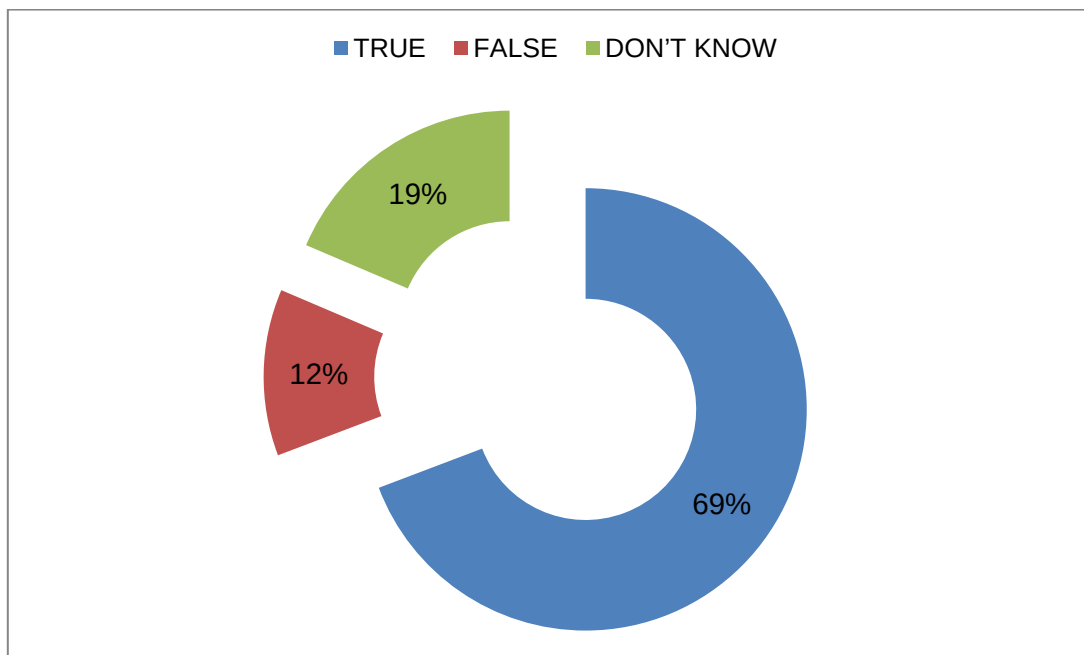
4.4.6 Counselling plus medication to treat nicotine withdrawal is more effective than intervention alone.

As a follow up to question 4.4.5 on impact of NRTs on smoking cessation, there was need to assess the effect of counselling and medication as other intervention strategies.

Figure 4.8 below highlights that majority of the health professionals believe that counselling and medication play a major role in treating nicotine withdrawal and are more effective than NRTs alone.

Given this information it is then necessary for health professionals to emphasize more on medication as well as counselling patients on the effects and dangers of smoking but also attempting other intervention strategies

Figure 4.8: Effect of counselling and medication on nicotine withdrawal

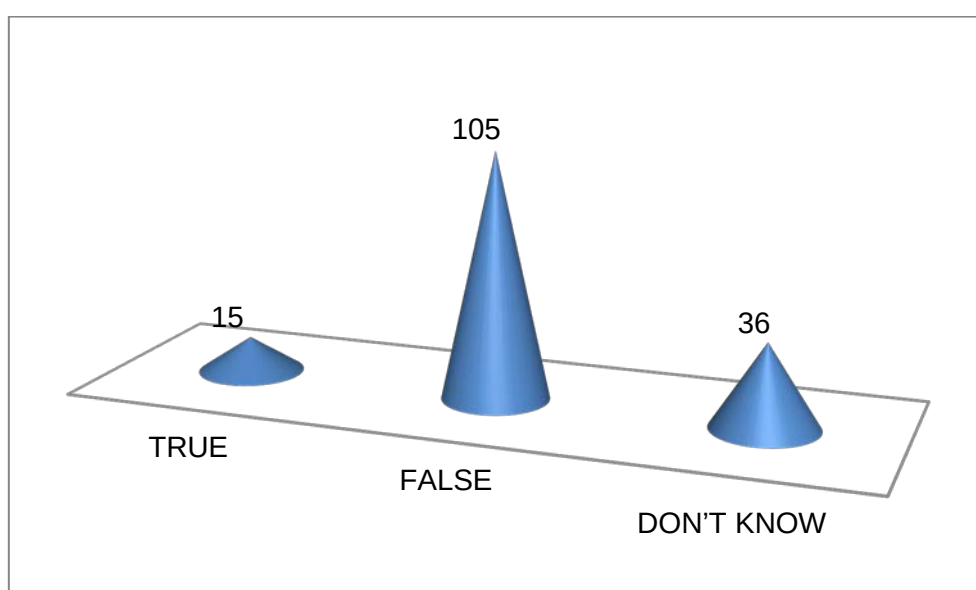


4.4.7 A common withdrawal symptom that occurs after quitting smoking is weight loss

The information gathered from the survey highlight that 67.31% (105/156) do not agree with this assertion whilst 9.62% (15/156) assert that there is a direct correlation between smoking cessation and weight loss and remaining 23.08% (36/156) are not aware of the relationship between weight loss and smoking cessation.

This information is shown in Figure 4.9 below:

Figure 4.9: Weight loss as a symptom of smoke withdrawal



The overall opinion among the sample indicated that there is no direct relationship between weight loss and smoking cessation.

4.4.8 *Smokers who are highly nicotine dependent, have social stressors and psychiatric comorbidities, are less likely to be successful at quitting?*

The researcher sought to establish what the health workers (respondents) think about the likelihood of patients who are highly nicotine dependent, have social stressor and psychiatric comorbidities have at quitting smoking. The table below indicates that there is a less likelihood for these patients on successfully quitting smoking.

Table 4.5: Likelihood of quitting smoking on smokers who are highly dependent on nicotine

TRUE	FALSE	DON'T KNOW	TOTAL
111	24	21	156
71.15%	15.38%	13.46%	100.00%

This shows that there is greater need to educate people on the effects of smoking before they become addicted. There is therefore need for all stakeholders to conduct

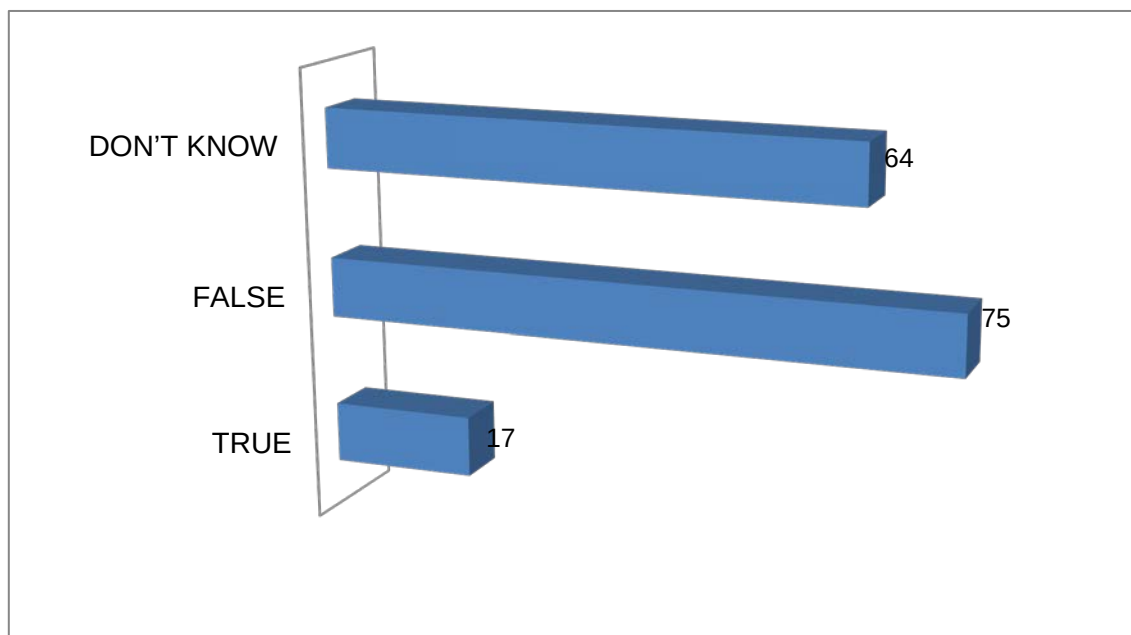
massive education campaigns especially to teenagers who are likely to experiment on smoking.

4.4.9 Time to first cigarette of the day

In an effort to establish if there a relationship between the time one smokes and his/her dependence to nicotine, most interviewees highlighted that there is no direct relationship between nicotine levels of smoking when one wakes up and one who smokes latter during the day.

This information is highlighted in Figure 4.10 below:

Figure 4.10: Relationships between smoking and nicotine dependence



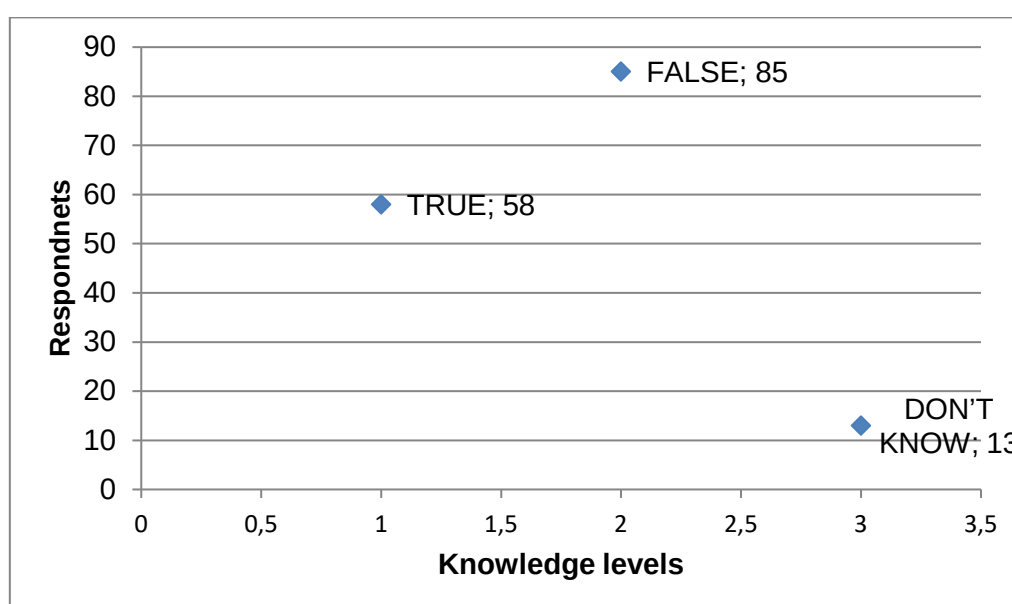
Results indicate that 75 of the respondents believe that there is no direct relationship between the time one smokes whilst 64 were not sure of the impact of time of day on nicotine dependence and the remaining 17 indicated that smokers who smoke within 30 minutes of waking up will be less likely dependent on nicotine than those who take it late on during the day.

4.4.10 Most smokers will successfully quit smoking on their own without assistance

This question was aimed at deducing whether a smoker can successfully quit smoking without encouragement from others. Of the 156 health professionals interviewed 58 (37.18%) of them concurred that a smoker can quit smoking without assistance whilst 85 (54.49%) differed with this notion claiming that one needs to be assisted in-order to quit smoking and the remaining 13 (8.33%) didn't know if a smoker should be assisted to quit smoking or let him/her quit on their own.

This information is shown in Figure 4.11 below:

Figure 4.11: Ability of smoker to quit smoking without assistance



The above data indicates that majority of the respondents agree that there is a need to assist smokers to quit smoking, this can be done at primary level by training staff to provide the necessary counselling to motivate patients to attempt to quit.⁽⁶⁶⁾

4.4.11 When advising patients to stop smoking, the advice should never be linked to the patient's current health/illness

A medical practitioner should never explain to their patients the effect of smoking and how it is linked to their current health or sickness, this is the view held by 66.67% (104/156) of the respondents whilst 30.77% (48/156) are of the opinion that patients

should be told of the effects of smoking on their current health/illness and a minute 2.56% (4/156) did not know how to proceed under such scenarios.

Figure 4.12: Linking smoking cessation advice to current illness/health



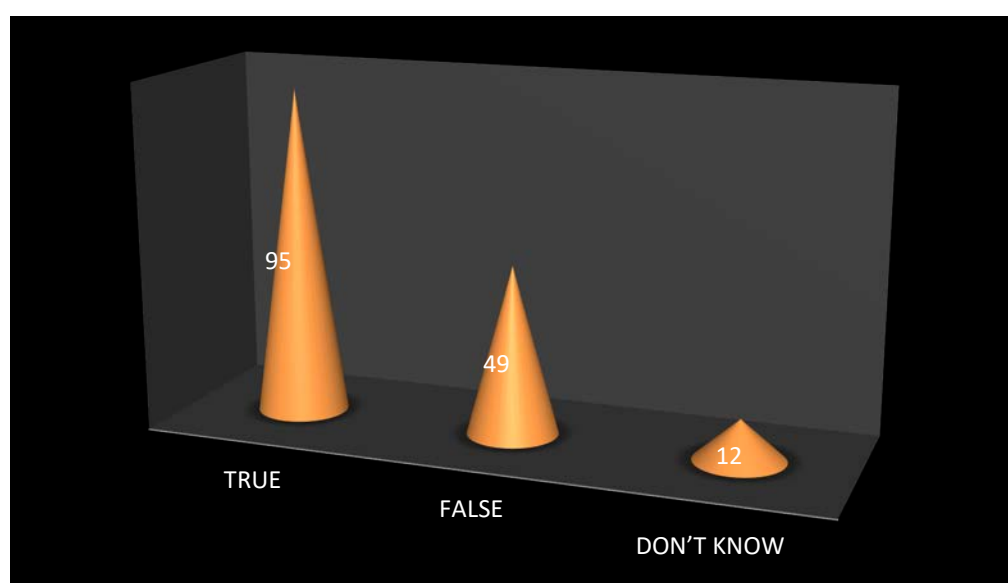
Majority of the respondents indicated that smoking cessation advice should be independent of the patient's current health/illness.

4.4.12 Counselling patients on smoking cessation includes assisting the patient to set a quit date

Having shown a willingness to quit smoking; is it necessary for a health professional to assist patients to set quit date. Most of the respondents 61% (95/156) highlighted that it is necessary to assist patients to set key dates for smoking cessation, this shows the commitment to the programme whereas 31% (49/156) disagreed with this idea implying that the counsellor did not have to advice a smoker to put dates in place as it would put the patient under undue pressure, however 8% (12/156) didn't know the importance of attaching dates to the programme.

The data below illustrates the results from the respondents.

Figure 4.13: Should a counsellor assist a patient to set a quit date



4.4.13 Most withdrawal symptoms disappear within four weeks

The researcher sought to know the opinion of the respondents on the period it takes for withdrawal symptoms to disappear, the longer the symptoms persist the more smokers may find it difficult to quit smoking.⁽⁶⁶⁾

The table below shows that majority 49% of the respondents are not aware of the period it takes for withdrawal symptoms to disappear from a patient whilst there was an 11% difference between those who agreed to and those who did not to the four-week withdrawal timeline.

Table 4.6: Period it takes for smoke withdrawal symptoms to disappear

TRUE	FALSE	DON'T KNOW	TOTAL
49	31	76	156
31.41%	19.87%	48.72%	100%

This indicates that many primary caregivers need to be educated on smoking cessation.

4.4.14 *It is imperative to speak to adolescents in the presence of their caregiver when encouraging smoking cessation*

How important is it to provide counselling to adolescent in the presence of their caregivers is a critical question to be dealt with considering that most of these adolescent are still minors. No smoking cessation medication is licensed for use in children aged less than 18 years.^(91,66)

Figure 4.14: Importance of counselling adolescents in the presence of their caregiver

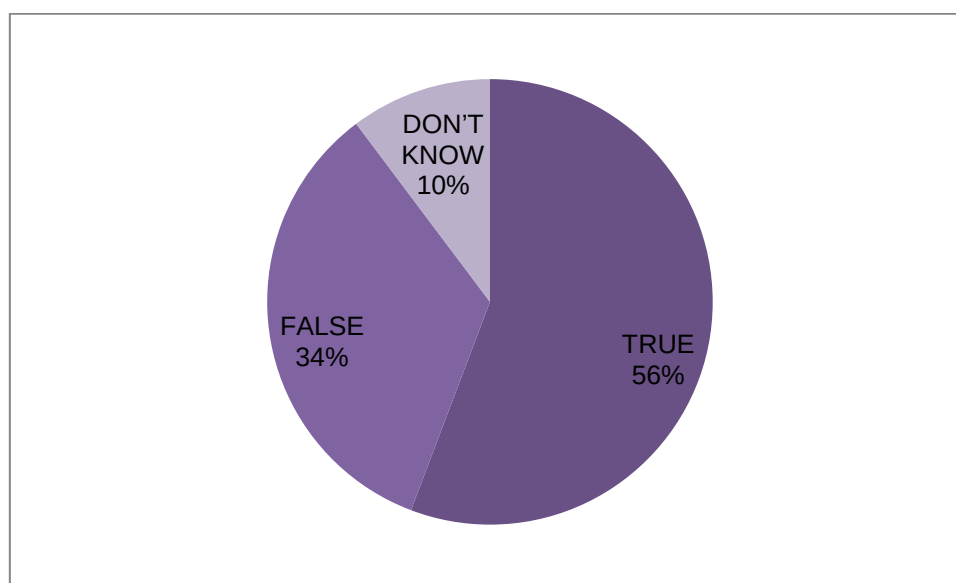


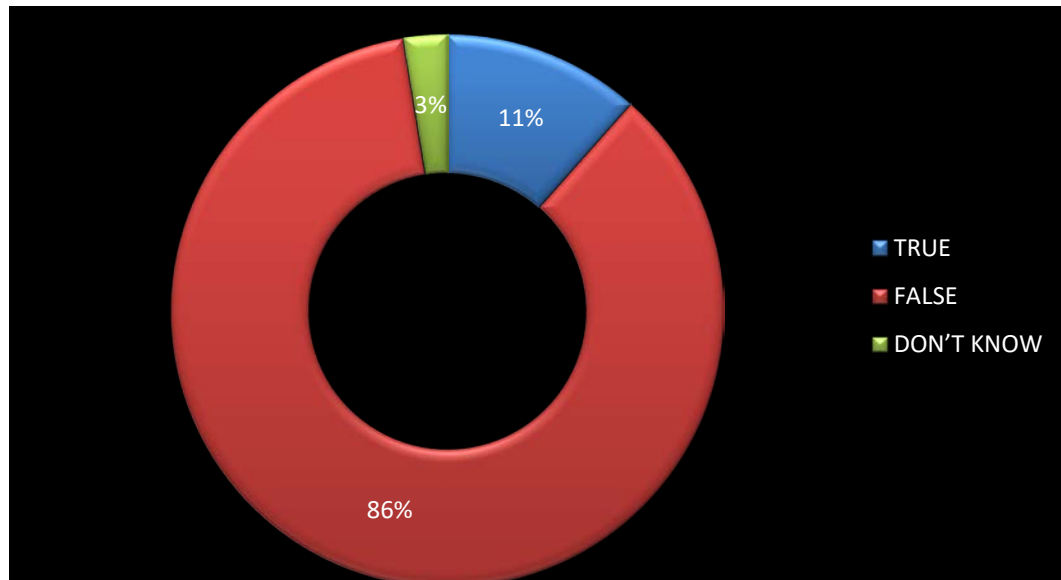
Figure 4.14 above indicates that 87/156 (55.76%) counsellors agreed that adolescents have to be accompanied by caregivers during counselling sessions while 33.97% (53/156) disagreed with this views with the remaining 10.26% (16/156) not sure how to proceed under such cases. It is worth noting that it is imperative to counsel teenagers when there is an adult available who can also provide the necessary guidance to them.

4.4.15 *There is no need of advising elderly patients who smoke (those above 60 years) to quit as the damage from smoking is already present and cannot be reversed*

Despite the many benefits such as reduction in risk of lung cancer, stroke, heart disease, etc.^(66,92) 11% of those interviewed feel that it is not necessary to advice patients over 60 years to quit smoking as the damage is already done, however this

view is not shared by the majority (86%) who said that despite the advancement in age, there is still need to advise patients on the benefits of smoking cessation.

Figure 4.15: Necessity of advising patients over 60 years on smoking cessation



Regardless of age of the patient there is need to provide counselling on the benefits of smoking.

4.4.16 Smokers have double the risk of developing TB and of dying of TB than non-smokers

The guideline on South African tobacco smoking cessation clinical practice guideline Vol. 13 highlights that, “smokers have approximately double risk of developing TB and of dying from TB than non-smokers.” It also noted that, “smoking cessation for people with active TB is a feasible and effective intervention.” Data from the survey also support this view as 126 of the respondents agreed that smokers are at a higher risk of developing and dying from TB than non-smokers whilst 24 of respondents did not agree to this notion with the remaining 6 not aware of the relationship between smoking and TB.

Table 4.7: High likelihood of smokers developing and dying from TB than non-smokers

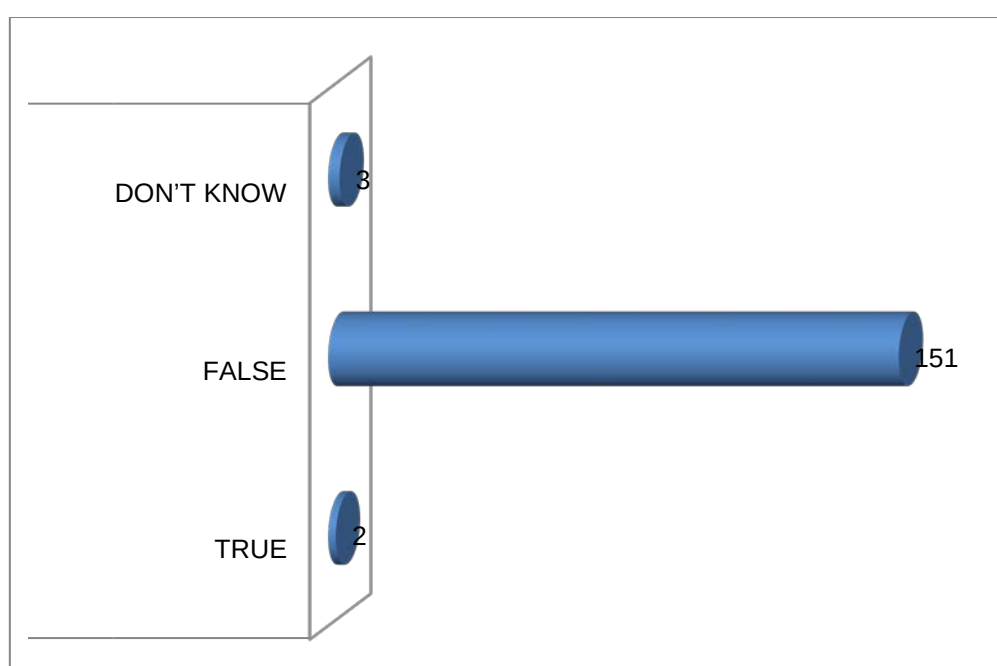
TRUE	FALSE	DON'T KNOW	Total
126	24	6	156
80.77%	15.38%	3.85%	100%

This indicates that health professionals are aware of the risk posed by smoking.

4.4.17 Smoking during pregnancy is safe for the baby

It has been observed that smoking poses significant risks to mother and foetus such as miscarriage and premature rupture of membrane among others.⁽⁶⁶⁾ The study also noted that second hand smoking is also increases the risk of low-birth weight.

Figure 4.16: Safety of smoking during pregnancy



The results from the survey highlight that majority of the respondents view smoking as harmful to the unborn baby, which is in line with the studies conducted.⁽⁶⁶⁾ It is imperative to offer counselling to expecting educating them on the dangers of smoking and benefits of smoking cessation.

The table below highlights the importance that medical officers and professional nurses attach on the effect of smoking on the unborn baby. This directly determines the amount of intervention they will put in during smoking cessation counselling.

Table 4.8: Importance of medical officers and professional nurses explaining the effect of smoking on the unborn baby

CATEGORY	TRUE	FALSE	DON'T KNOW	TOTAL
Medical officer	0	18	0	18
Professional nurse	1	91	2	94

The data highlights that all the 18 medical officers explained that smoking is not safe for the baby and 91 of the professional nurses concur with the same view as held by medical officers. With this knowledge in mind it can assist them in providing the correct information to expecting mothers.

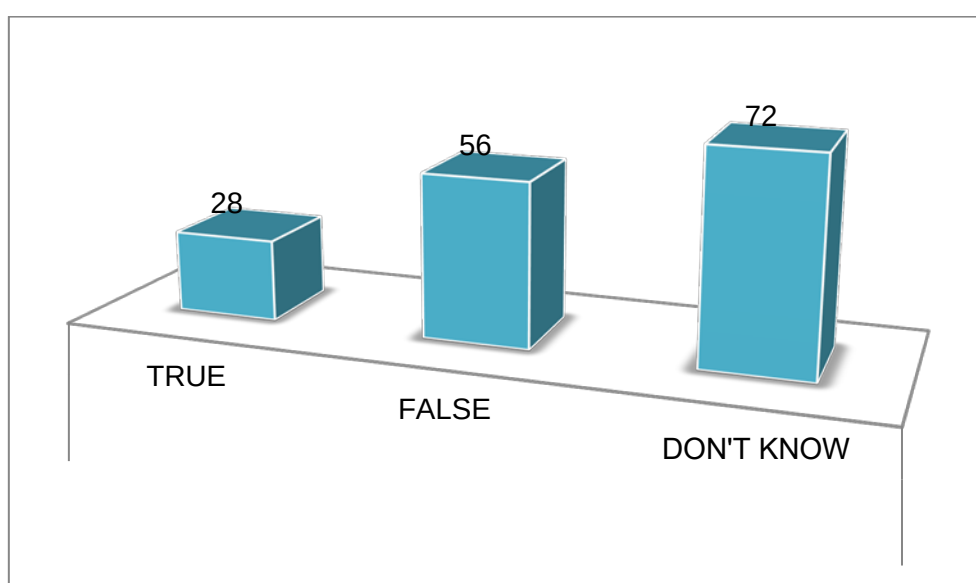
4.4.18 There is no drug- drug interaction between Anti-retroviral drugs and medicines used for smoking cessation

Are health professionals aware of concurrent application of smoking cessation drugs and ARVs and its effect on the patient? There is a possibility that drug-drug interactions may occur with bupropion, the risks also include inter alia pneumonia, TB and lung cancer.^(91,92)

The survey highlighted that 28 HCP conceded that it is indeed true there is no drug-drug interactions between ARVs and other medicines used for smoking cessation and 56 highlighted that there is drug-drug interaction whilst a worrisome 72 were not aware of the effect of simultaneously taking ARVs and other smoking cessation medicines.

This shows that there is need to train the health professionals on the consequences of drug-drug interaction so that they may disseminate the correct information. This information is shown in the figure below:

Figure 4.17: Interaction between ARVs and medicines used for smoking cessation



4.4.19 Medications recommended for treating tobacco dependence in SA

Different intervention strategies are available to assist in smoking cessation,⁽¹⁹⁾ which include Nicotine replacement therapies, Antidepressants and Nicotine receptors agonists.

The various medicines can be classified under such sub classes as shown in the following table:

Table 4.9: Classes of smoking cessation medicines

Class	Medication
NRT	1. Nicotine patch 2. Nicotine gum 3. Nicotine lozenge
Antidepressants	1. Bupropion 2. Clonidine 3. Nortryptiline
Nicotine receptor agonist	1. E-cigarettes 2. Varenicline

The health professionals were asked to show knowledge of the drugs recommended for treating tobacco dependence in SA. The results are summarized as follows:

4.4.20.1 Nicotine patch

Majority of the interviewees, 115/156 agreed that it is a recommended drug whilst 33/156 were not aware if it is recommended or not with the remaining 8/156 highlighting that it is not recommended. The results are shown in the table below.

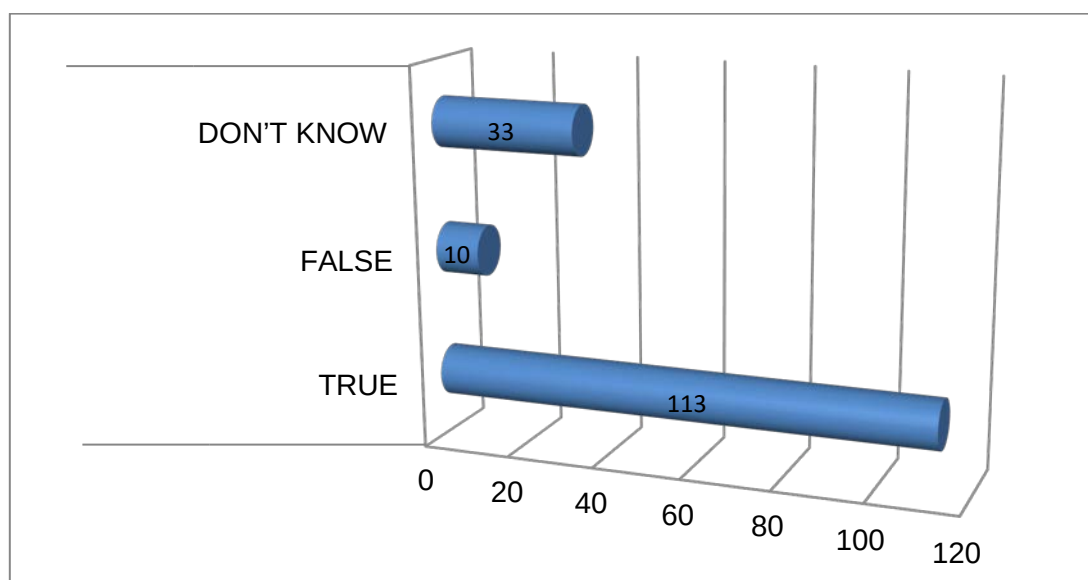
Table 4.10: Is Nicotine patch recommended for treatment of tobacco dependence in SA

TRUE	FALSE	DON'T KNOW	Total
115	8	33	156
73.72%	5.13%	21.15%	100%

4.4.20.2 Nicotine gum

Majority of the interviewees, 72.43% (113/156) agreed that it is a recommended drug whilst 21.15% (33/156) were not aware if it is recommended or not with the remaining 6.41% (10/156) highlighting that it is not recommended. The results are shown in the figure below.

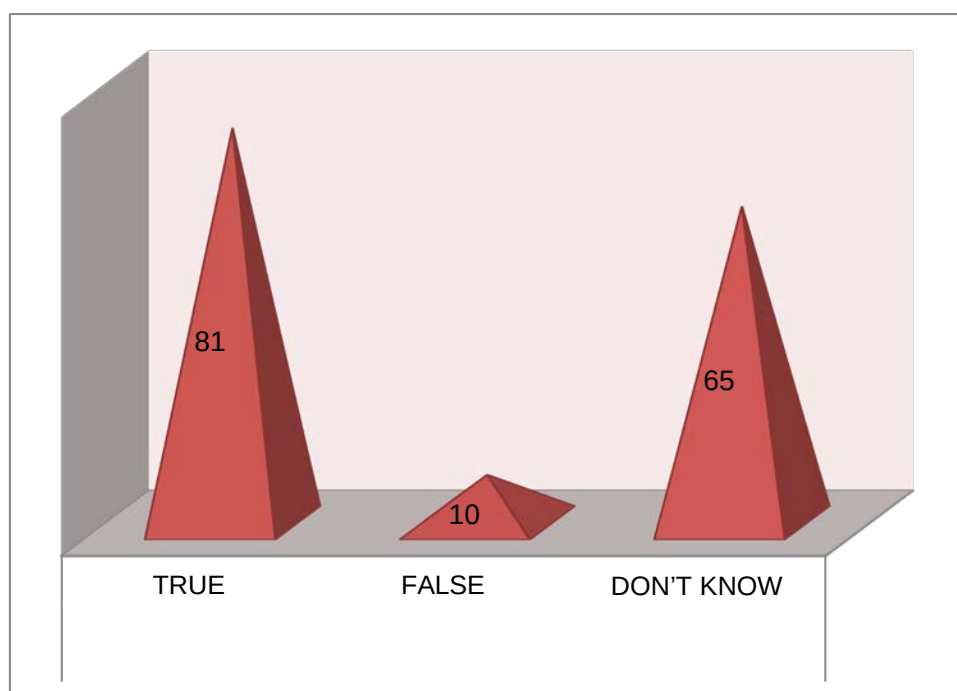
Figure 4.18: Is Nicotine gum recommended for treatment of tobacco dependence in SA



4.4.20.3 Nicotine lozenge

The results illustrate that most respondents 81/156 (51.92%) are aware Nicotine lozenge is recommended for the treatment of tobacco dependence. However more than 41.67% (65/156) of the respondents is not aware whether nicotine lozenge is recommended for treating tobacco dependence in SA. This is a huge number considering that patients rely on knowledge they get from health practitioners hence there is a need to train these officials further.

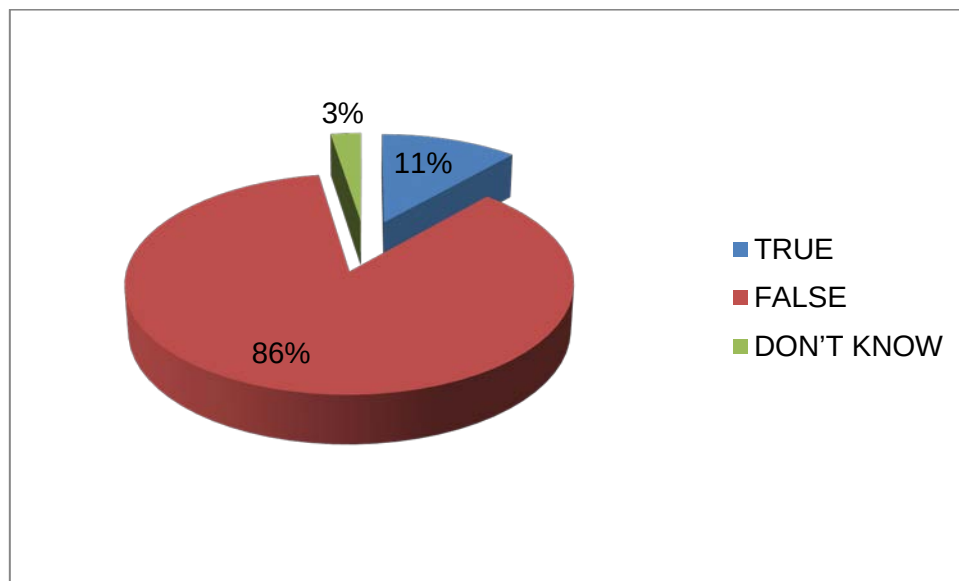
Figure 4.19: Is nicotine lozenge recommended for treating tobacco dependence?



4.4.20.4 Nicotine syrup

Data collected indicate that most of the sampled population is aware that nicotine syrup is not recommended for treating tobacco dependence in SA. This is illustrated in the figure 4.20 below.

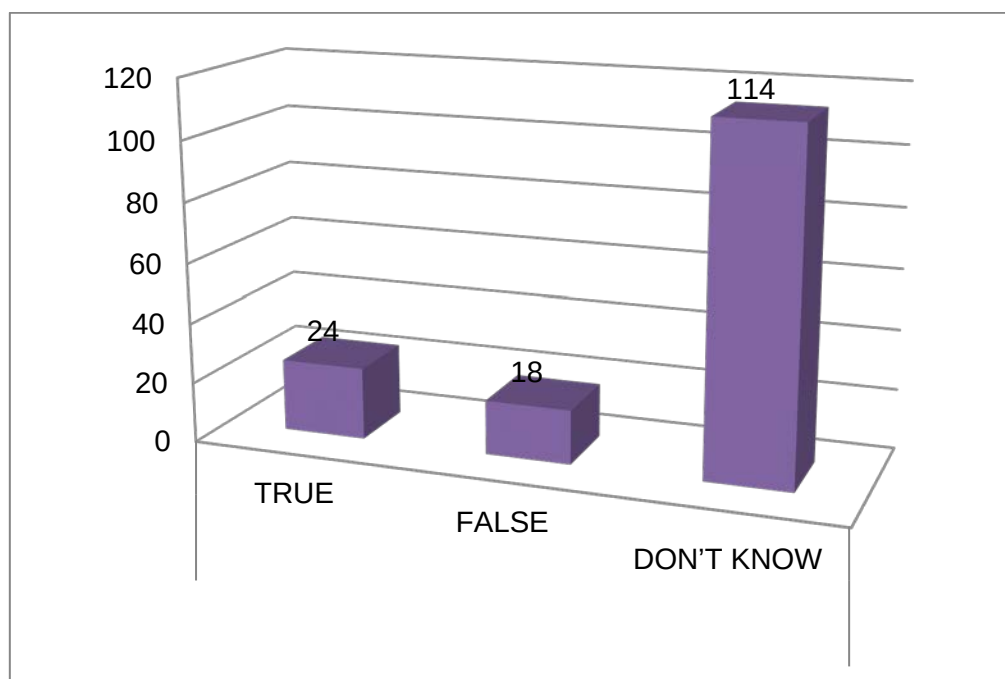
Figure 4.20: Is nicotine syrup recommended or not?



4.4.20.5 Bupropion

Sample results illustrate that most of the respondents (114/156), 73.08% are not aware that Bupropion is recommended for treating tobacco dependence in SA whilst a mere 15.38% (24/156) are aware of its role as an antidepressant and the remaining 11.54% (18/156) are also ignorant of its role. This is illustrated in Figure 4.21 below.

Figure 4.21: Is Bupropion recommended for treating tobacco dependence or not?



This indicates that there is need to further train health workers in-order for them to provide adequate counselling to patients. There is need to give a variety of options to smokers hence the need for these health workers to be acquainted with a variety of medicines on smoking cessation.

4.4.20.6 Varenicline

Varenicline falls under the Nicotine receptor agonists category; which can also be used as an aid in smoking cessation. The results indicate that only 20 are aware of its use in smoking cessation but the vast majority 121 are not aware that it can also be used in smoking cessation. The table below summarises these findings.

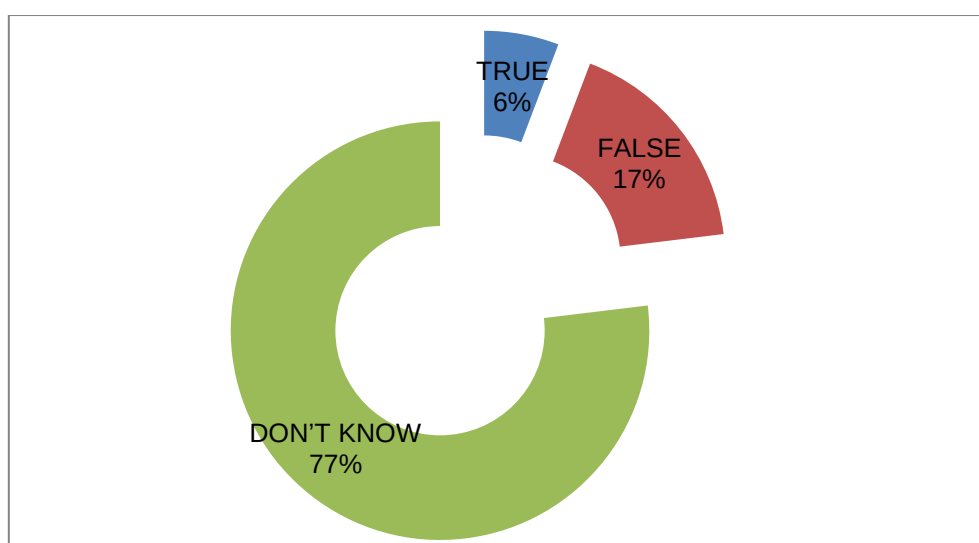
Table 4.11: Is Varenicline recommended for treatment of tobacco dependence in SA?

TRUE	FALSE	DON'T KNOW	Total
20	15	121	156
12.82%	9.62%	77.56%	100.00%

4.4.20.7 Clonidine

The results show that very few health workers are aware of this antidepressant drug and how it can assist in smoking cessation. This is illustrated by the data below:

Figure 4.22: Is Clonidine recommended or not?



4.4.20.8 Electronic cigarettes

Data gathered indicate that most of the interviewees are not aware of the importance of electronic cigarettes in aiding smoking cessation. 82/156 (53%) don't know the importance e-cigarettes in assisting in smoking cessation whereas 47/156 (30%) are aware of their importance in smoking cessation and the remaining 27/156 (17%) refuted that e-cigarettes help in smoking cessation. This is shown in the table below:

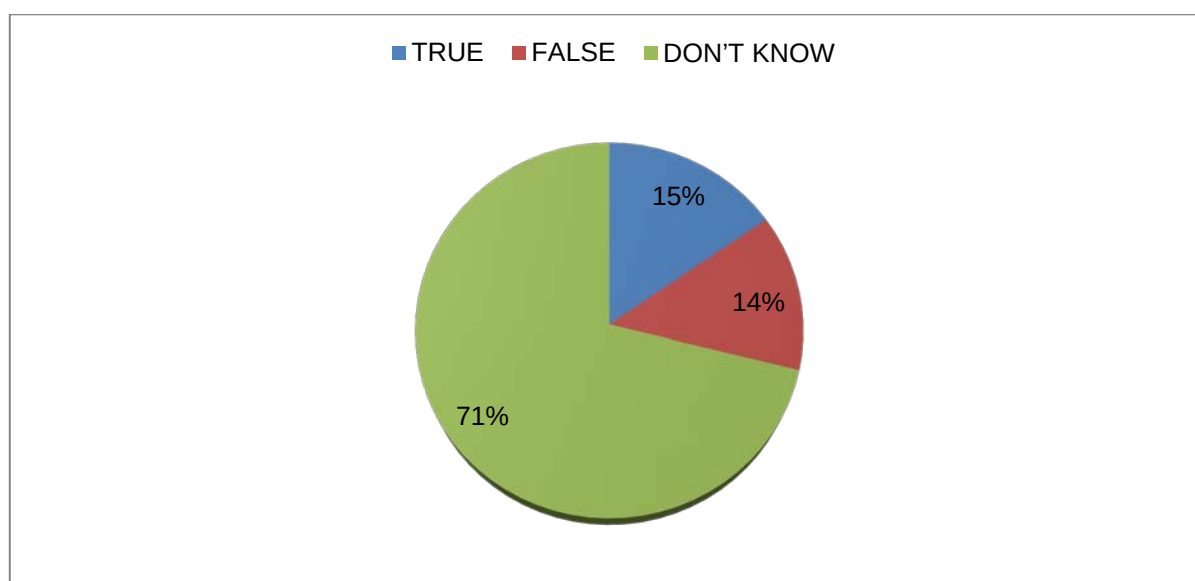
Table 4.12: Are electronic cigarettes recommended for treatment of tobacco dependence in SA?

TRUE	FALSE	DON'T KNOW	Total
47	27	82	156
30.13%	17.31%	52.56%	100.00%

4.4.20.9 Nortryptiline

Interviewees are equally split between those who knew that the drug can be used for aiding smoking cessation, 15% indicated that it is true whilst 14% indicated that it is not. However the overwhelming majority highlighted that they were not aware of the importance of this medicine is aiding smoking cessation. This is shown in the figure below.

Figure 4.23: Is Nortryptiline recommended for treating tobacco dependency or not?:



The overall impression is that most the health care workers interviewed are not aware of the drugs that can be used to aid in smoking cessation. This is a cause for concern and there is need to reverse this trend thorough education and further training.

4.5 ATTITUDES

Attitude can be defined as a predisposition or a tendency to respond positively or negatively towards a certain idea, object, person or situation.⁽⁹²⁾ It has an influence on an individual's choice of action and responses to challenges, incentives and rewards (together called stimuli). Attitude can be formed from a person's past or present environment or condition.

4.5.1 *Smoking cessation counselling is an important part of my job*

Of what significance is smoking cessation to HCP when executing their duties; the results show that 140 (113 + 27) respondents agree that it's necessary for them to do smoking cessation counselling. This is shown in the table below.

Table 4.13: Smoking cessation counselling is a vital part of my job

STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE	TOTAL
113	27	9	4	3	156
72.44%	17.31%	5.77%	2.56%	1.92%	100%

Majority, 140/156 (89.75%) agreed, that counselling is an indispensable part of their duties whilst 7/156 (4.48%) had a contrary view on this. The remaining 9/156 (5.77%) remained neutral on the subject.

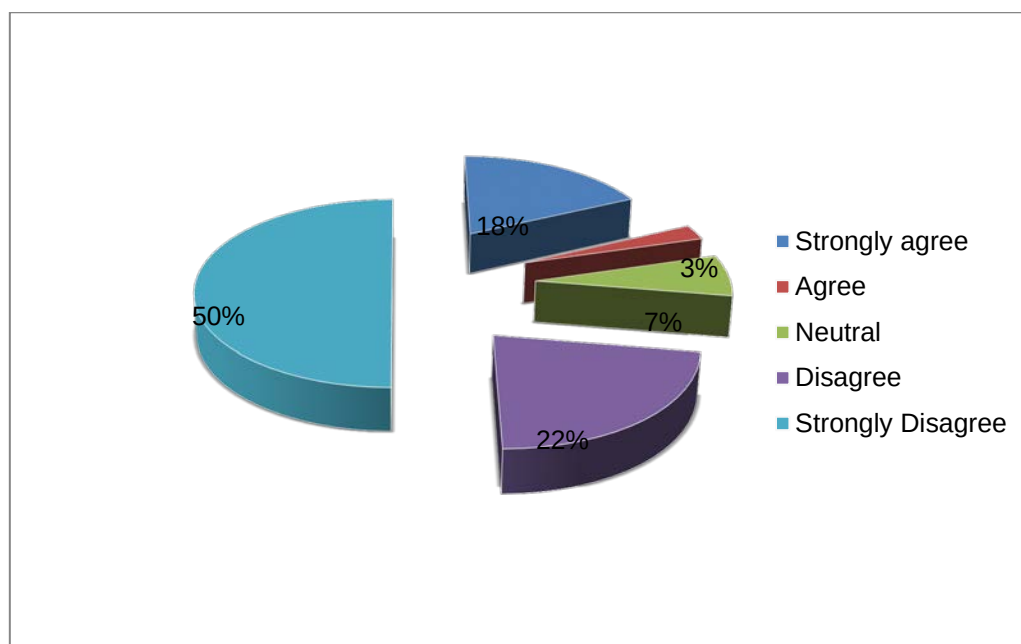
The results clearly show that health workers also have an important part to play in terms of advising patients on the negative health effects of smoking.

4.5.2 *It's not worth discussing benefits of smoking cessation with patients as patients already know they should quit*

The preceding question highlighted that offering smoking cessation advice to patients is essential as indicated by 89.75% (Table 4.13) of health care workers who agreed. This view correlates with the importance of advising patients to quit.

The overall impression is that a health care worker should never assume that a patient knows the benefits of smoking cessation hence it is necessary to discuss the benefits of quitting, this is evident by the 72% (50% + 22%). Only 21% of the respondents agreed that a patient should not be counselled, as they are aware of the benefits of smoking cessation. 7% of those surveyed were neutral on the issue and this can be as a result of lack of knowledge on the benefits of smoking cessation. This following figure shows highlights the view held by interviewees:

Figure 4.24: *It's not worth discussing the benefits of quitting smoking with patients?*



4.5.3 *Smoking is a personal decision which does not concern a health worker*

Health care workers are at the centre of everyday lives of their patients and it is against this background that the interviewer wanted to gather their attitude towards the care and concern of their clients.

HCP should strive to strike a balance between patient's personal boundaries regarding smoking and to what extent they should interfere?

A hundred and seventeen respondents (83 + 34) view smoking status of their patients as a matter of concern for them and it's their duty to offer necessary advice. Thirty two (15 + 17) oppose that view stating that a patient is aware of the consequences of smoking and as such it is a personal decision which should be respected and seven were neutral on the subject.

Table 4.14: Smoking is a personal decision which does not concern a health worker

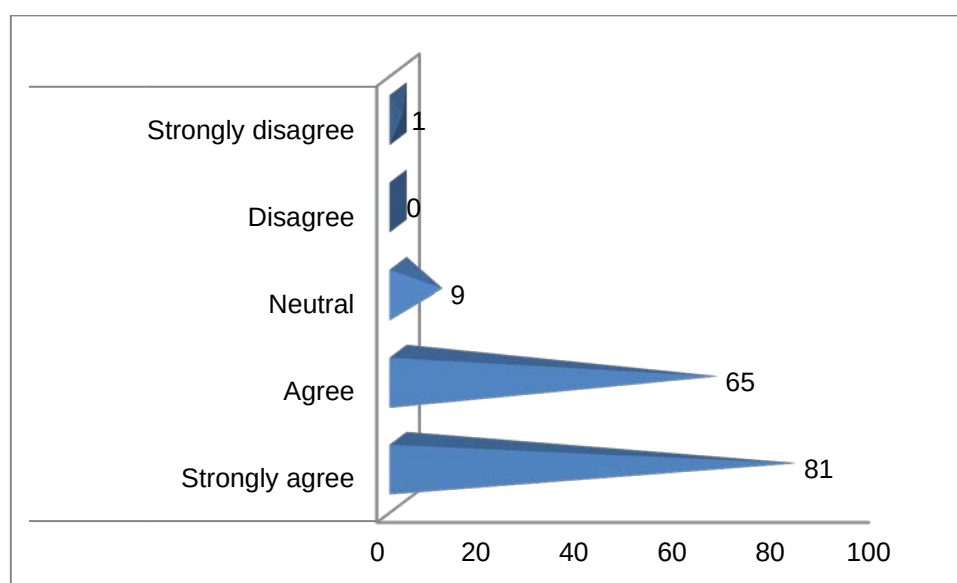
STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE	TOTAL
15	17	7	34	83	156
9.62%	10.90%	4.49%	21.79%	53.21%	100%

4.5.4 Patients acute health problems take precedence over smoking counselling

In light of competing health needs of a patient it is necessary to prioritise between smoke counselling and other health issues. Faced with such a dilemma; how the health workers handle these competing objectives.

The results show a mixed reaction between those who agree to the question and those who disagree.

Figure 4.25: Patient's acute health problem takes precedence over smoking counselling



In general 63/156 (43 + 20) agreed, 53/156 (27 + 26) disagreed and 40/156 were neutral on the subject.

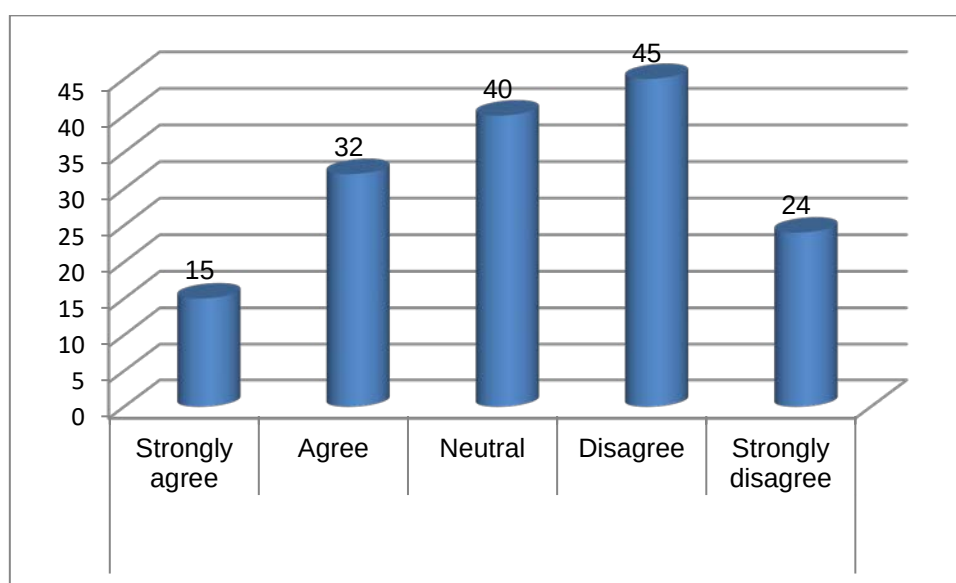
The marginal difference in opinion show the health care workers handle each case individually and there is no set procedure over which one should take precedence over the other.

4.5.5 Patients are not receptive to receiving smoking cessation assistance from healthcare providers

When asked if the advice offered by a counsellor increases a patient's chances of quitting (refer to 4.4.4), 87% conceded that it is indeed true that patients would likely quit after being advised. However the results reflect that 44.23% (69/156) indicated that patients are willing to receive smoking cessation advice from healthcare providers against 30.13% (47/156) who explained that patients are not willing to take smoking cessation advice. The remaining 25.64% (40/156) were not sure whether patients would be willing to receive smoking cessation advice.

These results are summarized in Figure 4.27 below:

Figure 4.26: Patients are not willing to receive smoking cessation assistance from a healthcare provider



4.5.6 Smoking cessation counselling negatively affects my relationship with patients

In-order to ascertain the effect of counselling on patient relationship, the researcher posed this question to the interviewee's in-order to deduce the degree to which this relationship is influenced by such sessions.

It can be observed that majority of those interviewed highlighted that smoking cessation counselling did not have any negative impact on the relationship. Table 4.15 summarises the results.

Table 4.15: Smoking cessation counselling negatively affects one's relationship with patients

STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE	TOTAL
9	13	15	70	49	156
5.77%	8.33%	9.62%	44.87%	31.41%	100%

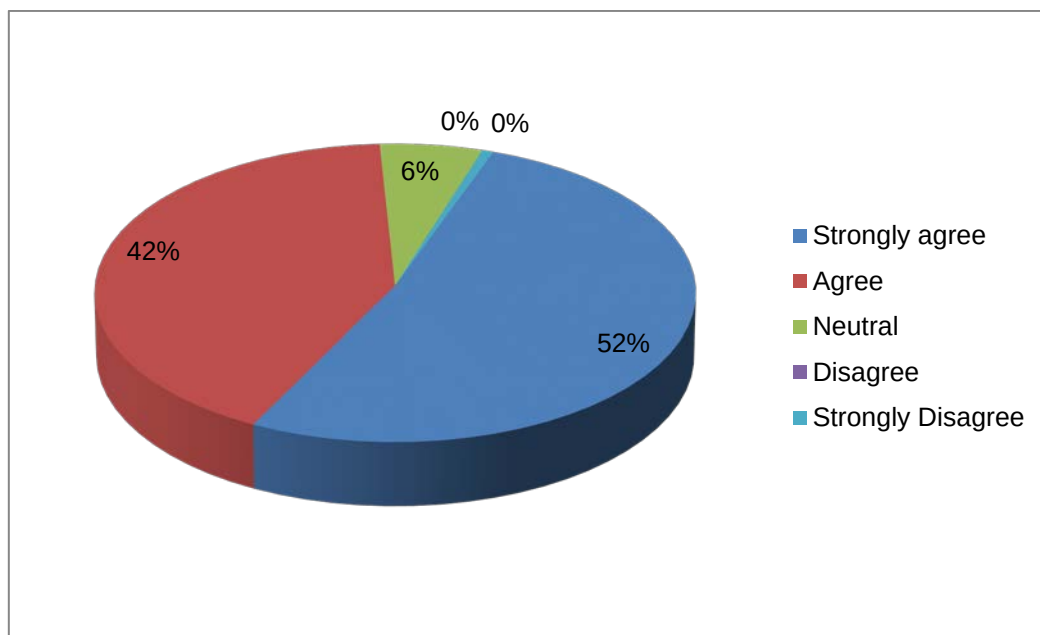
A mere 22/156 (9 + 13) were in agreement with the question at hand whilst 119/156 (70 + 49) disagreed with the notion. The remaining 15 were not sure how smoking cessation could influence their relationship with their clients. From the analysis it is

safe to conclude that this group of respondents think that smoking cessation counselling does not have a bearing on the relationship that exists between a healthcare provider and the patient.

4.5.7 *Clinicians should discuss smoking cessation with patients even if it is not the reason for the visit.*

Is there a fixed time for discussing smoking cessation with patients or clinicians should take advantage of every visit to discuss smoking cessation with patients. The respondents overwhelmingly agreed that there was no set time frame but rather clinicians should maximize each patient's visit to inform him about smoking cessation. This reflects that healthcare providers endeavour to expose their patients to smoking cessation advice whenever the opportunity arises. Figure 4.28 below highlights these results:

Figure 4.27: Smoking cessation advice should be offered whenever the opportunity arises

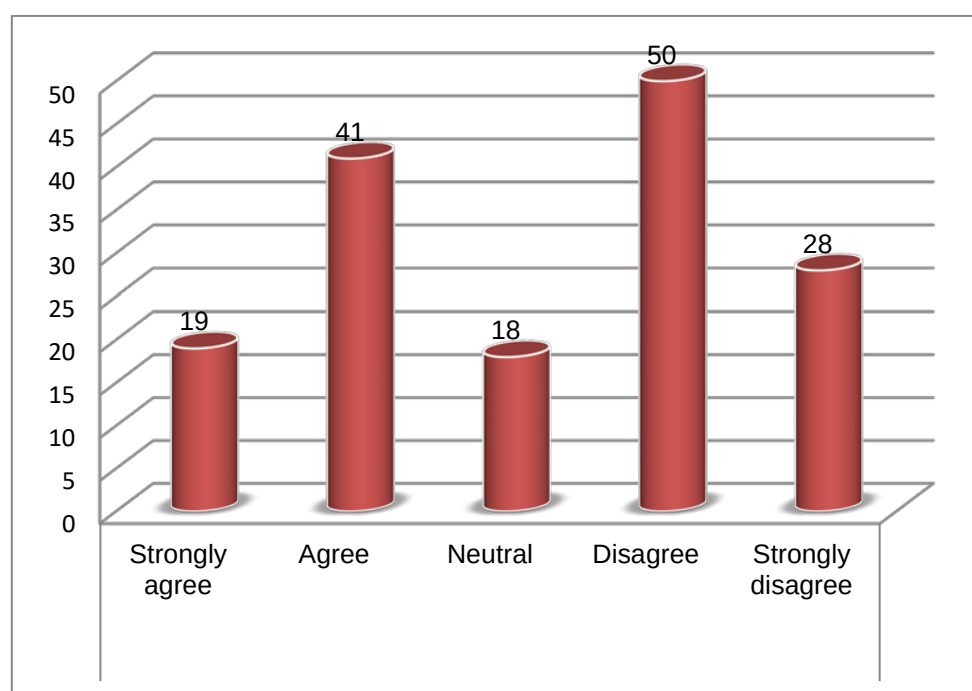


4.5.8 *I do not have sufficient time to offer advice and counselling to all patients who smoke during routine consultation.*

The responses gathered indicate that 78 (50 +28) of the health care providers that they don't have time to advice and counsel their patients on smoking cessation during routine visits, even though 89.75% had agreed that smoking cessation counselling is an integral part of their job (refer to 4.5.1); 60 (41 + 19) respondents said that they had insufficient time to counsel and advise their patients on smoking cessation during routine visits and the remaining 18 were neutral on the matter.

It is thus necessary to ensure that these workers make time in their busy schedule to include counselling and advice to patients on smoking cessation. The results are shown in Figure 4.29.

Figure 4.28: I don't have time for counselling patients on smoking cessation during routine visits



4.5.9 *It is uncomfortable to counsel my patients on smoking cessation*

When previously asked about what they feel about a patient's smoking status, (refer to 4.5.3) 75% responded that it is their duty to assist a patient by advising on smoking cessation. As a follow up question on how they felt with counselling patients on

smoking cessation; 76.92% highlighted that they felt comfortable with discussing smoking cessation with their clients. Only 13.46% said they feel uncomfortable with such discussions whereas 9.62% are neutral on the subject. The following data summarises the responses:

Table 4.16: I am uncomfortable to counsel my patients on smoking cessation

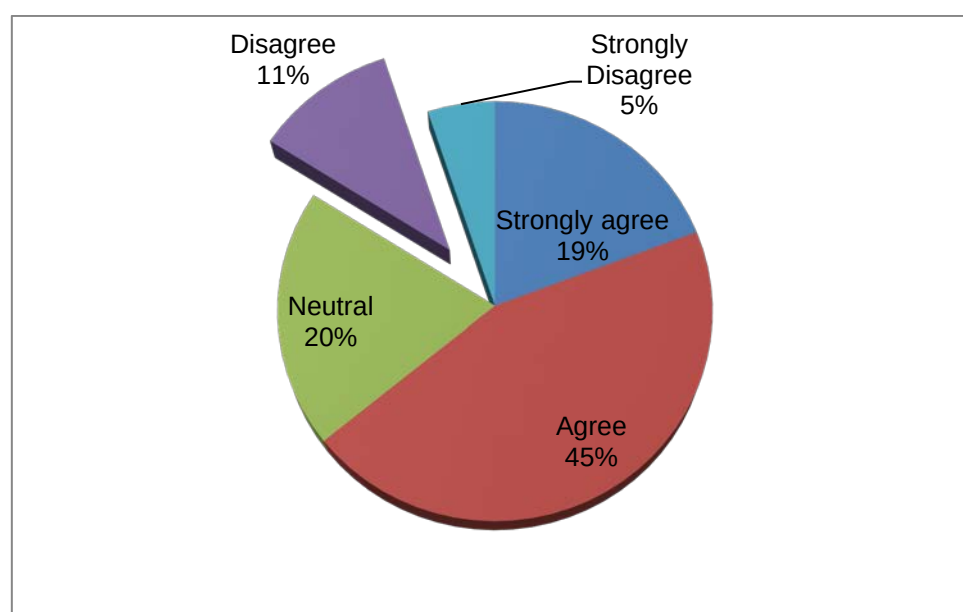
STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE	TOTAL
10	11	15	60	60	156
6.41%	7.05%	9.62%	38.46%	38.46%	100%

The vast majority view smoking cessation counselling as an integral part of their duties.

4.5.10 Patients don't comply with advice given on smoking cessation

Once the advice has been disseminated, how do patients act on it? This is a critical question that seeks to understand the level of compliance among patients on advice given. The data shown in Figure 4.30 indicates that 64% of respondents agree that patients do not act on the advice given whereas 16% disagree with that assumption.

Figure 4.29: Patients do not comply with advice given on smoking cessation



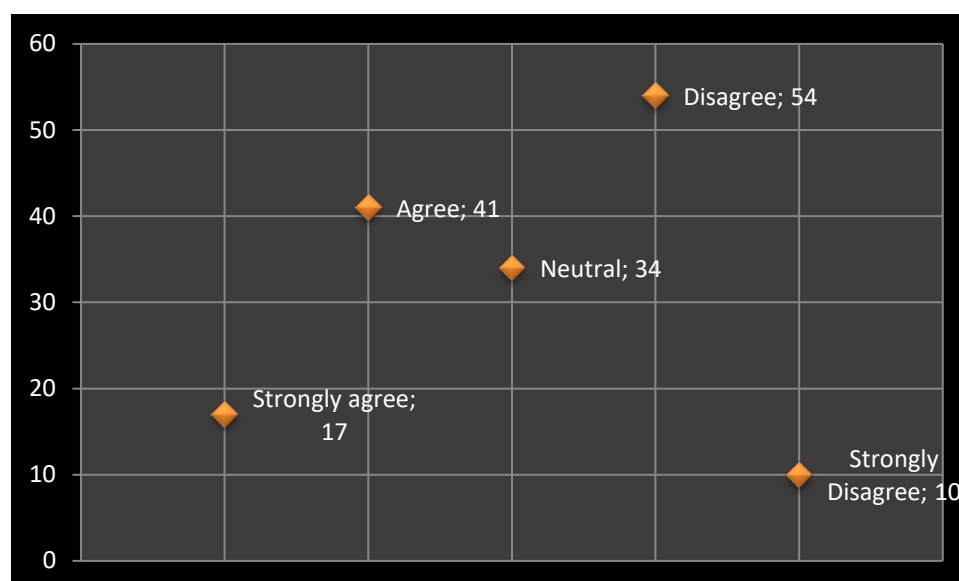
Non-compliance with instructions on quitting smoking is a cause for concern. More that needs to be done in-order encourage patients to quit smoking.

4.5.11 Patients are not interested in receiving smoking cessation information

Patient's attitude influence to a great extent the willingness to receive information on smoking cessation, negative attitude towards smoking cessation will negatively affect their ability act on the information given.

Of the 156 people interviewed 58 (41 + 17) indicated that patients tend to have a negative attitude towards smoking cessation information and 64 (54 + 10) highlighted that patients have a positive attitude on the information given. These marginal differences show that it will take a lot of intervention to change the negative attitudes from patients. Thirty four respondents remained neutral on the matter.

Figure 4.30: Patients lack interest in smoking cessation information



4.5.12 Smoking status should be included as one of the vital signs for patients attending primary care facilities

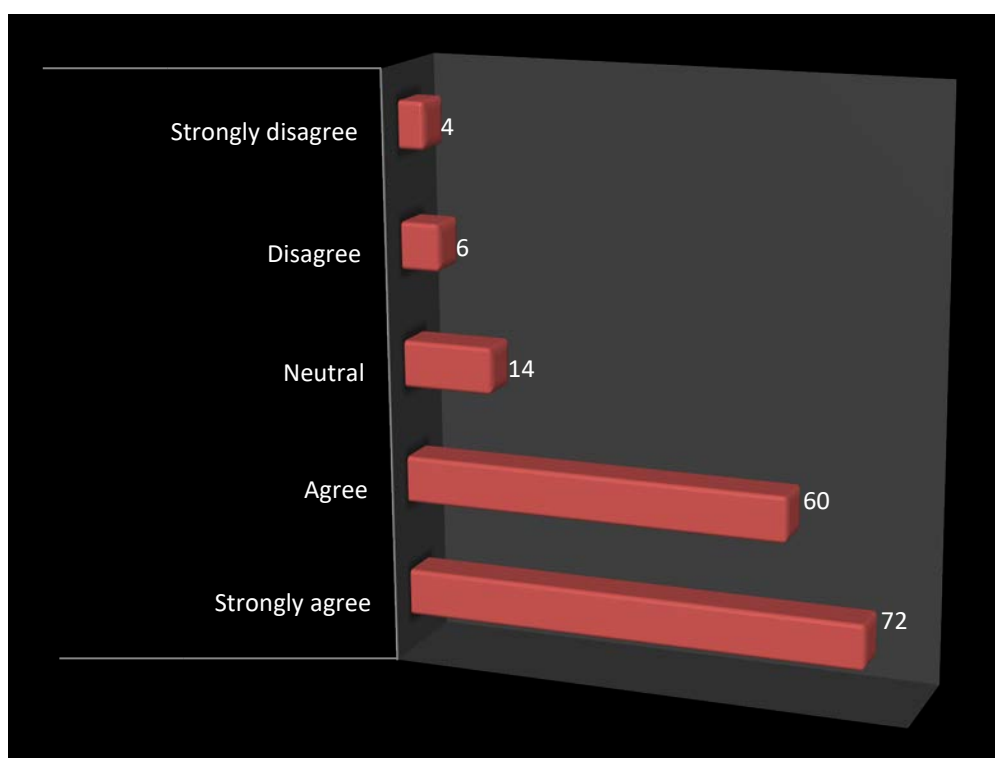
Given that there are an estimated 7 million smokers in South Africa,⁽⁶⁶⁾ it was necessary to establish the views of healthcare workers on whether smoking warrants enough attention to be included as one of the vital signs to be assessed during primary care.

The results from the interview point out that most healthcare providers feel that it is necessary to include it to enable them to provide the necessary counselling and advice to patients.

The study shows that 132/156 which accounts for 84.62% agree that it needs to form part of the vital signs for primary care and 10/156 which consists of 6.41% disagree with this view with the remainder 14/156 which comprise of 8.97% not sure whether they should be included or not.

The data is summarised in Figure 4.32 below:

Figure 4.31: Smoking status should be included as one of the vital signs for primary care



4.6 PRACTICES

4.6.1 Do you ask patients about their smoking status?

A practice can be defined as a method, procedure, process or rule that is used in a particular field or profession.⁽⁸⁹⁾ It's important to ascertain the procedures followed by

healthcare workers in smoking cessation. The researcher sought to establish the frequency with which these practices were done in the preceding 30 days.

When asked about how often they asked patients about their smoking status, 9/156 revealed that they did not make any enquiries regarding their patient's health with 80/156 saying they only asked at sometimes with 67/156 saying that they would always ask their patients these questions.

Table 4.17: Do you ask patients about their smoking status?

NEVER	SOMETIMES	ALWAYS	TOTAL
9	80	67	156
5.77%	51.28%	42.95%	100%

Table 4.18: Comparing the practices between senior clinicians i.e. medical officers and professional nurses

CATEGORY	NEVER	SOMETIMES	ALWAYS	TOTAL
Medical officer	1	9	8	18
Professional nurse	5	46	43	94

One medical officer of the eighteen interviewed said that he never ask patients about their smoking status (this represents 0.64%), whilst 50% (9/18) of the medical officers indicated that they often times make such enquiries with the remaining 44.44% (8/18) made it a habit always ask their patients such questions.

The numbers are not much different to professional nurses 5 of whom indicated that they do not ask such questions and 46 sometimes their patients whereas 43 always made it a point to enquire from their patients. There were six clinicians (1 + 5) who never asked such questions from their patients, this could stem from the fact that they could be smokers themselves, which could be causing bias against asking such questions.

4.6.2 Do you ask patients on how many cigarettes they take a day?

This question was meant to assess the level of nicotine dependence among patients. The levels of dependence from low to high risk can then be used the sort of cessation intervention required.

Figure 4.32: Do you ask patients how many cigarettes they smoke a day?

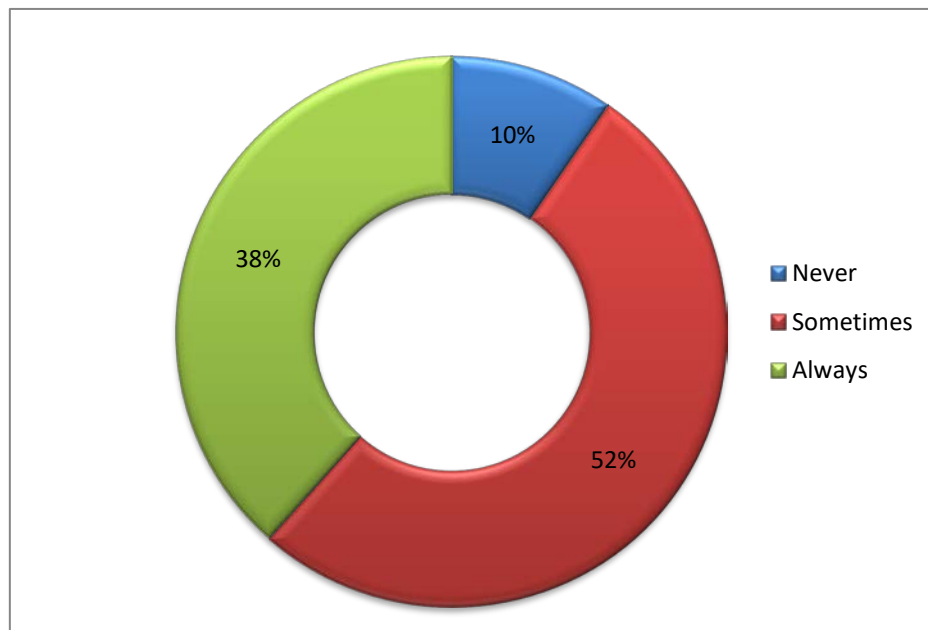
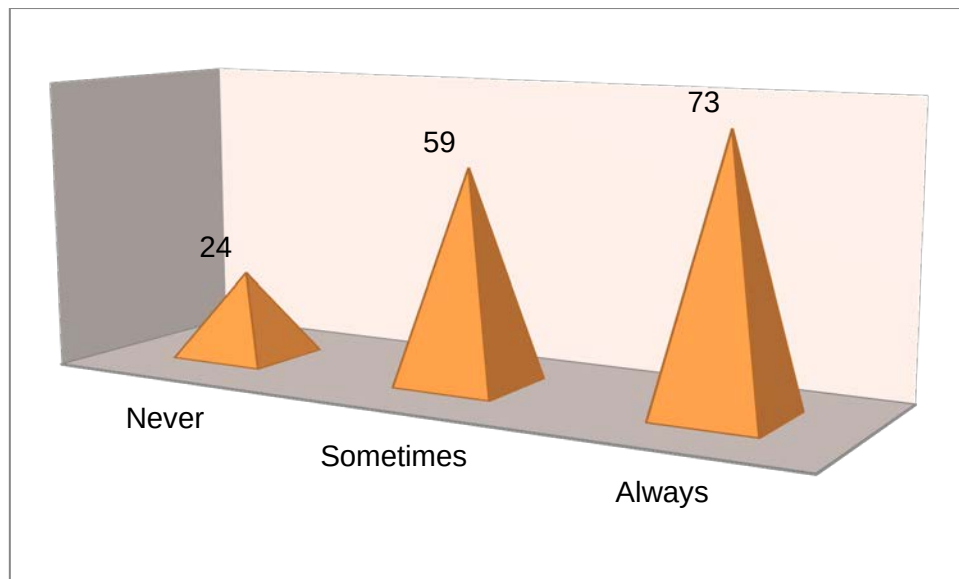


Figure 4.33 above highlights that 15/156 (9.62%) health care providers never asked their patients about the number of cigarettes they smoked per day whilst 81/156 (51.92%) were inconsistent in their enquiries while the remaining 60/156 (38.46%) made sure they enquired of their patients.

4.6.3 Do you record the patients smoking history in their medical records?

Any smoking cessation intervention is informed by the level of documentation kept. It is against this background that the researcher sought to establish the practice of healthcare workers regarding their patient's smoking history record keeping. The results show that there is need to encourage health workers to consistently record smoking history of their patients.

Figure 4.33: Record the patients smoking history in their medical records



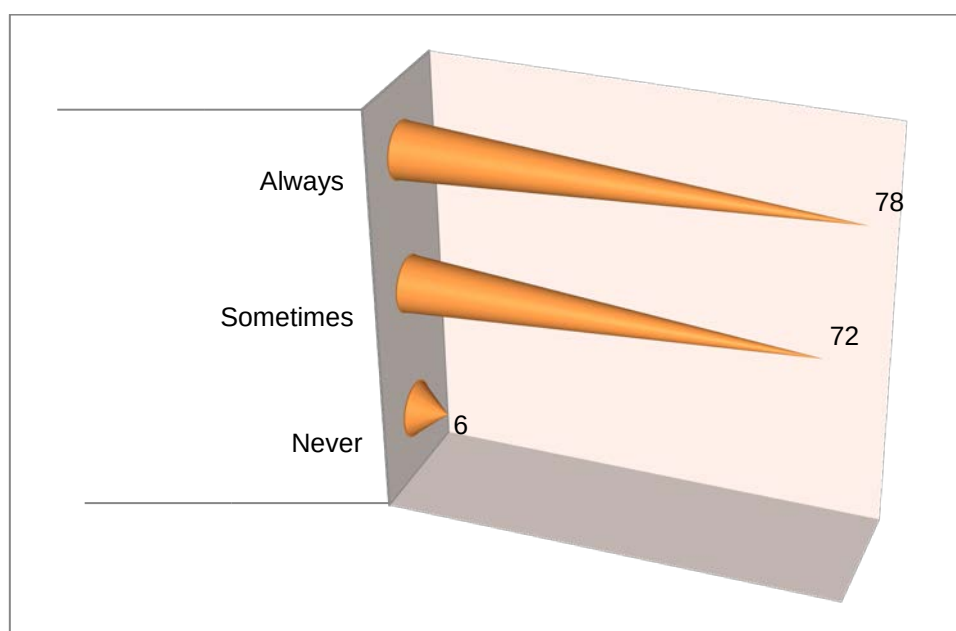
4.6.4 Discuss the risks of smoking as well as benefits of quitting smoking

It is essential for healthcare providers to give the necessary knowledge, this has been established (refer to 4.4.10) where 54% said that there is need to assist smokers in quitting smoking) that most patients will require assistance in knowledge in order for them to quit smoking.

Seventy eight (50%) of the respondents indicated that they always discuss the risks and benefits of smoking cessation but 6 (3.84%) HCP highlighted that they do not hold such discussions with their patients. A huge percentage 46.15% (72/156) highlighted that they do not hold such discussions with their patients on a regular basis. There is need to encourage these clinicians to regularly conduct such sessions if the country is to experience further reductions in people who smoke.

This information is shown in Figure 4.35 below.

Figure 4.34: Do you discuss the risks and benefits of quitting smoking with patients?



The interviewer also made a comparison on this practice between senior medical personnel i.e. medical officers and professional nurses. The results are summarised below:

Table 4.19: Comparing the practice of senior medical officers and professional nurses on discussing benefits of quitting smoking

CATEGORY	NEVER	SOMETIMES	ALWAYS	TOTAL
Medical officer	0	7	11	18
Professional nurse	5	42	47	94

Eleven of the medical officers said they always discussed the benefits of smoking cessation with their patients whilst seven said they discussed it at times. This is positive compared to forty two of the professional nurses who always discussed with their patients and five who never discussed the risks of smoking with their patients.

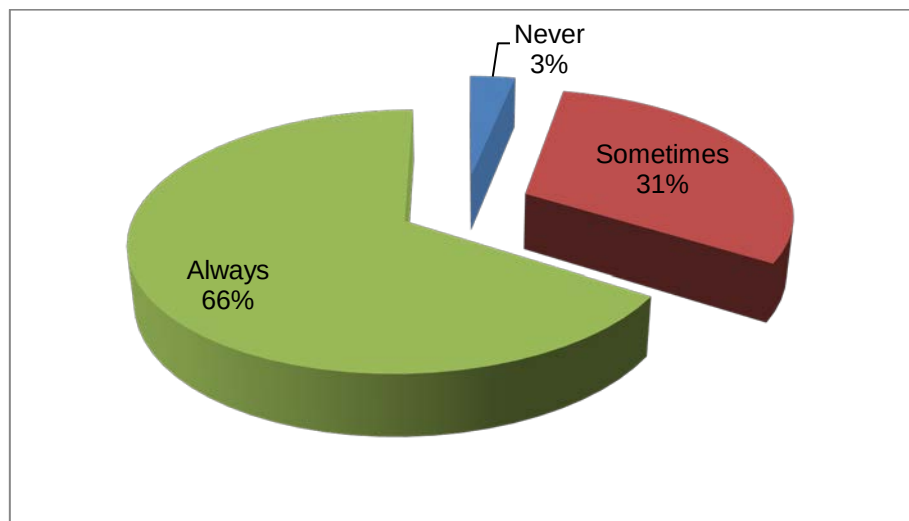
As senior medical practitioners, professional nurses should take a leading role in discussing the risks and benefits of smoking with their patients.

4.6.5 Do you advise patients to quit smoking!

This is in line with question 20 where 140 respondents highlighted that smoking cessation advice is an important part of their jobs. The information gathered show that 66% always advise their patients to quit smoking which is encouraging, the 31% highlighted that they offer such advice though not on a regular basis; however 3% of those interviewed said they never advised their patients to quit smoking in the past month.

There is need to build on such positive results and bring on board those indicated that they do not offer such advice to patients. This data is represented in the figure below:

Figure 4.35: Do you advise patients to quit smoking?



It was also necessary to consider the practices of the medical officers and professional nurses in whether they counsel their patients to quit smoking. The data shown in Table 4.20 below suggests that 14/18 (77.78%) of the medical officers always advise their patients to quit smoking compared to 59/94 (62.77%) of the professional nurses who practice it at all times.

Table 4.20: Comparing the practice of medical officers and professional nurses on advising patients to quit smoking

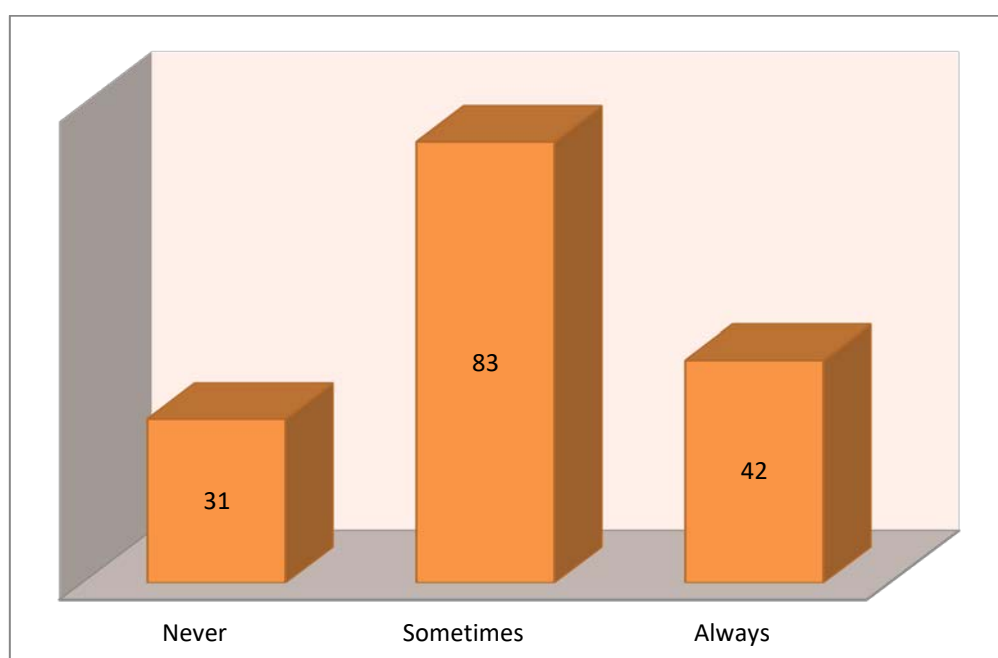
CATEGORY	NEVER	SOMETIMES	ALWAYS	TOTAL
Medical officer	1	3	14	18
Professional nurse	2	33	59	94

4.6.6 Do you ask patients about previous attempts to quit smoking?

This question was aimed at reviewing the nicotine dependence levels in patients, smokers can be categorized as being low dependent or highly dependent on nicotine. Data gathered can then be used to determine the nicotine dependence levels among patients and the level of intervention strategies to be employed on the different cases.

The survey revealed that 31 of the healthcare providers never asked their patients such questions and 83 asked occasionally with the remaining 42 always asking their patients this question. This information is shown in the graph below.

Figure 4.36: Do you ask patients about their previous attempts to quit smoking?



4.6.7 Do you assess the willingness of a patient to quit smoking?

Interviewee's responses showed that only 33.33% always asked patients if they attempted to quit smoking previously. The majority, (48.08%) were not persistent in making enquiries in this regard and 18.59% said they never asked their patients if they attempted to quit smoking.

This is the first and crucial question in effort to encourage patients to quit smoking. The table below shows the results from the survey:

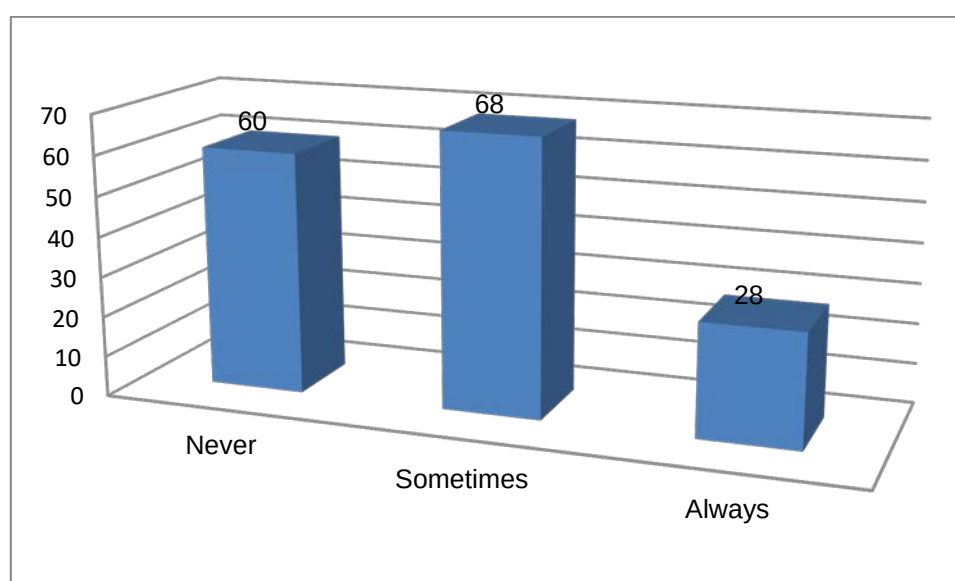
Table 4.21: Do you assess the willingness of a patient to quit smoking?

NEVER	SOMETIMES	ALWAYS	TOTAL
29	75	52	156
18.59%	48.08%	33.33%	100%

4.6.8 Do you encourage the use of nicotine replacement therapy?

Smokers who are motivated and have a low dependence on nicotine could be prescribed the NRT.⁽⁹²⁾ Despite NRT's effectiveness in reducing nicotine dependency the data gathered from interviews showed that 60/156 healthcare workers never encouraged their patients to use NRT whilst 68/156 rarely encouraged their patients and 28/156 always encouraged their patients to take NRT.

Figure 4.37: Do you encourage use of NRT?



There is need for the healthcare workers to always encourage patients to use every means available to quit smoking.

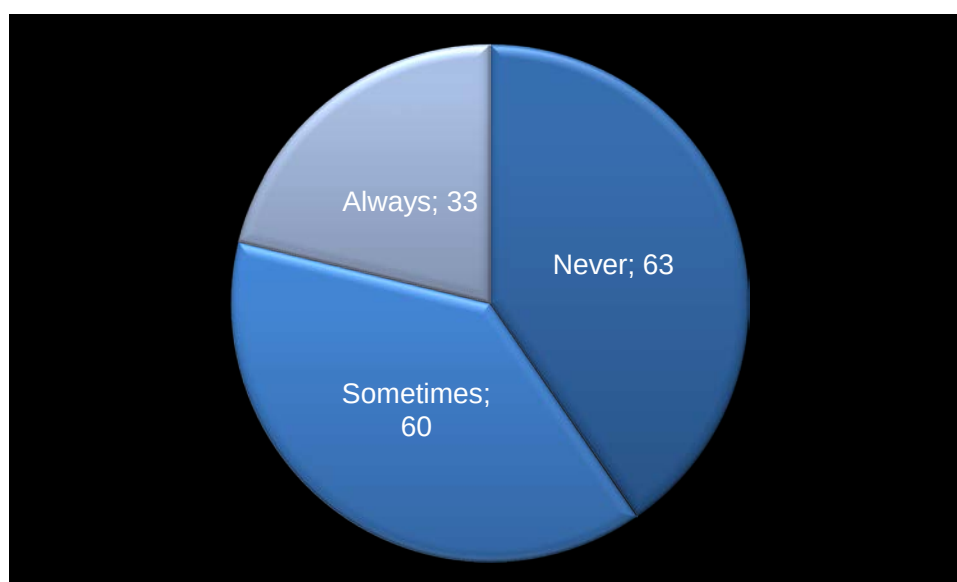
4.6.9 Do you assist a patient to set up target quit date?

Having identified the nicotine dependence levels, there is need to encourage patients to commit themselves to a target by setting a quit date^(89,66) to assist the patient in making a self-evaluation and ask for assistance where possible in order to attain his or her smoking cessation goals.

The results of the survey show that 63 of the 156 interviewees never give the necessary support to in assisting a patient in setting up a quit date. 60 of the 156 do assist thought not a regular basis and only 33 of the 156 highlighted that they always give the necessary support in assisting a patient to set up a quit date.

There is need to for healthcare workers to help patients by setting up a quit date.

Figure 4.38: Do you arrange support for setting a quit date?



4.6.10 Arrange follow up visits to discuss quitting?

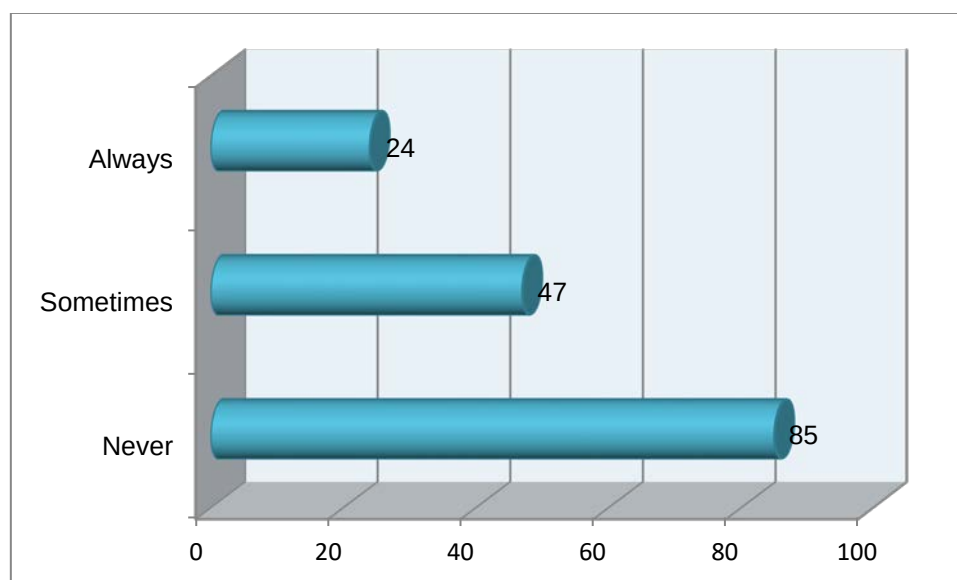
In a bid to reduce smoking in the country there is need to take every possible steps to encourage patients to cease smoking. The researcher sought to establish the

frequency with which clinicians went the extra mile in ensuring that their patients quit smoking, this includes arranging follow-up visits to encourage smoking cessation.

In cases where the clinician is unable to arrange follow-up visits, there is need to give pamphlets with the requisite information on smoking cessation.

The data gathered shows that only 24 of the interviewees always made follow-up visits whilst 85 never made any arrangement to make follow-up visits. This is a huge number and a cause of concern as it may result in a relapse among those employees who show willingness to quit but don't get the necessary support.

Figure 4.39: Do you arrange follow-up visits to discuss quitting smoking?



4.6.11 Do you encourage patients not to smoke in presence of infants and children?

Passive smoking increases the risk of cardiovascular disease in adults and respiratory disease, particularly among children.^(32,66) It is encouraging to note that 73.72% of the clinicians always encourage their patients to avoid smoking in the presence of infants and children; 17.31% of the population practice this and 8.97% never encourage their patients to practice good smoking behaviour.

It is imperative to encourage healthcare practitioners to always inform their patients about the dangers of passive smoking especially to infants and children.

Table 4.22: Do you encourage patients to avoid smoking in the presence of infants and children?

NEVER	SOMETIMES	ALWAYS	TOTAL
14	27	115	156
8.97%	17.31%	73.72%	100%

The practices of medical officers and professional nurses are important in guiding the junior medical staff in following the good practices of the profession. In light of this it was necessary to evaluate the practices in certain instances.

The frequency table below shows that 89% of the medical officers encourage their patients to avoid smoking in front of infants and children compared to 70% in professional nurses.

Table 4.23: Comparative analysis between medical officers and nurses on Practise 42

	Medical Officers		Nurses	
Frequency	Number	Percent	Number	Percent
Never	1	5.56%	8	8.51%
Sometimes	1	5.56%	20	21.28%
Always	16	88.89%	66	70.21%
TOTAL	18	100.00%	94	100.00%

4.7 BARRIERS

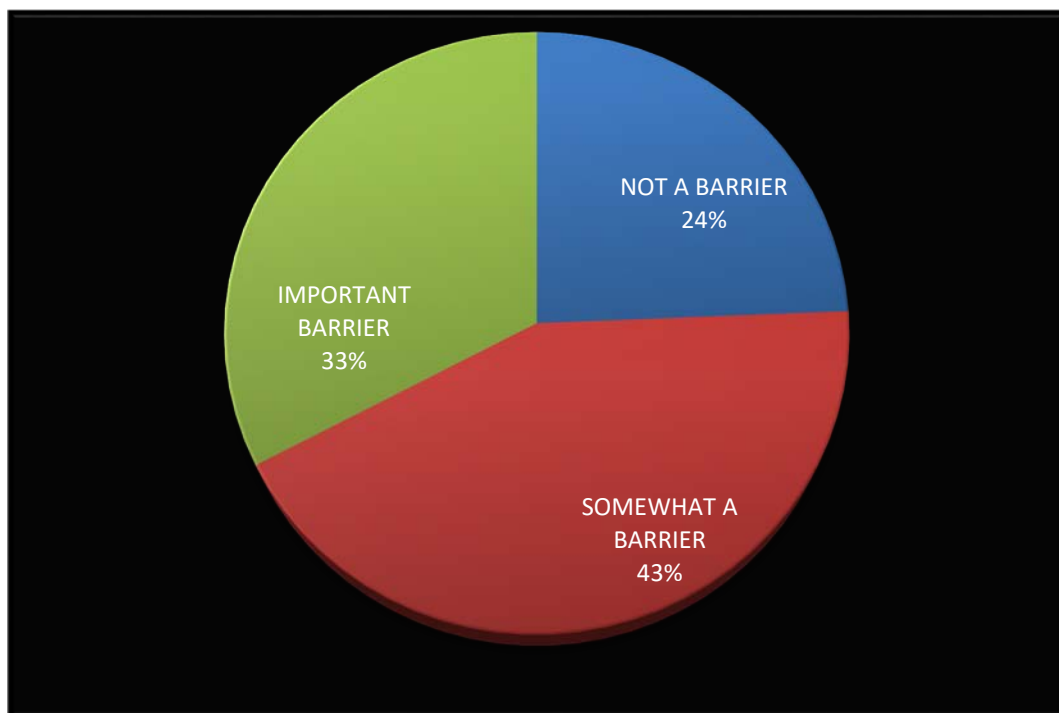
In pursuit of improving or assisting patients, there is need to highlight any obstacles that may prevent these objective from being achieved. The researcher posed questions on how the barriers influence clinicians from assisting smokers in quitting smoking and their response is reported on.

4.7.1 Lack of time

Time is a critical element when conducting counselling thus it was necessary to establish how clinicians are affected by time in smoke helping patients to quit smoking.

The results show that only 38 of the 156 are not affected by time and 67 out of 156 indicated that they were affected to some extent whereas the remaining 51 of the 156 highlighted that it's a major barrier in trying to assist patients to quit smoking.

Figure 4.40: Is lack of time a barrier in terms of counselling patients to quit smoking?



4.7.2 Lack of community-based tobacco cessation treatment centre to refer patients to

Community-based tobacco cessation treatment centres play a fundamental role in assisting patients to quit smoking thus it is imperative to ensure there are adequate community organisations to refer smokers to.

Table 4.24: Lack of community organisations to refer patients to

NOT A BARRIER	SOMEWHAT A BARRIER	IMPORTANT BARRIER	TOTAL
17	46	93	156
10.90%	29.49%	59.62%	100.00%

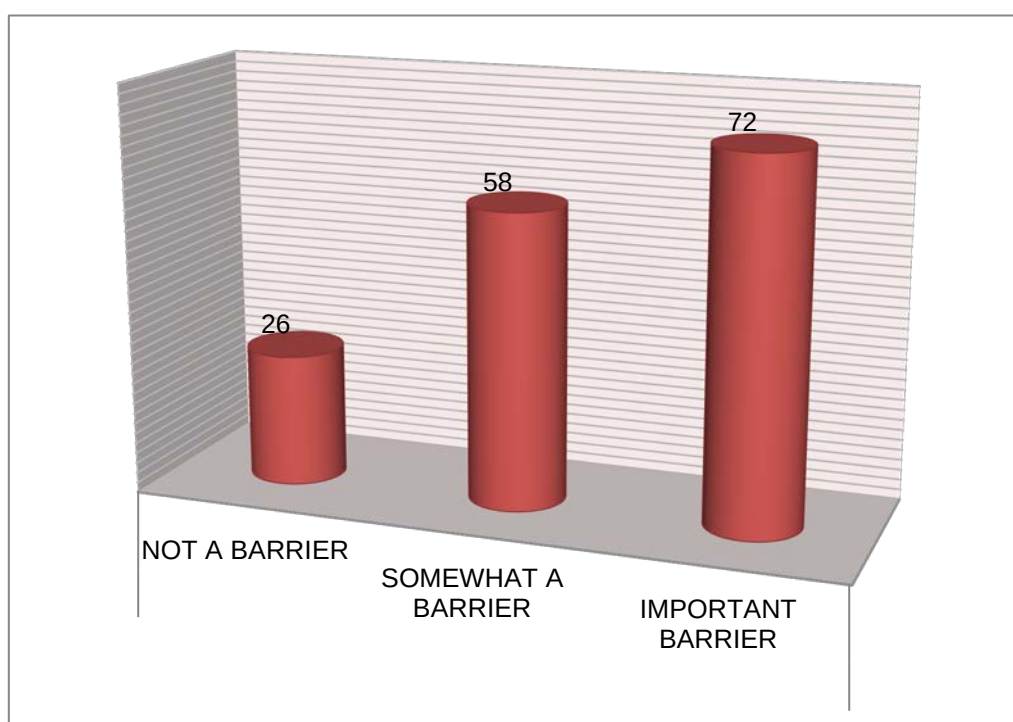
Table 4.24 above shows that there is a lack (59.62%) of such organisations in communities which further hampers efforts to assist patients to quit smoking.

4.7.3 Lack of patient educational material (Pamphlets/brochures)

These educational tools are essential especially for patients who are motivated to quit smoking but do not have time for smoking cessation counselling. Clinicians who do not have sufficient time to conduct a smoking cessation counselling session can also make use of these materials to encourage their patients to quit smoking.

It is however of concern to note that the majority of those interviewed highlighted that there is lack of patient educational material to provide patients with.

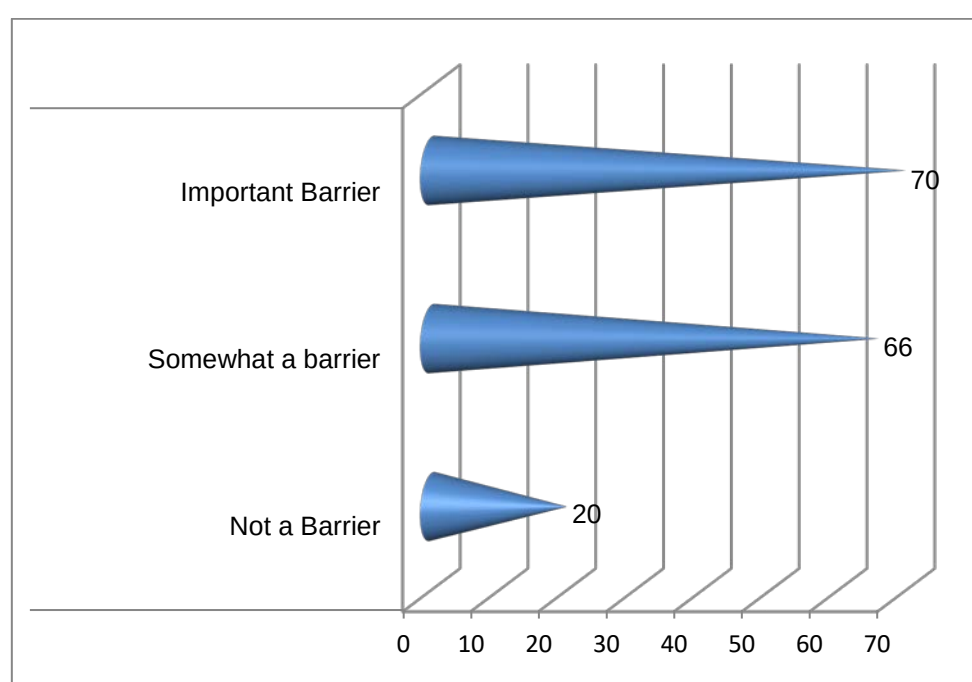
Figure 4.41: Lack of patient educational material as a barrier



4.7.4 Lack of knowledge and training on smoking cessation counselling

Without proper knowledge and training, clinicians cannot adequately provide counselling services to patients on smoking cessation. This barrier can result in the healthcare provider either avoiding these sessions or providing incorrect information on the options available for smoking cessation (refer to Table 4.16). The results shown below suggest that there is still need for further training to empower the clinicians with the requisite knowledge to effectively discharge their counselling role.

Figure 4.42: Lack of knowledge and training as a barrier to smoking cessation counselling



4.7.5 Lack of smoking cessation guidelines at health facilities

Smoking cessation guidelines serve as a tool that can be followed in assisting patients to quit smoking hence they should be readily available at healthcare facilities. It is however of concern to note that 100 of the respondents highlighted that lack of these guidelines was a major barrier in executing their duties. Seventy respondents of the one hundred who said that it is an important barrier were aware of the existence of the RSA guideline and the impact that it has on improving knowledge levels. Forty two said that they were affected only to a certain extent by their shortages with the remaining 14 indicating that it was not a major barrier.

Table 4.25: Lack of smoking cessation guidelines

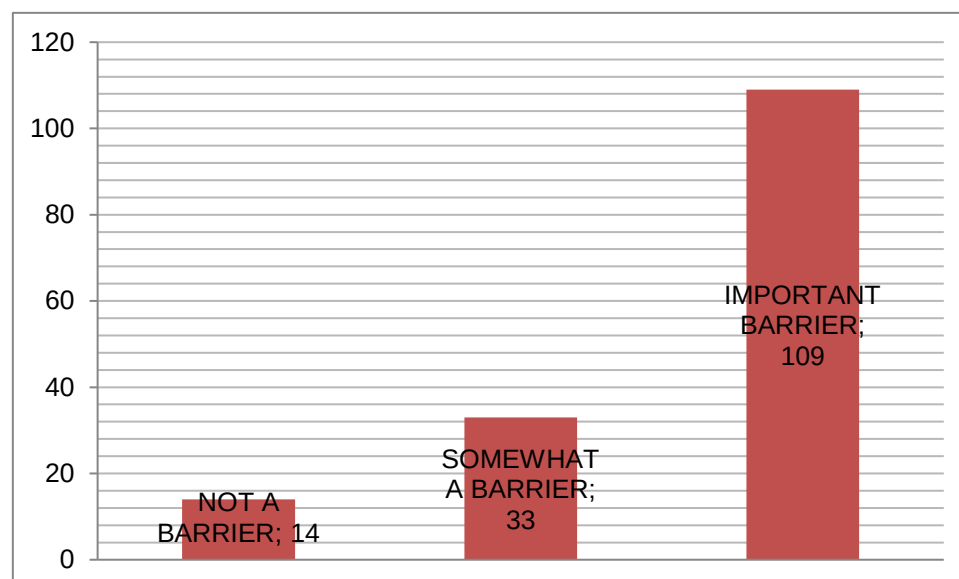
NOT A BARRIER	SOMEWHAT A BARRIER	IMPORTANT BARRIER	TOTAL
14	42	100	156
8.97%	26.92%	64.10%	100.00%

4.7.6 Lack of pharmaceutical medication for NRT

Studies conducted show that NRT is useful for addressing nicotine withdrawal, ⁽¹⁹⁾ it is against this background that the interviewer sought to establish if local pharmacies have the medication for nicotine replacement therapy.

The data gathered from the research shows that 109/156 of the respondents concur that there is lack of pharmaceutical medication for NRT. This is a huge number, which accounts for 70% of those interviewed.

Figure 4.43: Lack of pharmaceutical medication for NRT

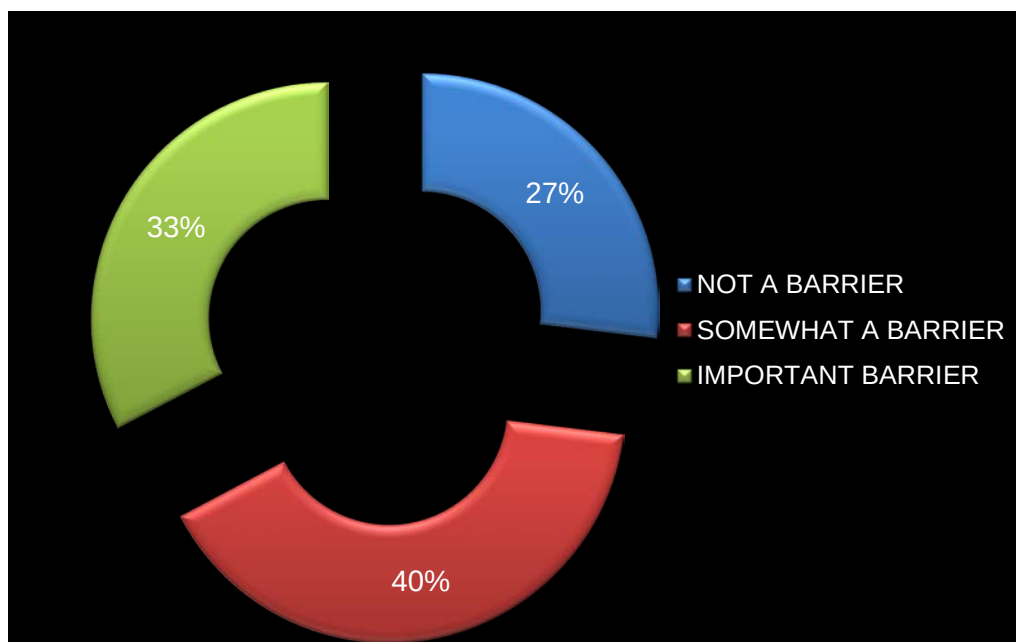


All efforts that are undertaken by clinicians in assisting patients to quit smoking will go to waste if the pharmacies are not adequately stocked with the relevant medication to assist such patients. Therefore there is need for all stakeholders to come together and assist in alleviating this problem.

4.7.7 Patients have more immediate health problems to be addressed

This is an important question which tries to address which treatment precedes the other. Similar to Figure 4.25, some clinicians as well as patients may regard smoking cessation counselling as a process which may take a long time thus it may be set aside for other pressing health matters. The diagram below also show that most patients are willing to set aside smoking cessation counselling to attend to other immediate health concerns which make it a huge barrier in smoking cessation counselling.

Figure 4.44: Patients have more immediate health problems to be addressed



4.7.8 Some healthcare providers are smokers themselves

When asked about their smoking status, 10% of the healthcare providers said that they currently smoke (refer to 4.4.5). The researcher was concerned that this may cause a bias against smoking cessation counselling or patients may not be willing to quit if the health care provider is a smoker himself. This is confirmed by a 60.90% of the respondents who said that it is an important barrier in their attempt to assist patients to quit smoking; 27.56% highlighted that it affects their efforts to some extent and the remaining 11.54% this does not affect their efforts.

Table 4.26: Some healthcare providers are themselves smokers

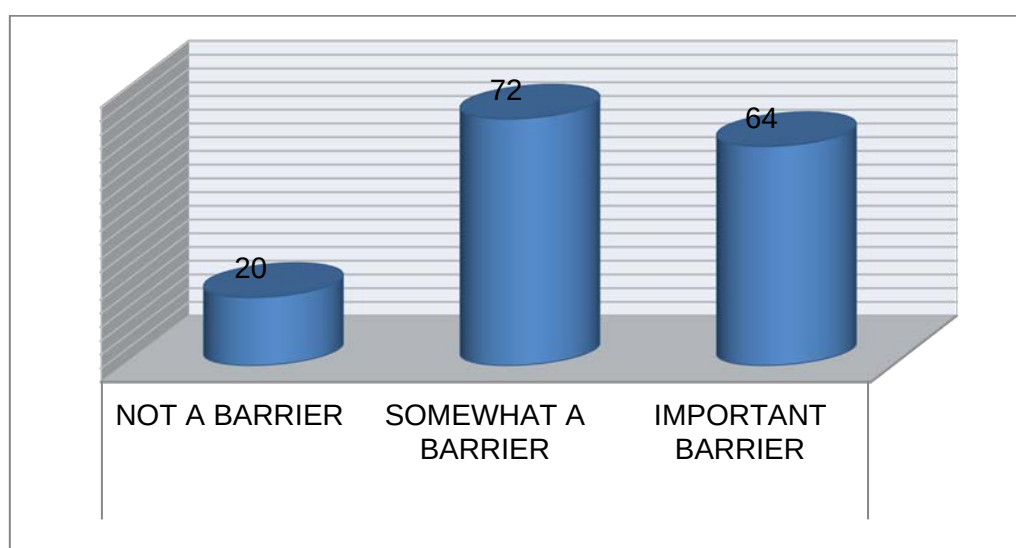
NOT A BARRIER	SOMEWHAT A BARRIER	IMPORTANT BARRIER	TOTAL
18	43	95	156
11.54%	27.56%	60.90%	100.00%

4.7.9 Quitting smoking is stressful to patients

Nicotine addiction and psychological stressors make smoking cessation difficult; due to these factors some patients find it difficult to quit smoking.^(32,66) Healthcare providers also concurred that quitting smoking can be stressful to patients.

Only 20 of the 156 interviewed highlighted that it was not a barrier in their attempts to assist patients to quit smoking whereas 72 highlighted that it posed some challenges and 64 out of 156 said that it was a major problem in assisting patients to quit smoking. This is shown in the following diagram.

Figure 4.45: Quitting smoking is stressful to patients



Reflecting on the above analysis it is necessary to continuously encourage patients to quit smoking to avoid relapse among those who are making strides in quitting smoking.

4.8 Summary

This chapter looked at data presentation and analysis. The next chapter looks at the discussion.

CHAPTER 5: DISCUSSION

5.1 Introduction

The study was aimed at determining the knowledge, attitude and practises of primary health care providers on smoking cessation intervention in Sol Plaatjie sub-district Public Health Facilities, Northern Cape, South Africa. The research participants were of diverse socio-demographic characteristics which assisted the researcher to present the views of the whole target population. The socio-demographic included were gender, age, employment category, years of practise and smoking status.

The major themes identified in the study were: Knowledge, Attitudes, Practises and Barriers in implementing smoking cessation strategies. The study revealed that Sol Plaatjie sub-district public health facilities in the Northern Cape have been implementing measures to curb the use of tobacco though to a limited extent the measures include but not limited to making available guidelines on smoking cessation, conducting education awareness programmes on the dangers of smoking and knowledge management.

Most adult South Africans continue to use tobacco despite government efforts in reducing its consumption; there is still need to scrutinise the root causes to ensure that tobacco control strategies remain effective.

5.2 Knowledge of primary health care providers on smoking cessation

Knowledge assessment is vital in determining if the healthcare providers have the necessary information required to assist smokers in quitting or providing counselling to quit smoking. The study found that healthcare workers have varying levels on smoking cessation knowledge and guidelines.

The study found that 47% of healthcare workers in the Sol Plaatje District are not aware of the smoking cessation guideline despite knowledge of the benefits of smoking cessation. Similar studies done in India on the impact of knowledge and awareness of smoking cessation guidelines highlighted that majority of the health care

providers interviewed described how lack of proper knowledge on smoking cessation was negatively affecting their smoke intervention cessation efforts. Fifty three percent of the interviewees in Bengaluru City, India felt they were not adequately equipped with the relevant knowledge on smoking cessation whilst 44% were aware of the provisions in the guidelines.⁽³⁷⁾

Lack of knowledge on the guidelines greatly compromises patient care.

It was also of great concern that most of the health workers did not know the importance of smoking cessation on management of COPD. We have so many patients in our district with COPD and some on home oxygen. Primary health care is pivotal in management of such patients smoking cessation helps such patients improve.

The respondents (81%); explained that there was a high probability of smokers to develop TB compared to non-smokers which is similar to studies done in Bengaluru, India where 87% of those interviewed explained the high probability of being infected with TB among smokers than non-smokers. Public health education could be improved to encourage TB patients to quit smoking for their health, so far there is not much public awareness of the link between TB and smoking.

When asked about the impact of smoking on an unborn baby, 97% of the responses explained that it was not safe for the baby and would negatively affect the baby, this is in line with the studies done in Tania, Brazil where 91% of the nurses explained that smoking and alcohol abuse during pregnancy negatively affects the growth of the child who would likely grow with foetal alcohol syndrome.⁽³⁴⁾ . Every pregnant mother or any female of reproductive age should have information on smoking done both during individual patient care and group discussions during ANC plus on radio , TV etc.

When asked on the impact of drug-drug interaction between ARVs and other medication used for smoking cessation, 72(46%) of the interviewees were not aware of the impact of using ARVs together with smoking cessation medicines which is in contrast to the 18% percent of the nurses interviewed on the same subject in London, England.⁽⁴⁵⁾ The huge difference of knowledge in the studies highlight the gap

between nurses at the local institutions and their counterparts in other countries, it therefore calls on the need for further education and training –in smoking cessation for local healthcare providers as this may compromise individual patient care.

The survey also highlighted the need for healthcare providers to assist patients in smoking cessation; this is indicated by 54% of those surveyed who explained that there is need to assist patients to quit smoking. A similar study done in India showed that 62% of those surveyed explained that patients are unlikely to quit smoking unless they get assistance from healthcare providers and other stakeholders.⁽³²⁾

South Africa has provided several medicines/options available to assist in smoking cessation interventions. These medicines are not available yet in the public health system. This could explain why the healthcare providers were not aware of or any knowledge about drugs such as Bupropion and Varenicline. The options are classified into Nicotine Replacement Therapy (NRT), Antidepressants and Nicotine Receptor Agonist (NRA).⁽¹⁹⁾ The studies highlighted that healthcare providers are more knowledgeable on the use of NRTs compared to Antidepressants and NRA. This is in line with similar with studies done in Malawi where 61% of those surveyed were not aware of Antidepressants and Nicotine Receptor Agonist as other interventions to assist in smoking cessation.⁽⁴²⁾ However studies done in London England, showed that 84% of those surveyed were aware of the use of Antidepressants and NRAs for managing nicotine.⁽⁴⁵⁾

There is need for policy change in SA to make NRT accessible.

The results of this survey showed that trained healthcare providers had a higher level of knowledge of interventions on smoking cessation and were able to assist their patients accordingly. Knowledge of Antidepressants NRA needs to be improved to facilitate behaviour change in smokers. There is need for further public support for stronger measures against tobacco use, promotion, pricing and growing to provide opportunities for health promotion action. Furthermore the findings accentuate the need to increase awareness of smokers about NRA and Antidepressants through mass-media campaigns and include tobacco dependence treatment as part of the national health insurance program.

5.3 Attitude of primary health care providers on smoking cessation

Attitudes are important in how healthcare workers execute their duties in particular how they handle smoking patients. The results gathered indicated that 72% of the respondents strongly agreed that smoking cessation counselling is an integral element of their jobs and it is necessary to discuss the benefits of smoking cessation with patients. The results are parallel to studies done among health care providers in Florida, USA which observed that 87% of the healthcare providers surveyed strongly agreed it is their duty to play an integral role in smoking cessation interventions.⁽⁴⁴⁾

More than two thirds of the respondents highlighted that discussing the benefits of smoking with patients greatly assists in smoking cessation among patients which is similar to results obtained in Tania, Brazil where more than eighty percent of those surveyed explained that discussing the benefits of quitting smoking with patients assisted them in smoking cessation.⁽³⁴⁾

Despite the willingness from healthcare providers to provide their patients with smoking cessation advice, 44% of the interviewees said that most patients are not willing to receive advice from health care workers. This is 14% more than what healthcare providers in the USA said.⁽⁴⁴⁾ The study also found that 64% of the patients do not comply with advice given on smoking cessation which is in line with results of a national survey of US health professionals which highlighted that more than 50% of the patients do not comply with advice on smoking cessation.⁽⁴⁴⁾ It therefore means there is a lot of work that needs to be done by all relevant stakeholders in-order to change attitudes of smokers towards accepting smoking cessation advice.

One third of those surveyed highlighted that they did not have sufficient time to conduct smoking cessation counselling sessions and two thirds said that it is necessary to discuss smoking cessation with patients even if it is not their main reason for visit. These results differ from the results found in a survey done in Malawi where more than two thirds of the respondents said that they did not have enough time for smoking cessation counselling and only a third explained that it was necessary to discuss smoking cessation with a patient whenever an opportunity arose.⁽⁴²⁾

Eighty five percent of those interviewed also stressed the need to have smoking as one of the vital signs of primary health care due to its damaging effect and the need to start intervention on a patient early; a similar study in Bengaluru City, India revealed that more than three quarters of the interviewees also expressed the same sentiments.⁽³²⁾

5.4 Practices of primary health care providers on smoking cessation

One way of providing smoking cessation advice is through the identification and recording of patients who smoke. Tobacco Smoking Cessation Practise Guideline vol. 103 recommended that healthcare providers establish and record the smoking status of every patient.⁽¹⁹⁾

This study found that only half of the population stated that they sometimes record their patients' smoking status which implies that there could be other smokers in public health that may not be recorded; only forty three percent were consistent in recording this information. These results are similar to the studies done in Malawi where 45% of those interviewed were inconsistent in keeping accurate information and 48% were consistent in this regard. Given such levels of inconsistency it becomes difficult to craft appropriate smoking cessation strategies.⁽⁵²⁾ It is important to record all the patient information in-order to ensure that all smokers receive adequate information on smoking cessation.

The research also revealed that only a third of the healthcare providers asked their patients how many cigarettes they take per day whilst the remaining two thirds were inconsistent in recording this information. Similar researches done in Florida, USA showed that more than 85% of those surveyed were consistent in recording this information; the same is true for studies done in London, England where 90% of the healthcare providers highlighted that they always recorded this information.⁽⁴⁵⁾ This information is necessary for determining the level of nicotine dependency of smokers and the amount of intervention required. It is also useful for smoking cessation counselling especially for first time smokers or those considering quitting.

When asked about the frequency in advising smokers to quit, 50% of the clinicians highlighted that they advise their patients on the benefits of quitting smoking whereas 46% said they do not give such advice on a regular basis. Clinicians who discuss the benefits of smoking cessation also offered advice to quit smoking but those who don't have smoking cessation counselling do not advise their patients of the benefits of quitting smoking. This is similar to studies done in Tania, Brazil where 58% of the respondents explained that they always advised their patients on the benefits of quitting smoking.⁽³⁴⁾

Tobacco Smoking Cessation Practise Guideline Vol. 103 contains guidelines on approaches to assist smokers in quitting, these are 'ask', 'alert', 'assess' and 'assist', however the study found that 27% of the clinicians surveyed always ask their patients about their previous attempts to quit whilst 53% occasionally ask their patients. The survey also showed that 33% of the clinicians always asked their patients about their willingness to quit smoking whilst 48% occasionally asked this question.

These results are comparable to those found in studies done by the India Heart Association (IHA) which showed that only a third of the clinicians made enquiries on previous attempts to quit and 50% assessed willingness among patients to quit smoking.⁽³²⁾ The results also show that only 18% of the respondents always encouraged the use of NRTs whilst 38% never encouraged its use, which is in contrast to 40% of clinicians who always encouraged the use of NRTs in India and 20% who never encouraged its use.⁽³²⁾

The study showed that 40% of the healthcare providers do not assist their patients to set up a quit date contrary to 21% who always assist their patients to set up a quit date. It was also noted that 54% of the healthcare providers never made any follow-up visit compared to 15% who did so. These results are comparable to the studies done in India where 43% of the clinicians did not assist their patients to quit against 30% who did.⁽³²⁾

Lack of knowledge on smoking cessation guidelines can be partly blamed for this lack of support from clinicians. As most Clinicians do not screen or offer brief cessation advice, they miss opportunities for smoking cessation counselling, this calls for further

studies which focus on understanding why clinicians in South Africa do not intervene in their patients' tobacco use in-order to implement effective tobacco cessation programs.

5.5 Barriers to provision of smoking cessation

Majority of the respondents highlighted that lack of community organisations for further referrals is a major barrier to the provision of smoking cessation interventions. This is supported by 60% of those interviewed who explained that any attempt to assist in smoking cessation is being hampered by lack of support structures that assist smokers thus causing them to relapse. This is in line with studies done in Malawi which showed that 75% of those surveyed indicated that lack of community centres was impeding their efforts on smoking cessation interventions.⁽⁴²⁾

Policy makers need to come up with community based referral centres to help quit smoking just like with illicit drug use.

Lack of educational materials was also cited as one of the major barriers to smoking cessation interventions were 46% of those surveyed explained that it is an important barrier and 37% said it is to some extent a barrier, these tools serve as an additional tool for those clinicians who lack time for smoking cessation counselling. Part of lack of knowledge on smoking cessation can be attributed to the fact that these guidelines are not readily available at health facilities. This was echoed by 64% of the respondents whilst 27% also said that it is somewhat a barrier. Studies done in Florida, USA contradict this information; it shows that only 10% attributed lack of community centres as barriers and 5% pointed to lack of educational material and lack of smoking cessation guidelines as barriers.⁽⁵²⁾

Pamphlets, Flyers, Posters etc will help highlight the problem and increase awareness.

Training and education on smoking cessation will greatly improve smoking cessation intervention efforts, despite this it was observed that 45% of those interviewed indicated that they were not trained in smoking cessation hence it was an important barrier in their efforts to counselling smokers. 42% also expressed concern on training highlighting that it was a barrier to some degree. This is similar to studies done in

Brazil were it was observed that 54% cited lack of training as a major barrier to smoking cessation intervention.⁽⁴⁰⁾

There is need for a programme coordinator at provincial and district level similar to TB to spearhead smoking cessation policy implementation.

Any effort to solve smoking will be fruitless if there are no medicines for NRTs at local pharmacies. Results obtained from the survey showed that 70% highlighted that lack of medicines at pharmacies are an important barrier with 21% explaining that it is somewhat a barrier. The results are in contrast to those obtained in studies done in England where 91% explained that it is not a barrier,⁽⁴⁵⁾ those done in Florida, USA were 93% highlighted that it is not a barrier.⁽⁵²⁾ There is need to augment efforts done by healthcare providers in smoking cessation by adequately equip local pharmacies with the relevant medicines to ensure intervention efforts yield fruit.

5.5.1 Limitations of the study

The study only focused on healthcare providers working in Sol Plaatje Sub-District, Northern Cape and is not a national representative sample thus it cannot be generalised to all health care providers in the country without assumptions. There may be under or over emphasis of knowledge, attitude, and practises of healthcare providers which may end up skewing the results as the questionnaire may not have been exhaustive on possible barriers. Some respondents did not complete all sections of the questionnaires due to incomplete knowledge among other reasons which made it difficult to make follow up because the system of identification made it difficult to trace a questionnaire to the respondent. Secondly a few respondents took longer with the questionnaire and could have looked up the responses thereby introducing bias.

5.6 Conclusion

The aim of the study was to determine the knowledge, attitude and practises of primary health care providers on smoking cessation interventions in Sol Plaatje sub-district Public Health Facilities, Northern Cape, South Africa.

How knowledgeable is the Northern Cape health care providers on smoking cessation? - The study found that most healthcare workers in the Sol Plaatjie District are not aware of the existence of smoking cessation guideline though they have been made available at some of the clinics. This negatively affects them in discharging their responsibilities of smoking cessation counselling. It was also observed that they were not aware of the harmful effects of smoking on the unborn baby, of such knowledge is critical in providing pre-natal care to expecting mothers.

On the other hand, there are several initiatives that could have been implemented by Sol Plaatjie Municipality and these include: knowledge management and organisational learning. This finding implies that Sol Plaatjie employed less knowledge management initiatives and therefore could not achieve its full potential in assisting patients on smoking cessation.

What are the attitudes of health care providers on smoking cessation? - The study found that the respondents agree that smoking cessation is an important element of their jobs and it is necessary to provide smoking cessation counselling. However they also highlighted that some patients have a negative attitude towards smoking cessation advice and do not comply with information they receive on smoking cessation. This finding implies that there is a lot to be done at policy level to encourage smokers to change attitudes towards smoking cessation.

What are the practises employed by health care service providers on smoking cessation? - This study found that twenty nine clinicians omit or don't assess smoking-patterns of their patients which could stem for the negative attitudes patients have on smoking cessation advice. This can also be due to bias from some clinicians (fifteen) are smokers themselves hence may be uncomfortable advising patients to quit when they are smokers themselves.

What are the barriers to the provision of smoking cessation intervention? – The study found that despite efforts to encourage smoking cessation from clinicians their efforts will bear little fruit as they are faced with many challenges such as lack of community organisations for refer patients to or lack of educational material on dangers of smoking, lack of smoking cessation guidelines among others. Without proper support

from all stakeholder patients who are attempting to quit may suffer from relapse if there is no coordinated follow-up to monitor their progress.

This study therefore concludes that, Sol Plaatje District has existing smoking cessation guidelines but they are not being implemented: As a result, 73 clinicians are not aware of the availability of smoking cessation guideline and are not able to fully assist patients who struggle with quitting smoking.

This study also concludes that some clinicians tend to display a **negative attitude** on smoking cessation matters and this is unconsciously transferred to their patients.

It can also be concluded that the **practises on treating** smoking are not being properly followed with most of the healthcare workers not adhering to routine tasks such as keeping accurate records on smoking patterns of patients or encouraging the use of NRTs or even arranging follow-up visits on those patients who are interested in quitting smoking.

It can be deduced that clinicians are faced with a number of **challenges which act as barriers preventing** them from assisting smokers; these include lack of time and knowledge on smoking cessation as well as lack of educational material.

5.7 Recommendations

- 1) Training and development of clinicians – There is need to readily make available the guidelines on smoking cessation in-order to enhance the knowledge of the clinicians as noted by seventy three health workers who are not aware of the existence of the South African smoking cessation guideline of June 2013. There is need to train health workers on brief motivational interventions using the 5 A's approach to help patients quit smoking. The training can use videos, role playing and lectures based on the SA guidelines.
- 2) Establishing community-based tobacco cessation treatment centres - The researcher proposes establishing more community-based tobacco cessation

treatment centres for further referrals of smokers, thereby making it easier to continue monitoring of progress for those who want to quit.

- 3) Information gathering – The author proposes that information gathering and recording of smoking status be included as one of the vital signs during patient consultation.
- 4) The study focussed on health workers only. It would be useful to assess KAP of smokers themselves in our district as this would help come up with interventional approaches from both the patients perspectives and health workers views..
- 5) The author further propose incorporating tobacco use cessation treatments into the essential drugs list in the public health system and be included in the medical aid coverage of their costs.
- 6) The author recommends incorporating tobacco use status into the clinical vital signs during pregnant patients during antenatal care visits so as to improve the potential for screening rates and subsequent cessation.
- 7) Application of the smoking cessation guidelines should be strictly monitored.
The negative effects of smoking on socio-economic level cannot be under mined hence there is need for on-going and further study on attitudes, practises and knowledge of PHC workers smoking cessation issues both locally and globally.
- 8) There is need for a provincial coordinator similar to TB to spearhead policy implementation .

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APPENDICES

Appendix A - Questionnaire

Appendix B - Participant Information Sheet

Appendix C - Letter of Approval: Health Sciences Research Ethics Committee

Appendix D - Letter of Approval: Northern Cape Department of Health

Appendix A: Questionnaire

Dear Participant:

Feel free to fill in answers on the questions asked in this questionnaire. The topic under investigation is: Knowledge, practices and attitude of health care providers on smoking cessation intervention - a case of Northern Cape Medical Institutions. The answers provided herein will be used to improve service provision and to promote smoking cessation.

Thank You.

By completing this questionnaire, informed consent is granted for participation in this study.

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

1) Gender?					
MALE			FEMALE		
2) Age?					
20 or younger	21 – 30	31-40	41-50	51-60	61 or older
3) Employment Category					
Medical Officer	Professional Nurse	Enrolled Nurse	Enrolled Nurse Assistant		
4) Years of Practice					
0 – 5 years		5 – 10 years		10+ years	

5) Smoking Status (Please tick one)		
Never smoked	Ex-smoker	Current smoker

SECTION B: RESEARCH QUESTIONS

A. KNOWLEDGE *(Please indicate if the following statements are true or false)*

		True	False	Don't know
1	South Africa has Smoking cessation clinical practice guidelines?			
2	Patients should only be asked about their smoking history if they have a smoking related disease/ illness.			
3	Smoking cessation is not a critical component of management of Chronic Obstructive Pulmonary Disease			
4	Smoking cessation advice given by a health professional to a patient increases the patient's chances of quitting.			
5	It is no necessary to assess nicotine dependence prior to initiation of Nicotine Replacement Therapy			
6	Counselling plus medication to treat nicotine withdrawal is more effective than either intervention alone?			
7	A common withdrawal symptom that occurs after quitting smoking is weight los			

8	Smokers who are highly nicotine dependent, have social stressors and psychiatric comorbidities, are less likely to be successful at quitting?			
9	Patients who have their first cigarette within half an hour of waking are likely to be less dependent on nicotine than patients who have it much later in the day.			
10	Most smokers will successfully quit smoking on their own without assistance.			
11	When advising patients to stop smoking, the advice should never be linked to the patient's current health/illness.			
12	Counselling patients on smoking cessation includes assisting the patient to set a quit date			
13	Most of the withdrawal symptoms from smoking cessation disappear within 4 weeks of abstinence.			
14	It is imperative to speak to adolescents in the presence of their caregiver when encouraging smoking cessation			
15	There is no need of advising elderly patients who smoke(those above 60 years) to quit as the damage from smoking is already present and cannot be reversed			
16	Smokers have double the risk of developing TB and of dying of TB than non-smokers			
17	Smoking during pregnancy is safe for the baby			
18	There is no drug- drug interaction between Antiretroviral drugs and medicines used for smoking cessation			

19. Which of the following medications are recommended for the treatment of tobacco dependence in SA?

(Kindly tick YES for those that are recommended and NO for those not recommended)

MEDICATION	YES	NO	DON'T KNOW
Nicotine Patch			
Nicotine gum			
Nicotine lozenge			
Nicotine syrup			
Bupropion			
Varenicline			
Clonidine			
Electronic cigarettes			
Nortryptiline			

B) ATTITUDES

Please tick in the appropriate space provided

Key: SA (Strongly Agree), A (Agree), Neutral (N), D (Disagree) and SD (Strongly Disagree)

		SA	A	N	D	SD
20	Smoking cessation counselling is an important part of my job					
21	It's not worth discussing benefits of smoking cessation with patients as patients already know they should quit					

22	Smoking is a personal decision which does not concern the health care worker					
23	My patients' acute health problems take precedence over smoking counselling					
24	Patients are not receptive to receiving smoking cessation assistance from healthcare providers					
25	Smoking cessation counselling negatively affects my relationship with patients					
26	Clinicians should discuss smoking cessation with patients even if it's not the reason for the visit					
27	I do not have sufficient time to provide advice and counselling to all my patients who smoke during routine consultations					
28	It is uncomfortable to counsel my smoking patients on quitting smoking					
29	Patients do not comply to information given on smoking cessation					
30	Patients are not interested in receiving smoking cessation information					
31	Smoking status should be included as one of the vital signs for patients attending primary care facilities					

C) PRACTICES

Please tick in the appropriate space provided

	Never	Sometimes	Always
In the last month how frequently did you do the following:			

32	Ask patients about their smoking status?			
33	Ask the patients on how many cigarettes they smoke a day?			
34	Record the patients smoking history in their medical records			
35	Discuss the risks of smoking and benefits of quitting smoking with patients?			
36	Advise patients to quit smoking?			
37	Ask patients about previous attempts to quit smoking?			
38	Assess a smoking patient on willingness to quit smoking?			
39	Encourage the use of nicotine replacement therapy?			
40	Assist a smoking patient to set up a target quit date?			
41	Arrange follow up visits to discuss quitting?			
42	Encourage not to smoke in presence of infants and children			

D) BARRIERS

NB: Tick in the appropriate space provided; this section addresses barriers that you may face in helping patients quit smoking. How would you rate the following as barriers that hinder you from helping patients to stop smoking (kindly tick appropriate answer).

		Not a barrier	Somewhat a barrier	Important barrier
43	Lack of time			
44	Lack of community organizations to refer patients to			
45	Lack of patient educational material(brochures/pamphlets)			
46	Lack of knowledge and training on smoking cessation counselling			
47	Lack of copies of smoking cessation guidelines in the facility			
48	Lack of pharmaceutical medication for Nicotine Replacement Therapy			
49	Patients have more immediate health problems to be addressed			
50	Some health care providers are themselves smokers			
51	Quitting smoking is stressful to patients			

Any additional comments

Thank you for participating in this study. Please place the completed questionnaire in the enclosed envelope and seal it.

Appendix B: Participant information sheet

My name is Lizwe Calvin Muza, a student at Free State University and I am currently studying towards an attainment of a Master's Degree in Family Medicine. As part of my studies, I am conducting a research study on the topic: Knowledge, attitude and practices of health care providers on smoking cessation intervention - a case of Northern Cape Medical Institutions.

I would like to invite you to take part in my study. Before you decide you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully. Ask questions if anything you read is not clear or would like more information. Take time to decide whether or not to take part.

Participants of this study are primary health workers (nurses and doctors) working in Sol Plaatje sub-district. The decision to involve this study population is that they are the health staff that is first in contact with most patients in the community prior to referral to higher levels of care.

The following conditions apply:

- Your participation in this project is voluntary and you may refuse to participate or withdraw from the project at any time with no negative consequence.
- Your expressed consent is sought before you engage in the study.
- No participant will be injured or harmed physically or emotionally throughout the research process.
- All participants' names and identity will not be asked and all responses and research findings will be treated professionally without being associated to any specific individual. Individual participant research data (questionnaires) will be anonymous and given a research code, known only to the researcher. The questionnaires will be kept in locked cupboards and information uploaded in the computer will be password protected.
- The research involves you filling up a questionnaire and no further participation after that.
- I cannot promise the study will help you but the information we get from the study will help to increase the understanding of low smoking cessation interventions in our health facilities.
- If you have a concern about any aspect of this study, you should ask to speak to the researcher who will do his best to answer your questions.
- The results of the study may be published in a journal

Thank you for participating in the study.

Lizwe Calvin Muza

078 595 5729

lizwecalvinmuza@yahoo.com

Appendix C: Letter of Approval: Health Sciences Research Ethics Committee



Health Sciences Research Ethics Committee

18-Jan-2019

Dear Dr Lizwe Muza

Ethics Clearance: Knowledge, attitude and practices of primary health care providers on smoke cessation interventions in Sol Plaatje sub-district Public Health Facilities, Northern Cape, South Africa

Principal Investigator: Dr Lizwe Muza

Department: Family Medicine Department (Bloemfontein Campus)

APPLICATION APPROVED

Please ensure that you read the whole document

With reference to your application for ethical clearance with the Faculty of Health Sciences, I am pleased to inform you on behalf of the Health Sciences Research Ethics Committee that you have been granted ethical clearance for your project.

Your ethical clearance number, to be used in all correspondence is: **UFS-HSD2018/1351/2901**

The ethical clearance number is valid for research conducted for one year from issuance. Should you require more time to complete this research, please apply for an extension.

We request that any changes that may take place during the course of your research project be submitted to the HSREC for approval to ensure we are kept up to date with your progress and any ethical implications that may arise. This includes any serious adverse events and/or termination of the study.

A progress report should be submitted within one year of approval, and annually for long term studies. A final report should be submitted at the completion of the study.

The HSREC functions in compliance with, but not limited to, the following documents and guidelines: The SA National Health Act, No. 61 of 2003; Ethics in Health Research: Principles, Structures and Processes (2015); SA GCP(2006); Declaration of Helsinki; The Belmont Report; The US Office of Human Research Protections 45 CFR 461 (for non-exempt research with human participants conducted or supported by the US Department of Health and Human Services- (HHS), 21 CFR 50, 21 CFR 56; CIOMS; ICH-GCP-E6 Sections 1-4; The International Conference on Harmonization and Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH Tripartite), Guidelines of the SA Medicines Control Council as well as Laws and Regulations with regard to the Control of Medicines, Constitution of the HSREC of the Faculty of Health Sciences.

For any questions or concerns, please feel free to contact HSREC Administration: 051-4017794/5 or email EthicsFHS@ufs.ac.za.

Thank you for submitting this proposal for ethical clearance and we wish you every success with your research.

Yours Sincerely

Dr. SM Le Grange
Chair : Health Sciences Research Ethics Committee

Health Sciences Research Ethics Committee

Office of the Dean: Health Sciences

T: +27 (0)51 401 7795/7794 | E: ethicsfhs@ufs.ac.za

IRB 00006240; REC 230408-011; IORG0005187; FWA00012784

Block D, Dean's Division, Room D104 | P.O. Box/Posbus 339 (Internal Post Box G40) | Bloemfontein 9300 | South Africa



Appendix D: Letter of Approval: Northern Cape Department of Health

	DEPARTMENT OF HEALTH	Research and Development Unit Executive Offices Northern Cape Department of Health Du Toit Span Road, Belgravia P/Bag X5049, Kimberley, 8300 Tel: 053 830 2134 Fax: 086 485 3243 Email: BMashute@ncpg.gov.za / EWorku@ncpg.gov.za
	LEFAPHA LA BOPHELO BO BOTLE	
	DEPARTEMENT VAN GESONDHEID	
	ISEBE LEZEMPILO	

Enquiries: Dipatlisiso: Imibuzo: Navrao :	Dr. E Worku	Date: Leshupelo: Umhla: Datum:	27 June 2018
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Reference: Tshupelo: Isalathiso: Verwysing:	NC_2018_RP002
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Dr. L Muza
Faculty of Health Science
University of the Free State
Bloemfontein

Dear Sir / Madam

Project Title: Knowledge, attitude and practices of primary health care providers on smoke cessation interventions in Sol Plaatje sub-district Public Health Facilities, Northern Cape, South Africa.

The application requesting permission to conduct the above-mentioned research study was received and has been reviewed by the Provincial Health Research and Ethics Committee (PHREC) for gate-keepers' permission.

Approval is granted to conduct this research study in public health facilities in Sol Plaatje Local Municipality, Frances Baard District, as indicated in your application form, in Northern Cape Province.

Your Provincial Ethics Reference Number is **NC_2018_RP002**, kindly use that reference number in correspondence with the PHREC administration

Please note the following:

- 1) The researcher(s) must not start this research project has been granted full ethical approval by the Health science Research Ethics Committee of the University of the Free State
- 2) The researcher(s) must use the National Health Research Database (NHRD) to upload his proposal including the supporting documents (i.e. ethics approval letter, data collection tool(s), etc.)

We are committed to achieving our vision through a decentralized, accountable, accessible and constantly improving health care system within available resources. Our caring, multi-skilled, effective personnel will use evidence-based, informative health care and maturing partnerships for the benefit of our clients and patients.

- 3) This approval is valid for a period of one (1) year
- 4) The researcher(s) is/are requested to make all necessary arrangement with each facility manger on when she/he will be visiting the facility to conduct this project.

Please note the following conditions:

- 1) This project must be conducted at no cost to the Northern cape Department of Health
- 2) This approval is limited to the research proposal as submitted in the application
- 3) No variation or modification on the research project
- 4) PHREC may monitor the research progress at anytime
- 5) At the completion of this study, a copy of the final report must be submitted to the Research and Development Unit
- 6) The Northern Cape Department of Health Senior Management Committee shall be briefed on the outcome of the study prior publishing

The committee wishes you success on your research study

Kind regards



Dr. E Worku
Chairperson of PHREC
Tel: 053 830 2134
Cell: 072 703 8037
Email: EWorku@ncpg.gov.za

28/06/2018
Date