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UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

FACULTY OF HEALTH SCIENCES

A SURVEY OF THE PUBLIC WILLINGNESS TO PAY FOR PROFESSIONAL PHARMACEUTICAL SERVICES IN THE JOHANNESBURG METROPOLITAN AREA

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(Bachelor of Pharmacy)

A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfillment of the requirements for the degree of Masters of Science in Medicine (Pharmaceutical Affairs)

Johannesburg, 2013

DECLARATION

I, Riona Sonne, declare that this research report is my own work. It is being submitted for the Degree of Masters of Science in Medicine (Pharmaceutical Affairs) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.

Signature of candidate _____

On this _____27th _____ day of ____September___ 2013 at _____Johannesburg_____

DEDICATION

To GOD who has blessed me with everything I need

To my family for their unconditional Love and support

To my husband, for being everything I could ever ask for and more

ABSTRACT

Medicine pricing regulations in South Africa have greatly influenced the manner in which pharmacy is being practiced. It has motivated community pharmacists to move their focus toward a more service oriented approach. This has further been facilitated by the introduction of pricing regulations surrounding the provision of professional pharmaceutical services in a pharmacy, in accordance with Good Pharmacy Practice guidelines. The combination of the dispensing fee and professional fee has been viewed as the way forward in maintaining the continued sustainability of community pharmacies.

This study was undertaken in an effort to determine whether there was a willingness from the public to pay for the professional services and how valuable would the availability of the services in a community pharmacy be to them.

The study was designed as a descriptive, cross-sectional study, targeting only the population within the Johannesburg metropolitan area. A sample size (n) of 252 was obtained. The results showed that 72% of the population perceived that the pharmacist added value when dispensing medicines to them. 57% of respondents chose the pharmacist first for advice on minor ailments, and 78% were of the opinion that the pharmacist had the ability to provide advice on health related issues. There was a low willingness to pay for the 6 services posed to the population, in comparison to their high perceived value.

It was concluded that there is scope for community pharmacist's to include additional professional services in their pharmacy settings, which would meet the demands of their customer base. This could also be seen as an opportunity for government to consider incentivising the professional pharmaceutical services which could form part of the National Health System.

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GLOSSARY

Pharmaceutical service: The supply and distribution of medicines and other health care products, the provision of appropriate information and advice to the patient, ensuring the correct use of medicine and monitoring the effects of the use of medicines (pharmaceutical care).

Professional fee: Means a fee for one or more of the services that may be provided in the various categories of pharmacies as prescribed in the *Regulations Relating to the Practice of Pharmacy* (GNR. 1158 of 20 November 2000), subject to the guidelines for levying such a fee as approved by the South African Pharmacy Council from time to time.

Dispensing fee: Means a fee determined in terms of the *Regulations Relating to a Transparent Pricing System for Medicines and Scheduled Substances: Amendment (Dispensing fee for pharmacists)*, exclusive of Value Added Tax, that may be charged to dispense a medicine.

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NOMENCLATURE

AIDS: Acquired Immunodeficiency Syndrome

ANC: African National Congress

CPS: Community Pharmacist's Sector

BOD: Burden of Disease

EU: European Union

GP: General Practitioner

HCI3: Heath Care Incentives Improvement Institute

HIV: Human Immunodeficiency Virus

NDP: National Drug Policy

NHI: National Health Insurance

NHS: National Health System

PC: Pricing Committee

PHC: Primary Health Care

PSF: Pharmacy Stakeholder's Forum

PSSA: Pharmaceutical Society of South Africa

SA: South Africa

SAPC: South African Pharmacy Council

SEP: Single Exit Price

UK: United Kingdom

VAT: Value Added Tax

1. BACKGROUND INFORMATION

1.1. INTRODUCTION

Since the new democracy in South Africa (SA) from 1994, one of government's main concerns was addressing the gross healthcare inequalities that the country was faced with (ANC, 1994). According to statistics quoted in the National Drug Policy (NDP), "in 1990 the private sector was responsible for 80% of the country's total expenditure on drugs, although 60-70% of the total volume of pharmaceuticals was consumed in the public sector" (NDP, 1996). This demonstrated the disparities between public and private sector healthcare in SA. The development of a NDP provided a guideline for the goal of making medicines more accessible and affordable to all South Africans, especially those who were poverty stricken.

The implementation of medicine pricing regulations in 2004 was amongst the employed strategies to make medicines more affordable and accessible to all parts of the population. A transparent pricing system was implemented, resulting in a single exit price (SEP) being set by the pharmaceutical companies on the cost of scheduled medicines (Medicines and Related Substances Act 101/1965). This in turn prevented community pharmacists from adding a mark-up on the cost price of medicines, whereas previously, profit margins on medicines were completely unregulated. Subsequently, government proposed a dispensing fee which was the maximum fee that pharmacists could charge on the SEP. The initially proposed dispensing fee was a mark-up of 26% capped to a maximum of R26 per item (Government gazette, 2004). This fee was rejected by

pharmacists, who indicated that it was not feasible for the continued survival of their pharmacies (Gray, 2004). This was further emphasized by the reported closure of many small pharmacies, especially in rural areas, which had a negative impact on promoting accessibility to medicines (Davie & Urbach, 2005). An estimated 400 pharmacies had closed since 2004 as reported by Business Day, quoted from a comment made by Johann Kruger (then President of the CPS of the PSSA) (Mundy, 2010).

The pricing committee (PC) which was formed by government to regulate pricing of medicines, was responsible for determining an appropriate dispensing fee, and were questioned about their decision-making methods and transparency for the proposed fee. A legal battle ensued wherein the PC was requisitioned to review the dispensing fee and propose a more feasible fee. They collaborated with the Pharmaceutical Society of South Africa (PSSA) and the Pharmacy Stakeholders Forum (PSF) to negotiate an acceptable fee. In the interim, pharmacies were allowed to charge dispensing fees as they felt appropriate to cover their business needs. (Andrews, 2009). A final dispensing fee according to a tiered structure was accepted and implemented by the pharmacy industry in 2010 (Medicines and Related Substances Act 101/1965).

Subsequently the South African Pharmacy Council (SAPC) proposed amendments to the regulations for professional services that could be conducted in a pharmacy, and a fee that pharmacists could charge for the services. This could be seen as an effort to promote the service oriented approach to pharmacy and moving away from the product orientation. Previous studies

(listed below) showed that there was a growing need for pharmacist's to be promoting pharmaceutical care services.

The 2001 National Pharmacy Survey which was done in the United States of America (USA) reported that there was an increase in the number of prescriptions that were being filled in a pharmacy, drug regimens were more complex and consumers were spending more on medicines. This would be suggestive of a growing need for advice and counselling on the correct use of medicines and additional pharmaceutical care services. (Stergachis, Maine & Brown; 2002). A study conducted in the United Kingdom (UK) reflected that there was support from the public for the non-medicines related role of the pharmacist of providing health related advice (Iversen, Mollison & MacLeod; 2001).

At the time that this research project was initiated, there had been a great deal of concern expressed by community pharmacists about survivability of their pharmacies (Letter's to the editor; SAPJ; 2011:54). Research surrounding willingness to pay for pharmacy services had been conducted in other countries. The previous studies had focussed on quantifying the economic value of willingness to pay (Blumenschein & Johannesson; 1999). There was little research that could be found surrounding a study which focussed on a comparison of willingness to pay for services to perceived value of the service in SA. This was identified as an opportunity to gain insight into the possible long term impact that the pricing regulations could have on community pharmacies. It was also envisaged that the results of the study would shed some light onto the

Public's perceptions of community pharmacists in SA, and how pharmacists could add more value to the professional services provided in their pharmacies.

1.2. AIM OF THE STUDY

This research project was aimed at determining whether the public in the Johannesburg metropolitan area, is willing to pay for the dispensing and professional pharmaceutical services offered by community pharmacists, and if they perceive these services to be valuable.

1.3. OBJECTIVES

a. To determine whether the public perceive the dispensing of medicines and counseling by pharmacist's as a valuable process.

b. To determine whether the public is willing to pay for the professional pharmaceutical services offered by community pharmacists.

c. To determine whether the public views the community pharmacist as providing a valuable service.

d. To investigate factors influencing the public's willingness to pay for the professional pharmaceutical services.

1.4. SIGNIFICANCE OF THE STUDY

The study is meant to give both legislators and community pharmacist's insight into the public perception of the professional fees and dispensing fees.

- Legislators will be enlightened on whether the dispensing and professional fees have greater potential for success with buy-in from the public.
- Pharmacists will be provided with further information on how they are perceived by the public and where improvements can be implemented to enhance patient/consumer satisfaction.
- The final result of the study will indicate to community pharmacists whether there is a demand from the public for additional professional pharmaceutical services, which could influence their decisions to include such services in their community pharmacies.

1.5. LIMITATIONS OF THE STUDY

a. The study was narrowed down to privately owned and chain store community pharmacies that were willing to participate in the study. There are various groups of chain pharmacies in SA, but corporate permission limited the study to only one large chain group in the country. Of the different chain stores that were approached for permission, only one group willingly allowed data collection to be carried out on their premises.

b. Only adults, classified as any person older than 18 years, were allowed to participate in the study. Scheduled medicines are not allowed to be dispensed to any person who is considered a minor, as parental consent is needed, which is why the study focussed on adults only.

c. The study was only carried out in the Johannesburg metropolitan area; therefore the results could not be construed to reflect the opinions of the general SA population.

d. Although a more accurate analysis would have been obtained by doing a countrywide study, this study was limited to Johannesburg metropolitan area, to allow for manageability from a time constraint, logistics and funding perspective, considering that the project was self-funded. It is understood that public perceptions may have varied across provinces.

e. Every respondent did not answer every question on the questionnaires. This resulted in the final sample size for different questions varying for those with no response or marked not applicable. In cases where non-respondents did not indicate a reason for not-responding, a certain level of non-response bias was introduced into the study where reasons could only be inferred from observations made by the researcher.

1.6. ASSUMPTIONS

a. It would be possible to obtain a good representation of the population from privately owned and chain store pharmacies.

b. An equal number of volunteers would be recruited from each pharmacy visited.

c. A person who responded 'Yes' to the 6 questions posed on willingness to pay for various services, did so without reservations. Where they had reservations, it would have been stipulated in the spaces provided for comments.

d. More than 50% of the population would be willing to pay the professional fees.

e. More than 50% of the sample population would perceive the dispensing and professional services to be valuable.

2. LITERATURE REVIEW

2.1. COMMUNITY PHARMACIST'S AS PRIMARY HEALTH CARE PROVIDERS

Pharmacists in private practice are the easiest and most accessible health care professionals. Their role in promoting public health is an important one. They can reach a wider population in a shorter time, and equipped with the appropriate knowledge, can help prevent or delay the onset of certain illnesses and diseases. (White, 2009:56,61).

The epidemic of HIV/AIDS has created a large burden of disease (BOD) in SA. The increase in the number of self-limiting and communicable diseases due to the presence of HIV/AIDS has placed greater pressure on the health care system (Bradshaw, Groenewald, Laubscher, *et. al.*, 2003). Furthermore, disparities between the public and private health care sectors have left the greatest burden on the public sector with the least financial support. It has been reported that in 2007/2008 the private health sector spent R 56bn on 8 million people of the population whereas this sum of money was equivalent to SA's entire health budget which caters for the other 41 million people (Paton, 2009; South African Human Rights Commission, 2009).

In the 2009 mid-year population estimates report published by Statistics SA, deaths due to AIDS was shown to be 263 900 (www.statssa.gov.za; 2009). The report indicated that this made up 43% of total deaths in SA which contributed to the loss of workforce in the country. This loss included health care professionals which would have further increased the pressure placed on an already

strained health sector. The global "human resources for health" crisis has had a large impact on developing countries with many health care professionals leaving to more developed countries (High-level forum on the Health MDGs, 2005). According to Di McIntyre in an article published in the Financial Mail (31 July 2009) concerning the National Health Insurance (NHI) scheme in SA, the number of health workers had decreased to the extent that "last year SA employed the same number of doctors and nurses as it used to 10 years ago". She claimed that 60 000 health professionals were lost to attrition but were never replaced (Paton, 2009). This impacted both public and private health care settings exacerbating the existing health care inequalities. The availability of certain professional services and monitoring in community pharmacies could help alleviate the pressure on other health care facilities.

A UK study entitled the "pharmaceutical 'consultation' as the first port of call in primary health care" found that many patients used the community pharmacist as the first port of call when faced with minor ailments or indecisiveness to go to a general practitioner (GP) (Hassel, Noyce, Rogers, Harris & Wilkinson, 1997). The results of this study showed that this was due to hesitance to wait in long queues or to wait for appointments to see the GP, and to approach the GP with problems that may be insignificant (Hassel *et. al.*, 1997). In contrast to those findings, a later study conducted in Sussex on the patient's use of GP's and community pharmacists in treating minor ailments found that patients went to the GP for minor ailments that could have been treated by a pharmacist (Hammond, Clatworthy & Horne, 2004). The results suggested that there was low awareness of the abilities of the pharmacist. A recent study conducted in SA concerning the counselling practices of community pharmacists showed that patients expressed satisfaction with

the extent of counselling and care provided by community pharmacists, and implied that they did ask for further advice from their pharmacists (Mukandabarasa MR, 2007).

2.2. NATIONAL HEALTH INSURANCE IN SOUTH AFRICA

The pilot project for roll-out of a NHI system in SA has already begun in selected areas of the country (www.doh.gov.za, 2012). The pricing regulations can be viewed as part of the process of setting up the National Health System (NHS). With the availability of various professional pharmaceutical services in community pharmacies, people will be able to access specific primary healthcare services at a regulated price. An article published by *Western Mail* reported on the changing role of the pharmacist since the implementation of a NHS in Wales in 1948. It was noted that the pharmacists' role had evolved to focus more on the patients' wellbeing and professional services which included promoting healthy living and preventing illness, thus keeping people away from taking medicines (Savage, 2008).

Capitation and fee-for-service models have been used in some states within the United States of America (USA) and have proven to have some positive outcomes. The Heath Care Incentives Improvement Institute (HCI3) is an organization which has published information on various incentivised programs that have been used in the USA to help improve the quality of care provided and to promote the use of primary care services. One of the outcomes in California was that the capitation model strongly incentivised physicians to join medical groups, which in turn

expanded the health management organizations. This resulted in the financial risk of capitation being spread over more physicians and patients, increased resources and greater potential for savings. They found that there were reduced hospital days per thousand per year of 137 non-Medicare patients and 900 Medicare patients. (http://www.hci3.org/content/capitation-outcomes).

O'Loughlin, Masson, Dery & Fagnan (1999) found in their study on the role of community pharmacists in health education and disease prevention, that lack of compensation and recognition for their role in disease prevention was expressed as a barrier by pharmacists to practice this role. Steve White, former president of the CPS of the PSSA, addressed the Board of Healthcare Funders conference, speaking about the issue of NHI in SA, and the role pharmacists can play in such a system. From his talk it was evident that he was of the idea that the community pharmacist is ideally positioned to bring healthcare to communities which are in greatest need, given the incentive to do so by the NHS and government (White, 2009).

2.3. THE NEED FOR PRICING REGULATIONS – AN INTERNATIONAL PERSPECTIVE

The percentage of health care spend on pharmaceuticals has increased over the years globally. According to an article by Maynard & Bloor (2003:32), they explained that healthcare expenditure generally grew at a faster rate than the rest of the economy. This was further emphasized in an

article by the Organization for Economic Co-operation and Development, which indicated that from 1995 to 2005 there was an annual average growth in pharmaceutical expenditure per capita of 4.6%. This had exceeded the average annual rise per capita of health expenditure of 4%, and annual average economic growth of 2.2% during the same period. (Dylst & Simoens, 2010:472).

The containment of healthcare costs is an important issue. This is especially important for low-income countries which have a greater burden of disease. The introduction of generic medicines onto markets has been viewed as a possible aid in reducing the prices of medicines in many countries. In the South African context, regulatory enforcement of generic substitution of all medicines unless otherwise specified or requested, was introduced in May 2003 under section 22 (F) of the Medicines and Related Substances Control Act No. 101 of 1965 (as amended).

The pricing of medicines by the pharmaceutical industry has been regulated in many countries globally in an effort to make medicines more accessible and affordable, especially to those parts of the populations that cannot afford it. All European Union (EU) countries have some type of pricing regulation on pharmaceuticals with specific focus on generic medicine prices, with the UK being the exception where they use an indirect pricing regulation through a profit scheme. The various types of regulations include reference pricing, profit controls and cost-effectiveness controls, each of which has their own challenges in implementation. A point of note from the study was that in order to attain savings from generics, it may be useful to move away from competition by discount to competition by price. (Maynard *et. al.,*2003).

The implementation of a transparent pricing system was another strategy employed by SA government to improve affordability and accessibility to medicines in the private health care sector. A survey done in 2004 on medicine prices in Gauteng by Xiphu & Mpanza (2004;92), indicated that medicines were priced higher in Gauteng than in other African countries participating in the survey, and that SA had the highest VAT charge from the other participating African countries. A comparison of the cost of going to a dispensing doctor or to retail pharmacy or a private hospital for medicines indicated that it was more affordable for a person to obtain their medicines from a dispensing doctor than retail or private hospital pharmacy. This was mainly due to the dispensing fee charged by a doctor being lower than that of a pharmacist. (Xiphu & Mpanza, 2004;79).

The article by Bate, Tren & Urbach (2006) titled "Still taxed to death" brings to the fore that one of the most logical, initial steps to improving affordability and accessibility to medicines is removing the government imposed import tariffs, taxes and duties on medicines. This is a barrier that many governments of the world impose, with the SA government being an example where VAT is imposed on all medicines. They showed in an analysis that a month's supply of anti-retroviral' s cost R 586 of which R 72 was paid to the government as VAT. Were the government to waive the VAT, that additional R 72 would allow the patient to afford essential food that is needed to remain healthy together with their anti-retroviral therapy. This becomes an important issue in a country where prevalence of HIV/AIDS is the highest in the world, and it is not always possible for the public health sector to meet the demand for treatment, leading to many people sourcing treatment from the private health care sector. (Bate *et. al.*, 2006:27-28).

2.4. SOUTH AFRICAN LEGISLATION – DISPENSING AND PROFESSIONAL FEES

Legislative changes governing the pricing of medicines in SA, has greatly affected pharmacy practice amongst community pharmacies. A transparent pricing system was implemented in 2005 in terms of Section 22G (2) (b) of the Medicines and Related Substances Control Act (101/1965) (as amended) (Government Gazette number 26304); wherein a SEP was set by the manufacturer. Prior to these regulations, the prices at which medicines were sold were unregulated. The SEP was the price at which the medicine had to be sold with no additional profit allowed by the retail pharmacy. All along the distribution chain, no bonusing, sampling or discounting was allowed any longer. This was meant to standardize the price at which all pharmacies purchased and sold their medicines, including larger chain stores with bulk buying capabilities.

A dispensing fee was proposed by government to make up for the excised profit. The initial proposed fee was a capped fee structure of a mark-up of 26% capped at R26 per item. Pharmacists were of the opinion that the proposed dispensing fee was inadequate to maintain a viable business and rejected the fee. A pricing committee was tasked with researching a more appropriate fee which would be proposed to Government. Together with various representative pharmacy bodies, such as the PSF, PSSA and SAPC, a final proposed dispensing fee was accepted in 2010 and implemented as the maximum dispensing fee that could be charged in community pharmacies (www.doh.gov.za).

The final fee was according to a tiered structure as explained below:

- Where single exit price is less than R75.00, the dispensing fee must not exceed R6 plus 46% of the single exit price
- Where single exit price is greater than or equal to R75.00 but less than R200.00, the dispensing fee must not exceed R15.75 plus 33% of the single exit price
- Where single exit price is greater than or equal to R200.00 but less than R700.00, the dispensing fee must not exceed R51.00 plus 15% of the single exit price
- Where single exit price is greater than or equal to R700.00, the dispensing fee shall not exceed R121.00 plus 5% of the single exit price.

(http://www.sabinetlaw.co.za/health/articles/health-sets-down-new-dispensing-fee-pharmacists).

The dispensing fee has since been reviewed and updated in June 2012.

In February 2007 the Rules relating to the services for which a pharmacist may levy a fee and guidelines for levying such fee or fees, was published by the SAPC (Pharmacy Act 53/1974). These rules described the various tasks that an appropriately trained pharmacist is allowed to carry out, in providing professional services to the public, and the relevant maximum fees that may be charged for each of these tasks. Extensive research was conducted by the SAPC together with other aiding bodies in the form of a "Time-in-motion" study. This was done to determine what the appropriate fees should be, as well as to provide an indication of the minimum time it should take a pharmacist to conduct each task/service. The results of this study were used to make amendments to the guidelines and were published on 28 May 2009. This provided a fee structure

for pharmacists who wished to offer additional healthcare services within the community pharmacy setting in accordance with the Good Pharmacy Practice (GPP) guidelines.

The professional fee was previously not a focus when community pharmacists were able to maintain viability of their pharmacies and services by cross-subsidizing from profits made on medicines. The transparent pricing regulations brought to the fore the need for regulated professional fees which was not linked to the dispensing of medicines. This was an aid to maintain sustainability of community pharmacies allowing them to continue to play their vital role in the community. (SAPC, 2009).

3. METHODOLOGY AND DESIGN

3.1. HYPOTHESES

3.1.1. PERCEIVED VALUE OF DISPENSING FEE

Let π_1 = the proportion of patient's in the population who perceive the dispensing fee to be valuable.

H_o: $\pi_{1\,0} < 0.5$

H_1: $\pi_{1\,a} \geq 0.5$

3.1.2. WILLINGNESS TO PAY PROFESSIONAL FEES

Let π_2 = the proportion of patient's in the population who are willing to pay the professional fee.

H_o: $\pi_{2\,0} < 0.5$

H_1: $\pi_{2\,a} \geq 0.5$

3.1.3. PERCEIVED VALUE OF PROFESSIONAL PHARMACEUTICAL SERVICES

Let π_3 = the proportion of patient's in the population who perceive value in the professional pharmaceutical services.

H_o: $\pi_{3\,0} < 0.5$

H_1: $\pi_{3\,a} \geq 0.5$

3.2. STUDY DESIGN

This research project was designed to be a descriptive, cross-sectional study following a mixed-method approach. A cross-section of the population was sampled once only, in five regions of the Johannesburg metropolitan area. The regions selected were Soweto/Lenasia (South), Johannesburg CBD, Krugersdorp (West), Midrand/Sandton (North) and Alberton/Germiston (East). These areas were selected in an effort to represent the various socio-economic backgrounds and to get an even distribution of pharmacies and racial groups throughout the Johannesburg metropolitan area.

It was anticipated that five pharmacies per region, twenty five pharmacies in total, would be visited in order to obtain the required predetermined sample size of 200 participants. This was not entirely attainable with time constraints as well as permission constraints from pharmacy owners. A final total of nineteen pharmacies were visited once at the end of the data collection, with a sample population size of 252 participants.

Ethics clearance was obtained on 28th May 2010 and renewed on 9th May 2012 for protocol number H100 519. Each participant was informed of the reason for the study, that the study was being done independent of the pharmacy, and their participation was voluntary. If they agreed to share their opinions by answering the questionnaire, they were asked to complete the informed consent. They were also handed the information leaflet to take away with them to read at leisure which provided more details on the study and contact details if they wished to find out more

about it. The data collection commenced on 25th February 2012 and was completed on 25th June 2012. Most of the data collection was carried out over weekends (Saturday and Sunday), with exceptions where pharmacies were not open on the weekends.

3.3. PHARMACY SELECTION

The types of pharmacies approached were classified as follows: (a) privately owned and (b) chain store pharmacies. Inclusion criteria for the pharmacies were that they must be a community/retail pharmacy and geographical location. A list of registered pharmacies in Gauteng (2010) was obtained from SAPC, which was used to identify pharmacies according to geographical location. Random sampling was used to identify pharmacies which would be contacted to participate in the survey. Each pharmacy was contacted telephonically for consent to conduct the study on their premises. In a case where consent was denied or the pharmacy contact details were unobtainable or incorrect, the next randomly drawn pharmacy name from the same area was contacted. Once consent was obtained, a date for the data collection was agreed upon and the pharmacist on duty was notified to expect the researcher. A minimum of four pharmacies per geographical region were visited for data collection.

Whilst it was intended for the sample size to be equally distributed amongst pharmacies in the different regions, this was not possible due to varying logistics of some pharmacies being busier than others. This resulted in more survey's being answered in the busier pharmacies and fewer in

the quieter pharmacies. Sampling was carried out by the investigator, who travelled to each pharmacy and recruited participants. An interpreter and a Wits student assisted the primary researcher with data collection in four out of the nineteen different pharmacies, located in two regions where there was a language barrier. They were both intensely trained on the understanding of the questionnaire and information leaflet prior to commencing with data collection. The investigators were available to assist those participants who were unable to complete the questionnaire on their own and required clarification or understanding of questions, or required for the investigator to write down the verbal responses they provided.

3.4. PARTICIPANT SELECTION

Participation in the study was voluntary, and open to all people attending the chosen pharmacy on the day of the data collection, except those who were under eighteen years of age. Customers were randomly approached whilst they were waiting in a queue at the pharmacy dispensary, and were not in a hurry. Customers in the pharmacy who were only purchasing front-shop items, which were not regulated by the SEP, were not approached. Customers were advised of the purpose of the study and asked if they would be interested in participating. Factors which would have excluded a person from participating in the survey were: if the person was under the age of 18 years, if they were fetching medication for a third party (excluding parents collecting medication for children under the age of 18 years) or if they did not consent to participate in the study. Confidentiality of all participants was to be protected by excluding personal details such as name, contact details, email address and so on. This made providing information pertaining to

income status, HIV testing and reproductive health services less sensitive, as the respondent could not be identified in any way after answering the questionnaire.

3.5. QUESTIONNAIRE DESIGN

A survey questionnaire was the only instrument used to collect data (Appendix A). The survey instrument had been specifically designed by the investigator for this study. The questionnaire was separated into different sections, where Section A focussed on collecting demographic and socio-economic information about the participants, with questions about gender, race, income status, insurance status and nationality. The question on health insurance status was included to determine whether being on medical aid or not would influence the responses provided. Nationality was included to determine how many of the responses were received from South Africans as opposed to visitors to South Africa. Respondents were not compelled to answer all questions in this section if they felt that the information requested was too sensitive to divulge.

In section B, Question 7 was included to determine the main reasons governing the choice of a pharmacy by members of the public, the intention of which was to provide insight into whether availability of pharmaceutical services influenced a person's choice of pharmacy. Question 8 was to help identify what percentage of respondents were familiar with the dispensing fee charged, before participating in the survey. Questions 9 to 12 focused on the perceived value added by pharmacists in the dispensing process. Lickert scales were used in question 9 to evaluate the

frequency with which pharmacist's performed certain tasks when dispensing medicines. The various tasks form part of the GPP guidelines.

Questions 13 and 14 were aimed at the professional services offered by pharmacists. Initially for question 14, Lickert type scales were used to rate the extent to which the public was willing to pay for specific services, and the value they attached to the availability of these services in a community pharmacy. After the validation study was done, it became evident that the participants found this question to be too long and were less inclined to want to answer the questionnaire. The Lickert scale was adapted to questions requiring a simple tick-box to answer 'Yes', 'No' or 'Not applicable'. Spaces were allowed for participants to comment where they felt necessary. The various services that are prescribed to be offered according to the "Rules relating to services for which a pharmacist may levy a fee" were grouped into broader sections, e.g. Baby and child health care service included immunization and injection services; reproductive health services included pregnancy testing. Some services were excluded as they were perceived to be confusing, such as the peak flow testing (for asthma) and blood cholesterol testing.

Section C was included solely to ascertain whether people on medical aid schemes were influenced to use the professional pharmaceutical services when the medical aid was paying for the service or not. A final section D was included to allow for respondents to share any personal views which they felt strongly about with regards to community pharmacy and pharmacists. This was analysed qualitatively.

3.6. INFORMATION LEAFLET DESIGN

The sole purpose of the information leaflet (Annexure B) was to enlighten people of the purpose of the study and to provide a brief overview of the key points of the questionnaire. Information was provided on the dispensing fee, professional fee and what a professional pharmaceutical service was. Contact details for the researcher, supervisor and ethics committee were also provided in case a person required further details on the study. Participants were offered the information leaflet at first point of contact to read before answering the questionnaire and/or to take away with them to read at leisure.

3.7. VALIDATION OF DATA COLLECTION INSTRUMENTS

During June 2011, a validation study was carried out in order to pilot the data collection instruments and determine whether they were readable and understandable. Ten voluntary participants were recruited at a retail pharmacy to complete the questionnaire and provide feedback on ease of understanding and reading of the questionnaire and information leaflet. To include people from a lower literacy group, another four questionnaires were distributed amongst cleaning staff at a corporate company, asking them to answer the questionnaires in the context of their last visit to the pharmacy.

The final result of the study revealed that people were reluctant to answer the questionnaire because it appeared to be too long when they saw that question fourteen was presented as a Lickert scale question, overlapping two pages. That question was then adapted, and grouped into overall questions with simple tick-box responses and spaces for “Comments”, as described in detail under the questionnaire design section above.

It was also observed that a section for generic comments would be useful for respondents who wished to share personal views about community pharmacy. The information leaflet was reviewed to make the sentences shorter and use easier language that would be understood by low-literacy groups as well. The revised versions of the questionnaire and information leaflet were used in the final data collection.

4. RESULTS

4.1. DATA ANALYSIS

Based on an assumption that the favourable response rate would be more than fifty percent (> 50%), i.e. more than 50% of participants would be willing to pay the professional fees and perceive the professional services to be valuable to them; then a sample size of 200 would have an accuracy of approximately ± 6.5% to estimate the favourable response rate.

The data collected from the study was captured in an electronic data set. Data capturing was verified and validity checks were performed with the data being double checked by the statistician once it was captured by the researcher. Categorical varieties were summarized by frequency counts and percentage, and were presented statistically as appropriate. Willingness to pay and perceived value of the pharmaceutical services were interpreted as a significantly favourable response in four out of the 6 questions directed as such under question fourteen.

The null hypotheses have been interpreted as meaning that the proportions of respondents unwilling to pay the professional fees and who do not find the services valuable is 50% or less, i.e. H_0: $\Pi \leq 0.5$ where Π represents the true proportion in the population. The alternative hypothesis was H_1: $\Pi \geq 0.5$. The normal approximation of the binomial distribution or Z-test was used to test H_0 against H_1. p-values ≤ 0.05 were interpreted as statistically significant.

Where applicable, responses in the data collection have been analysed and presented descriptively. All statistical procedures were performed on SAS Release 9.2 running under Microsoft Windows Vista Business for a personal computer.

The data was stratified by age, race, income status and health insurance status. This was used to determine whether there was any correlation between each of these groups and:

- awareness of the dispensing fee,
- perceived value of the dispensing fee,
- history of having used a pharmaceutical service in a community pharmacy,
- willingness to pay for each stipulated service and
- perceived value of having each service available in a community pharmacy.

4.2. QUANTITATIVE ANALYSIS

4.2.1. CHARACTERISTICS OF THE SAMPLE POPULATION

Table 1 shows that a total of 19 pharmacies were visited for the study, with 68% of the group consisting of privately owned pharmacies and the remaining 32% were part of a chain group.

Table 1: Types of pharmacies targeted in the study

TYPE OF PHARMACY	FREQUENCY	PERCENTAGE
Private	13	68%
Chain	6	32%

Of the 252 respondents, 60% were female and 40% were male, as seen on Table 2. The final sample population consisted of a total of 93% South Africans, and only 7% were Non-South Africans.

Table 2: Gender distribution

Gender	Percentage (%)	Frequency
Male	40	102
Female	60	150
Total	100	252

The age groups targeted consisted of 34% within the 18-30 year age group, 33% between the ages of 30-45 years, 25% between the ages of 45-60 years and 8% were older than 60 years of age (Table 3).

Table 3: Age distribution of sample population

Age groups	Percentage (%)	Frequency
18 ≥ 30	34	86
30 ≥ 45	33	84
45 ≥ 60	25	63
60+	8	19

Respondents reflecting the different racial backgrounds were 2% Asian, 42% Black, 4% Coloured, 10% Indian and 42% White, as reflected on Table 4.

Table 4: Racial distribution

Race groups	Percentage (%)	Frequency
Asian	2	6
Black	42	106
Coloured	4	9
Indian	10	25
White	42	106
Total	100	252

The income status of the study population (Table 5) was reflected as 6% students, 6% pensioners, 9% unemployed, 11% earning less than R5000 per month (p/m), 18% earning between R 6000 and R 10000 p/m, 30% earning between R 11000 and R 30000 p/m and 17% earning more than R 30000 p/m. 5% of respondents chose not to answer this question.

Table 5: Income status distribution

Income status	Percentage (%)	Frequency
< R5000	11	28
R 6000 – R 10000	18	45
R 11000 – R 30000	30	75
R 30000 +	17	42
Student	6	14
Pensioner	6	14
Unemployed	9	22
No response	5	12
Total	100	252

A total of 6% respondents were on a hospital plan, 65% were on full medical aid, 12% were privately funding their health care, 15% were dependant on public health care (PHC) and 2% chose not to respond to this question (Table 6).

Table 6: Health Insurance status

Health Insurance	Percentage (%)	Frequency
Hospital plan	6	15
Medical aid	65	162
Private	12	32
Public Health Care	15	39
No response	2	4
Total	100	252

4.2.2. REASONS FOR CHOICE OF PHARMACY

Respondents were able to select more than one option for going to the pharmacy on the chosen day. A total of 356 (n-value) volunteers responded. Figure 1 shows that 150 of the respondents had gone to the pharmacy for over-the-counter medication, 115 for collection of prescription medication, 27 to use a clinic service, 29 to ask the pharmacist for health related advice. 70 respondents felt that the chosen pharmacy was convenient and easy to get to, while 36 based their decision partly on the prices of medicines. Other reasons provided for choosing the specific pharmacy ranged from there being an old relationship and rapport with the pharmacist, trusting the advice offered by the specific pharmacist and receiving good service at the pharmacy they frequented.

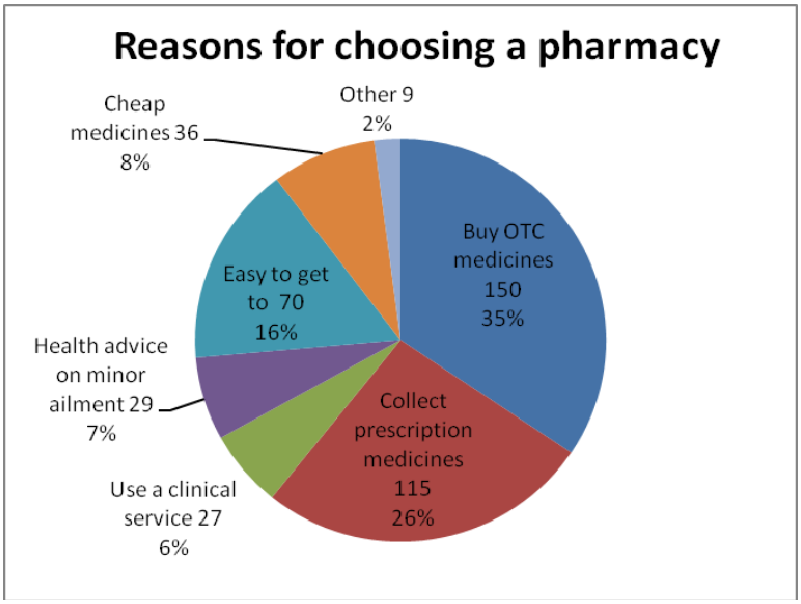


Figure 1: Pie graph representing the reasons for choosing a pharmacy

4.2.3. PUBLIC AWARENESS OF THE DISPENSING FEE

With reference to Figure 2 it can be seen from an overall sample size of 249 responses, 60.2% indicated that they were aware of the dispensing fee and 39.8% were not aware of the dispensing fee. There were only 3 non-respondents to this question which made up 1.19% of the final sample. These were excluded from the stratified analysis and interpretation to avoid inaccuracy in the statistical analysis.

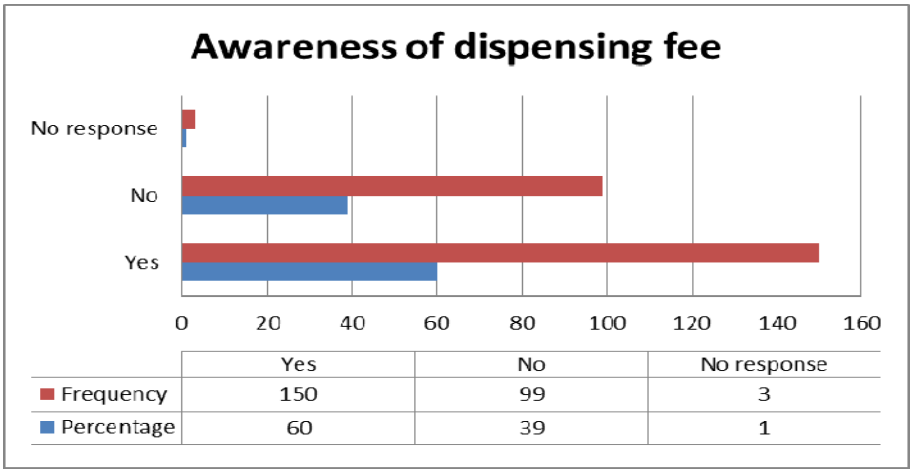


Figure 2: Bar graph representing population awareness of the dispensing fee

4.2.4. PUBLIC'S PERCEPTION OF VALUE RECEIVED DURING THE DISPENSING PROCESS

- When asked how often the pharmacist provided advice on the safe and effective use of medicines, 72% said mostly/always and 23% said never/sometimes and 5% of respondents were unsure.

- Questioned on the provision of information about side effects, 58% responded that they received this information mostly/always, 34% said never/sometimes and 8% were unsure.

- 50% of respondents said they received advice on drug/food and drug/drug interactions mostly/always, 37% never/sometimes and 13% didn't know.

- 57% of the sample population said they were asked by the pharmacist about allergies to medication mostly/always, 35% said never/sometimes and 8% were not sure.

- The pharmacist's checked about whether the patient was on any other medication before dispensing new medicines, according to 53% of respondents mostly/always, never/sometimes by 40% of respondents and 7% were unsure.

- On determining whether pharmacist's checked understanding of how to take medicines when dispensing, 79% indicated this was done mostly/always, 19% said never/sometimes and 2% were unsure.

- 78% - 79% of the population felt that they were able to talk to their pharmacist if they had further questions, 13% – 14% did not feel comfortable and easy to talk to their pharmacist and 15% – 19% were not sure about whether they felt easy talking to their pharmacist. (Table 7)

Table 7: Frequency with which public perceived to receive various counselling practices

FREQUENCY (n=252)	Never/ sometime		Don't	Most times/		No respon
A. Provides advice on safe and effective use of medicines	58	23 %	12 (4%)	180	72%	2 (1%)
B. Provides information on side effects of medicines	85	33 %	21 (8%)	145	57%	1 (1%)
C. Advises on drug/food or drug/drug interactions	93	37 %	33 (13%	125	49%	1 (1%)
D. Ensures there are no allergies to the prescribed medication	87	35 %	20 (8%)	140	56%	5 (2%)
E. Checks if I'm taking other medicines before dispensing new medicines.	99	40 %	17 (6%)	132	53%	4 (1%)
F. Ensured understanding of how to take medicines	48	19 %	5 (2%)	195	78%	4 (1%)
G. Is available for further questions	34	13 %	19 (7%)	196	78%	3 (1%)
H. Is easy to talk to	35	14 %	15 (6%)	198	79%	4 (1%)

The responses received for whether the pharmacist added value when dispensing medicines showed that 72% respondents said yes, 9% said no and 19% were unsure, as shown on Table 8. When analysed statistically, the unsure responses were excluded and only those who provided a "Yes" or "No" answer indicated that 88% (p-value = 0.000) had perceived value from the dispensing process and 11.3% had not perceived value. The responses of 'don't know' and the

non-respondents were excluded because it was not possible to make any valid inferences from this.

Table 8: Perceived value added by the pharmacist when dispensing medicines

Perceived value of dispensing process	Frequency	Percentage
Yes	180	72
No	23	9
Don't know	48	19

Table 9 refers to the question posed on who was the first port of call for treating minor ailments, of which 57% went to the pharmacist first, 38% chose a doctor first and the remaining 5% used other sources such as internet, family member, PHC clinics or traditional healers.

Table 9: First choice of health professional for advice on minor ailments

Health Professional	Frequency	Percentage
Pharmacist	142	57
Doctor	95	38
Other	15	5

Following on that response, 78% of respondents perceived the pharmacist as being able to provide them with health related advice whereas 9% said no, and 13% were not sure, as reflected on Table 10. For the statistical analysis, those responses with an unsure were excluded and the final sample size of 218 was analysed. It resulted in an 89.9% (p-value = 0.000) response that the pharmacist had the ability to provide health related advise and 10.1% did not have this perception of the pharmacist's ability.

Table 10: Perceived ability of the pharmacist to provide health related advice

Can pharmacist provide health related advice?	Frequency	Percentage
Yes	196	78
No	22	9
Don't know	34	13

Table 11 below displays that 45% (p-value = 0.057) of the population had used a professional pharmaceutical service within a pharmacy in the past and 55% had not.

When this data was stratified to health insurance status, the data revealed that 40% (p-value = 0.219) of people on a hospital plan and 41.9% (p-value = 0.020) on medical aid indicated that they had used a pharmaceutical service in a community pharmacy in the past, leaving 60% on hospital plan and 58.1% on medical aid who had not. 51.6% (p-value = 0.429) of people who privately funded their health care and 100% of those using public health facilities indicated that they had used a pharmaceutical service in the past in a community pharmacy with 48.4% private funders not having used it.

Stratification to age groups showed that amongst the respondents aged 18-30 years, 41.2% (p-value = 0.052) had used pharmaceutical services before and 58.8% had not. From the 30-45 year group 42.2% (p-value = 0.077) had used services and 57.8% had not. From the 45-60 year group 48.4% (p-value = 0.4) had used services and 51.6% had not. From the 60+ age group 63.2% (p-value = 0.126) had used services and 36.8% had not.

Table 11: Use of a pharmaceutical service in the pharmacy

Pharmaceutical service used at a pharmacy	Frequency	Percentage
Yes	112	45
No	137	55

On table 12, an overall view of the willingness to pay for different services and the perceived value of the services, have been presented. The data shows that the population were most willing to pay for baby and child healthcare services where 63% indicated this, and least willing to pay for the smoking cessation services as indicated by 43%. Smoking cessation services were seen as valuable by 62% of the sample, which was the lowest ranked in comparison to the other services. BP monitoring and HIV testing and counselling represented 52% and 49% of the population respectively who were willing to pay, yet the value attributed to having these specific services available in a pharmacy was acknowledged by 87% and 81% of the population respectively.

Table 12: Overall willingness to pay for services in a pharmacy and perceived value of having these services available in community pharmacy

Type of service	Willing to pay (%)			Valuable service (%)		
	Yes	No	N/A	Yes	No	N/A
Blood pressure monitoring	52	40	8	87	7	6
HIV testing/counseling	49	37	14	81	9	10
Smoking cessation services	43	16	41	62	9	29
Reproductive health services	55	17	28	71	6	23
Baby & child healthcare	63	17	20	76	5	19
Diabetes monitoring services	59	23	18	78	6	16

Additional services that were not included in the groupings but were requested by respondents included nutrition advice, weight loss programs, pregnancy testing, asthma advice and cholesterol

testing. Most of these services are included in the GPP guidelines and covered under the "Rules relating to services for which a pharmacist may levy a fee and guidelines for levying such a fee or fees" (Medicines and related substances act 101/1965, as amended).

4.3. STRATIFIED ANALYSIS

Stratification of results and interpretation thereof are presented below. The strata were income status, age, health insurance status and race. Stratification was done to determine whether there was any correlation to various questions.

4.3.1. AWARENESS OF THE DISPENSING FEE (Q_8)

Stratified to income status: 91.7% of people earning more than R 30000 p/m, 91.9% earning R 6000 – R 10000 p/m, 58.7% earning R 11000 – R 30000 p/m, 88% earning less than R 5000 p/m and 85% of unemployed, all responded indicating that they were aware of the dispensing fee. These are significant statistics as the p-value for each is <0.05. The remaining income bands which were excluded were the Student and Pensioner groups as they represented a small number of the sample population, 10 and 14 respectively, so the results would not be statistically significant.

Stratified to age: Respondents within the age group 18-30 years with awareness of the dispensing fee represented 48.2% and those not aware were 51.8% of the population. Of those between 30-45 years, 66.3% were aware and 33.7% were not aware of the fee. Those 45-60 years old represented 68.3% aware and 31.7% not aware of the fee. The last group of 60+ years old had 61.1% who were aware and 38.9% who were not aware of the dispensing fee.

Stratified to race: The two largest population groups were blacks (n=106) and whites (n=106). Of these groups 52.4% Blacks were aware of the dispensing fee and 47.6% were not aware, and 72.4% of Whites were aware with 27.6% not aware of the dispensing fee. The other race groups were poorly represented by 25 Indians, 9 Coloureds and 6 Asians. These were not taken into consideration as they would not be statistically significant in representing the population.

Stratified to health insurance status: People on medical aid were the most significantly represented by 159 repondents, of which 63.5% were aware of the dispensing fee and and 36.5% were not aware of it. From the 39 respondents who predominantly used PHC facilites 48.7% were aware of the dispensing fee and 51.3% were not. 32 respondents were privately funding their health care, of which 59.4% were aware of the dispensing fee and 40.6% were not. Those on a hospital plan represented 53.3% aware of the dispensing fee and 46.7% not aware of the fee.

4.3.2. PERCEIVED VALUE OF THE DISPENSING PROCESS (Q_10)

When the statistics were **stratified to age groups** it was found that from the age group 18-30 years, 87.7% perceived that the pharmacist added value when dispensing medicines to them, 12.3% did not perceive value. Within the 30-45 year age group, 87% perceived value and 13% did not perceive value. In the 45-60 year age group, 90.4% perceived value with 9.6% not perceiving value and in the 60+ year age group 94.1% perceived value with 5.9% not perceiving value.

Income status: The respondents earning less than R 5000 p/m showed a 100% perceived value with the dispensing process. Those earning between R 6000 – R 10000 p/m represented 53.5% (p-value = 0.324) who perceived value and 46.5% who did not perceive value from the dispensing process. Those earning between R 11000 – R 30000 p/m had a representation of 90.3% of perceived value and 9.7% not perceiving value. Of the group of earners with more than R 30000 p/m, 40.5% (p-value = 0.109) indicated that there was perceived value and 59.5% did not perceive value. 78.6% of the pensioner group indicated that they perceived value and 21.4% did not perceive value. Respondents who were students represented that 28.6% (p-value = 0.054) of this group did perceive value and 71.4% did not perceive value. Of the unemployed, 40.9% (p-value = 0.197) perceived value and 59.1% did not perceive value. (Refer to **Error! Reference source not found.**).

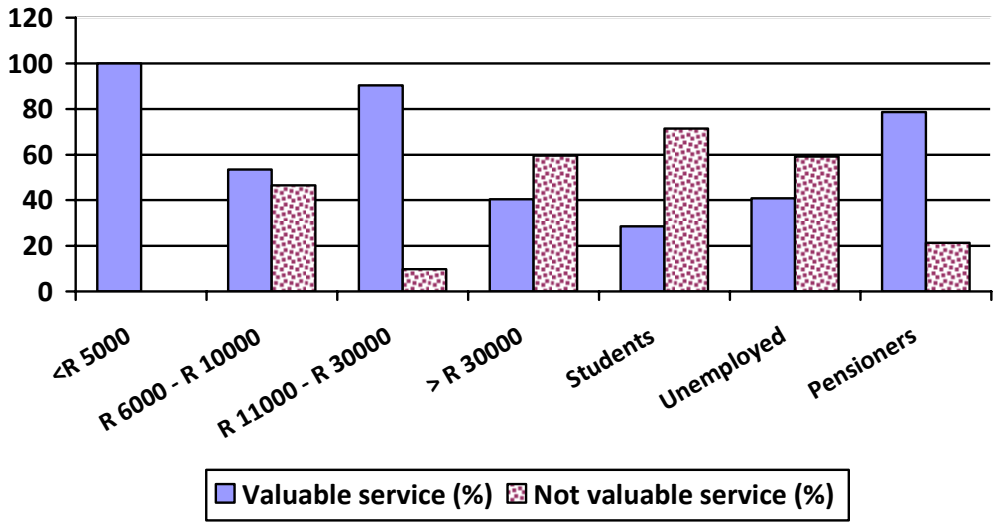


Figure 3: Graph showing perceived value of the dispensing process amongst different income groups

Race: Of the Black population that participated in the survey, 88.8% perceived that they received value in the dispensing process, 11.2% did not perceive value. From the White population, 84.4% perceived value and 15.6% did not perceive value. From the Indian population, 100% indicated a perceived value. Responses from the Coloured and Asian population groups were making up samples sizes of 9 and 6 respectively, which was too small to be seen as a significant value.

Health insurance status: People on medical aid represented the largest sample, of which 86.6% perceived the dispensing process to be valuable and 13.6% did not perceive it to be valuable. Of the people who were privately funding their health care, 95.8% perceived this to be a valuable process and 4.2% did not. From the group of PHC users, 100% perceived value. Respondents that were on a hospital plan did not represent a significant number of the population and were therefore not analysed.

4.3.3. WILLINGNESS TO PAY FOR PHARMACEUTICAL SERVICES AND PERCEIVED VALUE OF SERVICES (Q_14)

Stratified to Health Insurance groups

From the respondents that used **PHC facilities**, 45.9% indicated that they would be willing to pay for blood pressure (BP) monitoring and 54.1% would not be willing. 35.3% were willing to pay for HIV testing and counselling and 64.7% were not. 65% were willing to pay for smoking cessation services and 35% were not. 66.7% were willing to pay for reproductive health services and 33.3% were not. 57.1% were willing to pay for baby and child healthcare services and 42.9% were not.56.3% were willing to pay for diabetes monitoring services and 43.7% were not.

The same group of respondents showed that 100% felt BP monitoring was a valuable service to have in a community pharmacy, 77.1% said HIV testing and counselling was a valuable service and 22.9% did not find it valuable. 80.8% felt that smoking cessation services were valuable in a pharmacy and 19.2% did not find it valuable. 87.9% indicated that reproductive health services were valuable to have in a pharmacy and 12.1% did not. 88.2% found baby and child healthcare services valuable to have in a pharmacy and 11.8% did not. 84.8% perceived diabetes monitoring services to be valuable in a pharmacy and 15.2% did not.

The respondents on **medical aid** reflected 57% who were willing to pay for BP monitoring services in a pharmacy and 43% not willing to pay, 58.9% willing to pay for HIV testing and counselling and 41.1% not willing to pay. Willingness to pay for smoking cessation services was indicated by 74.5%

and 25.5% of the population were not willing to pay. 75.2% were willing to pay for reproductive health services with 24.8% not willing to pay for this. 82.5% were willing to pay for baby and child healthcare services and 17.5% were not willing to pay. 74.4% of respondents were willing to pay for diabetes monitoring services and 25.6% were not.

From this group of respondents 92% indicated that it would be valuable to have BP monitoring services in a pharmacy and 8% did not find it valuable. With regards to the HIV testing and counselling, 93.1% perceived it as valuable and 6.9% did not. For the smoking cessation services, 86.1% found it to be valuable and 13.9% did not. Regarding reproductive health services 92.8% felt it would be valuable and 7.2% did not. Value for baby and child healthcare services was expressed by 94.6% and 5.4% of respondents did not find this to be valuable as a service. 94.8% of respondents indicated that diabetes monitoring services would be valuable and 5.2% indicated it would not be valuable to them.

The sample population who were **privately funding** their health care reflected that 62.1% were willing to pay for BP monitoring with 37.9% not willing to pay. 63.3% would be willing to pay for HIV testing and counselling and 36.7% would not be willing to pay. For the smoking cessation services 71.4% would be willing to pay and 28.6% not willing to pay. For reproductive health services 90.9% were willing to pay and 9.1% were not willing to pay. With reference to baby and child healthcare services 88.5% were willing to pay and 11.5% not willing to pay. For diabetes monitoring services 81.5% were willing to pay and 18.5% were not willing to pay for the service in a pharmacy.

Interpretation of the perceived value for each of the services mentioned previously reflected that this group indicated 93.5% who perceived BP monitoring to be a valuable service to have in a pharmacy, 90% found HIV testing and counselling to be a valuable service to have in a pharmacy, 92% felt that smoking cessation services would be valuable, 96% said reproductive health services would be valuable, 96.2% felt baby and child healthcare services would be valuable and 92.9% felt diabetes monitoring services would be valuable to have in a community pharmacy.

Those respondents that were on a **hospital plan** only, reflected that 64.3% would be willing to pay for the BP monitoring services, 70% would be willing to pay for HIV testing and counselling, 77.8% would be willing to pay for smoking cessation services, 90% would be willing to pay for reproductive health services, 80% were willing to pay for baby and child healthcare services and 72.7% would be willing to pay for diabetes monitoring services in a pharmacy.

Of this group 93.3% felt BP monitoring services would be valuable to have in a community pharmacy, 73.3% indicated HIV testing and counselling would be valuable, 73.3% felt smoking cessation services would be valuable, 66.7% said reproductive health services would be valuable, 80% felt baby and child healthcare services would be valuable and 83.3% expressed that diabetes monitoring services would be a valuable service.

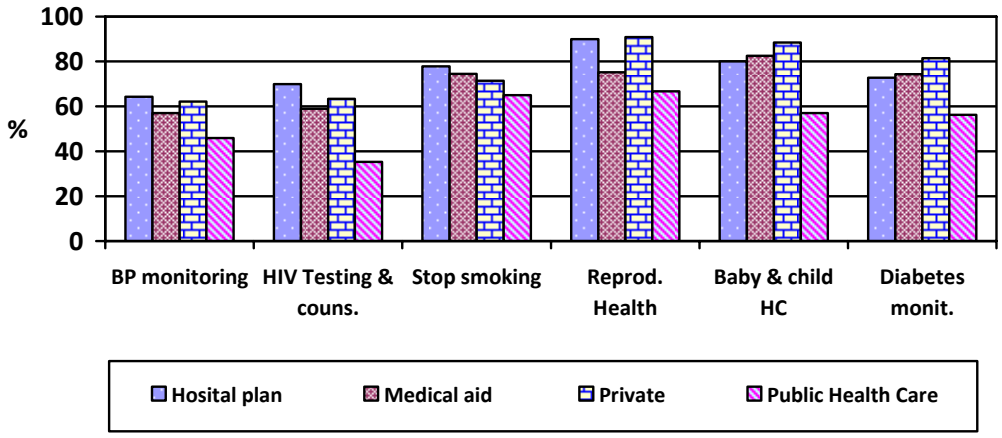


Figure 4: Graphical comparison of willingness to pay amongst the different Health Insurance groups

Stratified to age groups

The **18-30 year** age group respondents reflected that 41.8% would be willing to pay for BP monitoring, 50% would be willing to pay for HIV testing and counselling, 68.4% would be willing to pay for smoking cessation services, 68.6% would be willing to pay for reproductive health services, 80.3% would be willing to pay for baby and child healthcare services and 61.4% would be willing to pay for diabetes monitoring services.

When this group was analysed for perceived value of each service, it was found that 86.1% felt it would be valuable to have BP monitoring services available in a community pharmacy, 84.8% said HIV testing and counselling would be valuable, 78.1% indicated that smoking cessation services would be valuable, 87.3% said reproductive health services would be valuable, 93.2% felt baby and child healthcare services would be valuable and 85.7% felt that diabetes monitoring services would be valuable to have in a community pharmacy.

The **30-45 year** age group respondents reflected that 58.7% would be willing to pay for BP monitoring, 57.1% would be willing to pay for HIV testing and counselling, 73.3% would be willing to pay for smoking cessation services, 81.5% would be willing to pay for reproductive health services, 78.9% would be willing to pay for baby and child healthcare services and 74.6% would be willing to pay for diabetes monitoring services.

When this group was analysed for perceived value of each service, it was found that 95% felt it would be valuable to have BP monitoring services available in a community pharmacy, 93.2% said HIV testing and counselling would be valuable, 91.1% indicated that smoking cessation services would be valuable, 97.1% said reproductive health services would be valuable, 96.1% felt baby and child healthcare services would be valuable and 98.6% felt that diabetes monitoring services would be valuable to have in a community pharmacy.

The **45-60 year** age group respondents reflected that 64.4% would be willing to pay for BP monitoring, 60.4% would be willing to pay for HIV testing and counselling, 72.2% would be willing to pay for smoking cessation services, 80% would be willing to pay for reproductive health services, 70% would be willing to pay for baby and child healthcare services and 76.5% would be willing to pay for diabetes monitoring services.

When this group was analysed for perceived value of each service, it was found that 93.2% felt it would be valuable to have BP monitoring services available in a community pharmacy, 91.2% said HIV testing and counselling would be valuable, 88.9% indicated that smoking cessation services would be valuable, 92.7% said reproductive health services would be valuable, 90.9% felt baby

and child healthcare services would be valuable and 90.4% felt that diabetes monitoring services would be valuable to have in a community pharmacy.

The group of respondents that were **older than 60 years** reflected that 84.2% would be willing to pay for BP monitoring, 75% would be willing to pay for HIV testing and counselling, 90% would be willing to pay for smoking cessation services, 90% would be willing to pay for reproductive health services, 87.5% would be willing to pay for baby and child healthcare services and 94.4% would be willing to pay for diabetes monitoring services.

When this group was analysed for perceived value of each service, it was found that 100% felt it would be valuable to have BP monitoring services available in a community pharmacy, 84.2% said HIV testing and counselling would be valuable, 73.7% indicated that smoking cessation services would be valuable, 63.2% said reproductive health services would be valuable, 52.6% felt baby and child healthcare services would be valuable and 94.7% felt that diabetes monitoring services would be valuable to have in a community pharmacy.

Stratified to race groups

From the B**lack population** 49% were willing to pay for BP monitoring services, 50.5% were willing to pay for HIV testing and counselling, 65.6% were willing to pay for smoking cessation services, 74.7% were willing to pay for reproductive health services, 73.2% of respondents said they would be willing to pay for baby and child healthcare services in a pharmacy, 67% were willing to pay for diabetes monitoring services

87.4% indicated that BP monitoring would be a valuable service to have in a pharmacy, 86% felt HIV testing and counselling would be a valuable service to have in a pharmacy, 81.6% found smoking cessation services to be a valuable service, 89.7% said reproductive health services would be a valuable service to have in a pharmacy, 91.5% felt availability of baby and child healthcare services would be a valuable service to have in a pharmacy, 91.4% saw value in having diabetes monitoring services in a pharmacy.

In the **White population** sampled 65.6% were willing to pay for BP monitoring services, 63.5% were willing to pay for HIV testing and counselling, 77.9% were willing to pay for smoking cessation services, 82.6% were willing to pay for reproductive health services, 84.7% of respondents said they would be willing to pay for baby and child healthcare services in a pharmacy, 79.3% were willing to pay for diabetes monitoring services.

96% indicated that BP monitoring would be a valuable service to have in a pharmacy, 93.4% felt HIV testing and counselling would be a valuable service to have in a pharmacy, 89.5% found smoking cessation services to be valuable, 94.9% said reproductive health services would be a valuable service to have in a pharmacy, 96.2% felt baby and child healthcare services would be valuable to have in a pharmacy, with 94.1% seeing diabetes monitoring services as a valuable service.

From the **Indian population** 61.9% were willing to pay for BP monitoring, 63.2% were willing to pay for HIV testing and counselling, 76.9% were willing to pay for smoking cessation services,

62.5% were willing to pay for reproductive health services, 88.9% were willing to pay for baby and child healthcare services and 72.7% were willing to pay for diabetes monitoring services.

The analysis for value attributed to each of these services showed that 90.5% indicated it would be valuable to have BP monitoring available in a community pharmacy, 90.9% found HIV testing to be valuable as a service in a pharmacy, 94.1% perceived value from smoking cessation services, 93.8% expressed that reproductive health services would be valuable to have, 100% saw value in having baby and child healthcare services in a pharmacy and 90.9% said that the availability of diabetes monitoring services would be valuable to have in a community pharmacy.

The **Asian and Coloured populations** were small samples and the statistical analysis provided results that were not significant. Therefore they were not presented for further analysis and discussion.

Stratified to Income Status

The income group earning **less than R5000** p/m reflected 38.1% were willing to pay for BP monitoring services, 57.1% were willing to pay for HIV testing and counselling, 75% were willing to pay for smoking cessation services, 70% were willing to pay for reproductive health services, 57.1% of respondents said they would be willing to pay for baby and child healthcare services in a pharmacy, 76.9% were willing to pay for diabetes monitoring services.

From the same group 90.9% indicated that BP monitoring would be a valuable service to have in a pharmacy, 73.7% felt HIV testing and counselling would be a valuable service to have in a

pharmacy, 100% found smoking cessation services to be valuable, 95% said reproductive health services would be a valuable service to have in a pharmacy, 90.5% felt baby and child healthcare services would be valuable to have in a pharmacy, with 100% seeing diabetes monitoring services as a valuable service.

The income group **R6000 – R10000** p/m reflected 47.6% were willing to pay for BP monitoring services, 57.1% were willing to pay for HIV testing and counselling, 70.6% were willing to pay for smoking cessation services, 82.9% were willing to pay for reproductive health services, 75.8% of respondents said they would be willing to pay for baby and child healthcare services in a pharmacy, 50% were willing to pay for diabetes monitoring services.

From the same group 90% indicated that BP monitoring would be a valuable service to have in a pharmacy, 75% felt HIV testing and counselling would be a valuable service to have in a pharmacy, 87.9% found smoking cessation services to be valuable, 91.2% said reproductive health services would be a valuable service to have in a pharmacy, 93.9% felt baby and child healthcare services would be valuable to have in a pharmacy, with 90.5% seeing diabetes monitoring services as a valuable service.

The income group **R11000 – R30000** p/m reflected 62.3% were willing to pay for BP monitoring services, 61.5% were willing to pay for HIV testing and counselling, 82% were willing to pay for smoking cessation services, 79.7% were willing to pay for reproductive health services, 78.8% of respondents said they would be willing to pay for baby and child healthcare services in a pharmacy, 73.1% were willing to pay for diabetes monitoring services.

From this group 92.9% indicated that BP monitoring would be a valuable service to have in a pharmacy, 92.9% felt HIV testing and counselling would be a valuable service to have in a pharmacy, 89.8% found smoking cessation services to be valuable, 92.4% said reproductive health services would be a valuable service to have in a pharmacy, 94.1% felt baby and child healthcare services would be valuable to have in a pharmacy, with 92.8% seeing diabetes monitoring services as a valuable service.

The income group earning **greater than R30000** p/m reflected 79.4% were willing to pay for BP monitoring services, 76.2% were willing to pay for HIV testing and counselling, 85.2% were willing to pay for smoking cessation services, 86.2% were willing to pay for reproductive health services, 80% of respondents said they would be willing to pay for baby and child healthcare services in a pharmacy, 56.8% were willing to pay for diabetes monitoring services.

From this group 91.4% indicated that BP monitoring would be a valuable service to have in a pharmacy, 91.7% felt HIV testing and counselling would be a valuable service to have in a pharmacy, 92.9% found smoking cessation services to be valuable, 93.5% said reproductive health services would be a valuable service to have in a pharmacy, 93.8% felt baby and child healthcare services would be valuable to have in a pharmacy, with 89.2% seeing diabetes monitoring services as a valuable service.

The **pensioner's** group showed that 71.4% were willing to pay for BP monitoring services, 88.9% were willing to pay for HIV testing and counselling, 100% were willing to pay for smoking cessation services, 60% were willing to pay for reproductive health services, 92.9% of respondents

said they would be willing to pay for baby and child healthcare services in a pharmacy, 30.8% were willing to pay for diabetes monitoring services.

From this group 92.9% indicated that BP monitoring would be a valuable service to have in a pharmacy, 100% felt HIV testing and counselling would be a valuable service to have in a pharmacy, 100% found smoking cessation services to be valuable, 100% said reproductive health services would be a valuable service to have in a pharmacy, 100% felt baby and child healthcare services would be valuable to have in a pharmacy, with 83.3% seeing diabetes monitoring services as a valuable service.

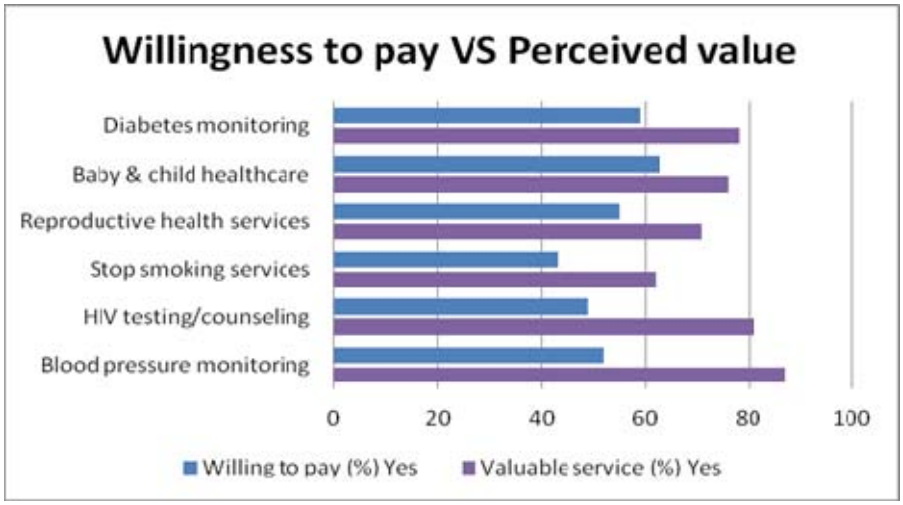


Figure 5: Public willingness to pay VS perceived value for the service

Table 13 below represents a brief summary of verbatim comments received from respondents completing the survey.

Table 13: Comments received from the different pharmacy types

PHARMACY TYPE	*COMMENTS*
Private pharmacy	Excellent services.
	Convenient to have additional services in the pharmacy.
	Pharmacist needs to provide more information on side effects, generic substitution, drug and food interactions.
	Pharmacists are important in the community to provide advice on minor ailments.
	Short waiting times and helpful.
	Pharmacists in the city are less patient and don't provide enough service especially to the elderly, as compared to pharmacists in the rural areas.
	Very expensive medicines.
Chain pharmacy	Pharmacist should be more informative about medicines.
	Pharmacists need to be friendly.
	Pharmacy must be conveniently situated.
	Provide an essential service without which state hospitals would collapse.
	Incompetent, lack expertise.
	Beneficial and convenient service provider.
	Need more training and support on client care.
	Pharmacists are helpful but due to long queues they don't get enough time to answer

	questions and provide explanations.
Chain pharmacy cont…	Lone queue times.
	More pharmacies should offer the additional services.

5. DISCUSSION

5.1. DISTRIBUTION OF PHARMACY TYPES AND REGIONS

There was an uneven distribution of pharmacies amongst the different regions. This was due to difficulty obtaining permission from some of the randomly selected pharmacies, where pharmacists were concerned that the study would bring to the attention of their customers the sensitive issues surrounding dispensing and professional fees. Some pharmacies were not contactable via the telephone numbers provided on the SAPC list as well as on internet websites.

The variety of pharmacy types was also only limited to privately owned retail pharmacies and one chain group of community pharmacies (seen on Table 1 previously). This was also skewed toward more privately owned pharmacies. Although there are various other types of chain pharmacies in the country, the researcher was faced with a barrier from corporate owned pharmacies who were not willing to freely allow data collection on their premises. They expressed concern that customers would feel harassed and there may be some negative impact on their business as a direct result of the types of questions people would be asked to think about. There was a single chain group that granted permission for data collection on their premises.

It was observed from remarks that the respondents who visited the smaller privately owned pharmacies demonstrated a greater satisfaction with the level of service received, in comparison

to the people at the larger chain store pharmacies. The larger pharmacies tended to be busier, resulting in longer waiting times and reduced time to spend on counselling patients. This caused patients to feel less satisfied with the service they were paying for and a poor perception of the abilities of the pharmacist. The pharmacist's in the privately owned pharmacies had the opportunity to develop rapport with their patients, resulting in a trusting relationship. Some respondents commented that they had visited the same pharmacy each time and did so because they trusted the advice received and did not receive the same level of service from other pharmacies. (Table 13). A previous study found that pharmacists working in independent pharmacies were 1.8 times more likely to practice prevention services than those in chain pharmacies (O'Loughlin *et al*, 1999).

5.2. DEMOGRAPHIC DISTRIBUTION OF THE SAMPLE POPULATION

97% of the respondents were South African citizens as opposed to visitors to the country. This was desirable since the focus of the study was to obtain the opinions of the people who would be directly affected by the legislative changes to medicines pricing, as well as their opinions on the role and perceptions of community pharmacists within SA.

There were more females than males that answered the surveys (Table 2). This may be attributed to more females being out shopping on a weekend, as consideration needs to be given to the fact that most of the data collection was done on weekends only. The respondents were mainly distributed between the ages of eighteen and forty-five years old (Table 3). This may be explained

by the fact that the survey was carried out within the metropolitan area, where a larger volume of the younger age groups would be found due to their jobs being in those areas. The survey was also dependant on people volunteering to answer it, which may create a skew toward younger people who may have greater willingness to volunteer as they could do so without much need for assistance.

Racial distribution showed that most responses were from the Black and White populations, with Indians, Asians and Coloureds being represented by small percentages (Table 4). This is not reflective of population statistics for SA. There is an inaccuracy in that an equal number of responses from Blacks and Whites were received, whereas according to SA statistics there is a larger population of Blacks than Whites in the country. The skew could be explained with statistical representation being inclusive of Black people in rural areas as well, but this survey only looked at the metropolitan area where there would be a higher concentration of the White population.

Socio-economic distribution of respondents can be interpreted as an even distribution between the low, middle and higher income groups (Table 5). This is desirable as it would provide a view of perceptions from various socio-economic backgrounds. The low income group was inclusive of students, unemployed, pensioners and those earning less than five thousand rand per month. Middle income earners were inclusive of those earning between six thousand and thirty thousand rand per month with those earning more than thirty thousand rand per month being considered a

high income group. The 5% of non-respondents could reflect that this portion of the population found this information to be too confidential to divulge.

People on medical aid made up the majority of respondents at 65% of the total sample (Table 6). Since only retail pharmacies were targeted in the data collection, it may be inferred that most people who have medical aid would prefer using the private facilities. The remaining 45% of responses were from people who privately funded their health care, used public health facilities or only had a hospital plan. These latter groups would predominantly pay cash for their day-to-day medical expenses, which could be seen as a hindrance to use the private facilities, hence preferring PHC facilities, thus explaining the lower percentage of respondents in those groups.

5.3. REASONS FOR GOING TO THE PHARMACY

The results demonstrated that the most common occurrence for visiting the pharmacy was to purchase medicines (Figure 1). There was a low occurrence of cases where the main purpose of going to the pharmacy was to obtain advice from the pharmacist for a minor ailment or to use any of the clinic services offered at the pharmacy. This correlates with findings from a study conducted in the UK, where it was shown that consumers used community pharmacies more often for medicines and less for general health advice (Anderson, Blenkinsopp, Armstrong; 2004). This may also be explained where there were cases in which the pharmacy did not offer professional pharmaceutical services. The public perceptions could be changed by pharmacists promoting their role as health advisors. The study by Anderson *et. al.* (2004) mentioned that the

public may have low expectations of the community pharmacist. This does not necessarily mean that the public would not be willing to support additional services if they were available in the pharmacy setting.

However, this survey showed that 57% of respondents went to the pharmacist first for advice on minor ailments or for health advice. 78% of respondents had the perception that the pharmacist had the ability to provide health related advice. This may be interpreted to mean that people perceive pharmacists as providers of health advice and not just dispensers of medicines. This is indicative of an evolving public perception of community pharmacists.

The location of the pharmacy also played an important role in whether customers used that pharmacy, as can be judged from the 70 respondents who indicated that the chosen pharmacy was conveniently situated. The price of medicines did not appear to play a large role in the decision making process for choosing a particular pharmacy, with only 36 respondents indicating that this factor influenced the decision to go to the chosen pharmacy. These findings were in agreement with a study conducted in Estonia where the surveyed public expressed that it was more important to them that the pharmacy was closer to home, and less important what the cost of the medicines was, when they chose a pharmacy to go to (Villako and Raal; 2007). The 2001 National Pharmacy Consumer Survey conducted in America also confirmed that the primary determining factor for choosing a pharmacy was convenience followed by price (Stergachis *et. al.*; 2002).

5.4. AWARENESS OF THE DISPENSING FEE

The results indicated that less than 50% of the younger population of 18-30 years old were aware of the dispensing fee. More than 50% of the older populations were aware of the dispensing fee i.e. the age groups from 30 years and older. No valid explanation could be offered with references, for this finding about the lack of awareness of the dispensing fee in the younger age group. It may be considered that younger individuals are less inclined than older people to have chronic conditions which result in them needing frequent medication. This could relate to the lower awareness in younger population groups.

The respondents that were on medical aid and those who privately funded their health care demonstrated the largest percentage of people who had been aware of the dispensing fee when compared to the other health insurance groups. 50% of the group that was using PHC or had a hospital plan indicated that they were aware of the dispensing fees. This can be seen as a chance outcome and therefore is not significant to say that they had awareness of the dispensing fee. It can be inferred if one makes the assumption that if a person is obtaining most of their chronic or emergency medical treatment in a PHC setting, where they are not affected by dispensing and professional fees, then they would have a lower awareness of this. People who are required to manage their healthcare with personal funds or with a medical aid would be more sensitive to any co-payments or changes in the prices of the medicines they are using, bringing to their attention things like the dispensing and professional fees.

When looking at the different racial groups, it was found that a larger percentage of the White population had been aware of the dispensing fee in comparison to the Black and Indian populations. Taking into consideration that the samples of Asian and Coloured populations were small, they could not be seen as statistically significant and were excluded from the analysis. This could be indicative that the Black and Indian populations may be more apathetic toward legislative changes and so they had lower awareness. Some people may have had difficulty interpreting the question which could lead to an inaccurate response.

All income bands demonstrated that more than 50% of each group were aware of the dispensing fee, which implies that income status and awareness of dispensing fees paid are not related. The non-respondents were excluded from the analysis since no clear inference could be made from their lack of providing a response.

5.5. PERCEIVED VALUE OF THE DISPENSING PROCESS

The overall public perception indicated that 72% of the sample population (Table 8) perceived that the pharmacist added value during the dispensing process. The three most prominent counselling practices that were found in the results was that:

a) more than 70% of all respondents had received advice on the safe and effective use of their medicines,

b) the pharmacist ensured that there was understanding of how to take the medicines correctly

and,

c) they presented as easy to talk to and approachable for further questions.

The least likely information that was provided by the pharmacist was advice on drug/food and drug/drug interactions and checking whether the patient was taking any other medicines before dispensing new medication (Table 7). This finding was also presented in the study by Mukandabarasa (2007), where counselling for drug interactions and adverse effects were amongst the commonly missed topics when counselling a patient.

Pharmacists may be cautious to provide too much information to patients which may create more concerns about taking the medicines and thus lead to poor adherence or be seen as an 'information overload'. In busier pharmacies, time constraints may also present an impediment to spending more time to provide detailed counselling. There were respondents who indicated that they would prefer for the pharmacist to provide the advice on side effects and interactions, but only received this information if they asked further questions. Some remarks also indicated that patients would appreciate the pharmacist being friendlier and asking more questions.

Table 8 presented that 19% of the overall population did not know whether the pharmacist added value when dispensing medicines. This may mean that the pharmacists are not always consistent in the level of counselling practised. This could be a result of the respondents going to different pharmacies or being helped by different people at the pharmacy with varying levels of clinical knowledge and counselling abilities. This may also impact the perceptions of those people who responded that they did not feel they received value when medicines were being dispensed to

them. A remark that can be taken into consideration was that the service level dropped when the pharmacy was busier. That may result in pharmacist's providing less counselling and advice in order to work faster, which then influenced the perception of value received (Table 13).

An interpretation of the results presented when stratified to age, income status, health insurance status and race, did not present a discernible deviation with perceptions of the value added during the dispensing process. There was an overall demonstration that the public perception was that the pharmacist added value when dispensing medicines to them.

5.6. PUBLIC'S USE OF PROFESSIONAL PHARMACEUTICAL SERVICES

There was an overall indication that the use of health services in a community pharmacy was not common amongst the sample population. Less than 50% of the population had used these types of services in the past. This may be as a result of the services not being available in all pharmacies, or not being sufficiently advertised, leading to low awareness of the services being available in the pharmacies. There was a perception amongst 78% of the population that the pharmacist had the ability to provide health related advice. Taking into account that 57% of respondents viewed the pharmacist as a first choice for advice on minor ailments, it can be inferred that the public was aware of the abilities of the pharmacist and given the opportunity, would make use of health advice and services available in a pharmacy.

The medical aid member's showed greatest reluctance to use professional pharmaceutical services. This may be attributed to the medical aid covering costs of a doctor's consultation where the basic monitoring services can be done, in contrast to the cost of the pharmacy service being paid out-of-pocket. The older age group displayed a higher portion of the sample that had used the services in the past. Less than 50% of the population between ages 18 – 45 years old had used professional pharmaceutical services, whereas those older than 45 years had represented greater than 50% of the population who had used the services in the past. This may be explained from there being greater awareness of chronic ailments being prevalent as one gets older. This may have motivated the population to have regular monitoring for current or possible chronic conditions at their pharmacies.

5.7. PUBLIC WILLINGNESS TO PAY FOR PHARMACEUTICAL SERVICES

An interpretation of the results for whether the public were willing to pay for certain pharmaceutical services, and what value did they attach to having these services in a community pharmacy revealed that overall, people were less willing to pay for services, but felt that it would be valuable to have the services available in a community pharmacy setting.

When the responses marked 'not applicable' were excluded from the analysis of results, it became evident that smaller proportions of the population were willing to pay for BP monitoring (56.5%) and HIV testing and counselling (56.7%). HIV testing is considered a sensitive topic and comments received indicated that people preferred having this done in a confidential

environment, which they felt was not available in the pharmacy. They also did not have the perception that the pharmacist was appropriately trained to provide counselling and so preferred to go to a doctor or nurse who had the relevant training and skills. BP monitoring is a service that people can obtain at a clinic or on a doctor's visit, without having to pay any additional fee, and remarks reflected that this should be a free service. BP monitoring machines are also available for people to purchase and use at home, which is another reason there was a lower willingness to pay for this service.

The most prevalent service that the population was willing to pay for was baby and child healthcare services with 79% indicating such (Figure 5). Reproductive health services reflected a willingness to pay from 76.7% of the population, which was followed by smoking cessation and diabetes monitoring services both having a willingness to pay from 72% of the population. It can be deduced that people would place the healthcare of their children at a high level of priority and would not want to compromise in this regard. They would be willing to pay for quick and convenient service, especially when dealing with a sick child. A large portion of the sample population was between the ages of 18 years to 45 years, which could influence the use of services pertaining to reproductive health and smoking cessation.

Certain factors were identified which would influence the reasons for willingness to pay such as:

Not willing to pay

- some people already owned a BP, diabetes, etc. machine at home or had their check-up done at the gym or at work for no charge
- the services were offered at a clinic or hospital at no charge
- the person did not have any chronic conditions so did not feel that it was necessary to have regular checks
- people who were not earning commented that this was a hindrance to their willingness to pay for services in a pharmacy
- some people perceived that the pharmacist was not knowledgeable enough to counsel and deal with some of the services such as HIV testing and counselling
- less privacy and confidentiality in a pharmacy setting as compared to a private doctor's consultation was a concern for some
- some conditions should be monitored by a specialist only and not at a pharmacy
- some comments were that the services should be available for free in a pharmacy

Willing to pay

- people would be willing to pay for the service if it was reasonably priced
- the convenience of having services in the pharmacy was seen as a motivation to pay for them

- pharmacists were seen as more accessible than doctor's, as there was no need to make appointments to see the pharmacist
- the pharmacy hours being longer and available on weekends was a valuable comment made for greater willingness to pay.

Some services may have previously been offered at no cost, such as blood pressure monitoring, which then creates a barrier to pharmacists suddenly charging a fee for the service. An additional factor that needs to be taken into consideration is that if a pharmacist identified a problem with a test that was carried out, e.g. a person was found to have high cholesterol readings, and the patient was referred to a doctor for confirmation of the diagnosis, they would have had to pay the pharmacist, and the doctor to do the diagnostic testing. The pharmacist visit may then be seen as a duplicated expense because the diagnosis cannot be confirmed by the pharmacist, which is why the professional fees need to be maintained at a realistic low rate. Displaying the cost of the services offered at the pharmacy may also be a means of attracting more people to use the service in cases where they perceive the cost to be affordable for them.

Stratified to age groups

The age group stratification showed that those from age 18 to 30 years old had a smaller proportion of people that were willing to pay for the BP and diabetes monitoring services whereas there was a greater prevalence that would be willing to pay for the reproductive health services and the child healthcare services. This can be considered to be related to the age group having

younger children and probably not having a high incidence of chronic ailments. In this case the monitoring for chronic conditions would not be as high a priority as caring for the health of their children as well as family planning, contraception and other services related to reproductive healthcare.

As the population age increased from 30 years to 60 years, there was a noticeable increase in the willingness to pay for services that allowed regular monitoring of chronic conditions. There were comments indicating that for people who needed the services these would be valuable for it to be available in the community pharmacy, meaning that although they indicated there was perceived value for the services, it was not necessarily valuable for the respondent if they felt that it was not needed by them specifically.

In the 60+ age group, it was noted that they had a lower willingness to pay for services such as baby and child healthcare and reproductive health services. This is probably explained from understanding that this population group would be less likely to have young children of their own and would also have less concern for family planning and related issues.

Stratified to race groups

When comparing the various services amongst the racial groups, it was observable that there was a lower willingness to pay for HIV testing and counselling from the Black population which was at 50.5%, than the White and Indian populations at 63% each. There may be a stigma amongst the

Black population attached to HIV, which could pose a barrier to be willing to be tested in an environment that does not appear to be private and confidential. Also taken into account is that respondents may have been reluctant to indicate that they would be willing to be tested for HIV, for fear that it may be assumed they are HIV positive and will be stigmatized.

The Black population showed the lowest willingness to pay for BP monitoring services at 49% whereas the Indian and White populations showed that more than 60% were willing to pay for the service. Economic and Social considerations continue to contribute to the low rate of detection, treatment and control of hypertension in the black population (Saunders, 1988). This could be a contributing factor to the low willingness to pay for the service.

The Black population displayed poor willingness to pay for smoking cessation services in comparison to the Indian and White populations. According to a study on tobacco smoking in SA, it was found that smoking prevalence was highest amongst Coloured people followed by Whites, Indians and then Black people (van Walbeek, 2002). This may be a factor contributing to the greater willingness to pay for services to help stop smoking amongst the Indian and White population groups, and lower willingness to pay for smoking cessation services among the Black population.

All three of the analysed population groups showed that greater than 50% of each group were willing to pay for reproductive health services, baby and child healthcare services and diabetes

monitoring services. This may be indicative that these services are more likely to be used if they are available in the pharmacy and that people may have greater concerns about conditions related to these services than to things such as blood pressure or smoking cessation.

Stratified to health insurance status

People on a hospital plan and those who privately funded their healthcare showed a higher percentage of the population that were willing to pay for the pharmaceutical services in comparison to those on medical aid and using PHC services. This may be explained from the perspective of medical aid members expecting that their services should be funded by the medical aid and PHC users receive the services at no cost when they attend public hospitals and clinics, so there is no perceived motivation for them to pay additional costs. Those who fund their out of hospital medical requirements from their own pockets would be more willing to pay for the services in a pharmacy setting if they perceived it to be more reasonably priced and convenient in avoiding appointments and long queues at a doctor's surgery. Across all health insurance groups there was an overall perceived value for having the services available in a community pharmacy (Figure 4).

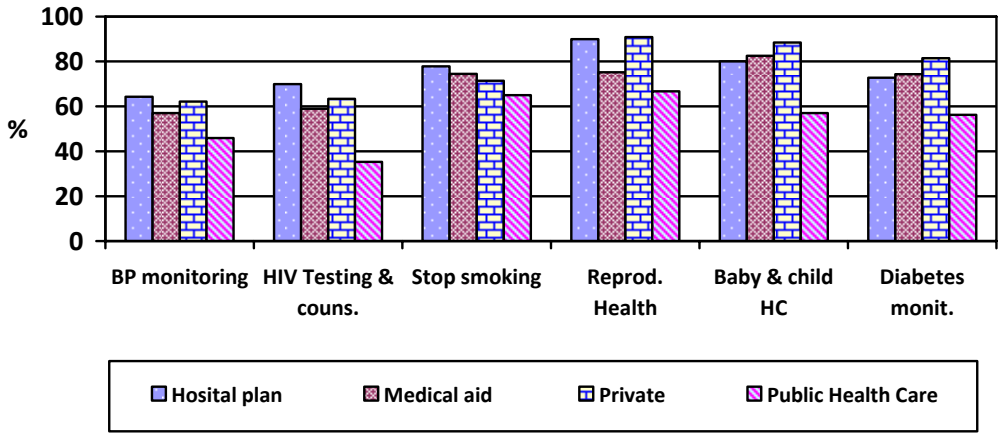


Figure 4: Graphical comparison of willingness to pay amongst the different Health Insurance groups

Stratified to Income Status

Employment status and age group has been shown to have an influence on patient satisfaction. The findings of a study concerning the relationship between pharmacy services and patient satisfaction showed that older people and those without jobs experienced higher satisfaction with pharmaceutical services amongst the Japanese population tested (Kamei, Teshima, Fukushima and Nakamura; 2001).

The results showed that people who fell into the lower income groups were less willing to pay for services that could be found in the PHC setting for free, whereas those who were earning in the middle to higher income groups displayed a greater willingness to pay for most services if they were available in a pharmacy. Some comments of note were that they would be willing to pay for the convenience of not having to wait in long queues and having the service available without

having to make an appointment at the pharmacy. It may be valuable for pharmacies who offer the additional services to display a price list of fees per service offered, as other remarks from respondents revealed that they would be willing to pay a reasonable fee.

The pensioner group indicated a greater willingness to pay for 5 out of the 6 services requested. The diabetes monitoring service was found to have the lowest percentage of respondents willing to pay and this may be because some people have this monitoring done regularly if they have been diagnosed with diabetes or have monitors of their own, so there would be no need to have this testing done for a fee in a pharmacy. The entire group expressed a high level of perceived value to have the professional service available in a community pharmacy.

It was evident that the older population are more approving of the convenience and importance of having various primary health care services available in a community pharmacy and may be more inclined to support pharmacies that offer such services. The analysis of this particular group has been looked at with the knowledge that the final sample of pensioners that answered these questions was 14, which does not provide statistically significant values with a p-value >0.05. They have been presented in an interest to determine whether there is any validation in the findings by Kamei *et. al.* (2001). This has been demonstrated but with reservations regarding the small sample size.

5.8. PERCEIVED VALUE OF PROFESSIONAL SERVICES

It can be seen from Table 12 previously, more than 60% of the overall population perceived that it would be valuable to have professional pharmaceutical services available in a community pharmacy. When stratified to race groups more than 80% of each of the stratified race groups revealed perceived value for the services as well. This is a significant value to take into consideration for all of the pharmaceutical services mentioned previously. The implications may be that availability of the additional pharmaceutical services will be adding value to the community. The population across all age groups indicated more than 50% of the population perceived value that would be attached to the availability of the additional pharmaceutical services.

Figure 5 below displays that there are disparities that can be seen between perceived value for the services and willingness to pay for the service. Respondents remarked that the services should be available in the pharmacy at no cost. This may have a detrimental effect on the way forward for the profession if the public does not see the value of paying for a service in a community pharmacy, but would be willing to pay for it at a doctor or clinic. Visible advertising of the availability of additional professional services and the costs of the services may prove to attract more to people using them. This is in agreement with the study conducted by Stergachis *et. al.* (2002).

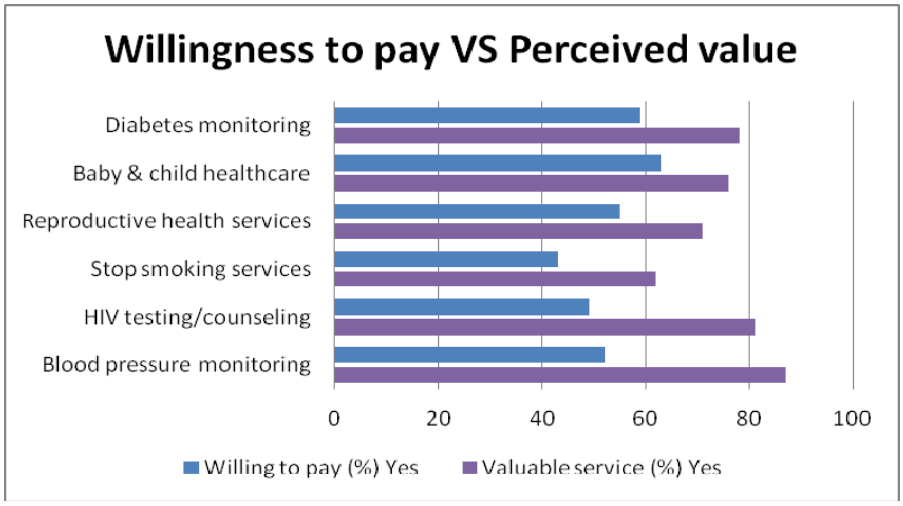


Figure 5: Public willingness to pay VS perceived value for the service

Those respondents who indicated a 'not applicable' response to the perceived value of the services, did not represent a significant portion of the sample population, but the response can be construed to imply that they may have not been aware of the professional services available in some community pharmacies . This may lead to them being unable to attribute a value of some sort, having not been exposed to the service previously.

Taking into consideration the implementation of the NHI in SA in the near future, and the perceived value of pharmacy services as indicated by the public in this sample population, a capitation model which is applicable to NHS and private health insurance funders, may be a viable option. An interesting point of note from the studies conducted by the NCI3 was that the incentivised models used in the USA resulted in higher quality of care where this was an impacting factor on the re-imbursement to the physicians.

Another study conducted by O'Loughlin *et. al.* (1999), also confirmed the previous findings that incentives by health insurers and government could promote pharmacies including health care and prevention services. She found that pharmacists were willing to practice prevention but the lack of compensation was seen as one of the barriers to providing this service.

NHS could use the capitation model as a tool to incentivise more pharmacies to include primary care services within their pharmacy settings and promote the opening of pharmacies in the poorly accessible rural areas. This could lead to more people having access to primary care services at an affordable rate and reducing the burden on the PHC clinics and government sector hospitals who could be using valuable, limited resources on patients with more serious and complex health problems and emergencies.

6. CONCLUSIONS

For many years since the last century, many people have been emphasizing the need for the pharmacy profession to move away from the traditional role of being a 'shopkeeper' toward the pharmaceutical care model (Williams KF, 2007). The findings from this study indicate that this change has happened and the public perception of community pharmacists as health care providers is successfully moving in the desired direction. The pharmacist's skills are being recognized and fully embraced in the community pharmacy setting. This is in agreement with the results of the study conducted by Mukandabarasa M R (2007) as mentioned in section 2.1 above.

The study has presented that there is a perception amongst the majority of the sample population that the dispensing of medicines by a pharmacist was a valuable service. They received valuable information when they were counselled and were able to ask further questions of the pharmacist when more details were required. The pharmacist was perceived as having the ability to provide advice on minor ailments and health problems. They were seen as a preferential choice over a doctor for this type of advice. This leads to the conclusion that the public perception of the pharmacist as a health advisor has become more evident and that the move toward pharmaceutical care is a more common practice amongst pharmacists. The privately owned pharmacies were viewed as being an important part of the community pharmacy sector, as their customers displayed a higher level of satisfaction with services.

There was a general reluctance in willingness to pay for the various pharmaceutical services, but a significant perceived value for having the services available in a community pharmacy. Regular monitoring of chronic conditions is important to ensure proper control of disease and prevent rapid progression or complications. It would be valuable for pharmacists to promote their roles as health care advisors in the community pharmacy setting. This is especially important in areas where there is a poor perception of the abilities of a pharmacist.

Relationship marketing is a tool that has been discussed in detail by Doucette and McDonough (2002). They described how building a lasting relationship with specific patient groups can lead to a mutually beneficial relationship where the pharmacy can market services that meet the needs of their customer base. They explain how pharmacy services can be tailored according to the market segment and niche markets can then be created (Doucette and McDonough, 2002). In this way the services offered are more likely to be used because they are in demand.

With the gradual roll-out of the NHI, community pharmacies offering additional clinic services could help in reducing the tremendous burden placed on primary care settings. It also provides an ideal situation for regular monitoring of chronic conditions and collection of chronic medication simultaneously. Government could use this as an opportunity to incentivise community pharmacies to offer professional services using a capitation or fee-for-service model, which would create public-private partnerships. This could lead to more community pharmacies in rural areas, where there is a greater need, ultimately addressing the long-term goal of improving accessibility to health care and medicines.

There was a relationship found between income status and willingness to pay for services, where people earning less money or no money portrayed a lower willingness to pay. With SA government looking for ways to reduce the costs of medicines and improve accessibility to healthcare, if they were to review and remove the VAT component from the cost of medicines, it would impact the ability of the public to afford regular treatment as well as regular monitoring services. The long term effect of which could be reduced need for hospital visits to treat emergencies.

Factors that would influence willingness to pay for the professional pharmaceutical services were identified as:

- The pharmacist needed to demonstrate a level of competence to provide the services
- The services should be 'reasonably' priced
- The availability of the pharmacist and services without having to make appointments was important to respondents
- The availability of the pharmacy at convenient times was an additional factor promoting willingness to pay for additional services.

7. RECOMMENDATIONS

- It may be worthwhile for the SAPC to consider introducing structured training programs as part of the continuous professional development of pharmacists which allows them to update and improve their knowledge, in order to offer the professional services that are within their scope of practice, such as injection services, vaccination, diabetes monitoring, etc. A valid qualification certificate may aid in promoting the pharmacists' abilities as a health care provider and ability to provide primary care services.

- Pharmacists should aggressively market the availability of additional professional services within the pharmacy. They can actively offer the services to clients when dispensing chronic scripts. The identification of their market demands for services, are important when deciding what services to offer their clients, and tailor services to their client's needs.

- Government should consider targeting the removal of VAT which is added onto medicines, instead of solely removing profit margins in efforts to reduce the costs of medicines. The combined price reduction from the SEP and VAT removal will certainly have a greater impact on making medicines more affordable than one effort alone.

- Government and private health insurers should take into consideration the positive effects a capitation model can have on the SA health care system. If this model can

improve the basic requirements as stipulated in the NDP, of improving access, affordability and quality of health care to all South Africans, this will be a great step toward an improved health system.

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APPENDIX A

Survey of the Public Willingness to Pay for Professional Pharmaceutical Services in the Johannesburg Metropolitan Area

A. DEMOGRAPHIC INFORMATION (Please tick the box of your choice where appropriate)

1. GENDER:

Male ☐ Female ☐

2. AGE GROUP

18-30 years ☐ 30-45 years ☐

45-60 years ☐ 60 + years ☐

3. RACE

Black ☐ White ☐ Coloured ☐

Indian ☐ Asian ☐ Other ☐

4. NATIONALITY

South African ☐ Non South African ☐

Please specify your town/ province/ country of origin.

_____

_____

5. INCOME STATUS (p/m = per month)

Less than R5 000 p/m ☐ R6 000 – R10 000 p/m ☐

R11 000 – R30 000 p/m ☐ more than R30 000 p/m ☐

Unemployed ☐ Student ☐ Pensioner ☐

6. HEALTH INSURANCE STATUS

Public health care ☐ Hospital Plan ☐

Medical aid scheme ☐ Private ☐

B. BACKGROUND INFORMATION.

You may tick more than 1 option

7. Why did you come to the pharmacy today?

Buy over-the-counter medicine ☐

Collect prescription medicines ☐

To use a clinical service e.g. check blood pressure, cholesterol, family planning services, etc. ☐

For advice on a health related problem e.g. persistent cough, headache, diarrhoea, etc. ☐

Easy to get to ☐

Medicines prices are lower ☐

Other reason ☐ Please specify:

_____

_____

_____

8. Are you aware that you pay a dispensing fee to community pharmacists when they dispense medicines to you?

Yes ☐ No ☐

APPENDIX A

9. Please circle a number on the scale below that best shows how much you agree or disagree with the following statements.

My Pharmacist:	**Never**	**Sometimes**	**I don't know**	**Most times**	**Always**
A. Provides advice on the safe and effective use of my medicines	1	2	3	4	5
B. Provides information about side effects of my medicines	1	2	3	4	5
C. Advises me on any drug/food or drug/drug interactions	1	2	3	4	5
D. Ensures that I do not have allergies to the medication	1	2	3	4	5
E. Checks if I am taking other medicines before dispensing new medicines	1	2	3	4	5
F. Ensures that I understand how to take my medicines	1	2	3	4	5
G. Is available to me whenever I have further questions	1	2	3	4	5
H. Is easy to talk to	1	2	3	4	5

10. The above mentioned services form part of the dispensing process. In your opinion, does your pharmacist add value when dispensing medicines to you?

Yes ☐ No ☐ I don't know ☐

Comment:

_____

_____

11. Is your pharmacist able to provide you with health related advice?

Yes ☐ No ☐ I don't know ☐

If yes, please specify what type of health related advice you have asked your pharmacist for in the past.

_____

_____

12. Who do you go to first for health advice on minor ailments?

Pharmacist ☐ Doctor ☐ Other ☐

Please specify who:

_____

13. Have you ever used any of the professional pharmaceutical services offered at community pharmacies?

Yes ☐ No ☐

14. (a) Are you willing to pay for blood pressure monitoring at your pharmacy?

Yes ☐ No ☐ Not applicable ☐

Comment: _____

Do you feel this is a valuable service?

Yes ☐ No ☐ Not applicable ☐

Comment: _____

(b) Are you willing to pay for HIV testing and counselling at your pharmacy?

Yes ☐ No ☐ Not applicable ☐

Comment: _____

Do you feel this is a valuable service?

Yes ☐ No ☐ Not applicable ☐

Comment: _____

(c) Are you willing to pay for services to help you stop smoking at your pharmacy?

Yes ☐ No ☐ Not applicable ☐

Comment: _____

Do you feel this is a valuable service?

Yes ☐ No ☐ Not applicable ☐

Comment: _____

(d) Are you willing to pay for reproductive health services at your pharmacy?

Yes ☐ No ☐ Not applicable ☐

Comment: _____

Do you feel this is a valuable service?

Yes ☐ No ☐ Not applicable ☐

Comment: _____

(e) Are you willing to pay for baby and child health care services at your pharmacy?

Yes ☐ No ☐ Not applicable ☐

Comment: _____

Do you feel this is a valuable service?

Yes ☐ No ☐ Not applicable ☐

Comment: _____

(f) Are you willing to pay for diabetes monitoring services at your pharmacy?

Yes ☐ No ☐ Not applicable ☐

Comment: _____

Do you feel this is a valuable service?

Yes ☐ No ☐ Not applicable ☐

Comment: _____

(g) Are there any other services not mentioned, that you would find valuable in your pharmacy?

_____

C. PLEASE ANSWER THE FOLLOWING QUESTION ONLY IF YOU ARE ON MEDICAL AID.

14. When you use the pharmaceutical services available at your pharmacy how do you pay for it?

I pay out-of-pocket ☐ Medical aid savings pays ☐ Other ☐ Please specify _____

D. YOUR COMMENTS

Please share with me how you view your pharmacy and the services provided by your pharmacist.

_____

_____

_____

THE END – THANK YOU FOR YOUR PARTICIPATION 

INFORMED CONSENT

I, the undersigned, hereby declare that I am participating in this survey of my own free will, and have not been placed under pressure by any person to do so. All information provided in the survey express my own opinions and I understand that the information will be used for research purposes only.

Signature of participant _____ Date _____

Signature of researcher _____ Date _____

FOR OFFICIAL USE ONLY

Name of Pharmacy: _____ Assistance provided? No ☐ Yes ☐ Specify:

Researcher Name: _____ _____

Appendix B has been saved separately as a PDF file. Unable to attach to this word document as it was created in a program that cannot be imported.