

https://dspace.org/

Development of a sustainable student-run clinic serving the homeless of the inner city

Johnston, Deanne

2020
https://hdl.handle.net/10539/30775

Downloaded from a DSpace repository. https://dspace.org/

DEVELOPMENT OF A SUSTAINABLE STUDENT-RUN CLINIC SERVING THE HOMELESS OF THE INNER CITY

DEANNE JOHNSTON

0101518Y

Original published work submitted to the Faculty of Health Sciences,

University of the Witwatersrand, Johannesburg,

in fulfilment of the requirements for the degree of Doctor of Philosophy

Johannesburg, 2020

Supervised by:

Associate Professor P McInerney,

Centre for Health Science Education, University of the Witwatersrand, Johannesburg

Doctor Jacqui Miot

Health Economics and Epidemiology Research Office, University of the Witwatersrand, Johannesburg, South Africa

Doctor Anthony Egan

Steve Biko Centre for Bioethics, Faculty Health Sciences, University of the Witwatersrand, Johannesburg, South Africa

Jesuit Institute South Africa, Johannesburg, South Africa

DECLARATION

I, Deanne Mary Graham Johnston, declare that this thesis is my own work. It is being submitted for the degree of Doctor of Philosophy at the University of the Witwatersrand, Johannesburg.

It has not been submitted before for any degree or examination at this or any other university.

……

Deanne Mary Graham Johnston

_____ day of _____ in 2020

DEDICATION

When your why is big enough you will find your how

Laith Wallace

To my daughters,

Katelyn Anne Johnston

&

Hannah Mary Johnston

PRESENTATIONS ARISING FROM THIS STUDY

1. Student volunteers' interprofessional learning experiences at an inner-city student-lead clinic. D. Johnston, P. McInerney, S. Moch, All together better health IX, Auckland University of Technology, Auckland, New Zealand, 3-6 September 2018

2. Student volunteers' interprofessional learning experiences at an inner-city student-lead clinic. D. Johnston, P. McInerney, S. Moch, First Conference of Biomedical and Natural Sciences and Therapeutics, Stellenbosch, South Africa, 7-10 October 2018

3. Profiling the health of homeless at an inner-city student-run primary health care clinic in Johannesburg. Deanne Johnston, Patricia McInerney, Jacqui Miot, 9th Cross-Faculty Postgraduate Symposium, University of the Witwatersrand, Johannesburg, South Africa, October 2018

4. Development of a sustainable student-run clinic serving the homeless of the inner-city. Deanne Johnston, Patricia McInerney, School of Therapeutic Sciences Biennial Research Day, University of the Witwatersrand, Johannesburg, South Africa,10 September 2019

5. What is the Cost of Free Pharmacy Services? Deanne Johnston, Jacqui Miot, Patricia McInerney, Bridging the Gap - Annual Conference on Pharmaceutical Sciences, 7-11, Centurion, South Africa, 7-11 October 2019
   *poster accepted for forthcoming conference

PUBLICATIONS ARISING FROM THIS STUDY

JOURNAL SUBMISSIONS AND DETAILS OF CONTRIBUTIONS OF AUTHORS

Declaration: Student's contribution to article(s) and agreement of co-author(s)

I, Deanne Johnston, student number 0101518Y, declare that this thesis is my own work and that I contributed adequately towards research findings published in the article(s) stated below which are included in my thesis.

Signature of Student:

Date:

Name of Primary Supervisor: Patricia McInerney

Signature of Primary Supervisor:

Date:

Agreement by co-authors: By signing this declaration, the co-authors listed below agree to the use of the article(s) by the student as part of her thesis.

Article 1

Title: The rise, fall and re-establishment of Trinity Health Services: Oral history of a student-run clinic based at an inner-city Catholic Church

Journal name, year, volume and page numbers: Studia Historiae Ecclesiasticae, 2018, 44 (3), 1-21

Authors	Name	Signature	Date
1st author	Deanne Johnston		
2nd author	Anthony Egan		
3rd author	Patricia McInerney		

Article 2

Title: Experiences of the homeless accessing an inner-city student run clinic in Johannesburg

Journal name, year, volume and page numbers: Health SA Gesondheid – Journal of Interdisciplinary Sciences accepted for publication on the 20th January 2020 (see Appendix 1)

Authors	**Name**	**Signature**	**Date**
1st author	Deanne Johnston		
2nd author	Patricia McInerney		
3rd author	Hilary Thurling		

Article 3

Title: A framework for learning at an Inner-city Interprofessional Student-run Clinic in South Africa

Journal name, year, volume and page number: Under review at Education for Health submitted on 30 September 2018 (see Appendix 2)

Authors	**Name**	**Signature**	**Date**
1st author	Deanne Johnston		
2nd author	Patricia McInerney		
3rd author	Shirra Moch		

Article 4

Title: A Profile of the Health of Homeless at an Inner City Primary Health Care Clinic in South Africa

Journal name, year, volume and page number: Journal of Health Care for the Poor and Underserved, 2019, 30(4), 1455-66

Authors	Name	Signature	Date
1st author	Deanne Johnston		
2nd author	Patricia McInerney		
3rd author	Jacqui Miot		

Article 5

Title: Volunteering, health and the homeless – The cost of establishing a student-run primary healthcare clinic serving the inner-city homeless in South Africa

Journal name, year, volume and page number: manuscript was potentially accepted for publication on the 23rd January 2020 (see Appendix 4)

Authors	Name	Signature	Date
1st author	Deanne Johnston		
2nd author	Patricia McInerney		
3rd author	Jacqui Miot		

ABSTRACT

Student-run clinics (SRCs) are environments where students take the lead in operating the clinic and provide healthcare to a community under the direct supervision of healthcare professionals. SRCs are not only of educational benefit to the students but also improve the healthcare services to underserved communities such as the homeless.

Trinity Health Services (THS) is an interprofessional SRC based at a church providing free healthcare to the inner-city homeless of Johannesburg. This study aimed to describe the establishment and to investigate the various factors affecting the sustainability of THS. A convergent parallel mixed method study design was used to relate the qualitative and quantitative data collected. There were four components contributing to the proposed model of sustainability.

The first component described how and why the clinic was established. The establishment, closure and re-establishment of THS (2004 – 2016) documented the partnership between the university and church in providing healthcare services to the homeless. The second component sought to understand the clinic from the perceptions of stakeholder groups: student and professional volunteers, student management committee and homeless community, using a grounded theory approach. Three broad themes, *serving*, *learning* and *management* emerged, forming the basis of the stakeholder framework. The retrospective record review, component three, documented 240 patient visits from January - December 2016. Patients frequently presented with conditions related to the respiratory (21.7%) and digestive (12.4%) systems. The most commonly dispensed medications were analgesics (38.8%), antibiotics (13.8%) and antihistamines (10.4%). Lastly, the cost analysis component quantified the cost of establishing (ZAR 214 157.08) and operating (ZAR 346 185.54) THS as well as the cost of treatment per patient (ZAR 69.05).

The proposed sustainability model consists of three levels. The foundation, level one, represents the management structure of THS incorporating the student management committee supported by the church, university and advisory committee. The second level consists of three pillars of sustainability. The central and largest pillar, *volunteering to serve*, is flanked by *learning* and *services and supervision*. These

pillars are housed under the third level, a homeless-centred healthcare service. The proposed model involves collaboration from all stakeholders in providing a healthcare service meeting the needs of the homeless.

ACKNOWLEDGEMENTS

I am very fortunate to have had the support of my ‘village’ to help me through this journey. I am eternally indebted to my supervisors, colleagues, family and friends who have been by my side.

I would like to firstly thank Professor Patricia McInerney for her supervision and guidance from the first moment I embarked on this journey. Your timeous and detailed feedback has not only assisted my research but has emulated the level of supervision I wish to provide to my postgraduate students. Thank you to Drs Jacqui Miot and Anthony Egan. I value your expertise and assistance.

I am very appreciative to Mrs Shirra Moch and Dr Hilary Thurling for assisting with the focus group discussions and co-authoring of publications. Thank you for the advice and words of encouragement.

I express my sincere gratitude to my colleagues in the School of Therapeutic Sciences and Department of Pharmacy and Pharmacology for their continued support, never failing to ask how my research was progressing and if I needed help. To my dearest friend, Lisa du Toit, I am truly blessed to have your support and motivational chats over endless cups of coffees.

Thank you to my wonderful family and especially my dad, Robert Hazle. I am fortunate to have your unconditional love and support that helps me to persevere during the challenging times. My daughters, Katelyn and Hannah, may you always follow your dreams, challenge yourself and believe in your strength. My dearest husband, Simon Johnston, I am eternally grateful for your love and unwavering encouragement. When I have not been able to give one hundred percent at home, I know that you have been there to fill the gap and more. I will love you always.

Trinity Health Services exists through the support of volunteers and the trust of those who use the service. I am appreciative to all who support this initiative and for the opportunity to serve alongside students and supervisors.

CONTENTS **PAGE**

Declaration i
Dedication ii
Presentations arising from this study iii
Publications arising from this study iv
Abstract vii
Acknowledgements ix
List of Figures xiii
List of Tables xvi
List of Appendices xviii
List of Abbreviations and Acronyms xx
My Personal Statement xxi

1. CHAPTER 1 – Introduction and Literature Review

1.1. Introduction 1
1.2. Background 1
1.3. Literature review 2
1.3.1. Homelessness 3
1.3.1.1. Health of the homeless 4
1.3.1.2. Health of the homeless in South Africa 4
1.3.1.3. Homelessness and health science education 5
1.4. Student-run clinics (SRCs) 6
1.4.1. Communities SRCs serve 7
1.4.2. Role of SRCs in medical education 8
1.4.2.1. Interprofessional collaboration 9
1.4.3. Student-run clinics (SRCs) in South Africa 10
1.4.3.1. Student-run clinic (SRCs) at the University of the Witwatersrand 10
1.4.3.2. Student's Health and Wellness Centres Organization (SHAWCO) 12
1.5. The setting: Trinity Health Services (THS) 15
1.6. Conceptual framework 17
1.7. Study purpose 19
1.8. Conclusion 20

2. CHAPTER 2 – Methodology

2.1. Introduction 21
2.2. Component 1: History of the Clinic 24
2.2.1. Methodology 24
2.2.1.1. Research design 24
2.2.1.2. Study population 24
2.2.1.3. Study sample 24
2.2.1.4. Sampling method 24
2.2.1.5. Data collection 24
2.2.2. Data analysis 24
2.3. Component 2: Stakeholders 25
2.3.1. Methodology 25
2.3.1.1. Research design 25
2.3.1.2. Study population 25
2.3.1.3. Study sample and sample size 25
2.3.2. Data analysis 26
2.4. Component 3: Profiling the health of the homeless 26
2.4.1. Methodology 26
2.4.1.1. Research design 26
2.4.1.2. Study population 27
2.4.1.3. Study sample and sample size 27
2.4.1.4. Data collection 27
2.4.2. Data analysis 27
2.5. Component 4: Cost analysis 28
2.5.1. Methodology 28
2.5.1.1. Research design 28
2.5.1.2. Cost analysis 28
2.5.1.3. Data sources 28
2.5.2. Data analysis 29
2.6. Ethical considerations 29
2.7. Presentation of results to an expert panel 30
2.8. Trustworthiness of the qualitative data 30
2.9. Reliability and validity of the quantitative data 32
2.10. Validation framework used for mixed methods 33
2.11. Conclusion 34

3. CHAPTER 3 – Component 1 – History of THS

3.1. Introduction 35
3.2. Paper 1: The Rise, Fall and Re-establishment of Trinity Health Services: Oral History of a Student-run Clinic Based at an Inner-city Catholic Church 36

4. CHAPTER 4 – Component 2 - Stakeholders

4.1. Introduction 56
4.2. Paper 2: Experiences of the homeless accessing an inner-city pharmacy and medical student-run clinic in Johannesburg 57
4.3. Paper 3: A framework for learning at an Inner-city Interprofessional Student-run Clinic in South Africa 75
4.4. Supervising professionals 94
4.4.1. Process of supervision 94
4.4.1.1. Role of supervising doctors 96
4.4.1.2. Role of supervising pharmacists 96
4.4.2. Thematic analysis 97
4.4.3. Discussion 103
4.4.4. Conclusion 105
4.5. Student management committee 106
4.5.1. Thematic analysis 108
4.5.2. Discussion 114
4.5.3. Conclusion 115

5. CHAPTER 5 – Component 3 – Profiling the Health of the Homeless

5.1. Introduction 116
5.2. Paper 4: A Profile of the Health of Homeless at an Inner City Primary Health Care Clinic in South Africa 117

6. CHAPTER 6 – Component 4 – Cost Analysis

6.1. Introduction 128
6.2. Paper 5: Volunteering, health and the homeless – The cost of establishing a student-run primary healthcare clinic serving the inner city homeless in South Africa 129

7. CHAPTER 7 – Discussion and Development of Model

7.1. Introduction 151
7.2. Theoretical stakeholder framework 151
7.3. Development of sustainability model 158
7.3.1. Goal of the model 159
7.3.2. Design of model and concepts reflected 159
7.3.3. Expert panel 159
7.3.4. Model of sustainability 161
7.3.4.1. Level 1: Foundation 161
7.3.4.2. Level 2: Pillars of sustainability 166
7.3.4.3. Level 3: Roof: Homeless-centred healthcare service 169
7.4. Conclusion 171

8. CHAPTER 8 – Conclusion and Recommendations

8.1. Introduction 172
8.2. Summary 172
8.2.1. Implementation of the model 174
8.2.2. Joint vision addressing homelessness 175
8.3. Study limitations and recommendations for further research 175
8.4. Conclusion 177

9. References 178

10. Appendices 201

LIST OF FIGURES

CHAPTER 1

Figure 1.1: Continuum of homelessness (adapted from Rule-Groenewald *et al.*, 2015) 3

Figure 1.2: Outline of patient consultation 16

Figure 1.3: Schematic representation of students' roles in THS 17

Figure 1.4: Conceptual framework of study 18

Figure 1.5: Schematic representing the relationship between the four study components 19

CHAPTER 2

Figure 2.1: Convergent parallel mixed method approach (adapted from Creswell, 2014) 22

CHAPTER 3

Figure 1: Schematic description of consultation process Source: Trinity Health Services 2011, Standard Operating Procedures 43

CHAPTER 4

Figure 1: Paper 2: Services provided by the church and university to the homeless 60

Figure 2: Paper 2: Themes and categories identified 63

Figure 1: Paper 3: Figure 1: Description of patient consultations 77

Figure 2: Paper 3: Figure 2: Relationship between stakeholders in the study context 79

Figure 3: Paper 3: Figure 3: A framework for learning at THS 86

Figure 4.1: Figure 4.1: Outline of the pathway patients follow indicating the students and supervisors involved 95

Figure 4.2: Figure 4.2: Role of supervisors in balancing patient care and facilitating learning 105

Figure 4.3: Figure 4.3: Managing committees and reporting channels 106

CHAPTER 5

Figure 1: Distribution of number of visits to THS (n=240) 120

Figure 2: Classification of blood pressure measurements according to JNC 8 Guideline (n=236) 120

Figure 3: Distribution of habits (n=104) 121

Figure 4: Distribution of previous medical histories treated (n=74) 122

Figure 5: Frequency of diagnoses categorized according to ICD10 codes (n=258) 123

Figure 6: Medication categorised according to route of administration (n=254), (b) mediation dispensed via the oral route of administration (n= 209) and (c) mediation dispensed via the topical route of administration (n=28) 123

CHAPTER 6

Figure 1: Paper 5 Figure 1: Cost and quantity medication dispensed in 2016 and 2017 (GIT: gastrointestinal tract) 140

Figure 2: Paper 5 Figure 2: Capital and recurrent costs itemized as financial and economic costs 142

CHAPTER 7

Figure 7.1: Grounded theory coding process (Creswell, 2014) 153

Figure 7.2: Development of stakeholder framework (a) – (c) 156

Figure 7.3: Stakeholder framework (a) incorporating themes and categories as well as (b) relationships between stakeholders, themes and categories 157

Figure 7.4: Components of a model for practice (Pearson and Vaughan, 1986) adapted for THS 158

Figure 7.5: Model of sustainability 163

Figure 7.6: Stepwise approach to community involvement 171

CHAPTER 8

Figure 8.1: Prioritisation of tasks into three stages 175

LIST OF TABLES

CHAPTER 1

Table 1.1:	Keywords used in literature review	2
Table 1.2:	Examples of SRCs service models	7
Table 1.4:	SHAWCO SRC model (SHAWCO.org, 2019)	14

CHAPTER 2

Table 2.1:	Outline of the methodology, research questions and objectives per component	23
Table 2.2:	Ethical clearance numbers for study	29
Table 2.3:	Trustworthiness of qualitative data	31
Table 2.4:	Validity of the quantitative data	33
Table 2.5:	Core elements of the validation framework (Dellinger and Leech, 2007)	34

CHAPTER 4

Table 1:	Paper 2: Primary and probing questions from FGDs	62
Table 1:	Paper 3: Primary and probing questions asked in discipline specific FGDs	79
Table 4.1:	Demographic information of supervising professionals	94
Table 4.2:	Themes and categories identified from interviews held with the supervising professionals	98
Table 4.3:	Student committee portfolios and responsibilities	107
Table 4.4:	Theme and categories identified from the FGD held with the student management committee	109

CHAPTER 5

Table 1:	Patient information relating to demographics, vital sign measurements and social habits	122

CHAPTER 6

Table 1:	Paper 5: Various models of SRCs	132
Table 2:	Paper 5: Description of capital and recurrent costs	135
Table 3:	Paper 5: Summary of capital and recurrent costs	136

CHAPTER 7

Table 7.1:	Synthesized categories and themes	152
Table 7.2:	Expert panel	159
Table 7.3:	Questions posed to expert panel	160
Table 7.4:	Roles and responsibilities of stakeholders	164
Table 7.5:	Potential funding sources for THS	165

LIST OF APPENDICES

Appendix 1: Health SA Gesondheid 200

Appendix 2: Education for Health 201

Appendix 3: Journal for Health Care for the Poor and Underserved 202

Appendix 4: BioMed Central Health Services Research 203

Appendix 5: Permission to conduct the study from University of the Witwatersrand 204

Appendix 6: Permission to conduct the study from Holy Trinity Catholic Church 205

Appendix 7: In-depth interview questions 206

Appendix 8: Focus group questions for student volunteers 207

Appendix 9: Focus group questions for THS student committee 208

Appendix 10: Focus group questions for supervising professionals 209

Appendix 11: Focus group questions for the homeless community 210

Appendix 12: Pre-designed case report form 211

Appendix 13: Description, costing method and valuation method pertaining to the identified capital and recurrent costs 215

Appendix 14: HREC (Medical) Clearance certificate No. M170953 216

Appendix 15: HREC (Medical) Clearance certificate No. M161140 217

Appendix 16: HREC (Medical) Clearance certificate No. M1703109 218

Appendix 17: HREC (Medical) Clearance certificate No. M170953 Amendment 219

Appendix 18: Information documents 220

Appendix 19: Informed consent documents 225

Appendix 20: Editorial policy Studia Historiae Ecclesiasticae 229

Appendix 21: Editorial policy Journal of Health Care for the Poor and Underserved 230

Appendix 22: Turnitin report 232

ABBREVIATIONS AND ACRONYMS

AIDS	Acquired immune deficiency syndrome
ARV	Antiretroviral
£	British Pound
CATHCA	Catholic Health Care Association
CARES	Community Aid, Relief, Education and Support Clinic
CMJAH	Charlotte Maxeke Johannesburg Academic Hospital
EDL	Essential Drug List
FGD	Focus group discussion
GC	General Council
GEMP	Graduate Entry Medical Program
HIV	Human immunodeficiency virus
HCSCR	Homeless-centred student-run clinic
HPCSA	Health Professions Council of South Africa
IPE	Interprofessional Education
Jesuits	Society of Jesus
LGBTI	Lesbian, gay, bisexual, transgender and intersex
Max.	Maximum
Min.	Minimum
N	Number
NHI	National health insurance
QUAL	Qualitative
QUAN	Quantitative
SEP	Single-exit price
ZAR	South African Rands
SAPC	South African Pharmacy Council
SRC	Student-run clinic
SHAWCO	Student’s Health and Wellness Centres Organization
TB	Tuberculosis
THS	Trinity Health Services
UCT	University of Cape Town
WHO	World Health Organisation
Wits	University of the Witwatersrand
WRHC	Wits Rural Health Club

MY PERSONAL STATEMENT

Creswell (2014) explains the influence the researcher's worldview has on the study and the necessity to describe this at the beginning of the research. I have approached this study from a social constructivist perspective seeking to understand how and why the clinic exists from multiple perspectives. I acknowledge that I too, play a role as I am the primary person responsible for the pharmacy and am involved in the day to day operations of THS. My religious beliefs too, influence my approach. Therefore, I see my role as forming a bridge between the church, university and students.

Personal view of homelessness

I believe that regardless of the reasons someone may find themself without a home, each one of us deserves to be treated with dignity and respect, regardless of our social standing. Underserved populations are in desperate need for basic services which not only improves their quality of life but may help alleviate their circumstances and provide them with opportunities to emerge from homelessness.

Reasons for my involvement

As healthcare professionals, I believe we have a specialised skill set and that within most of us is a desire to serve. I was approached in 2010 by the THS committee and asked to assist in registering the pharmacy with the South African Pharmacy Council. Initially I was hesitant to become involved not knowing what the commitment would entail. It was in the closure of THS, mainly due to a lack of a registered pharmacy, that I felt my skill set was needed. Through much persistence, the pharmacy licence was issued, and the responsibility shifted to re-establish this important service.

My reasons for volunteering are also linked to my faith. I am a Catholic and a parishioner at Holy Trinity Catholic Church. The homeless are part of the church community and there are many initiatives within the parish which are focused in uplifting and assisting those living with homelessness.

Lastly, I am a passionate pharmacist who is a teacher at heart. Through serving the community there are a multitude of authentic teaching and learning opportunities that cannot be simulated in a classroom. It is my opportunity to teach through example

and role model the healthcare professional behaviours I would like to impart to students.

Interpretation of sustainability

At the onset of this research my thought of the concept of sustainability was to ensure that the clinic would continue to exist until there was no longer a need. However, I am discovering that sustainability may differ from each of the stakeholder perspectives and it depends on the lens from which they view the THS. It is my hope that the THS is the first of many student-run initiatives within this community, extending beyond health to become an interdisciplinary approach to community engagement.

CHAPTER 1: INTRODUCTION AND LITERATURE REVIEW

Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.

United Nations General Assembly (1948)

1.1. Introduction

This chapter reviews the literature, providing a rationale for the study. The literature review is divided into two sections. The first section reviews homelessness and its relationship to health. While the second deals with the value of SRCs in health science education, their impact on the communities they serve and the interprofessional collaborations between student groups. The setting of Trinity Health Services (THS) is then described and leads into the research question. The chapter concludes with the purpose of the study and the identification of the objectives of the study.

1.2. Background

A student-run clinic (SRC) is a unique healthcare setting where students play a central role in service provision and management under the supervision of licensed healthcare professionals (Berlin *et al*, 2017). Most SRCs provide healthcare to the underserved including the poor, homeless and/or jobless members of society. SRCs are gaining popularity globally; a study completed in 2014 identified over a hundred SRCs present in 75% of medical schools in America (Smith *et al.*, 2014). There are a few SRCs in South Africa (Gordon, 2016), however little published information is available regarding how they operate, their volunteers and the communities they serve (Mendelsohn, 2014; Favara and Mendelsohn, 2012; Lohrmann *et al.*, 2012).

The homeless are a vulnerable group in society prone to physical and mental healthcare problems. Homelessness is often caused from health-related conditions such as drug abuse (Larkin, 2009). Numerous psycho-social factors such as substance abuse, mental and physical health problems are drivers of homelessness upon which interventions may be structured (Rule-Groenewald *et al*., 2015).

This study reviewed the sustainability of services provided by THS. The healthcare services are provided by students and supervising professionals on the premises of Holy Trinity Catholic Church. Therefore, THS involves collaboration between the church and university. For the purpose of this study sustainability in the context of the clinic is defined as the ability to provide and maintain the healthcare services meeting the needs of the community. There are various factors that affect the sustainability, for example student volunteers to help manage and work at the clinic, supervising professionals to observe students, interprofessional collaboration between students and sufficient funds to support the services.

1.3. Literature review

The literature review focuses on two broad areas, homelessness and SRCs. The databases used included, Pubmed and ScienceDirect® and the search engine Google Scholar ™. A list of keywords used is found in Table 1.1. The literature was reviewed extensively when compiling the protocol and thesis in 2017 and 2019 respectively. In 2018-2019 literature searches were conducted specific to the manuscripts submitted.

Table 1.1: Keywords used in literature search

Homelessness	SRCs
Health disparities	Medical students AND homeless
Health disparities AND South Africa	SRCs AND Cape Town
Healthcare system AND South Africa	SRCs AND education
Homeless statistics AND Johannesburg	SRCs AND homelessness
Homeless AND communicable diseases	SRCs AND interprofessional
Homeless AND non-communicable diseases	SRCs AND pharmacy
Homeless AND health AND South Africa	SRCs AND models
Homeless statistics AND South Africa	SRCs AND outcomes
Homelessness AND definition	SRCs AND services
Homelessness statistics	SRCs AND South Africa
Homelessness AND health	SRCs AND University of the Witwatersrand
Homelessness AND South Africa	SRCs AND SHAWCO
Shelters AND South Africa	Universities AND Health advocacy
Trinity Health Services	
Underserved communities	

1.3.1. Homelessness

There is no universal definition of homelessness (Springer, 2000) but generally it refers to individuals without a permanent address (De Beer and Vally, 2017). It is dependent on the housing or shelter an individual can access as well as how long they find themselves in that situation (see Figure 1.1) (Rule-Groenewald *et al.*, 2015). The most destitute are the street homeless who reside on the pavements, under bridges or in parks (De Beer and Vally, 2015).

More than ten years ago, in 2008, the homeless population in South Africa was estimated to be between 100 000 and 200 000 (Rule-Groenewald *et al.*, 2015). There is no recent data for Johannesburg's inner-city region, however, a study conducted in 1998 found 7 456 homeless people in the inner-city with more than 80% living on the pavements and streets (Olufemi, 1998).

Some reasons documented for people being on the streets include engaging in criminal activity; family breakdown as well as seeking employment, adventure and independence (Moyo *et al.*, 2015). Without adequate housing a person does not have sufficient protection against the elements which has a major impact on health.

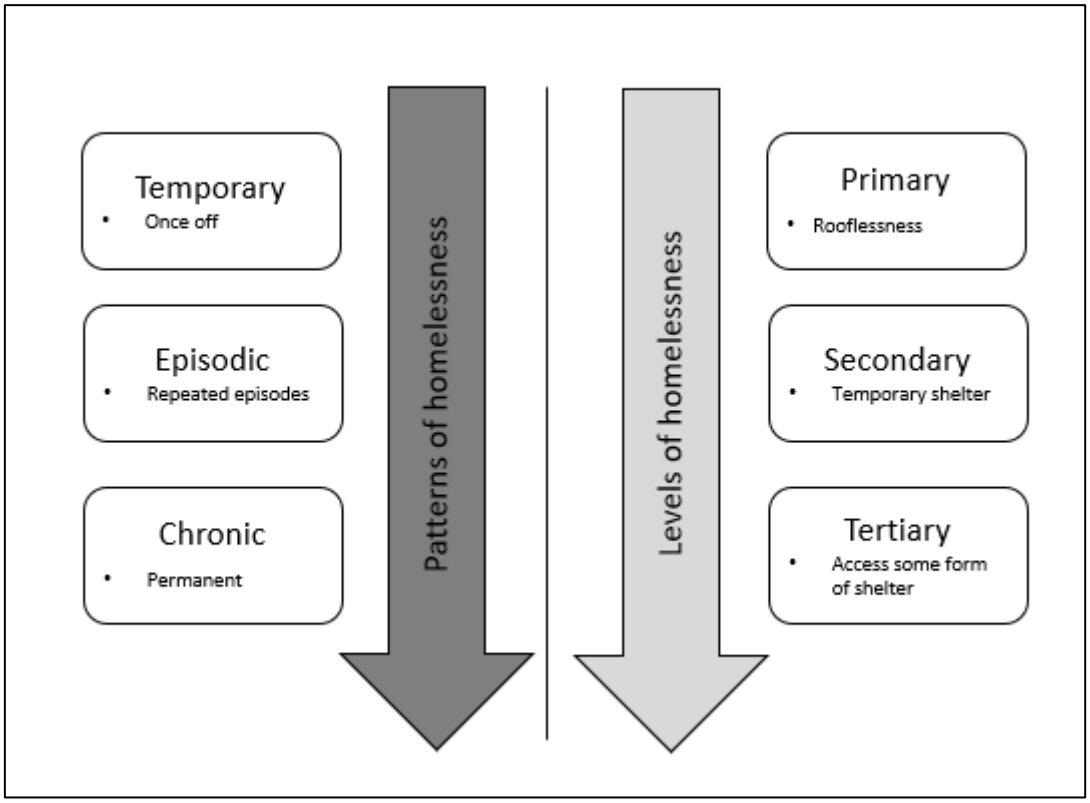


Figure 1.1: Continuum of homelessness (adapted from Rule-Groenewald *et al.*, 2015)

1.3.1.1. Health of the homeless

Communicable, respiratory and cardiovascular diseases have been linked to poor living conditions (WHO, 2011). In addition, the homeless often struggle to access healthcare services. Kim *et al*. (2007) found that barriers to physical healthcare included transport and cost, while stigma and fear of social rejection were associated with mental healthcare conditions. Previous experiences of discrimination and stigma result in the homeless feeling unwelcome in the healthcare facility which negatively impacts them accessing these services in the future (Wen *et al*., 2007).

In 1988, the Institute of Medicine in the United States elucidated the linkages between homelessness and health. Although almost 30 years have passed, these links are still valid and include the following:

- Health problems which may lead to homelessness.
  For example: drug and substance abuse; mental illness; loss of employment following an injury.
- Health problems as a result of homelessness.
  For example: illness as a result of exposure to extreme weather conditions (hypothermia); injuries following assault or rape.
- Health problems which may be complicated because of homelessness.
  For example: adherence to treatment for chronic conditions; little choice in the food they are given; difficulty in finding a bed to rest and recover.

1.3.1.2. Health of the homeless in South Africa

South Africa provides an example of a fragmented healthcare system. The majority of South Africans (84%) access the public healthcare services accounting for half the country's healthcare expenditure (Ranchod *et al*., 2017). Inadequate housing, lack of water and sanitation, poor nutrition, alcohol and substance abuse as well as poor social cohesion are social determinants that lead to premature mortality in South Africa (Gray and Vawda, 2016).

The public sector is overburdened and specialised services for vulnerable groups, such as the homeless, do not exist. Various factors influence the access of healthcare by the homeless such as waiting times, limited services offered, shortage of available medications and perceived discrimination by staff (Wentzel and Voce, 2012).

Sexual assault, sexually transmitted infections, tuberculosis, HIV infection and AIDS, skin diseases, pregnancy, malnutrition, drug and alcohol abuse were commonly reported by the homeless in a study conducted across four provinces in South Africa (Seager and Tamasane, 2010).

HIV prevalence in the inner-city homeless community in Johannesburg was investigated by Lohrmann *et al.* (2012). They established that 23.5% of their population (n=136) tested positive and that there was a significant association between homelessness and unemployment as well as concurrent sexually transmitted infections. Another study found that sex workers living on the streets of Pretoria frequently engaged in alcohol and substance abuse including injectable drugs increasing their risk of contracting HIV (Hugo, 2015).

Adding to the growing numbers of homeless is the de-institutionalisation of mentally ill persons (De Beer and Vally, 2017). Those suffering from mental illness, struggle to find and maintain employment. Moyo *et al.* (2015) conducted a qualitative study which sought to understand the homeless persons with mental illnesses and their relationships with other homeless individuals, service providers and the broader society. Their study showed the health of homeless individuals with mental illness to be worse than the general population of homeless individuals.

There is a need for specialised and targeted healthcare services for the homeless in South Africa. The intricacy of health and homelessness calls for a joint effort from both the government and non-governmental organisations. Universities too, have a role to play in both the educational and research spheres.

1.3.1.3. Homelessness and health science education

The Strategic Framework for Universities South Africa (2015 – 2019) states that "Universities play an important part in the intellectual life of the country and have a major impact on the social, economic and cultural development and well-being of our nation" (Universities South Africa, 2017, pg. 2). In turn university graduates need to be the change agents transforming the healthcare landscape (Frenk *et al.*, 2010).

The core competencies relating to health advocacy for the education of undergraduate healthcare practitioners in South Africa include identifying and

responding to healthcare needs of marginalised or vulnerable communities (Health Professions Council of South Africa, 2014). The homeless represent both a marginalised and vulnerable group in the South African context requiring special attention.

The attitudes of the healthcare providers have been identified as a barrier to the homeless seeking healthcare services (Wen *et al*., 2007; Lester and Bradley, 2001). Changing attitudes of healthcare providers has been shown to be dependent on their interaction with the homeless rather than their medical teaching (Buck *et al*., 2005). Therefore, educational interventions should be structured around positive encounters of students with the homeless (Buck and King, 2009).

1.4. Student-run clinics (SRCs)

According to the Society of Student Run Free Clinics (2019) a SRC is defined as free healthcare services to underserved communities, such as the homeless, by student volunteers. Students report to have learnt new skills and apply theory taught in lectures (Mendelsohn, 2014). In addition, working in a SRC teaches students responsibility for patient care (Schutte *et al.*, 2015) and social accountability (Duke and Brunger; 2015).

SRCs provide healthcare services (Ryskina *et al.*, 2009; Zucker *et al.*, 2011; Gorrindo *et al.*, 2014) in non-traditional clinical sites (Simpson and Long, 2007). Important components to SRCs include service delivery to those in need and the educational value of such encounters. Models of SRCs vary considerably from comprehensive models of care to specialised services to partnering with non-medical disciplines (see Table 1.2).

Table 1.2: Examples of international SRCs service models

MODEL	EXAMPLE	SERVICES PROVIDED	DISCIPLINES INVOLVED	REFERENCE
Primary health care	University New England / Coledale Student-led Health and Wellbeing Clinic	Chronic and acute care Dispensing medication Health promotion	Nursing	Stuhlmiller and Tolchard, 2015
Mobile	University of Calfonia, Los Angeles, mobile clinic	Medical services Dispensing medication	Public health Dentistry Medicine Law	Hastings *et al*., 2007
Health promotion	Hawaii Homeless Outreach and Medication Education	Health promotion	Medical	Izutsu *et al.*, 2012
Specialised health services	Chester Community Physical Therapy Clinic	Physical therapy	Physical therapy	Black *et al*., 2013
Medico-legal partnership	Shade Tree Clinic	Medical Legal	Medicine Law	Wong *et al*., 2018

1.4.1. Communities SRCs serve

The services provided at SRCs are dependent on the resources available and the purpose of the clinic. SRCs are often based at non-clinical sites, provide limited services, have few resources and patients receive care not aligned to national standards (Buchanan and Witlen, 2006). Therefore, it is important to engage with the community to determine their needs, possible interventions and to evaluate the care provided (Rosenbaum *et al*., 2016). Thus, there is a growing awareness of the need to evaluate the services provided and patient opinions.

Two studies were found that reviewed patient satisfaction with SRCs in America (Ellett *et al.*, 2010; Mischell *et al.*, 2017). In both studies patients responded positively and were appreciative of the service provided however, they noted that patients complained about the waiting times and hours of operation. These studies were used to highlight quality improvement issues in these clinics.

The quality of services provided at SRCs has been assessed in three clinics. Ryskina *et al.* (2009) and Gorrindo *et al.* (2014) found the quality of care of diabetic patients at a SRC to be of a high standard. Zucker *et al.* (2011) found that the pharmacotherapy

treatment of hypertension in a SRC in New Jersey was according to the latest hypertension guidelines.

Another methodology employed to determine the impact of services provided was through assessing patient knowledge (Ouyang *et al*., 2013). At the University of California, San Francisco, students educate, screen and vaccinate patients for Hepatitis B. They measured patient knowledge regarding Hepatitis B before and up to one month after their visiting the clinic and found patients to have retained the information provided.

1.4.2. Role of SRCs in medical education

SRCs are traditionally seen as an extra-curricular activity where students volunteer to participate (Gordon, 2016; Stephens *et al*., 2015). There are examples of SRCs incorporated within formalised (Izutsu *et al*., 2012) and student-led curricula (Sheu *et al*., 2011). Regardless of the relationship to the formal curriculum, learning forms an important component of SRCs.

The educational experience of volunteering in a SRC is valued by student volunteers (Smith *et al*., 2012; Wee *et al*., 2010). Real-life situations and taking responsibility for patient care constitute two important triggers to learning (Schutte *et al*., 2015). SRCs provide a unique environment for learning where students work autonomously, and learning is self-directed (Meah *et al*., 2009). Students have reported to learn new and/or improve their knowledge and skills (Stephens *et al*., 2015; Stuhlmiller and Tolchard, 2015; Mendelsohn, 2014; Hamso *et al*., 2012).

Mendelsohn (2014) administered a questionnaire to student volunteers to determine the effect of Student's Health and Wellness Centres Organization (SHAWCO) clinics in medical education. He identified that students learnt a number of skills for the first time at the clinic and that they benefited from exposure to primary health care which is often not the focus of the undergraduate medical curricula.

Students reported achieving core competencies such as interprofessional learning and peer learning, more patient exposure and monitoring of disease conditions as well as providing cost effective treatment options while volunteering at a SRC as

opposed to the traditional curriculum at Mount Sinai School of Medicine (Stephens *et al*., 2015).

At a student-led clinic in Australia the mutual benefit to both student learning and positive health outcomes was demonstrated when students drew on their clinical notes from working at a SRC to reconstruct case studies which were then presented at a conference (Stuhlmiller and Tolchard, 2015). They also described reciprocal learning, where not only the students learnt from patients, but the patients learnt about their health and wellbeing from this encounter.

Additional skills such as training of medical students as teachers have been taught at SRCs (Hamso *et al.*, 2012). Medical doctors are expected to teach patients, medical students and fellow colleagues in practice. At Columbia Student Medical Outreach, Columbia University SRC, a pilot study was conducted examining students' in clinical teaching where senior medical students taught preclinical students (Hamso *et al.*, 2012). Their study concluded that medical schools should consider SRCs as potential sites where peer teaching can be learnt, which may prepare them for eventual practice.

1.4.2.1. Interprofessional collaboration

The importance of interprofessional involvement is gaining traction with evidence showing it leads to improved patient outcomes and more effective health care services. A SRC provides a space for students to collaborate in interprofessional teams, sharing their knowledge, skills, values and life experiences (Holmqvist *et al.*, 2012). In interprofessional activities that are extracurricular, students volunteer their time and are committed to attend, as opposed to formal activities when attendance and participation is monitored (Van der Wielen *et al*., 2014).

A mixed method study was conducted at the Winnipeg Interprofessional SRC across 13 different academic units over three years (Ambrose *et al.*, 2015). During this period 653 students and 42 mentors volunteered. Medicine and nursing had the highest numbers of volunteers, which the authors attributed to the fact that these disciplines easily conceptualize their clinical roles in the health team. During patient consultations and debriefing sessions students reported to have learnt about other

professions. Furthermore, students indicated following this encounter that they would like to know more about interprofessional education.

The Community Aid, Relief, Education and Support Clinic (CARES) student-run free clinic is an interprofessional clinic involving medical, nursing, pharmacy, occupational therapy, physical therapy and physician assistant programs (Seif *et al.*, 2014). They reported improved student perceptions in interprofessional attitudes and clinical reasoning after working as part of an interprofessional team at CARES.

Pammett *et al.* (2015) and Derington *et al.* (2017) specifically describe pharmacy students' involvement in interprofessional SRCs. Pammet *et al.* (2015) identified tasks in which pharmacy students were involved. These included medication reconciliation, medical assessments and medication education to patients and healthcare providers. While Derington *et al.* (2017) describe pharmacy students' clinical and administrative roles in which they took the lead in chronic disease medicine management. Both studies confirmed the importance of including pharmacy students in both traditional and non-traditional roles.

1.4.3. Student-run clinics (SRCs) in South Africa

In South Africa, where there in much inequality, students have responded through forming student-run clinics in many disciplines offering services relating to education, health, social and psychological welfare, as well as legal aid.

In a recent study there were five known SRCs in South Africa connected to Medical Schools at the Universities of Cape Town, Kwazulu-Natal, Free State, Stellenbosch and Witwatersrand (Gordon, 2016). However, there are only a few publications reviewing these clinics, two from Universities of Cape Town (Mendelsohn, 2014; Favara and Mendelsohn, 2012) and one from University of the Witwatersrand (Lohrmann *et al.*, 2012).

1.4.3.1. Student-run clinics at the University of the Witwatersrand

The University of the Witwatersrand has a rich history of activism and encourages students to become active citizens striving for equality. Undergraduate health professionals at the Faculty of Health Sciences have formed numerous SRCs serving

impoverished communities' over time. These SRCs were often featured in The Auricle, a University of the Witwatersrand Medical Students' publication.

The Katlehong Clinic, established in May 1962, provided free medical and dental care including medication (Kalk, 1962). The clinic aimed to "provide free medical services as well as to enable medical students to treat patients on their own initiative" (Kalk, 1962, pg. 2) under the supervision of senior medical personnel. Students would travel to Katlehong two evenings per week. They documented approximately 900 patient visits over nine months.

The Riverlea clinic was opened in 1963 by medical students (Medical Students' Council, 1987a). In 1966 there were on average 20 patients seen fortnightly (Medical Students' Council, 1966). There was also the addition of antenatal services under the supervision of a doctor and midwife. In 1967, there was a call for students to show commitment to the project, "Riverlea is your clinic, make use of it, but be responsible", as the community became more reliant on the clinic's services (Mendelow, 1967, pg. 1).

There was active community participation in 1986 when the project was adopted by the Riverlea Youth Congress in conjunction with the Riverlea Civic Association and Woman's Group (Medical Students' Council, 1987a). This increased support prompted the students to form a comprehensive service. In 1987 the clinic operated two evenings per week. Medical and pharmacy students worked together at the clinic providing medical services and dispensing medication respectively.

The Muldersdrift Health Centre, established by six students in the 1970's, saw approximately 250 patients each Saturday morning (Medical Students' Council, 1974). They noted that although there were no formal teaching rounds they did learn and called for students to participate on a regular basis. Differences in the doctor-patient as well as doctor-student interactions were noted and promoted student involvement.

A later article claimed the clinic was opened in 1984, however this may describe the reopening of services (Medical Students' Council, 1987b). The services at this time focused on family planning and paediatric health. Noting the importance of the

community involvement in the clinic, the students stated that “the community should dictate the direction we take in accordance to their needs” (Medical Students’ Council, 1987b, pg. 9).

A partnership between University of the Witwatersrand and the Department of Health (DoH) was formed. The DoH was responsible for managing and operating the clinic while the university continued to send students to the clinic. Support of the Muldersdrift Health Centre dwindled over time. Currently only nursing students visit the clinic where they are involved in community development projects such as sewing groups and planting vegetable gardens (The University of the Witwatersrand, 2019a).

The Riverlea and Katlehong clinics closed quite some time ago however, the reasons for their demise is unknown. Although the Muldersdrift clinic still exists, it has lost its identity as a SRC. THS today faces similar challenges as described at these clinics, they provided lessons to be learnt in addressing its sustainability.

1.4.3.2. Student’s Health and Wellness Centres Organization (SHAWCO)

The most established SRC in South Africa is SHAWCO, run by the medical students from University of Cape Town. It was established in 1943 by Andrew Kinnear (see Table 1.2). Their first clinic was based at a school in Kensington (Favara and Mendelsohn, 2012). The Union of Jewish Women teamed with medical students and provided lunches to the elderly and started a crèche. Now 75 years later the SHAWCO model involves health, education and social entrepreneurship in the Cape Flats (SHAWCO.org, 2019). SHAWCO Health has evolved to six clinic evenings per week and a paediatric clinic operating on two Saturdays per month. Initially the project relied on sponsorship from donors, however this was not sustainable (Favara and Mendelsohn, 2012). A more sustainable solution was found in 2012 through the development of their social enterprise sector which generates income to fund their community initiatives.

SHAWCO is an example of a mobile SRC (see Table 1.3) There are approximately 200 clinics per year where 5000 patients are treated (SHAWCO.org, 2019). The majority of the patients present with infections, upper and lower respiratory tract infections, worm infestations, acute diarrhoea and backache (Mendelsohn, 2014).

For students this is an authentic encounter with patients where they feel responsible for treating the patients accessing this service (Gordon, 2016, Mendelsohn, 2014).

The educational worth of SRCs in attaining 21st century medical education goals was investigated by Gordon (2016). This study found that SHAWCO provided an "enabling learning environment" (pg.47) in which students were able to articulate what was learnt and how this compared to the formal curriculum. Although volunteering at these clinics provides invaluable experience and learning opportunities especially in community-based teaching, the study concluded that incorporating it within the formal curriculum would "rob SHAWCO of the very essence that makes it so beneficial" (pg.84).

Holmqvist *et al*. (2012) call for international research collaboration to determine the effects of SRC on the community, students, institutions and healthcare systems. However, before such collaborations can be investigated, both locally and internationally, there is a need to document information relating to THS.

Table 1.3: SHAWCO SRC model (SHAWCO.org, 2019)

Established	1943
Service model	Mobile
Services offered	Health Education Social entrepreneurship
Interprofessional student healthcare team	Medicine Physiotherapy Occupational therapy Speech therapy Dietetics Audiology
Location	Underserved communities on the Cape Flats Kensington to Khayelitsha
Medication	Mobile “pharmacy” Dispensed by nurses (dispensing licenses)
Referrals	Local clinic or secondary hospital
Clinics frequency	6 per week
Clinics per year	200 clinics
Funders	Private donors University funds Western Cape Government
Funding model	SHAWCO enterprises: • Educational Fee-paying Saturday School • Transport Hiring of vehicles when not used by SHAWCO • Shift IT Provision of computer training and internet in under resourced communities • International program Opportunity for foreign students to participate in SHAWCO.
Health services	Primary healthcare Screening Health promotion
Support	Operational Financial Human resources Fundraising Drivers Administrators Student committee – Health Student committee – Education

1.5. The setting: Trinity Health Services (THS)

THS was established by medical students from the University of the Witwatersrand in collaboration with priests from Holy Trinity Catholic Church in Braamfontein in the early 2000's. Students observed the need to provide basic wound care to the homeless attending a soup kitchen on Monday evenings. The volunteering students formed a committee which took responsibility for the operational and administration duties for THS. Initially the clinic provided basic first aid, but this quickly expanded to more comprehensive acute care. The need for additional space was identified by the church, following which three consultation rooms were provided.

In 2011, the Faculty of Health Sciences was concerned about the functioning of the clinic and requested that the clinic be closed for a period of time to formalize the roles and responsibilities of the faculty and church as well as the students and university staff. It was imperative that the clinic had a registered pharmacy which led to the involvement of the Department of Pharmacy and Pharmacology and pharmacy students. Following a lengthy registration process, in 2015 a community pharmacy license was obtained for Trinity Pharmacy.

THS reopened at the end of January 2016 with student volunteers from both medicine and pharmacy, supervised by a doctor and pharmacist respectively. THS operates bi-monthly on Monday nights to provide free healthcare to the homeless. An outline of the patient consultation is provided in Figure 1.2.

The medical and pharmacy students have defined roles (see Figure 1.3) based on the scope of practice and/or skills level. The medical curriculum at the University of the Witwatersrand Medical School consists of two tracks. The first is a six-year program for school leavers. The second is a four-year program for graduates with a relevant degree who are admitted to the Graduate Entry Medical Program (GEMP). The two tracks merge, called GEMP I, in the school leavers third year and the graduates first year. All medical students, from their first year of study, are registered with the Health Professions Council of South Africa (HPCSA).

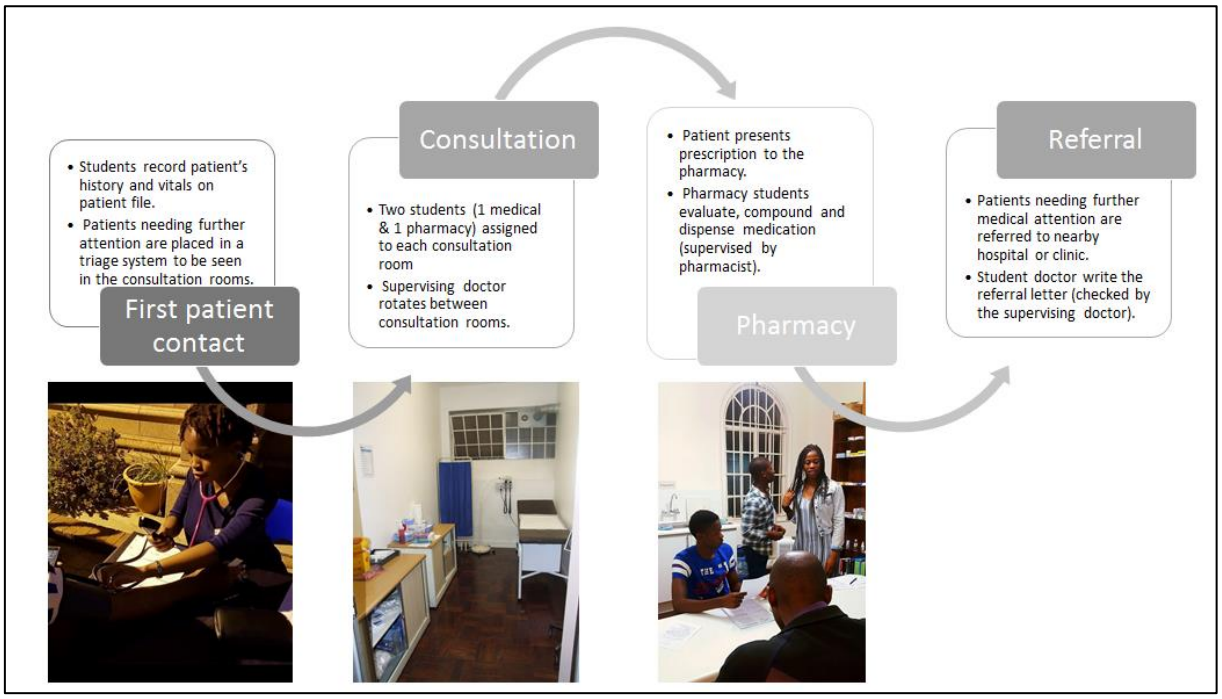


Figure 1.2: Outline of patient consultation

At THS, GEMP I and II (equivalent of third- and fourth-year) students are tasked with history taking and the measurement of vital signs, while GEMP III and IV students (fifth- and sixth-year medical students) work in the consultation rooms and present to the supervising doctor(s). The supervising doctors need to have completed their internship (two years post-graduation), community service (one-year post internship) and are registered with the HPCSA.

The Bachelor of Pharmacy (BPharm) degree at University of the Witwatersrand is four years in duration. Pharmacy students register with the South African Pharmacy Council (SAPC) in their first year of study. In their second year of study they have the scope of practice of a basic pharmacist's assistant while in their third and fourth year their scope of practice changes to a post-basic pharmacist's assistant.

At THS the second- and third-year pharmacy students work in Trinity Pharmacy dispensing medication under the direct supervision of a pharmacist (see Figure 1.3). The fourth-year pharmacy students are based in the consultation rooms and assist the medical students in selecting the most appropriate treatment plan and/or medication based on the medicine formulary. The supervising pharmacist would have successfully completed their internship (one-year post graduation) and community service (one-year post internship) and is registered as a pharmacist with the SAPC.

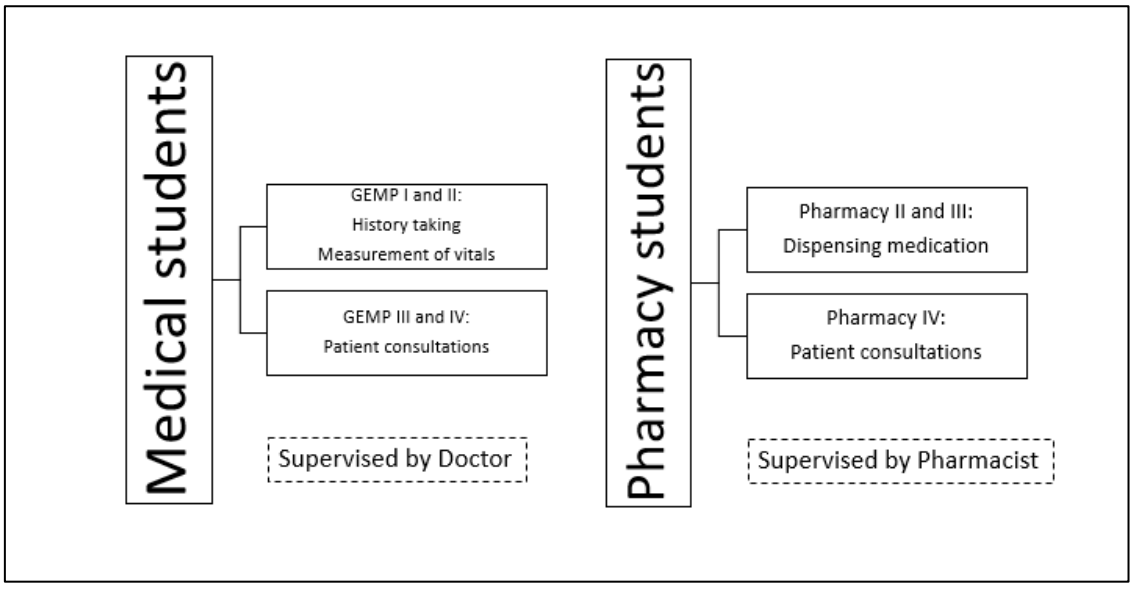


Figure 1.3: Schematic representation of students' roles in THS

Student volunteers formed an interprofessional student management committee and were supported by the THS steering committee comprising of representatives from the university, faculty and church as well as the THS student committee. More recently there has been dwindling involvement from the steering committee with only a few members staying involved.

1.6. Conceptual framework

There are two lenses from which this study could be viewed. The first lens is that of an educational perspective and the second is that of service delivery to the homeless. The conceptual framework for this study is based within these two lenses and merges conceptual frameworks described by Van der Wielen *et al*. (2014) and Kilbourne *et al.* (2006) as illustrated in Figure 1.4.

Van der Wielen *et al.* (2014) provide a conceptual framework which addresses improving public health through interprofessional SRCs. Their model takes into consideration the knowledge and skill sets of each profession, their perceived value and the support needed from faculty. Kilbourne *et al.* (2006) provide an epidemiological framework for research in health disparities consisting of three phases, detecting and understanding health disparities leading to the implementation of interventions.

THS grew organically from a need which medical students identified while working at the soup kitchen run by the church. Over time the clinic grew into an interprofessional

SRC serving the homeless community. Each profession brings discipline-specific strengths, forming a collaborative team to address the needs of the clinic and community.

There is a curative approach in providing much needed acute primary healthcare services. The homeless community is prone to specific disease conditions and their health seeking behaviour is influenced by their experiences and social standing. Sustainability in this study refers to ensuring that there are sufficient resources to maintain the service provided to the community for an indefinite period.

THS receives institutional support from both the church and university. The church provides the premises for the clinic and is responsible for maintenance. The faculty is responsible for operational aspects such as human resource requirements (staff and students), finances, licensing of the pharmacy and indemnity. Most of the university responsibilities fall on the student management committee.

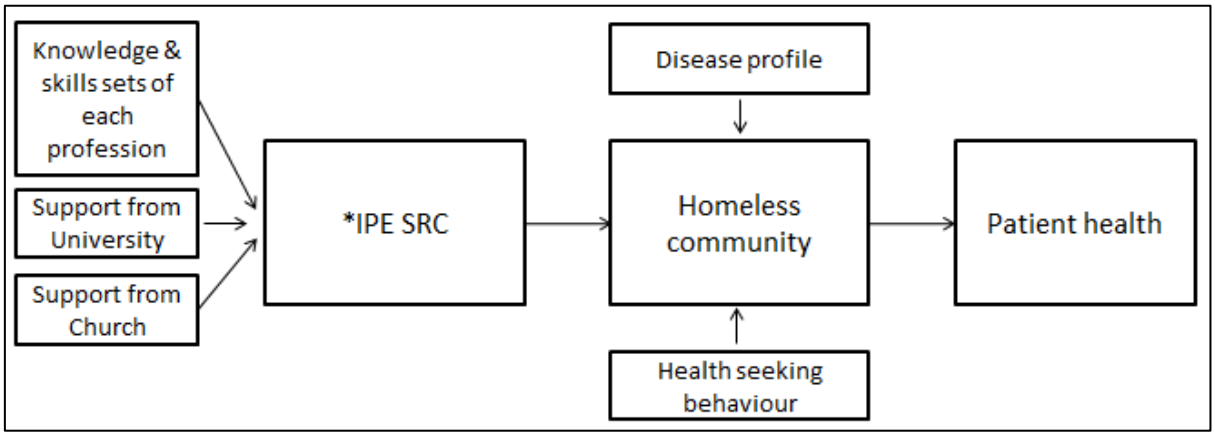


Figure 1.4: Conceptual framework of study

*IPE SRC: Interprofessional student run clinic

Problem statement

The sustainability of SRCs is a growing concern impacted by human resources and funding (Holmqvist *et al*., 2012). The homeless are becoming dependent on the services provided by THS and its sustainability needs to be ensured. The story of the origin, demise and resurgence of the clinic is yet to be documented. Local information profiling the health of the homeless is scarce which is essential in tailoring the services to meet these needs. The backbone of the clinic is the volunteers and it is imperative to understand why they are drawn to work in this

environment. The clinic is funded through donations, and thus, determining the cost of the clinic is needed to ensure sufficient funds going forward.

1.7. Study purpose

The purpose of this study was to describe the establishment and investigate the various factors affecting the sustainability of THS at Holy Trinity Catholic Church.

The objectives of this study were to:

1. document the history of THS.
2. determine the perceptions of the stakeholder groups, i.e. student and professional healthcare volunteers, the student and steering committees and the homeless community.
3. determine the prevailing conditions with which homeless people present.
4. conduct a cost analysis determining and estimating the costs of establishing and operating a SRC as well as the cost of treatment per patient.

This mixed method study comprised of four areas of research, each referred to as a component (see Figure 1.5). Each one plays a pivotal role in the development and operation of THS.

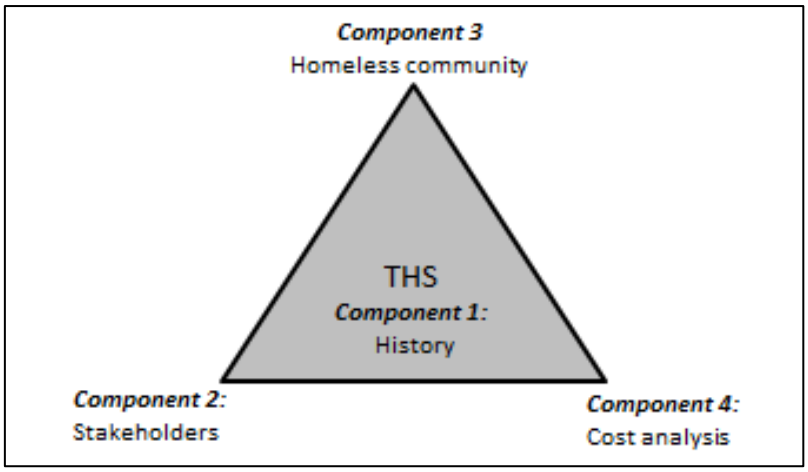


Figure 1.5: Schematic representing the relationship between the four study components

1.8. Conclusion

The introductory chapter describes the context of THS, a SRC based at a church serving the homeless of the inner-city. Illness is both a driver and outcome of homelessness where they face numerous challenges in accessing care. The literature explained the importance of a SRC as it provides students opportunities for them to interact and serve impoverished communities such as the homeless. University of the Witwatersrand has a history of students responding to the needs of communities in establishing SRCs. Over time these services closed or were handed over to the Department of Health to continue. They shared many of the challenges THS faces today.

CHAPTER 2: METHODOLOGY

We have come dangerously close to accepting the homeless situation as a problem that we just can't solve.
Lingle (2004)

2.1. Introduction

The sustainability of THS is multifaceted and complex, and thus required a mixed method study design (see Figure 2.1) to ensure input from multiple perspectives. The methodology is outlined in Table 2.1. The qualitative components consisted of documenting the history of the clinic (Objective 1) and eliciting the experiences and opinions of stakeholders (Objective 2). The quantitative components comprised of a retrospective record review of patient files (Objective 3) as well as the cost analysis of establishing and operating THS (Objective 4). The overall permission to conduct this study was attained from University of the Witwatersrand (Appendix 5) and Holy Trinity Catholic Church (Appendix 6).

Mixed methods studies have been used extensively in social science research (Tashakkori and Teddlie, 2010; Collins *et al*., 2008) and emerged as a "separate orientation" in the 1980's (Teddlie and Tashakkori, 2009, pg.7). It is defined as "a type of research design in which qualitative and quantitative approaches are used in types of questions, research methods, data collection and analysis procedures, and/or inferences" (Tashakkori and Teddlie, 2003, pg. 711).

The mixed methods approach allows for a more holistic understanding as it investigates different facets of the phenomenon (Graff, 2016). The purpose of the study was to describe the establishment and investigate the various factors affecting the sustainability of THS at Holy Trinity Catholic Church. This could not be answered using either a qualitative or quantitative approach, hence a mixed methodology was used to "integrate the statistical and thematic analytic techniques" (Teddlie and Tashakkori, 2009).

A convergent parallel mixed methods approach was used as illustrated in Figure 2.1 (Creswell, 2014). In parallel mixed methods studies the quantitative and qualitative phases investigate various aspects related to the same research question (Teddlie and Tashakkori, 2009). This mixed method study equally emphases the qualitative

(QUAL) and quantitative (QUAN) approaches placing them centrally on the mixed methods continuum (Teddlie and Tashakkori, 2009). Thus, both are represented with capital letters in Figure 2.1.

This parallel mixed data analysis involves two steps where the quantitative and qualitative analysis were independent and their findings combined and integrated to explain the phenomenon investigated (Teddlie and Tashakkori, 2009). Components 1 and 2 were inductive and explorative in documenting the experiences of multiple stakeholders. In contrast component 3 and 4 were objective and deductive, providing numerical data sets. The findings and results of the four components were assimilated and formed the model of sustainability.

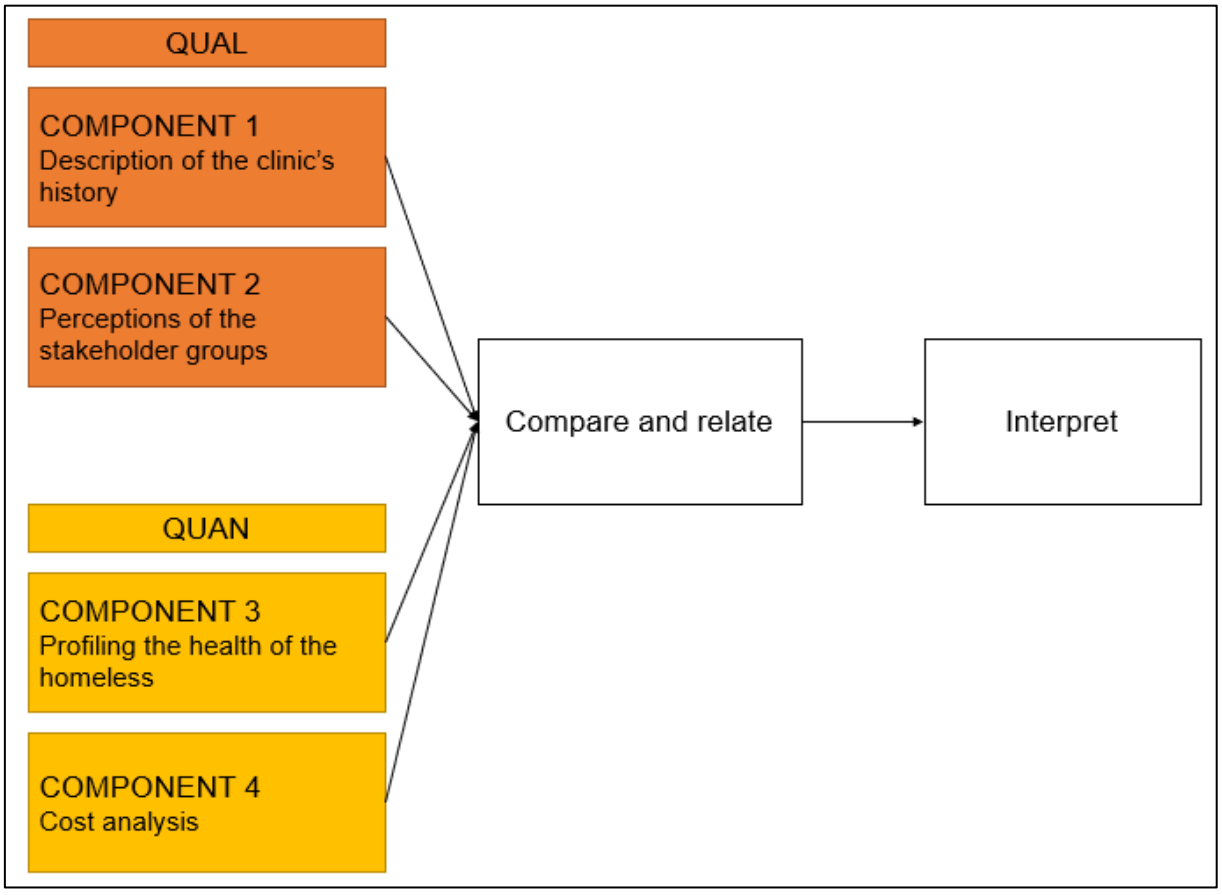


Figure 2.1: Convergent parallel mixed method approach (adapted from Creswell, 2014)

Table 2.1: Outline of the methodology, research questions and objectives per component

BRIEF DESCRIPTION	METHODOLOGY	RESEARCH QUESTIONS	OBJECTIVES PER COMPONENT
COMPONENT 1 Description of the clinic's history	Oral historical research methods	Why and how was Trinity Health Services established?	Describe the establishment of the clinic. Determine the role of the church, faculty and students in the development and operation of the clinic. Record the reasons for the closure of the clinic and the opinions of the students. Document the developments leading to the re-opening of the clinic.
COMPONENT 2 Perceptions of the stakeholder groups	Qualitative, grounded theory	What were the perceptions of the clinic from each stakeholder group? What were the roles and responsibilities of the stakeholders of THS? Why did students and supervising professionals volunteer at the clinic? What were the perceptions of the stakeholders regarding the management of the clinic?	Determine the roles and responsibilities of the stakeholders of THS. Explain the management of THS through the student and steering committees. Ascertain the reasons students and supervising professionals volunteer at the clinic. Describe the experiences of students, supervising professionals and the homeless community at the clinic. Discover the purpose of the clinic from the various stakeholders
COMPONENT 3 Profiling the health of the homeless	Retrospective record review	What were conditions that the patients presented with at THS and how were they managed?	Conduct a retrospective review of patient files to document: patient demographics, patient presenting and prevailing complaints, provided treatment, frequency of patient referrals to state-run clinics, and frequency of visits to THS. Categorise the presenting conditions/diseases by assigning a code to each diagnosis in accordance with the International Statistical Classification of Disease and Related Health Problems (ICD-10).
COMPONENT 4 Cost analysis	Retrospective cost-analysis (ingredients based, top-down)	What were the costs which contributed to the establishment and operating of a SRC? What was the cost of treatment per patient at THS?	Determine and calculate the costs (economic and financial) which contribute to the establishment of a SRC. Determine and calculate the financial and economic costs which contribute to operating a SRC. Establish the cost of treatment per patient

2.2. Component 1: History of the Clinic

2.2.1. Methodology

2.2.1.1. Research design

Oral historical methods were employed using in-depth interviews with key individuals to document the history of THS to achieve the objectives outlined in Table 2.1. Appendix 7 consists of an outline of the questions which were used in the interviews.

2.2.1.2. Study population

The study population involved initially in THS is unknown. Therefore, snowballing sampling was used to identify students who initiated the clinic.

2.2.1.3. Study sample

Thirteen in-depth interviews took place with five previous students, two faculty staff members and six priests who were involved in the opening, closing and reestablishment of THS.

2.2.1.4. Sampling method

Snowball sampling was employed starting with the original founders of the clinic. They in turn provided names of students, staff members and clergy involved in the initial establishment, closure and reopening of THS.

2.2.1.5. Data collection

In-depth interviews were audio recorded and transcribed verbatim. The duration of the interviews ranged from 20 – 68 minutes

2.2.1.6. Data analysis

A narrative analysis approach was used to construct the history of THS. The researcher interpreted the interviewees' story of THS and their involvement to construct the history of events. Comparisons were made between the convergent and divergent narratives. Convergent narratives refer to similarities in the interviewees recall and opinions of events. In contrast, divergent narratives refer to discrepancy in recalling details of the events and/or differing opinions.

2.3. Component 2: Stakeholders

2.3.1. Methodology

2.3.1.1. Research design

This qualitative component sought to discover how and why the clinic operated from the perspective of the stakeholders. Component 2 comprised of four stakeholder groups. The qualitative data collected from individual stakeholder groups was analysed thematically using Tesch's eight steps (Creswell, 2014).

A grounded theory approach was used to integrate the qualitative findings from individual stakeholder groups (see Table 2.1). This allowed for simultaneous data collection and analysis from the various stakeholder groups, comparing and contrasting their opinions and experiences as described by Glaser and Strauss (1967).

The data were collected by means of focus group discussions (FGDs) and semi-structured interviews with groups of stakeholders i.e. student volunteers (see Appendix 8), the student management committee (Appendix 9), supervising professionals (Appendix 10) and the homeless community (Appendix 11).

2.3.1.2. Study Population

Student volunteers (75 medical students and 30 pharmacy students) and the student committee members (13 students) are registered undergraduate students in the Faculty of Health Sciences at the University of the Witwatersrand. There are approximately 30 qualified healthcare professionals who volunteer at the clinic. There are approximately 330 patients who have been seen at THS.

2.3.1.3. Study sample and sample size

Focus group discussions for student volunteers

Student volunteers who attended THS on one or more Monday evenings were invited to participate in a focus group discussion (FGD). Separate FGDs were held with medical and pharmacy students. Two FGDs were held for each professional group comprising of 6 – 8 participants. The duration of the FGDs varied from 36 – 58 minutes. An outline of the questions asked is provided in Appendix 8.

Focus group discussion for the student management committee

Members of the student management committee were invited to participate in a FGD. One FGD was held with six members of the committee and was 56 minutes in length. An outline of the questions posed to the committee can be found in Appendix 9.

Semi-structured interviews for supervising professionals

Supervising professionals who had volunteered at THS on more than one Monday night were invited to attend a FGD. A suitable time to conduct the FGD could not be found, therefore in-depth interviews were conducted with three medical doctors and two pharmacists. The interviews were between 25 – 30 minutes each. An outline of the questions posed can be found in Appendix 10.

Focus group discussion with homeless community

Members of the homeless community who had attended THS on at least one occasion were invited to attend a FGD. Three FGDs were held. The questions posed to this group can be found in Appendix 11.

2.3.2. Data analysis

The audio recordings from the FGDs and interviews were transcribed verbatim. Data analysis began with reviewing the transcriptions line by line, generating the initial codes (Creswell, 2014). Initial codes were used to group similar data, to form categories. Similar categories were then grouped to form themes.

The categories and themes identified in the stakeholder groups were synthesized using a grounded theory approach as described by Charmaz (2006). The synthesized categories and themes were combined to form a theoretical framework.

Data collection continued until saturation was reached, which was defined as the point at which no new information was forthcoming in the FGDs or interviews. However, only one FGD could held with the student management committee, as the same committee remained in place for two years. The data collected after each focus group was reviewed and informed the next stage of the research as described in the constant comparative method (Glaser and Strauss, 1967).

2.4. Component 3: Profiling the health of the homeless

2.4.1. Methodology

2.4.1.1. Research design

This quantitative component profiled the disease conditions of the homeless community through retrospectively reviewing patient files (see Table 2.1) documenting each visit on a predesigned case report form (Appendix 12).

2.4.1.2. Study population

Patient files were reviewed for patient visits in 2016. Approximately 20 consultations occur on Monday evenings when the clinic operates.

2.4.1.3. Study sample and sample size

The review of patients' files included all patient visits from January to December 2016. There were 178 patient files reviewed, totalling 240 visits.

2.4.1.4. Data collection

A predesigned case report form was used to collect data (Appendix 12). Each time a patient visits THS the consultation was documented and attached to the patient's file. These records were kept in a locked room at THS. The extracted information was captured onto predesigned case report forms (Appendix 12). Each patient file was given a unique study number. The recorded information included the following: patient demographics (age, gender, race, nationality); vital signs (blood pressure, heart rate, respiration rate, weight); comorbidities and chronic medication; presenting complaints; clinical findings and diagnosis and management plan including the medication prescribed and referral to another facility. The final diagnoses were classified according to ICD-10 codes.

2.4.2. Data analysis

The information was captured on a predesigned case report form. These results were exported into Microsoft Excel® 2010 and assessed quantitatively making use of descriptive statistics and graphical representations. Categorical variables were described using frequencies and percentages. Continuous variables were described using mean values and standard deviations (if the data were normally distributed) or median and the interquartile range (if responses were not normally distributed). Statistica™ (version 13.2) was used to assist with data analysis.

The data for the record review was collected as part of a research project conducted by 5th year medical students in 2017. I was the supervisor of this project. I analysed the results presented with the assistance of a statistician.

2.5. Component 4: Cost analysis of a SRC

2.5.1. Methodology

2.5.1.1. Research design

The design of this component of the study was a retrospective cost analysis which estimated the cost incurred when the clinic was established as well as the cost of operating the clinic (see Table 2.1). The costing analysis used a mixed-methods approach combining an ingredients-based (costing each component) with a top-down (costing of a category) methodology where appropriate.

2.5.1.2. Study period

The study period was from January 2015 to December 2017. The costing year was set at 2018; costs outside that period were adjusted accordingly using the annual consumer price index.

2.5.1.3. Cost analysis

The costs pertaining to the establishment and operating of a SRC as well as the cost of treatment per patient were identified, quantified and valued. Costs were divided into capital and recurrent costs as per Appendix 13. Capital costs referred to costs associated with the establishment of the THS including building alterations, purchasing of equipment and licensing. Recurrent costs referred to expenses associated with operating the services such as rental, utilities and consumables. These costs were further categorised as economic or financial. Economic costs were valued, however, were not paid for by THS, for example donations of equipment or services. The financial costs were paid for by THS, for example consumables and medication.

2.5.1.4. Data sources

Sources of data included procurement records, service agreements, patients' records (patient consultation files and pharmacy records), architectural consultation report and the asset report. Pharmacy prescription records were reviewed retrospectively.

Prescriptions that were dispensed were filed and stored in the pharmacy as required by legislation (South Africa, 1974).

2.5.2. Data analysis

Descriptive statistics, illustrated using graphs and tables, were used to describe the costs obtained. Sources of data included procurement records, service agreements, patients' records and pharmacy prescriptions, architectural drawings and asset reports. Costs were captured and analysed using Microsoft Excel® 2010.

2.6. Ethical considerations

Ethical approval for this study was applied for in stages from the Human Research Ethics Committee (Medical) of the University of the Witwatersrand (see Table 2.2). The ethical clearance certificate numbers are found in Table 2.2.

Table 2.2: Ethical clearance numbers for study

COMPONENT	BRIEF DESCRIPTION	STUDY POPULATION	ETHICAL CLEARANCE No.
1.	In-depth interviews	Key individuals	M170953 (Appendix 14)
2.	FGDs Semi-structured interviews	Student volunteers Management committees Supervising professionals Homeless community	M161140 (Appendix 15) M170953 (Appendix 14)
3.	Profiling the health of the homeless	Patient consultation records	M1703109 (Appendix 16)
4.	Cost analysis	Patient prescriptions	M170953 (Appendix 14 & 17)

The information documents for the interviews and FGDs in Components 1 and 2 provided to interviewee/s or participants with the purpose of the study, their involvement and an outline of the research process are shown in Appendix 18.

Participation in the study was voluntary. The interviewee or participant signed an informed consent (Appendix 19) to participate in the study and for the interview or FGD to be audio recorded. The interviewee or participant was given the choice to refuse to answer any questions and/or withdraw at any stage of the study. The interviewee(s) or participants were provided the opportunity to review the transcription.

Although confidentiality in FGDs groups cannot be ensured, participants were asked not to discuss or repeat the content discussed. The FGDs involving students were conducted by a member of staff from the Centre for Health Science Education who was not a lecturer in either undergraduate program.

The retrospective information was extracted from patient records and prescriptions. Patient files and prescriptions were assigned study numbers. The list of study numbers and patient names were password protected and only accessible to the researchers and supervisor.

All documents collected are securely stored in password protected files or in a locked cupboard in the researcher's office and will be for a minimum of two years after publication of the data or six years in the absence of publication.

2.7. Presentation of results to an expert panel

The proposed model of sustainability was developed from the findings and results in Components 1-4 and presented to an expert panel. The expert panel consisted of faculty, church and student representatives, identified as stakeholder groups.

2.8. Trustworthiness of the qualitative data

Trustworthiness of qualitative data, according to Guba and Lincoln (1985), can be established through addressing criteria such as "credibility", "transferability", "dependability" and "confirmability". These criteria are defined in the context of the study are represented in Table 2.3 and include the techniques used to ensure the findings were valid and reliable.

Table 2.3: Trustworthiness of qualitative data (Guba and Lincoln, 1985)

Criteria	Definition in context	Techniques used
Credibility (truth value)	Refers to the "truth value" of how valid the findings of the study were within the context of THS	Member checking Triangulation of data Peer debriefing
Transferability (applicability)	Refers to the degree the findings would be relevant in other SRCs or services provided to homeless communities	Thick description provided as multiple stakeholders were included
Dependability (consistency)	Refers to how similar the results would be if repeated with same participants	Inquiry audit Purposive and snowball sampling used Multiple FGDs or semi-structured interviews were held with stakeholder groups.
Confirmability (neutrality)	Describes the degree of neutrality and includes the researcher bias	Reflexivity through presenting beliefs and values

Multiple stakeholder groups were included in this study in order to understand their experiences of the services provided. Within stakeholder groups several interviews and/or FGDs were held. Triangulation of data was achieved through collection of data from multiple stakeholders which contribute to both the stakeholder framework and the model of sustainability. The transcripts were reviewed and compared to identify emerging themes informing the next stage of data collection.

The FGDs and/or interviews with stakeholder groups were conducted by the same facilitator(s). Before coding commenced transcriptions were checked for accuracy. The coding system and transcription were revised until consensus was reached between researcher and supervisor(s).

Presentation of the results to an external panel served as peer debriefing. The external panel represented stakeholder groups that were familiar with THS. The framework and model were presented to the panel to elicit their interpretation and applicability of the model proposed.

Reflexivity, within a qualitative research context, is described by Palaganas *et al.* (2017, pg 426) as “The journey of discovering how researchers shaped and how they were shaped as a result of the research process…”. When the researcher is too familiar with the project, the researcher may overlook aspects or fail to integrate findings (Roberts *et al*., 2006), thus the need to reflect on my bias as the researcher.

My familiarity with the setting of THS can be both an advantage and pose potential problems. I was unable to suspend my participation in THS as I am the appointed pharmacist responsible for the pharmacy operations and there was no one able to replace me in this role. Therefore, I declared my involvement in THS and the reasons I participate in the project under my personal statement. I outlined my role as the researcher and have been transparent in the research process followed in reducing my bias. I was aware of my involvement and how this may have influenced the research. I always kept my bias in the forefront and ensured measures were taken to safeguard the trustworthiness of the findings.

2.9. Reliability and validity of the quantitative data

Reliability of the quantitative data refers to consistency in results (Creswell, 2014). Predesigned case report forms were used to retrospectively collect data from patient files (Component 3) and medication records (Component 4). These data collection tools were tested prior to use increasing their reliability. The data collection tools were based on forms completed for each consultation or prescription requirements. Measures to ensure the results of the quantitive were valid are described in Table 2.4.

Internal validity refers to experimental procedures, treatments or experiences that threaten the accuracy of the data sample (Creswell, 2014). The quantitative data were analysed retrospectively from patient files and medication records, where all the data within the stipulated time period was reviewed.

External validity refers to the applicability of the results to other people or settings (Creswell 2014). All patient files and prescription records for adults (18 years and older) were reviewed ensuring external validity. Most patients seen at THS were adults and insufficient paediatric patients were seen to draw valid conclusions. The disease patterns seen at THS may not be representative of the homeless in general,

given that most of the patients were men residing in an urban setting. However, these findings are valid for THS in contextualising the needs of its community.

Table 2.4: Validity of the quantitative data

Type	Application in context	Techniques used
Construct validity	Did the proposed methodology profile the health conditions the homeless presented with and the pharmacological treatment they were given?	The retrospective analysis of the patient files and pharmacy files were the primary sources used.
Content validity	Does the data collection tool accurately record all the information documented on the patient files and prescription records?	The data were transcribed onto purpose-designed case report forms based on the patient and prescription forms used at THS. Incomplete files and/or records were identified as possible threats and were excluded from the study.
Face validity	Do data extraction tools accurately retrieve the necessary information?	These data collection tools were piloted prior to use.

2.10. Validation framework used for mixed methods

The preceding sections explain trustworthiness and validity and reliability of the qualitative and quantitative components respectively. However, there it is necessary to discuss the validation of the mixed methods approach. A validation framework proposed by Dellinger and Leech (2007) was used to explain the application of mixed methods of rigour applied to this study. There are four core elements (see Table 2.5) to their framework namely foundational, translation fidelity / inferential consistency audit, utilization / historical and consequential.

Table 2.5: Core elements of the validation framework (Dellinger and Leech, 2007)

Element	Definition	Application
Foundation element	"reflects the researchers prior understanding of a construct and/or phenomenon under study" (page 323)	An in-depth review of the literature was undertaken researching the two phenomena, homelessness and SRCs A personal statement was provided by the researcher and researcher bias discussed.
Translational fidelity / Inferential consistency audit	"refers to whether the inferences in the study are consistent given what is known from prior understandings, past research and theory" (page 324)	Multiple data sources contributed to the constructed inferences. The inferences are consistent with the literature and elucidate the linkages between SRCs and homelessness.
Utilization / Historical element	"the more a measure or study inferences are used to represent or provide meaning to a construct, the more evidence that the measure or study inferences are an acceptable way of representing the construct" (page 325)	Implementation of the study findings were beyond the study objectives. Thus, the consequences of the implementing the study could not be determined. However, the findings were presented to an expert panel that confirmed their applicability to THS.
Consequential element	"judging the social acceptability of consequences that occur as a result of using the study's findings, measures, or inferences" (page 325)	

2.11. Conclusion

Chapter 2 describes the mixed methods employed in achieving the study objectives. The four components of the study are outlined, and a detailed methodology provided including the analysis of data and ethical considerations taken. The validity and reliability of the quantitative data and the trustworthiness of the qualitative data is described as well as the researcher bias. The chapters to follow present the findings of the various study components.

CHAPTER 3: COMPONENT 1 – HISTORY OF THS

The Son of God came into this world as a homeless person. The Son of God knew what it was to be a homeless person, what it was to start life without a roof over his head.
Francis cited in America Papal Visit 2015 (2019)

3.1. Introduction

Chapter 3 documents the history of THS. These findings were published in *The rise, fall and re-establishment of Trinity Health Services: Oral history of a student-run clinic based at an inner-city Catholic Church* published in Studia Historiae Ecclesiasticae. This component described the establishment of the clinic, recorded the reasons for its closure as well as documented the developments leading to the re-opening. The stakeholders were identified as the church, faculty and students and their role in the development and operation of the clinic was described.

The convergent and divergent themes compared the history of THS to the more traditional Catholic healthcare. This comparison ascertained the context of THS based at the church and the significance of providing the healthcare from this setting. The importance of establishing partnerships between secular and religious organisations in addressing the needs impoverished communities was identified.

Paper 1: The Rise, Fall and Re-establishment of Trinity Health Services: Oral History of a Student-run Clinic Based at an Inner-city Catholic Church

The journal permits use of the article by author(s) as stipulate in Appendix 20.

The Rise, Fall and Re-establishment of Trinity Health Services: Oral History of a Student-run Clinic Based at an Inner-city Catholic Church

Deanne Johnston https://orcid.org/0000-0001-6431-2140 University of the Witwatersrand
deanne.johnston@wits.ac.za

Anthony Egan
https://orcid.org/0000-0002-4191-4701
University of the Witwatersrand
Jesuit Institute South Africa
a.egan@jesuitinstitute.org.za

Patricia McInerney
https://orcid.org/0000-0002-1011-8032
University of the Witwatersrand
Patricia.McInerney@wits.ac.za

Abstract

The Catholic Church played a significant role in healthcare within South Africa through the establishment of 73 hospitals by the 1950s. However, the majority of these had been taken over by the state by 1970. Trinity Health Services (THS), a student-run clinic providing free healthcare to the homeless and operating from a Catholic Church in Johannesburg, proposes a new model for involvement of the church (and by extension the wider religious community) in healthcare. This oral history describes the story of THS, a joint partnership between Holy Trinity Catholic Church and the University of the Witwatersrand. It defines the stakeholders, namely the students, the Faculty of Health Sciences at the University of the Witwatersrand, and Holy Trinity Catholic Church, and explains their contributions to the clinic. The clinic was established in 2004 by two medical students and soon expanded its services, therefore needing more space and resources, including a pharmacy. The clinic was closed from 2011–2015 while registering the pharmacy. It reopened in February 2016, offering medical and pharmaceutical services. Convergent and divergent themes are described between the history of THS and more traditional Catholic healthcare. Similarities are drawn between the communities they serve, their approach to healthcare, and legislative challenges faced. The differences relate to the involvement of both secular and religious people in THS who are motivated to serve for humanitarian reasons, compared to religious sisters who were serving as part of their mission. THS shows the importance of healthcare projects with religious links. This new paradigm calls for the involvement of multiple partners, involving both religious and secular entities, in providing much needed services to underserved communities within society.

UNISA university of south africa PRESS

Studia Historiae Ecclesiasticae
https://upjournals.co.za/index.php/SHE/index
Volume 44 | Number 3 | 2018 | #4701| 21 pages

https://doi.org/10.25159/2412-4265/4701
ISSN 2412-4265 (Online)
© The Author(s) 2018

Published by the Church History Society of Southern Africa and Unisa Press. This is an Open Access article distributed under the terms of the Creative Commons Attribution-ShareAlike 4.0 International License (https://creativecommons.org/licenses/by-sa/4.0/)

Keywords: Catholic healthcare; student-run clinics; social justice; Trinity Health Services (THS)

Introduction

History shows the interconnectedness between religions, medicine and healthcare. Koenig et al. (2012, 24–49) outline historical events indicating the links of Buddhism, Christianity, Hinduism, Islam and Judaism to healthcare.

Health, healing and wellbeing are constitutive elements in religious traditions. While a narrowly defined "magical" understanding of religious healing (i.e. faith healing) is inadmissible in modern medicine (as indeed it was for Catholic sisters who founded hospitals and clinics in South Africa during the 19th and 20th centuries), modern medicine acknowledges a holistic understanding of medicine. The bio-psychosocial model of healthcare that is the gold standard of pedagogy in South African medical faculties (including the University of the Witwatersrand) is much closer to an understanding of the healing that the Catholic sisters brought.

Traditional hospital-based models of Catholic healthcare, we shall suggest, are no longer viable. The time for religious sisters working as nurses has passed; there are no longer vocations and many of these orders are in rapid numerical decline. Nor can the Catholic Church afford to operate hospitals run entirely by lay staff. There has been a shift to greater professionalisation of healthcare and the need to comply with legislation. Most of the remaining religious sisters with medical training have moved into home-based healthcare. The decline in vocations means they will not be replaced.

In stark contrast to religious vocations, homelessness has increased in South Africa. Homeless people in South Africa are most in need of food, water, sanitation and housing. They face several challenges when accessing healthcare, for example inability to provide identification documents and/or proof of residence (Wentzel and Voce 2012, 84). Holy Trinity Catholic Church in Braamfontein provides a daily soup kitchen for feeding the homeless. The church is seen as their place of refuge where they form a community.

Student-run clinics (SRCs) are spaces where healthcare students under the supervision of qualified professionals take the lead in providing healthcare services to underserved communities. There are five SRCs associated with Medical Schools in South Africa (Gordon 2016, 21). The Students' Health and Welfare Centres Organisation of the University of Cape Town, established in 1942, is perhaps the most well-known SRC and consists of mobile healthcare services which travel to communities in need (Favara and Mendelsohn 2012, 401– 402).

The subject of this article is an inner-city clinic, based at Holy Trinity Catholic Church, serving the homeless. It proposes a new paradigm for the involvement of a religious organisation in healthcare and to our knowledge it is the only such clinic in South Africa. This is a story which needs to be told as it illustrates religion and medical science working together, pointing to a new direction for the churches' involvement in healthcare in an era where the older paradigms are no longer possible.

Catholic Healthcare in South Africa

To contextualise our story and to substantiate our claims, it is necessary to review the role of Catholicism in healthcare within South Africa. Catholicism established itself in South Africa from 1818 onwards, after the British had occupied the Cape in 1806. This opened the door for

missionaries who were initially sent to educate communities as a way of spreading the faith. However, the missionaries found a clear need for healthcare. In the 19th century Bishop Jolivet saw the opportunity to expand into social work and healthcare in Natal, but needed to gain the confidence of the Zulus who stayed within their tribes and believed in traditional medicine (Brain 1982, 86). Over time, people migrated inland as they found opportunities in mining. Soon there was a need for hospitals, as frequent disease outbreaks occurred due to poor living conditions and inadequate sanitation, as well as an increasing number of mining injuries (Brain 1991, 89–90).

Faced with this need there was a rapid increase in Catholic hospitals, totalling 73 by 1950 (CATHCA 2011, 117). Care in these hospitals was provided regardless of race and religion. The religious nurses believed that all people were entitled to quality services and strived to uphold high standards in the hospitals they founded. They opposed apartheid government policies such as prohibiting "white" nurses from treating "black" patients (Brain 1991, 91).

The Johannesburg General Hospital (later renamed the Charlotte Maxeke Johannesburg Academic Hospital [CMJAH]) had an initial close relationship with Catholic religious sisters. Brain (1991, 86–92) describes the involvement of the sisters of the Holy Family of Bordeaux in the establishment of the Johannesburg General Hospital. In 1888 the sisters started to work in the temporary hospital until the Johannesburg General Hospital on Hospital Hill was officially opened in 1890. The sisters continued to serve in the hospital, despite many challenges such as the small pox outbreak in 1893 and the dynamite explosion of 1896. They showed devotion to nursing as they "undertook in the most whole-hearted way the entire nursing of the male natives, which always has been and will be embarrassing to arrange owing to local prejudices … and have in addition nursed a small portion of white patients" (Brain 1991, 91). They served at the hospital until 1915.

Catholic hospitals faced many challenges (CATHCA 2011, 17, 116–120). The majority of Catholic hospitals were funded by oversees sponsors and few received state subsidies. Nurses, mostly religious sisters trained and qualified in their home countries, faced many challenges as legislation in South Africa demanded registration of nursing staff and their foreign qualifications were not always approved[1]. Doctors and nurses often volunteered or were paid a meagre salary. Hospitals became expensive to run and with a declining global number of people joining religious orders from the 1970s onwards (particular sisters' congregations focused on active ministry, as opposed to contemplative orders), a number of facilities could not continue to operate. Declining vocations meant fewer sisters working in Catholic hospitals. With the increased cost of hiring lay staff, Catholic hospitals either had to adopt the private system of healthcare to survive or be handed over to the state. With increasing numbers of lay nurses and doctors in both public and private hospitals, religious communities also felt that there was no longer a need which they had to fill and they embarked on new missions serving in more rural areas.

Nearly all mission hospitals were appropriated to the state in the 1970s, except St Vincent's Hospital (Bela-Bela) and St Mary's Hospital (Mariannhill) (CATHCA 2011, 120). Although there

[1] There is discrepancy whether the qualifications and/or training of the religious nurse was accepted by the Colonial Medical Council. The Medicine and Pharmacy Act of 1891, section 30, refers to recognition of prior nursing qualifications if the nurse had obtained a licence to practice, obtained from British or foreign institutions, provided this included an examination (Searle, 1965). Alternatively, a certificate of competency could be obtained for those without a licence to practice if they had received training and if that training met specific criteria. CATHCA (2011) stated the sisters were trained in France but had no official qualifications. Thus, it is unclear if any of their training was recognised.

was far less involvement of the missionaries in hospitals, they focused their attention on other areas such as home-based healthcare and outreach projects in rural communities.

Catholic Involvement in Healthcare Today

The Poor Sisters of Nazareth arrived in South Africa in 1881 and set up houses and orphanages to care for the elderly and children in Johannesburg, Cape Town, Kimberley, Port Elizabeth and Durban (CATHCA 2011, 111). The sisters continue until today to serve the communities in the houses they established and have extended their role to provide care for approximately 5 000 HIV-positive patients at the Clinic of Hope and Love (SACBC Aids Office 2012). They partnered with the Department of Health to provide antiretroviral drugs and laboratory testing, ensuring sustainability of the clinic and hospice (SACBC Aids Office 2014).

The Catholic Health Care Association (CATHCA), established in 1987, describes its vision as "to enable the provision of high-quality healthcare services to all, especially the poor and marginalised in South Africa, in the spirit and service of Christ" (Morgan and Goemans 2013, 191). CATHCA sees the necessity for the Catholic Church to partner with other stakeholders to address the needs of South Africans through advocacy in government policies. They are involved in training programmes for home-based healthcare, HIV/AIDS prevention education as well as HIV/AIDS testing and counselling (Morgan and Goemans 2013, 191–207).

This history of Trinity Health Services describes a clinic formed at Holy Trinity Catholic Church in Braamfontein and provides a new paradigm in Catholic healthcare in South Africa. It explains the role of the church and the partnerships needed in serving the homeless community of the parish. It is encapsulated in this statement:

> … an inner-city parish somewhere in a poor city started a project like this based on the vision of a fourth-year student, and sheer doggedness has brought it to something like this … (Interview, Pugin 2017)

The Rise of Trinity Health Services

Trinity Health Services (THS) is a student-run clinic that first served the homeless community on 26 July 2004 at Holy Trinity Catholic Church (Weber 2005), a parish served since the 1970s by the priests of the Society of Jesus (Jesuits), who have worked in South Africa since the 1870s (Ryan 1990). The Jesuits are a religious order with a long history of innovative ministry, including pioneering religious inculturation in China in the 17th and 18th centuries, secondary and tertiary education, academic research (including work in many sciences) and ecumenism (Bangert 1972; Woodrow 1990; Worcester 2008). By the late 20th century, the Jesuits were also deeply committed throughout the world to social justice, epitomised in Decree 4 of its 32nd General Congregation (1975), which insisted that all Jesuit ministries should have a justice dimension (GC32, 1975). These commitments could be found at Holy Trinity in 2004, where Jesuit pastors, working with the Society of St Vincent de Paul (SVDP) (a lay Catholic organisation dedicated to charitable work) embraced local homeless people as an integral part of the parish's life. They also serve two student chaplaincies, the University of Witwatersrand and the University of Johannesburg.

The clinic was started by two fourth year medical students, Bronwyn Weber and Michael Flynn. Weber, residing in Trinity House, worked at the parish's soup kitchen on Monday evenings. Trinity House is a student residence owned by the Catholic Archdiocese of Johannesburg adjacent to the church building. Students living at the residence come from various religious backgrounds but are requested as far as possible to participate in parish and student chaplaincy

life. While volunteering at the SVDP soup kitchen as part of the latter engagement, Weber thought this would be an ideal location for an ad-hoc clinic. She noted that "as students, you want to be out there, you want to make a difference, you want to help and there wasn't anything" (Interview, Pitman [nee Weber] 2018). She approached the Jesuit priests at Trinity, Graham Pugin SJ (parish priest) and Anthony Egan SJ (student chaplain), in early 2004. Egan was asked by Weber whether he thought a clinic would be a good idea as she had observed that a number of people attending the soup kitchen were sick and didn't seem to visit any healthcare facilities. He agreed, but noted that this was outside the expertise of priests and the parish, and urged her to formulate a plan before approaching Graham Pugin. Weber approached Pugin and, following numerous discussions, approval was given. Egan recalls that Pugin was a little unsure, and said: "… it may be a little enthusiasm … it might work for a few weeks, it might work for a few months, it may even last a year, he says, 'you know, the old *Gamaliel* principle; if it's God's will it will last, if it isn't, well you know, it's a nice little try'" (Interview, Egan 2017).

In the establishment of the clinic, students at the University of the Witwatersrand's Faculty of Health Sciences took the lead. From the start they came from a variety of religious backgrounds, if any. Unlike the SVDP, the focus was overtly humanitarian rather than religious. As the "founder," Weber (Interview, Pitman [nee Weber] 2018) was responsible for what she described as the "nagging." This involved getting the necessary permissions, determining how the clinic would complement the soup kitchen and negotiating the required space. Flynn (Interview 2018) was responsible for the logistics and fundraising. The role of the church, as Pugin (Interview 2017) recalled, was supportive: "[W)e have resources, we have contacts, we have people, we have networks, we have facilities, and to a modest extent we have money. And all those are things that a baby project like this desperately needs, and so it was providing the facilities, it was providing very basic supplies and it was providing contacts." The role of the Faculty of Health Sciences in the establishment was, at that point, minimal, though Weber remembers the faculty being aware of the project and encouraging it as it was seen as students doing voluntary community service. Pugin (Interview 2017) further describes the role of the faculty as follows: "… the students were getting no recognition for the hours they were doing, the work they were doing and … felt: a) they were doing a good thing; and they felt b) they were getting some experience that they didn't get otherwise. I don't recall any enthusiastic support from the faculty, although individual doctors [who helped supervise the students] may well have had faculty links …"

Weber and Flynn approached their fellow students to volunteer at the clinic. Student volunteers were, as noted above, from various cultural, religious and racial backgrounds. Pitman [nee Weber] (Interview 2018) recalls how the clinic operated. The volunteers would arrive dressed in their white coats and would set up a clinic outside, between the church and the priests' house, with chairs and tables for patients to be seen. The more severe cases, needing more privacy, were taken to a small consultation room in the basement of the church. Initially very few people accessed the clinic but in the weeks that followed more and more people came: "[W]e realised there was a huge need … [I]n fact, we were probably quite unprepared for the need" (Interview, Pitman [nee Weber] 2018).

Very limited services were initially offered, recalls Flynn (Interview 2018) "… a very basic, almost like first-aid type of service … [extended] into very basic over-the-counter medications … occasionally … a doctor … would come in and support us and … a more senior medical student would be there." Patients, who were mostly male, most commonly presented with psychological problems, alcohol abuse, sexually transmitted infections, dermatological conditions and tuberculosis. As the scope of the clinic was limited, patients needing additional care were referred to the CMJAH or Hillbrow Community Health Centre with a referral letter,

which was “something more of a way for a patient to get into it … to encourage them to go and seek help rather than being something that could be used by the service that they were referred to …” (Interview, Flynn 2018).

For the next few years the service continued its limited medical care, providing over-the counter medication and medical advice (Interview, Lorhman 2018). However, students began to see a need for the clinic to expand: “[O]ur goal was to try to turn it into a more functional clinic that could provide a few more services … [W]e found that basically everyone who had anything actually wrong with them, we had to refer, and even … for like minor complaints …” (Interview, Lorhman 2018). Russell Pollitt SJ (Interview 2017), the then parish priest, confirmed this, saying “… these people needed the space and in order … [to] give better medical treatment, equipment was needed … So I remember thinking to myself it would be really good if we had space for people to be treated with dignity … that they weren’t just on a chair outside in full view of everybody.”

Father Tim Curtis, the then Director of the Jesuit Missions Office of the British Jesuit Province (of which the South African Jesuits were a region), had just visited South Africa and was impressed with the soup kitchen and clinic. Pollitt then wrote to Jesuit Missions, who sent out an appeal for donations towards the clinic in a publication called *Jesuits and Friends*. THS received approximately R120 000.00, which was enough to reconfigure the available space at the parish to provide for three consultation rooms, a pharmacy and a store room. The remaining funds were used to buy necessary equipment. Fine (Interview 2018) describes how the services of the clinic expanded into the new spaces: “… we had formal consultation rooms which were fully stocked for examinations. We built up the pharmacy … using the primary healthcare EDL [Essential Drug List] as our guideline and started providing a much larger range of primary healthcare type management.” The official opening of the renovated facilities took place on 10 April 2010 and was supported by students and their families, as well as supervising professional staff and clergy.

The clinic’s expansion into new spaces mirrored the formalisation of students into a committee. The committee consisted of eight members with defined portfolios: chairperson, vice-chair, treasurer and secretary as well as separate portfolios responsible for the pharmacy, HIV testing and referral, sterilisation and roster of volunteers (Trinity Health Services 2011). Members of the committee were voted in by the students who were volunteers at THS during a meeting held in October of each year. The committee outlined the aims of THS as follows:

> Provide free basic healthcare for the homeless, unemployed and foreign people in Braamfontein and the surrounding areas.
>
> Provide an opportunity for Health Science students to be exposed to patients, practise their clinical skills and use their theoretical knowledge in a clinical setting, in order to gain experience and to supplement their learning.
>
> Give younger students an opportunity to learn from more experienced students as well as the consulting doctors. (Trinity Health Services 2011)

The clinic was thus a space where students from different years of study could work together in serving the community. The consultation process outlined in Figure 1 divides the tasks which volunteers were given, based on their year of study (Trinity Health Services 2011). The more junior students, first and second years, saw the patients first and could take vital

measurements, performed outside in the area between the church and priests' house. The third and fourth year students consulted patients in rooms situated in the basement of the church and they presented cases to the senior students (fifth and sixth years), before obtaining final approval from the supervising doctor. The referral list expanded to include more specialised sites and specific facilities for South African and foreign patients. It was perceived that foreign patients were frequently turned away from certain hospitals and clinics.

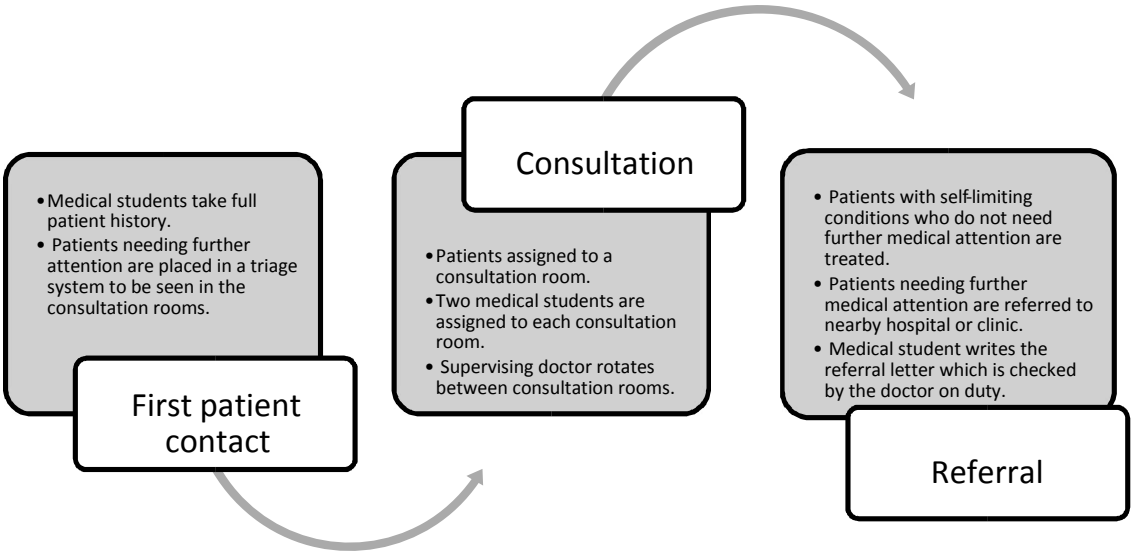


Figure 1: Schematic description of consultation process

Source: Trinity Health Services 2011, Standard Operating Procedures

Expanding Services to Include HIV Voluntary Counselling and Testing

Flynn (Interview 2018) explained that in the early stages the clinic would have liked to offer services such as HIV Voluntary Counselling and Testing (VCT), but it was not possible. This was one of the services that the clinic was able to provide through its expansion. Lorhman (Interview 2018) explains the reasoning for offering VCT: "[W]e always knew we were working with a very high-risk population … homeless inner-city people, a lot of immigrants … sex workers … have a higher prevalence [of HIV] and they often get lost in the health care system …"

The clinic partnered with New Start, a non-profit HIV programme, which was able to assist in training students and supporting the initiative. Students were excited to learn this new skill. Fine (Interview 2018) explains that "in some ways there was a selfish aspect to it in that it was something that we could learn, it was new for us, it would give us … a certificate to say that we were able to do something that our colleagues … still had to learn."

At this time "there was no research done on HIV prevalence for homeless people …" (Interview Botha 2018) which led to the development of a research project. Bruce Botha SJ, another Jesuit priest then based at Trinity, and Graham Lorhman, a medical student, together with researchers from the Wits Perinatal HIV Research Unit, applied for permission from the Human Research Ethics Committee of the University to conduct research which culminated in a publication entitled "HIV and the Urban Homeless in Johannesburg" published in the *South African Journal of HIV Medicine* (Lorhman et al. 2012). The study found that HIV prevalence in

this community was not much different from the South African population of similar demographic profile. Homelessness on its own was not a risk factor, however, poverty and unemployment contributed to a higher prevalence of HIV (Lorhman et al. 2012).

With limited funding and resources, the clinic was "nowhere near a position to prescribe antiretrovirals" (Interview, Lorhman 2018). Patients testing positive needed to be referred to the Hillbrow Community Health Centre, unless the patient was a foreigner (often an "illegal" immigrant) in which case they were sent to Nazareth House for further assessment (as mentioned in the introduction, Nazareth House, in partnership with the Department of Health, provides antiretroviral medication to HIV positive patients). This was necessitated because, despite South Africa's Bill of Rights and the National Health Act, which both reject discrimination against patients on grounds of nationality, perceived "illegal immigrants" were sometimes chased away from state hospitals, particularly during times of heightened xenophobia.

The church was supportive of this initiative, despite opposing views regarding the use of condoms to promote safe sexual practices. In accordance with official Catholic teaching regarding family planning, the Catholic Church opposes the use of condoms in almost all circumstances (Paul VI 1968). Many Catholic moral theologians disagree with this, particularly in a context where the primary intention of condom use is to prevent HIV infection and save lives (Azetsop 2016; Bate and Munro 2014; Keenan et al. 2000; Kelly 1998). Students claimed that they were not allowed to advocate for the use of condoms and promote family planning (Interview, Fine 2018; Interview, Tambuze 2018), yet in the interviews conducted some of the priests said that the students needed to advocate for the needs of the patients first: "… if somebody's having multiple sex partners, you can't tell them don't use condoms" (Interview, Botha 2018); "… we have to negotiate our way around some official church policies which are extraordinarily neuralgic, regarding family planning, reproductive health, those kinds of things, and therefore very much touching on HIV issues …" (Interview, Pugin 2017); and "if they wanted to prescribe condoms to these folks, we're not going to ask questions, we're not going to look at it" (Interview, Egan 2017). The latter's observation reflects the actual complexity of the Catholic response to the AIDS crisis in South Africa; while officially strongly opposed to condom use, in practice through a multitude of state-run clinics in rural or peri-urban Catholic parishes, as well as through home-based healthcare, the church has become one of the largest distributors of antiretrovirals in South Africa and has frequently engaged in heated debate about condoms (Joshua 2010a; 2010b; 2014).

Whether the students perceived in some way that they were restricted from providing condoms, or whether other Catholics told them that, is uncertain. Strictly speaking, it can be argued that the medical use of condoms, following a reading of the encyclical *Humanae Vitae* itself, is allowed for "… therapeutic means necessary to cure bodily diseases …" (Paul VI 1968). Though at the time Rome and the majority of bishops in South Africa rejected this claim (an exception being Bishop Kevin Dowling of Rustenberg [Joshua 2010b]), there is a strong tradition in Catholic moral theology that a dissenting view, if morally probable, may be entertained (a point one of the Jesuits at Trinity, a moral theologian by training, would have pointed out had he been asked) (Interview, Egan 2017). The decision to use or not use condoms, according to traditional Catholic ethics, is ultimately a matter of conscience which must be followed, whether or not it conforms to the official teaching of the church.

Another point worth raising is that the majority of the homeless community as well as the doctors were not Catholic, thus not "bound" by the church's moral teaching. However, as "guests" of the parish, possibly misinformed about the complexity of moral theology, or simply

uneasy with raising a controversial issue, the students did not pursue the question further. Though it presented a challenge in the close collaboration between Trinity and THS, this issue reflects the complexity of the relationship and mirrors the subtle tension that always seems to exist between religious belief and medicine.

The Fall of Trinity Health Services

With the expansion of services, there was a need to prescribe and dispense more medication, necessitating the inclusion of a pharmacy. Although there was a room known as the "pharmacy" with a person assigned to dispense, there was no pharmacist present and the facility was not registered as such with the legislative authorities. Up until this point (September 2011) the required medication was prescribed by one of the supervising professional doctors and dispensed in bulk by a local pharmacy. The medication was kept in a toolbox, which was stored in a nearby pharmacy on days when the clinic was closed. On Mondays students would collect the medications from the pharmacy, take them to the clinic and medication was dispensed by a medical student in accordance with the prescriptions written. The medication was then (at the end of the day) returned to the pharmacy for safe keeping.

The student committee wanted to legalise the dispensing of medication and needed to register the pharmacy. They approached members of the Department of Pharmacy and Pharmacology. The initial perception of the committee was that this was a relatively easy task: "… our initial understanding, our initial sort of thoughts were that it would be a relatively quick process …" (Interview, Fine 2018). This was confirmed by Bhikhoo (Interview 2018): "… you know when you … read about it, it just seems easy because you just follow the steps and it's … okay, get pharmacist, register pharmacy, get certain books, change pharmacy plans ..." The committee first applied for a community pharmacy license at the end of 2011, with Deanne Johnston, a lecturer from the Department of Pharmacy and Pharmacology, appointed as the Responsible Pharmacist.

In registering the pharmacy, the students needed to engage with the university. Students and the parish priest, Russell Pollitt, met with the Dean of the Faculty of Health Sciences and a few staff members. Although the dean was said to support this initiative, the clinic posed numerous legal risks. Pollitt (Interview 2017) described the meeting as follows:

> I remember going to a meeting where his kind of question was "with whose permission are you doing this?" [I]t's always been supported, but no, you didn't ask for my permission, was the kind of attitude that we got from him. He raised all sorts of … legal problems … stuff around insurance and the university's culpability should something go wrong because it was no longer just sort of taking people's blood pressure but … getting a little bit more serious. And I think there were questions about that insurance and then he involved the … legal department of the university and all sorts of things … I felt instead of finding an amicable way of doing this, it was basically ordered that the place be shut down …

The students were disappointed. Many no longer wanted to help as they feared that it might compromise their future careers (Interview, Bhikhoo 2018). With a dwindling group of volunteers and pressure from the faculty, the clinic was temporarily closed in September 2011. Notices were placed around the church to inform the homeless community.

The response from the community was noted by Pollitt (Interview 2017): "I remember for weeks them coming to beg me because they just weren't getting any treatment at places like [CMJAH] … or they were getting poor treatment … they really, really suffered …" Bhikhoo (Interview 208) makes a valid point that the homeless are not often consulted when services are

withdrawn: “[They are] used to sort of getting disappointed … you were entitled to this and now we are taking this away from you … it’s not a population that is used to having something.”

Students also voiced their disappointment to Fine (Interview 2018): “Other students, younger students who had heard about Trinity, would often come up to me and say ‘oh but I wanted to help’ and they were quite disappointed when they heard that it was not functional.”

A strong faculty supporter of the clinic, Adjunct Professor Lionel Green-Thompson (Interview 2018), who frequently supervised at THS, described his reaction: “I was so cross with the faculty for closing the clinic down. I was hopping mad, you know. And nobody could ever give me a full story … it was ‘so and so’ complained that we were overstepping our mark.”

The Re-establishment

Following the temporary closure of the clinic, the primary task was to register the pharmacy with the South African Pharmacy Council (SAPC). This proved onerous, taking almost four years. The difficulty was in meeting the minimum standards for registering it as a community pharmacy. The Pharmacy Act 53 of 1974 (as amended) allows for the registration of community, consultant, manufacturing, institutional and wholesale pharmacy. The Act does not deviate from these categories and applies minimum standards which a pharmacy must meet according to the site plan of the pharmacy, submitted to the Department of Health. The only category, in which Trinity Pharmacy could be registered, was as a community pharmacy.

The committee’s first application for a pharmacy license (in 2011) was unsuccessful. The SAPC raised concern with the ownership of the pharmacy being the church and the floor plans needed to be professionally drawn to scale reflecting the size of the pharmacy and premises. Ownership was discussed with the legal office of the university, with parish priest Pollitt, and with designated responsible pharmacist, Johnston. Following this meeting it was decided that the university should apply as the owner of Trinity Pharmacy.

The amended ownership documents and floor plans were submitted to the SAPC, but the license was denied once more in July 2012. The space demarcated for the pharmacy was too small and it could not meet the minimum standards for a community pharmacy. For example, there was no separate area for the receiving of stock, the dispensing area was too small and the pharmacy was not wheelchair accessible.

These findings were not easy to address and necessitated relocation of the pharmacy to ground level. Many meetings between the church, members of staff from the Department of Pharmacy and Pharmacology and the architect ensued. The required space was identified, and plans were drawn, but the required alterations were put on hold until the licence had been approved. The next application was sent to the Department of Health on 31 March 2014. Following a few minor changes, on 5 January 2015, the SAPC found the pharmacy to be compliant and sent a letter of recommendation to the Department of Health to issue a licence. The licence was signed on 14 February 2015 by the Director-General for Health. This marked the rejuvenation of Trinity Health Services and planning for the re-opening could now commence. The pharmacy site was on the ground floor of the priests’ house. Building soon commenced, including a wheelchair ramp to allow access.

Meanwhile, following lengthy discussions between the church and the Faculty of Health Sciences, an agreement was reached. The church would be responsible for the premises of the

clinic, including maintenance. The university, now the owner, assumed legal responsibility for the clinic, responsible for the staffing and management of funds (including fundraising). Many of the tasks would be allocated to the students.

Over the period when the clinic was closed, student involvement in the project dwindled as many of the tasks were out of their scope. Most of the students at the time of reopening had had no previous involvement with the project: "I remember I did speak to a few students in my class, and the way that they knew about the clinic is because they had siblings who had worked previously in the clinic who had already left Medical School … [S]tudents didn't actually know about the clinic because it wasn't something that was running when we were at Medical School …" (Interview, Tambudze 2018).

The Wits Rural Health Club (WRHC), another student-run organisation, showed initial interest in the reopening of THS. Katherine Tambudze, a member of WRHC, together with interested students took responsibility for spreading the word and mobilised the students to form a separate committee. Gilbert Mardai SJ, the new parish priest when the clinic reopened, recalls the students' commitment: "I was very moved by the kind of spirit that I saw in the students when they were setting it up, the Saturdays that they came and cleaned up the rooms and prepared them, when they could have gone and studied. Just the positive energy that they had when they arrived there and trying to make sure that everything is well done" (Interview, Mardai 2018).

The inclusion of a pharmacy within the clinic necessitated the involvement of pharmacy students. The pharmacy students were enthusiastic as expressed in an interview with a fourth year pharmacy student, Thabo Justice Lephalala: "Other people out there, pharmacy students and other students at medical school, are ready to help because people just need a platform for 'okay so you can help here'; so now that we have a pharmacy and we have the knowledge and the skills to provide services, they will be willing to come and provide those services" (Lephalala in Random Acts of Kindness 2015).

On 1 February 2016, THS reopened its doors to offer primary healthcare services staffed by seven students (four from medicine and three from pharmacy) supervised by a doctor and pharmacist. Since then the clinic has provided a regular service upon which the homeless community can depend. Tambudze (Interview 2018) explained that "initially there was just a little bit of apprehension … I did expect, and I would understand why … but after a while things did get better, and we even had people who started coming more than once and we soon realised that some people just actually wanted to come and talk because they didn't really have anyone to talk to."

The official reopening ceremony took place on 24 May 2016. Green-Thompson (Interview 2018), now Assistant Dean of Teaching and Learning, at the Faculty of Health Sciences, observed: "This is the work of the students but in many ways, it reflects our social justice dimension … This is something that's grown out of the students, even in the second round" (Interview, Green-Thompson 2018).

Tambudze (Interview 2018) became team leader of the students, supported by an interprofessional team of medical and pharmacy students and described the first year as "trying to find our feet and figure things out." The team of students formed a committee with defined roles and responsibilities.

Analysis: The Role of Key Stakeholders

Role of the Church

> Trinity is a classic example of a good working parish that's developed a good working relationship with the university, that is operating across and *beyond* the sort of narrow, confessional boundaries and moving … beyond even religious boundaries. (Interview, Egan 2017)

Holy Trinity Church has included a number of social apostolates including Justice and Peace, a lesbian, gay, bisexual, transgender and intersex (LGBTI) ministry, Community of Sant'Egidio and SVDP. These groups were founded in marginalised sectors of society.

Egan (Interview 2017) describes the extent of feeding homeless people at Trinity as follows:

> Holy Trinity Braamfontein Parish had run a soup kitchen … there are actually two sets of soup kitchens; the one was a Monday night soup kitchen, which was run by the Saint Vincent De Paul Society ... And during the mornings, the parish house keeper, the redoubtable Yvonne … would run her own little soup kitchen for the homeless people, so we would feed people Mondays to Fridays … at about 11:00 in the morning and we'd also have the evening … we used to sometimes call it the 'feeding of the five thousand' … on a Monday night.

Pugin (Interview 2017) is uncertain of when the Monday night SVDP soup kitchen began, but thinks it could have been in the 1980s. It was from the Monday night soup kitchen that the vision of a clinic grew. Initially the role of the church was marginal but expanded as the clinic developed: "We got outside funding but the church managed the funding. They gave us a place to work, they gave us a lot of support, they put us in contact with people who were helpful to us, they helped us organise the HIV counselling, testing, they supported us in many ways" (Interview Fine 2018) and "they were kind of the last word on every matter … if you wanted to make any structural changes, if you wanted to start any new programmes they had to give the okay" (Interview, Lorhman 2018). Pollitt (Interview 2017) acknowledged that the church may seem to have "owned" the clinic, however, the church felt it was a joint responsibility between the students and church: "… it was seen as the church's thing because it was initiated on church property and so forth … but it's quite clear that without the medical students, that thing would never have been able to run … [F]or me, it was a very good partnership because I felt like there was a collective responsibility."

The support the students received from the parish priests went beyond that of the management of the clinic: "… they gave us I think a lot of, you know, just kind of emotional psycho-social, psychological support. We were, I guess, in a situation where as students we didn't realise … the impact we were having on a lot of these guys who otherwise were not accessing healthcare. We realised it but to a very shallow degree I think, and they helped us realise, so they were very supportive in terms of that" (Interview, Fine 2018).

When the clinic was reopened the church reaffirmed its commitment in providing additional space for the pharmacy as Tambudze (Interview 2018) explained: "I remember even when it came to the new pharmacy and actually have it in the priests' house … I was like, wow … that's a big ask."

Mardai (Interview 2018) saw the supportive role the church played as twofold: "[F]irst it helps those who are beneficiaries … homeless" and is the social justice platform for students to learn: "They learn medicine, they may want to go into big hospitals [when] patients are coming from wealthy backgrounds, but they need to also have an exposure to the poor and as a church that is something that we … needed to support."

Julia Moolman (Interview 2018), a medical doctor who was chairperson of the parish pastoral council of Trinity, questioned the involvement of the parish in the clinic: "From the parish side there were very few discussions about the clinic, and about how it should run and what services we should be offering … I was quite in favour of the parish council playing a more active role in conceptualising the clinic … we maybe haven't established its importance in the global picture … I definitely think in moving forward in the sustainability of it, it's something that really needs to be [examined]." This raises the point of broadening the view that the church is represented by the clergy and embedding the clinic within the parish, particularly given contemporary Catholic theology—following the Second Vatican Council (1962–1965)—that the church is the whole people of God, and that laity ought to take full and active responsibility in church life (Lumen Gentium 1964: nn.9–17; Gaudium et Spes 1965: nn.31 *et passim*).

Role of the Faculty of Health Sciences

The role of the Faculty of Health Sciences was difficult to confirm as many of the key role players who perhaps decided whether to support the clinic, are no longer at the University.

In the early days of THS little involvement from the faculty was needed, as described by Flynn (Interview 2018): "I think that the faculty initially wasn't specifically involved … it was of interest from the faculty [to make sure] that students were involved in other activities outside [of university] … but … as soon as the faculty was aware of what we were doing, there was … a very keen interest in building it up and establishing it."

Lorhman (Interview 2018) recalls help from individual doctors who worked in the faculty: "… a lot of support, individuals … we really didn't struggle to get people there. So, so Dr Green-Thompson was a big proponent for us as well … a lot of people from family medicine kind of rotated through."

Even though staff may have been involved in supervising students, support from the faculty was lacking, especially when it came to the legalities of a clinic and pharmacy: "… initial support was underwhelming. I think because their, from a legal standpoint they couldn't … as an institution take the risk of getting involved until it was fully legal and operated … I think we felt quite unsupported by Wits, which was very disappointing. If you look at Wits's quite proud history of social activism in previous decades … [M]y feeling was that apart from a few individuals they were decidedly unhelpful for the most part" (Interview, Fine 2018).

In the re-establishment students still feel unsupported by faculty: "I think the extensions of the faculty, which was mainly Deanne [Johnston] and Prof. Green-Thompson were very, very involved and very excited … I really struggled to get the rest of the faculty on board" (Interview, Tambudze 2018). The lack of faculty commitment was evident at the reopening of the clinic: "I think we sent out and invited most of the members of the faculty and not a lot of the members of the faculty supported … [T]hat would have been a great statement for them, even one or two to come through just to show support" (Interview, Tambudze 2018).

Green-Thompson (Interview 2018) explains that he has continued to volunteer "to demonstrate to the students that there's a level of faculty leadership that will be able to engage at the lowest level in a socially just paradigm or dimension." However, students do not perceive the involvement of a few staff members as representing the faculty and call for support especially as they try to expand the inter-professional team.

Role of the Students

As a student-initiated and student-run clinic, ownership of the project and the responsibility of operations lie within the students' realm. This is echoed in these comments:

> [I]t's nice to be part of something that's your own as a student, but it's not a forced activity by the faculty, it is something that you want to do and it is something that you are learning from and growing from. (Interview, Bhikhoo 2018)

> [T]he basis of the clinic is a student-run clinic, and I think with that in mind, most of the responsibility lies with the students … (Interview, Tambudze 2018)

> I did at one point feel like it was, that was my baby, that was my thing, you know I spent a lot more time on that than I did on my university work, and that may or may not reflect in my marks, but it was you know, that's what kept me going through the difficult times in three years of med school … [E]very Monday I could be going to do something that I felt was worthwhile, kept me going. (Interview, Fine 2018)

The commitment from the students to THS, both initially and since the reopening, was noted by the parish priests:

> So there was a real sense that students were very dedicated, they were enthused by this … and I found that inspiring because you know, here's these young people, you know, who were dealing with what I suppose the world would look at as the real dregs of society, these people who lived on the streets. They would come faithfully every single week and they would, you know, look after these people … (Interview, Pollitt 2017)

> … there are people who are not actually doing this for marks, they are not doing this for any trophy, they truly believe in helping another human being … (Interview, Mardai 2018)

The experience of THS has had a long-lasting impact on the students in where they find themselves today:

> … having that exposure to patients, both in terms of clinical ability and in terms of humanness, made a big difference when I started practising, when I started working. In my clinical years at "varsity" and as intern, and as a whole it grew my interest in primary [health]care. So currently I'm a Registrar in Family Medicine … which would be as close as you could get to that sort of medicine. (Interview, Fine 2018)

> [Y]ou kind of pick up on when someone is, is having something going on at home, almost, if someone has something non-medical … when you have spent time at the clinic and you speak to patients … they kind of mention, their illnesses and they … hint at what is actually going on and what is really troubling them, their situation … and if you are not exposed to that and you don't see that … (Interview, Bhikhoo 2018)

> [I]f you've worked in … that sort of … degree of poverty … you appreciate what you have … [I]t's just a more broad level, but also I think it tends to make you want to be a better doctor (Interview, Flynn 2018)

A multi-layered partnership in mission is established between the church, faculty and students:

1. The clinic is aligned to the social mission of the church.
2. It is the mission of the university to form and train socially accountable healthcare professionals.
3. The clinic provides an opportunity for students to encounter patients and put into practice the skills and knowledge learnt in lectures under the supervision of staff.

This partnership demonstrates a post-modern shift. Neither stakeholder claim monopoly on the discourse, be they medical or religious. Each stakeholder approaches it from their own perspective, interest and ideology but ends up working for a common purpose.

Framing THS: Social Justice

The words of Dom Hélder Câmara, a Brazilian Roman Catholic Archbishop, "When I give food to the poor, they call me a saint. When I ask why they are poor, they call me a communist" (Rocha 2000, 53), recalled by Pugin (Interview 2017), explain the role of the clinic in both advocating for the homeless, but also in teaching students about social justice:

> … you learn to advocate for your patients because you know how difficult it is for them, you know where they are coming from … (Interview, Bhikhoo 2018)

> … social responsibility is important that we don't just see people as bodies, but we need to understand their social circumstances. (Interview, Tambudze 2018)

This too is confirmed by the comments from Pollitt (Interview 2017): "[A]nother very important part of that thing was to expose, and let's face facts. Most of the medics who came there at the time when I started were young white people, who kind of came from privileged backgrounds, and I think the socialisation of exposing them to life on the streets, life in Braamfontein … was a good thing for them to do as well."

Underserved communities, such as the homeless, often find themselves at the margins of society and the institutions they encounter need to respond to their requirements, as echoed in the comment from Mardai (Interview 2018): "… when we are running an organisation or an institution, that institution will not be rendering itself relevant to the society around it if it doesn't reach out to them …"

It is no surprise that an initiative such as this was established in a Jesuit parish. Their involvement in the clinic aligns to Decree 4 of the Society of Jesus' 32nd General Congregation: "… the promotion of justice is not one apostolic area among others, the 'social apostolate'; rather, it should be the concern of our whole life and a dimension of all our apostolic endeavors" (GC 32, 1974–75).

Convergent and divergent themes in the History of THS and Catholic Healthcare

The story of THS can be compared to the multiple roles of Catholicism in healthcare within South Africa. Similarities can be drawn in the communities they serve, their approach to

healthcare and legislative challenges they faced. Catholic hospitals and clinics that were established in South Africa were staffed by sisters who believed they had a duty to serve all people, regardless of race. Their view was one that all patients were deserving of quality healthcare services. THS serves the homeless community, which faces tremendous challenges when seeking healthcare. It strives to provide the best service possible with the limited resources at its disposal.

That Catholic hospitals were staffed by sisters, many of whom had received their nursing education abroad, was problematic as nurses working in South Africa needed to comply with the Medical and Pharmacy Act of 1891. This Act required all nurses working in the Cape to be registered and given certificates of competence. Due to shortages of nursing staff and the demand, many hospitals continued to allow religious sisters to practise as nurses. THS has faced its own legislative difficulties in attaining a licence for the pharmacy and it was closed for almost five years until approval was received. Healthcare is highly legislated and compliance with the prevailing laws is critical for the sustainability of services. However, it is often challenging to balance the prevailing needs with the legal framework.

There are also differences which need to be emphasised. Originally Catholic hospitals and clinics were managed by and staffed mainly by religious sisters. With the dwindling numbers of vocations, they could not maintain a strong presence in these hospitals. In contrast, THS, although situated in a Catholic parish, had and has very little, if any, overt religious ties. Students and staff who volunteer are from a variety of religious backgrounds, or none, and very few are Catholic. Most are motivated by humanitarian reasons. For their part, the Jesuits see the work as a social apostolate of service rather than any form of evangelisation (whether of students or homeless people). It should be noted that a few years ago some of the homeless—consulting with the parish staff—indicated an interest in a Bible study group, which they themselves run together with other parishioners.

A sandpaper-like relationship is described between the Sisters of the Holy Family of Bordeaux and the lay nurses at the Johannesburg General Hospital, with these two groups of nurses not able to work together (Brain 1991, 90). These two groups of nurses reportedly had a different approach to nursing and the lay nurses refused to take orders from the nuns. THS needed (and needs) multiple partners to work together for the survival of the clinic. The church, faculty and students must understand each other's roles. Historically, when mutual beneficial relationships were seen in organisations such as Nazareth House partnering with secular members of the community and the Department of Health, this strengthened existing services. THS continues this tradition, though without full medical engagement by faculty personnel.

Conclusion

Catholicism has had a profound effect on healthcare in South Africa although its influence in facilities today is almost non-existent. Catholic healthcare today is on a far smaller scale, focusing mainly on home-based healthcare. THS presents a new potential development of healthcare projects with Catholic links (by extension, this could be true for other religious traditions too). These projects call for a new approach where multiple partners, both religious and secular, need to form innovative strategies to address prevailing healthcare problems. In closing, these remarks by Mardai (Interview 2018) summarise the relationships between the partners of THS in providing healthcare for underserved communities:

> [P]eople come there but they are coming because we have invited them … [T]hey come and they have a sheltered place and they can receive this kind of service … Medical School has rendered

itself relevant and so has Holy Trinity and I think that is something that any institution should be doing. [We] shouldn't remain as ivory towers, we should become institutions that are making a difference outside the institution and that's precisely what the clinic has managed to do … (Interview, Mardai 2018)

References

Azetsop, Jacquineau (Ed.). 2016. *HIV and AIDS in Africa: Christian Reflection, Public Health, Social Transformation.* Maryknoll NY: Orbis.

Bangert, William V. 1972. *A History of the Society of Jesus.* St Louis: Institute of Jesuit Sources.

Bate, Stuart, and Munro, Alison (Eds). 2014. *Catholic Responses to AIDS in Southern Africa.* Pietermaritzburg: Cluster Publications.

Brain, Joy B. 1982. *Catholics in Natal II*. Durban: Archdiocese of Durban.

Brain, Joy B. 1991. *The Catholic Church in the Transvaal*. Johannesburg: Missionary Oblates of Mary Immaculate.

CATHCA. 2011. *In the Service of Healing: A History of Catholic Health Care in Southern Africa*. Johannesburg: Catholic Health Care Association.

Favara, D. M. and Mendelsohn, S. C. 2012. "The Students' Health and Welfare Centres Organisation (SHAWCO) of the University of Cape Town: A Review of the Past 69 Years." *SAMJ: South African Medical Journal* 102 (6): 400–402. http://www.scielo.org.za/scielo.php?pid=S025695742012000600031&script=sci_arttext&tlng=pt.

Gaudium et Spes. 1965. "Pastoral Constitution on the Church in the Modern World" (promulgated 7 December 1965). *Vatican Council II: The Conciliar and Post Conciliar Documents*, edited by Austin Flannery. Dublin: Dominican Publications 1975, 903–1001.

GC32. 1975. 32nd General Congregation of the Society of Jesus, 1974–1975. "Service of Faith and the Promotion of Justice." Accessed 5 August 2018. https://www.scu.edu/ic/programs/ignatian-tradition-offerings/stories/decree-4-gc-32-serviceof-faith-and-the-promotion-of-justice.html.

Gordon, C., 2016. "Volunteer, Community-Based Student-Run Clinics for the Underserved: Can they be Used to Attain 21st Century Medical Education Goals?" PhD thesis, Stellenbosch: Stellenbosch University. http://scholar.sun.ac.za/handle/10019.1/98371.

Joshua, Stephen Muoki. 2010a. "A Critical Historical Analysis of the South African Catholic Church's HIV/AIDS Response between 2000 and 2005." *African Journal of AIDS Research* 9 (4): 437–447. https://doi.org/10.2989/16085906.2010.545660.

Joshua, Stephen Muoki. 2010b. "The 'Dowling Controversy', the 'Message of Hope', and the Principle of Oikonomia: A Historical-critical Reflection on the South African Catholic Church's Stance on the Use of Condoms in HIV Prevention between 2000 and 2005." *Journal of Theology for Southern Africa* 137 (July): 4–27. https://search.proquest.com/docview/856599063?accountid=15083.

Joshua, Stephen Muoki. 2014. "'Tell me where I can find the Condom!' Catholic AIDS Discourses in South Africa during the 1990s." *Historia* 59 (1): 72–87. http://www.scielo.org.za/scielo.php?pid=S0018-

229X2014000100005&script=sci_arttext&tlng=pt.

Keenan, James F. et al. (Eds). 2000. *Catholic Ethicists on HIV/AIDS Prevention.* New York: Continuum.

Kelly, Kevin T. 1998. *New Directions in Sexual Ethics: Moral Theology and the Challenge of AIDS.* London: Geoffrey Chapman.

Koenig, Harold G., McCullough, Michael E., Larson, David B. 2001. *Handbook of Religion and Health*. New York: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195118667.001.0001.

Lohrmann, Graham M., Botha, Bruce, Violari, Avy, Grey, Glenda E. 2012. "HIV and the Urban Homeless in Johannesburg." *Southern African Journal of HIV Medicine* 13 (4): 174–177. http://dx.doi.org/10.4102/sajhivmed.v13i4.111.

Lumen Gentium. 1964. "Dogmatic Constitution on the Church" (promulgated 21 November 1964). *Vatican Council II: The Conciliar and Post Conciliar Documents*, edited by Austin Flannery. Dublin: Dominican Publications 1975, 350–426.

Morgan, Yvonne, Goemans Loek. 2013. "Catholic Health Care: The CATHCA Story." In *A Story Worth Telling: Essays in Honour of Cardinal Napier*, edited by Bate, Stuart C. and Egan, Anthony, 191–207. Pretoria: South African Bishops Conference.

Paul VI. 1968. "Humanae Vitae." Accessed 25 July 2018. http://w2.vatican.va/content/paulvi/en/encyclicals/documents/hf_p-vi_enc_25071968_humanae-vitae.html.

Pharmacy Act No. 53 of 1974. Accessed 5 August 2018. https://www.mm3admin.co.za/documents/docmanager/0C43CA52-121E-4F58-B8F681F656F2FD17/00010723.pdf.

Random Acts of Kindness. 2015. Random Acts of Kindness, Trinity Health Services. Accessed 3 July 2018. http://www.702.co.za/articles/9843/random-act-of-kindness-trinity-health-service.

Rocha, Zildo. 2000. *Helder, O Dom: uma vida que marcou os rumos da Igreja no Brasil* [Helder, the Gift: A Life that Marked the Course of the Church in Brazil]. Petropolis: Editora Vozes.

Ryan, J. A., 1990. An examination of the achievement of the Jesuit Order in South Africa, 1879– 1934. *Maters dissertation, Rhodes University*. https://core.ac.uk/download/pdf/145042931.pdf.

SACBC Aids Office. 2012. Nazareth House Johannesburg, Accessed 3 July 2018. http://aidsoffice.sacbc.org.za/nazerth-house-johannesburg/.

SACBC Aids Office. 2014. "Gauteng Department of Health signs MOU with Nazareth House, Johannesburg." Accessed 3 July 2018. http://aidsoffice.sacbc.org.za/gauteng-department-ofhealth-signs-mou-with-nazareth-house-johannesburg/.

Trinity Health Services. 2011. Standard Operation Procedures. THS Archives (in possession of Zeenat Bhikhoo).

Weber, Bronwyn. 2005. "Trinity Health Service." *The Auricle*, January, page 10.

Wentzel, D., and Voce, A. 2012. "Health Seeking Experiences and Behaviours of Homeless People in Durban, South Africa." *Africa Journal of Nursing and Midwifery* 14 (2): 77–89. http://uir.unisa.ac.za/handle/10500/13014.

Woodrow, Alain. 1990. *The Jesuits. A Story of Power.* London: Geoffrey Chapman.

Worcester, Thomas. (Ed.). 2008. *The Cambridge Companion to the Jesuits.* Cambridge: Cambridge University Press. https://doi.org/10.1017/CCOL9780521857314.

Interviews

Bhikhoo, Zeenat. 2018. Interview, 22 February. Johannesburg: Wits Medical School.

Botha, Bruce. 2018. Interview, 10 January. Johannesburg: Jesuit Institute.

Egan, Anthony. 2017. Interview 28 November. Johannesburg: Jesuit Institute.

Fine, Nicholas. 2018. Interview, 25 January. Eastern Cape: Zithulele Hospital (by telephone).

Flynn, Michael. 2018. Interview, 6 February. London: Stockwell (by telephone).

Green-Thompson, Lionel. 2018. Interview, 1 March. Johannesburg: Wits Medical School.

Lorhman, Graham. 2018. Interview, 8 February. Boston: Roxbury (by telephone).

Mardai, Gilbert. 2018. Interview, 10 January. Harare: Arrupe Jesuit University (by telephone).

Moolman, Julia. 2018. Interview, 22 February. Malawi (by telephone).

Pitman [nee Weber], Bronwyn. 2018. Interview, 4 January. Cape Town: Wynberg (by telephone).

Pollitt, Russell. 2017. Interview, 20 December. Johannesburg: Jesuit Institute.

Pugin, Graham. 2017. Interview, 18 December. Johannesburg: Holy Trinity Catholic Church.

Tambudze, Katherine. 2018. Interview, 8 February. Bloemfontein (by telephone).

CHAPTER 4: COMPONENT 2 – STAKEHOLDERS

Our daily deeds as ordinary South Africans must produce an actual South African reality that will reinforce humanity's belief in justice, strengthen its confidence in the nobility of the human soul, and sustain all our hopes for a glorious life for all.

Mandela (1994)

4.1. Introduction

Chapter 4 describes the roles and responsibilities of the stakeholders of THS since reopening in 2016, and the experiences of students, supervising professionals and the homeless. It ascertained the reasons students and supervising professionals volunteer and explains the management of THS.

The findings for each of the stakeholder groups, the homeless (see Chapter 4.1.); students (see Chapter 4.2.); supervising professionals (see Chapter 4.3.) and the student management committee (see Chapter 4.4.), are presented. There were two manuscripts submitted for publication emulating from this component:

> *Experiences of the homeless accessing an inner-city student run clinic in Johannesburg*, submitted to Health SA Gesonheid – Journal of Interdisciplinary Health Sciences on 2nd August 2019
>
> *A framework for learning at an Inner-city Interprofessional Student-run Clinic in South Africa*, submitted to Education for Health on 30 September 2018

The relationships between stakeholders and the emergent themes are presented in the discussion and contribute to the formation of the stakeholder framework (see Chapter 7.2.).

4.2. Paper 2: Experiences of the homeless accessing an inner-city pharmacy and medical student run clinic in Johannesburg

This section is formatted according to Health SA Gesonheid – Journal of Interdisciplinary Health Sciences style requirements.

Abstract

Background

Mental and physical health problems are both contributory factors and drivers of homelessness. Adding to this the homeless encounter numerous barriers when accessing health care services.

Aim

The aim of the study was to determine the experiences of the homeless when accessing healthcare services and the reason they visit Trinity Health Services (THS).

Setting

THS, a student-run clinic (SRC) based at an inner-city church in Johannesburg South Africa, provides free acute health care services to the homeless.

Methods

This qualitative study consisted of three focus group discussions (FGDs) with the homeless who access services provided by the church. Those who had previously visited THS on at least one occasion were invited to participate in a FGD. The FGDs were audiotaped and transcribed verbatim. The data were analysed thematically using Tesch's eight steps.

Findings

Three themes were identified. The first theme, *homelessness affecting health,* explains how limited access to food, ablution facilities and shelter negatively impact their wellbeing. This led to the second theme, *health needs,* where tuberculosis, influenza, sexually transmitted diseases and dental infections were identified as ailments frequently occurring. The need for healthcare services was explicit yet participants were reluctant when accessing healthcare services as they faced stigma and discrimination. The third theme, *THS in addressing health needs*, denotes the value of THS to the community it serves where they were treated with compassion and empathy.

Conclusion

The needs of this homeless community were clearly identified as well as the role THS plays. However, THS provides limited services and integration with existing healthcare services is essential.

Introduction

The rising levels of unemployment and downward spiral of the South African economy has left many citizens reliant on social grants and facing possible homelessness (Cross *et al.*, 2010; Cross and Seager, 2010). The definition of homelessness includes those residing on the street and in communal houses/shelters (Rule-Groenewald *et al.*, 2015). More specifically homelessness in Johannesburg would expand to include “cardboard house under the bridge, occupation of metropolitan open spaces, parks, vacant land, a couple of dirt-stained blankets on the corners of high-rise buildings, occupation of unused buildings” (Tipple and Speak, 2005, pg 343). There are no available statistics confirming the number of homeless in South Africa (Cross and Seager, 2010), however, in 2008 it was estimated to be between 100 000 – 200 000 (Rule-Groenewald *et al.*, 2015).

The intersection between homelessness and health is multifaceted. Illness in oneself or a family member may have been a contributing factor to becoming homeless (Seager and Tamasane, 2010). Yet poor health is also an outcome of the homeless as they experience higher rates of communicable and non-communicable diseases (Fazel *et al.*, 2014). Adding to this, the homeless encounter additional problems in accessing healthcare services (Baumstarck *et al.*, 2015; Trevena *et al.*, 2003).

Student-run clinics (SRCs) provide basic healthcare services to impoverished and underserved communities (Schutte *et al.*, 2015; Simpson and Long, 2007). A SRC is an environment where healthcare services are provided by healthcare students under the supervision of licensed healthcare professionals. However, it differs from other clinical exposures as in these clinics the healthcare students are responsible for the management of the clinic (Holmqvist *et al.*, 2012; Simpson and Long, 2007).

Through patient feedback it was found that the homeless were appreciative of the quality of care received at SRCs, however, they raised concerns regarding waiting times and the operational hours of these clinics (Mischell *et al.*, 2017; Ellett *et al.*,

2010). Feedback from patients and community members assists in identifying the healthcare needs that can be addressed by a SRC (Buchanan and Witlen, 2006). Thus, this study was motivated by the need to obtain patient feedback to determine the value of the SRC to the community it serves. The aim of this study was to determine the experiences of the homeless when accessing healthcare services and the reason they visit THS.

Description of the setting

Trinity Health Services (THS) is a student-run clinic operating on alternate Monday nights from an inner-city church in Braamfontein, Johannesburg. The church provides meals to the homeless community through a soup kitchen; toiletries (toothbrushes, toothpaste and soap), blankets and second-hand clothing (See Figure 1). The need for healthcare services in the community was recognised by two medical students from the Faculty of Health Sciences, University of the Witwatersrand, who were volunteering in the soup kitchen (Johnston *et al.*, 2018). Initially basic first aid services were provided and over time this expanded to more comprehensive acute care. The most common conditions seen and managed at the clinic related to the respiratory, predominately upper and lower respiratory tract infections, and digestive systems, including dental caries (Johnston *et al.*, in press). The clinic consists of three consultation rooms and a pharmacy. It is staffed by pharmacy and medical students as well as pharmacists and doctors who work together to provide healthcare services (see Figure 1). Patients needing further care are referred to nearby public healthcare facilities.

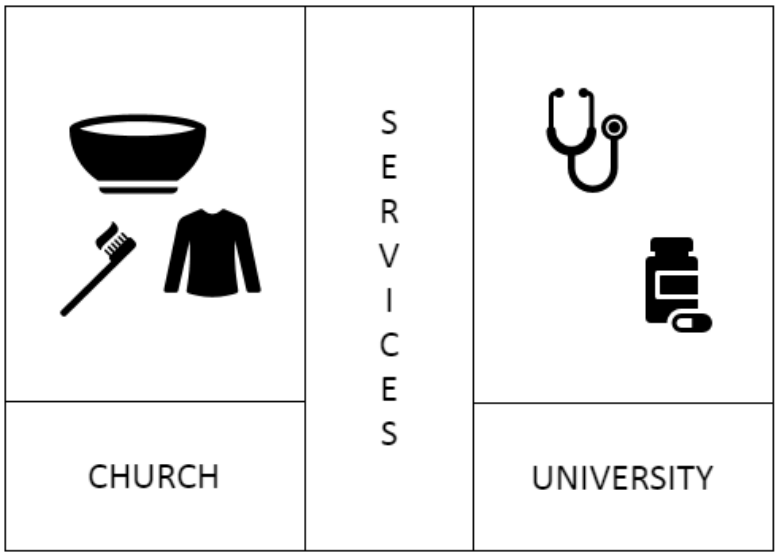


Figure 1: Services provided by the church and university to the homeless

The community the clinic serves is becoming increasingly dependent on the services provided yet there is little information describing their experiences when accessing healthcare and the reason they attend THS. Therefore, the research question asked was: *Why do the homeless seek help from the clinic and what were their experiences of the services it provides?*

This qualitative study formed part of a larger body of research which aimed to describe the establishment and investigate the various factors affecting the sustainability of THS. A component of this was to establish the value of the clinic from the homeless communities' perspective and various stakeholders. Stakeholders are groups and/or individuals having a vested interest in THS and were identified as the church, university, pharmacy and medical students, supervising professionals and the homeless community.

Methodology

Focus group discussions (FGDs) were conducted with the homeless visiting the church to gain an in-depth understanding of their experiences of healthcare services they access. The inclusion criteria were patients who had previously visited THS on at least one occasion and were 18 years or older. A convenience sampling method was employed, those meeting the inclusion criteria who were present at the soup kitchen when the FGDs were held were invited to participate. The facilitator of the FGDs is an experienced qualitative researcher (H.T.). The researcher (D.J.) observed the FGDs.

Participants were provided with a participant information sheet and given an explanation of the purpose of the study from the facilitator. The participants signed an informed consent to participate in the FGD and a separate consent for voice recording. The FGDs were audiotaped and transcribed verbatim. Ethics approval was attained from the Human Research Ethics Committee of the University of the Witwatersrand (M170953).

Three FGDs were held with six participants in each, totalling fifteen men and three women. The higher number of men who participated is congruent with the demographics of those attending the clinic (Johnston et al, in press). This is attributed to THS operating after hours and women are more likely to access shelters which close at sunset. The predominant common language spoken by the homeless at the soup kitchen and THS is English. The FGDs varied in duration from 58 to 75 minutes.

The facilitator of the FGDs explained to participants that they were to disclose information they were comfortable with sharing and were not expected to reveal personal information relating to their health. Participants were also requested to keep information discussed in the FGD confidential and not to discuss it with others afterwards. They were asked primary and probing questions outlined in Table 1. Data saturation, defined as the point at which the gathering of more information no longer reveals new insight, was reached after the third FGD.

The data were analysed thematically using Tesch's eight steps (Creswell, 2014). The researchers reviewed the audio recordings and transcriptions repeatedly to gain a thorough understanding of the data. Initial codes were induced and grouped into categories. Categories were reviewed to determine the emerging themes.
The source of the statement was confirmed using an annotation system. The FGD was given a number (H1 – H3) followed by the participant number (#1 – 6#).

Table 1: Primary and probing questions from FGDs

1. *Primary question:* Please tell me why you attend Trinity Health Services.

2. *Primary question:* What are the health needs of the homeless community?

   Probing questions:
   - What services are available to the homeless?
   - Where are there located? Are they easily accessible?

3. *Primary question:* How does the clinic serve this community?

   Probing questions:
   - How does it differ from other clinics you have visited?
   - How do you communicate your needs to the clinic?

4. *Primary question:* Please describe your experiences of the clinic?

   Probing questions:
   - How did you hear about the clinic?
   - How often have you visited the clinic?

5. *Primary question:* What additional services do you or the community need?

   Probing questions:
   - How could the care provided to the community be improved?
   - Do you have any other suggestions?

Findings

Three themes emerged from the FGDs (see Figure 2). The first theme, *homelessness affecting health,* explains how homelessness impacts health. This leads to the second theme, *health needs,* referring to prevailing ailments in the community contributing to their health needs as well as their experiences when accessing existing healthcare services. The third theme, the *THS in addressing health needs*, denotes the value of this SRC to the community it serves.

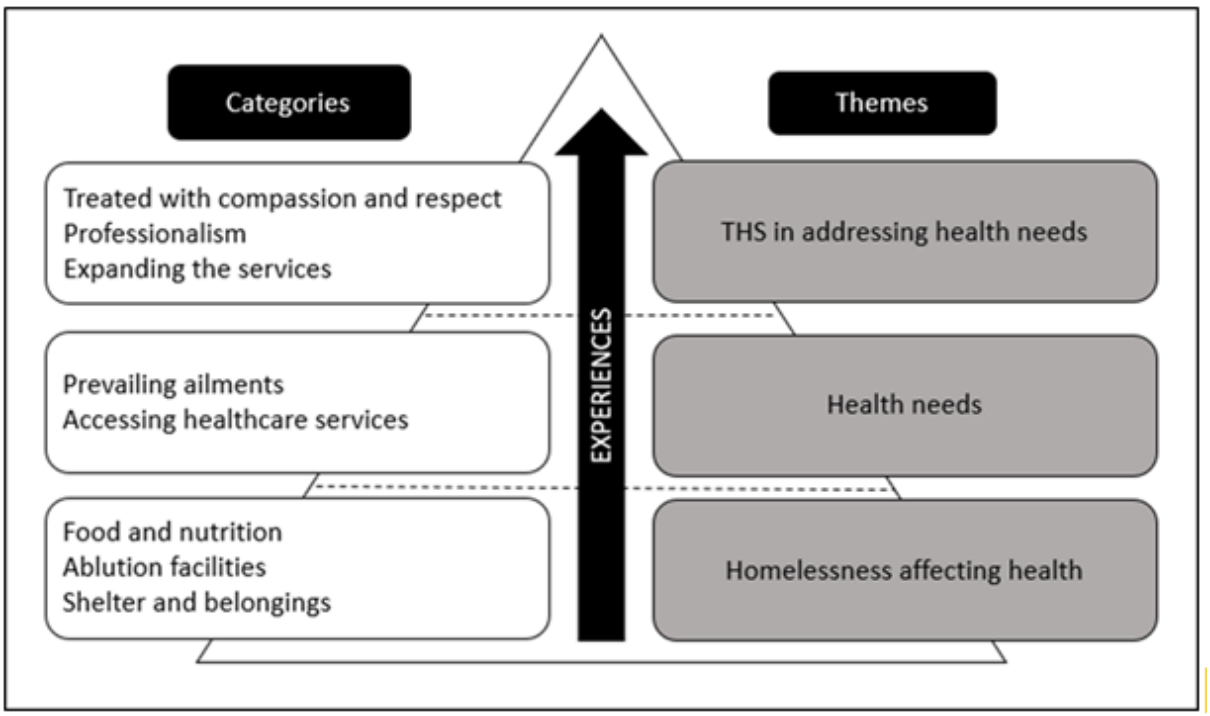


Figure 2: Themes and categories identified

Homelessness affecting health

There were three categories contributing to this theme: food and nutrition, ablution facilities as well as shelter and belongings. These categories elucidate the link between homelessness and health. The homeless frequent soup kitchens for food or may resort to eating from dustbins. There are few ablution facilities in the vicinity and they cannot afford toiletries, resulting in poor hygiene practices. Many of the homeless reside on the street as they cannot pay to stay in a shelter. Exposed to the cold wet weather they frequently get sick. Furthermore, their belongings, such as important documents, medication, clothes and blankets, were often stolen.

Food and nutrition

The participants visited the daily soup kitchens provided by the church or other facilities in the surrounding area. However, many reported to have eaten from dustbins when necessary. Some explained the pain they experienced from hunger:

"*you never know how hunger is, how painful it is until you get hungry yourself*" (H2, #2).

Mixed views were expressed regarding the food they ate, most often soup, and how often they were provided with meals. However, all agreed that their diets lacked nutritional value as indicated in this question asked by a participant:

"*Where do you get a balanced meal if you have to beg for food?*" (H1, #4).

Furthermore, those taking medication were often instructed to take it with food. This may lead to non-compliance to medical treatment if they have nothing to eat.

Ablution facilities

The homeless use public ablution facilities to wash themselves and their clothes. They found "*It's very difficult on the street to get a bath every day*" (H1, #4) where they wait in long queues to use these facilities. In addition, there is only cold water and they need to purchase their own toiletries and soap, which they cannot afford.

Shelter and belongings

Some participants slept in a shelter but needed to pay a fee. Many of the homeless cannot afford this fee, leaving them no choice but to sleep on the pavements. This in turn impacts their health as they are more prone to influenza and infections:

"*When you sleep on top of a pavement…if it rains, you normally (have) some cardboard underneath and then you put a plastic on top…the rain overflows underneath the cardboard, and it's just there before you get wet. And then the thing is we catch 'flu' or coldness during that process…there is only one part that is being affected, and that is the back bone (referring to the spine). So it absorbs or it catches that coldness, and then after that what happens, you're going to get a blocked chest*" (H3, #2).

They face many difficulties when finding shelter and keeping their belongings safe, such as identification documents and medication:

"*The basic thing is somewhere to sleep and where my things such as my CV can be kept safe… You can't keep a prescription of medication for more than three days without losing it*" (H1, #1).

Health needs

The theme health needs was developed from two categories: prevailing ailments and accessing healthcare services. The participants described frequently occurring ailments that necessitated treatment such as influenza, tuberculosis, sexually transmitted diseases and dental infections. The participants then explained their experiences when accessing healthcare facilities and the barriers encountered.

Prevailing ailments

Tuberculosis and drug/alcohol addiction were identified by the participants as prevalent conditions in the homeless:

"*The majority (of the homeless) are doing drugs and you have got to watch out they are bringing in TB and viruses and they smoke from each other's lips (as they share cigarettes), so TB it's a high risk on the streets*" (H2, #6).

This participant describes the need for information about sexually transmitted infections and in particularly using adequate protection to reduce their transmission:

"*I will wish that it can be also more of a counselling in terms of sexually transmitted disease...because in the street I don't think they exercise protection*" (H1, #5)

The need for healthcare was evident especially in the winter months when those residing on the pavements were exposed to extreme cold. Most participants stated that they had had flu and one participant explained that flu vaccines were required to provide protection against influenza:

"*During winter it's whereby we experience a high number of death rates on the street, due to the fact that people, they don't know their health state*" (H3, #4).

The necessity for dental services was evident. Participants explained that there were relatively few facilities offering these services and adding to this many of the homeless cannot afford toothpaste and toothbrushes:

"*Since I was born I have never been attended to by a dentist*" (H1, #6).

"*My brothers and sisters are losing…their teeth, based on certain food they eat and not being able to have toothpaste and toothbrush to keep them clean*" (H3, #2).

Diseases the homeless present with were also described as "*hidden sicknesses*" (H3, #6) referring to people not knowing about their condition and therefore *"…they fail to come here to approach the doctors for their health issues*" (H3, #4).

Accessing healthcare services

The need for healthcare services was explicit yet participants were reluctant to access these (government clinics or) services as they felt discriminated against:

"*I was afraid to go to the public hospital because I know how they treat people*" (H1, #5).

"*They (clinics and hospitals) are avoiding homeless people to give them such care, or to give them support in their rights (to healthcare)*" (H3, #2).

The stigma and discrimination the homeless face is contextualised in these two questions that a participant was frequently asked by healthcare professionals:

"*Why are you not bathing?*" and "*Why are you smelling?*" (H1, #1).

Furthermore, they feel blamed for the illnesses they encounter:

"*It's like when you're not clean or when you're not formally dressed or not smartly dressed, they'll be like you went to seek the sickness…*" (H3, #2).

This participant explains the distrust of the homeless by healthcare professionals. For example, when reporting that medication was stolen and needed to be replaced:

"*I'm HIV (human immunodeficiency virus) positive, they (healthcare professionals) don't trust, like the medication I'm taking is for 30 days, they don't trust me. If I get lost one of the, my ARVs (antiretrovirals) it's like I've sold it, you see*" (H1, #2).

Providing identification documents and residential addresses, traveling costs, operational hours of clinics and high patient volumes were also described as limiting factors which impede the homeless from accessing healthcare services. The participants explained that their identification documents were often stolen and without these they cannot access public healthcare services:

"*Almost 99% of us here have got…no IDs, they are stolen at night*" (H1, #1).

THS in addressing health needs

The homeless are welcomed by the church through the soup kitchen and healthcare services provided. This participant explained that the church felt like home and the people who access these services regularly, have formed a community:

"*…it's more like our home, our community…*" (H3, #3).

THS was appreciated by the participants for the medical and pharmaceutical services provided. The value of the clinic to this community extends beyond these services forming the first two categories in this theme: treated with compassion and respect and professionalism. The third category, expanding the services, describes unmet needs in the community and suggestions for future services.

Treated with respect and compassion

The participants described the way they were treated in contrast to the stigma they so often faced when accessing other healthcare services:

"*you have value, you're understood, you're just someone*" (H3, #4).

They were respected when visiting the clinic which positively impacted their health:

"*The respect that they are giving us as homeless people is one of the most important things in terms of it's one of the things that encourages us*" (H1, #5).

They also referred to the "*love and compassion*" (H1, #4) experienced at the clinic which in turn motivated them to return to the clinic:
"*Some other time you just wish that you can be sick forever so that you get that attention*" (H2, #2).

Professionalism

The participants referred to the professionalism of those providing the services at THS. The privacy experienced during the consultations and relationships formed between healthcare providers and patients were key components that contributed to this category.

The participants were aware that THS is a student-run clinic and felt that this was to their advantage as pharmacy and medical students spent more time with them and there was a "*double check*" in place as the student presented to a supervising doctor:

"*The check-ups are being done from A to Z and they even check or they double check… there are doctors that are doing their (clinical) practicals and then there are superiors on top of them, so what I love about that is that they (the pharmacy and medical students) are the practical ones and are giving the superiors the information, and the superior one double checks*" (H3, #2).

A relationship is established between the patient and the pharmacy and medical students where the patient feels comfortable in disclosing the necessary information:

"*They (the pharmacy and medical students) give you enough time to even ask you what other things are bothering you… by asking me what other things are bothering me…I was able to open up...I will really say that for them to come to where we are, it's one of the best advantages they are giving us*" (H1, #5).

Expanding the services

The clinic is open for specific evenings each month and offers limited services. Therefore, patients were frequently referred to public healthcare facilities for further care.

This comment explains the disadvantages of the referral system as they return to the healthcare services where they encounter discrimination:

“Most of the times it’s unfortunate that they only have to take you to refer you somewhere else to these people whom we are complaining about” (H1, #1).

Participants suggested that THS should be open more frequently and needed to expand the services offered to include dentistry, social and psychological services as well as health promotion.

“*The only thing that I feel like it can be improved is (to open) two times or three times a week at least, and then as well as a dentist*” (H3, #2).

“*A support group by which we are sharing our health circumstances…giving courage to one another*” (H3, #4).

Discussion

This study described the experiences of the homeless accessing care from a free SRC based at an inner-city church. However, their experiences extend beyond THS and explain the connection between being homeless and health as well as the need for such a clinic. Three themes emerged: homelessness affecting health, health needs and the role of THS in addressing health needs. Limited access to food, ablution facilities and shelter negatively impact the health of the homeless. Adding to this the stigma and discrimination they faced at public health services may adversely affect their mental and psychological health. They explained the challenges faced when accessing public healthcare services and the gap which THS fills.

The study reports experiences of participants when accessing healthcare services. Although it may be difficult to confirm the accuracy of their descriptions, other studies have also reported the discrimination the homeless face when accessing healthcare services in South Africa (Moyo, 2015; Wentzel and Voce, 2012; Tamasane and Seager, 2010). Their negative experiences with accessing healthcare services could lead to noncompliance to treatment regimens, especially in HIV positive patients as described in these findings. This would result in treatment failure and possible resistance of the virus to the medication.

The participants appreciated the services the clinic provided as well as the respect and compassion received. In addition, the participants described returning to the clinic when they were sick or waiting till the clinic was open again before seeking help. SRCs have been shown to provide quality healthcare services that lead to positive patient outcomes (Gorrindo *et al.*, 2014; Berman *et al.*, 2012; Butala *et al.*, 2012; Liberman *et al.*, 2011; Lough *et al.*, 2011; Zucker *et al.*, 2011; Ryskina *et al.*, 2009; Spector *et al.*, 2007; Hsu *et al.*, 2003; Der *et al.*, 2001). Although studies have reported positive patient outcomes and feedback, it is important to note that most SRCs provide services to vulnerable communities and need to ensure the needs of the patient are always considered first (Buchanan and Witlen, 2006).

THS is striving towards becoming a patient-centred clinic. The three core factors of patient-centred care are patients including their family, healthcare professionals and a healthcare environment (Epstein and Street, 2011) that ensures the care received is “respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions” (Committee on Quality of Health Care in America, 2001, pg 3). Understanding the healthcare needs of the community THS serves and how this integrates with their social circumstances is imperative for strengthening and expanding the services. Future studies need to explore suitable means to measure the interventions the clinic takes in becoming a patient-centred clinic.

There were several instances when participants mentioned their referral to other clinics and hospitals for further care. An established relationship between the clinic and neighbouring facilities is needed to expedite the referral process. Gelberg *et al.* (2000) found the homeless were more likely to seek help from healthcare services if they believe there is a need. Thus, the referral letter patients receive may prompt them to seek further care. However, further research is needed to determine if referred patients visit these facilities and the factors which may influence their decision to access further care.

The gap which THS fills is clearly elucidated. However, the community calls for more assistance, perhaps beyond the scope and capacity of the clinic. The clinic plans to incorporate dental services. There too, is an urgent need for social and psychological

services as well as skills development. The church and university should consider including additional partnerships with government and non-government organisations extending beyond the scope of this SRC.

Conclusion

This homeless community described an urgent need for healthcare and the challenges faced when accessing existing services. The compassion and empathy received by patients at THS created an environment conducive to healing where patients felt at ease and trusting relationships with the healthcare providers were formed. However, THS provides limited services and integration with existing healthcare and other services is essential in meeting the needs of the community.

References

1. Baumstarck, K., Boyer, L. and Auquier, P. (2015). The role of stable housing as a determinant of poverty-related quality of life in vulnerable individuals. *International Journal for Quality in Health Care*, *27*(5), pp.356-360.
2. Berman, R., Powe, C., Carnevale, J., Chao, A., Knudsen, J., Nguyen, A. and Edgman-Levitan, S. (2012). The crimson care collaborative: A student–faculty initiative to increase medical students' early exposure to primary care. *Academic Medicine*, *87*(5), pp.651-655.
3. Buchanan, D. and Witlen, R., 2006. Balancing service and education: ethical management of student-run clinics. *Journal of Health Care for the Poor and Underserved*, *17*(3), pp.477-485.
4. Butala, N.M., Murk, W., Horwitz, L.I., Graber, L.K., Bridger, L. and Ellis, P., (2012). What is the quality of preventive care provided in a student-run free clinic?. *Journal of Health Care for the Poor and Underserved*, *23*(1), pp.414-424.
5. Committee on Quality Committee on Quality of Health Care in America and Institute of Medicine Staff (2001). Crossing the quality chasm: A new health system for the 21st century. National Academies Press of Health Care in America, Institute of Medicine Staff. Crossing the quality chasm: A new health system for the 21st century. National Academies Press.
6. Creswell, J.W. (2014). Research Design: Quantitative, Qualitative, and Mixed Methods Approaches, 2nd edn., Sage Publications, California
7. Cross, C., Seager, J., Erasmus, J., Ward, C. and O'Donovan, M. (2010). Skeletons at the feast: A review of street homelessness in South Africa and other world regions. *Development Southern Africa*, *27*(1), pp.5-20.
8. Cross, C. and Seager, J.R. (2010). Towards identifying the causes of South Africa's street homelessness: Some policy recommendations. *Development Southern Africa*, *27*(1), pp.143-158.
9. Der, D.E., You, Y.Q., Wolter, T.D., Bowen, D.A. and Dale, L.C. (2001). A free smoking intervention clinic initiated by medical students. *Mayo Clinic Proceedings,* 76(2), pp.144-151
10. Ellett, J.D., Campbell, J.A. and Gonsalves, W.C. (2010). Patient satisfaction in a student-run free medical clinic. *Family Medicine*, *42*(1), pp.16-18.
11. Epstein, R.M. and Street, R.L. (2011). The values and value of patient-centered care. *Annals of Family Medicine*, *9*(2), pp100-103.

12. Fazel, S., Geddes, J.R. and Kushel, M. (2014). The health of homeless people in high-income countries: descriptive epidemiology, health consequences, and clinical and policy recommendations. *The Lancet*, *384*(9953), pp.1529-1540.
13. Gelberg, L., Andersen, R.M. and Leake, B.D. (2000). The behavioral model for vulnerable populations: application to medical care use and outcomes for homeless people. *Health Services Research*, *34*(6), p.1273.
14. Gorrindo, P., Peltz, A., Ladner, T.R., Miller, B.M., Miller, R.F. and Fowler, M.J. (2014). Medical students as health educators at a student-run free clinic: improving the clinical outcomes of diabetic patients. Academic Medicine, *89*(4), p.625.
15. Holmqvist, M., Courtney, C., Meili, R. and Dick, A. (2012). Student-run clinics: Opportunities for interprofessional education and increasing social accountability. *Journal of Research in Interprofessional Practice and Education*, *2*(3).
16. Hsu, L.D., DeJong, W., Hsia, R., Chang, M., Ryou, M. and Yeh, E. (2003). Student leadership in public health advocacy: lessons learned from the hepatitis B initiative. *American Journal of Public Health*, *93*(8), pp.1250-1252.
17. Johnston, D., McInerney, P., Miot, J. (in press). A profile of the health of the homeless at an inner city primary health care clinic in South Africa. *Journal of Health Care for the Poor and Underserved.*
18. Johnston, D., Egan, A. and McInerney, P. (2018). The rise, fall and re-establishment of Trinity Health Services: Oral history of a student-run clinic based at an inner-city Catholic Church. *Studia Historiae Ecclesiasticae*, *44*(3), pp.1-21.
19. Liberman, K.M., Meah, Y.S., Chow, A., Tornheim, J., Rolon, O. and Thomas, D.C. (2011). Quality of mental health care at a student-run clinic: care for the uninsured exceeds that of publicly and privately insured populations. *Journal of Community Health*, *36*(5), pp.733-740.
20. Lough, L.E., Ebbert, J.O. and McLeod, T.G. (2011). Evaluation of a student-run smoking cessation clinic for a medically underserved population. *BMC Research Notes*, *4*(1), p.55.
21. Mischell, S., Yegya-Raman, N., Frenchu, K. and Lin, K. (2017). Patient expectations and satisfaction when using a student-run health clinic. *Journal of Student-Run Clinics*, *3*(1).

22. Moyo, U., Patel, L. and Ross, E. (2015). Homelessness and mental illness in Hillbrow, South Africa: a situation analysis. *Social Work*, *51*(1), pp.1-21.
23. Olufemi, O. (1998). Street homelessness in Johannesburg inner-city: a preliminary survey. *Environment and Urbanization*, *10*(2), pp.223-234.
24. Rule-Groenewald, C., Timol, F., Khalema, E. and Desmond, C. (2015). More than just a roof: unpacking homelessness. Human Sciences Resource Center. www. hsrc. ac. za/en/review/hsrc-review-march-2015/unpacking-homelessness. Accessed (07 Sept. 2015.).
25. Ryskina, K.L., Meah, Y.S. and Thomas, D.C. (2009). Quality of diabetes care at a student-run free clinic. *Journal of Health Care for the Poor and Underserved*, *20*(4), pp.969-981.
26. Schutte, T., Tichelaar, J., Dekker, R.S., van Agtmael, M.A., de Vries, T.P. and Richir, M.C. (2015). Learning in student-run clinics: A systematic review. *Medical Education*, *49*(3), pp.249-263.
27. Seager, J.R. and Tamasane, T. (2010). Health and well-being of the homeless in South African cities and towns. *Development Southern Africa*, *27*(1), pp.63-83.
28. Simpson, S.A. and Long, J.A. (2007). Medical student-run health clinics: important contributors to patient care and medical education. *Journal of General Internal Medicine*, *22*(3), pp.352-356.
29. Spector A, Alpert H, Karam-Hage M. (2007). Smoking cessation delivered by medical students is helpful to homeless population. *Academic Psychiatry*, *31*(5), pp.402-5.
30. Tipple, G. and Speak, S. (2005). Definitions of homelessness in developing countries. *Habitat International*, *29*(2), pp.337-352.
31. Trevena, L.J., Simpson, J.M. and Nutbeam, D. (2003). Soup kitchen consumer perspectives on the quality and frequency of health service interactions. *International Journal for Quality in Health Care*, *15*(6), pp.495-500.
32. Wentzel, D. and Voce, A. (2012). Health seeking experiences and behaviours of homeless people in Durban, South Africa. *Africa Journal of Nursing and Midwifery*, *14*(2), pp.77-89.
33. Zucker, J., Gillen, J., Ackrivo, J., Schroeder, R. and Keller, S. (2011). Hypertension management in a student-run free clinic: meeting national standards?. *Academic Medicine*, *86*(2), pp.239-245.

4.3. Paper 3: A framework for learning at an Inner-city Interprofessional Student-run Clinic in South Africa

This section is formatted according to the journal 'Education for Health' style requirements.

Abstract

Background

Trinity Health Services (THS) is a free clinic that serves a homeless community of Braamfontein. The clinic is run by pharmacy and medical students registered in the Faculty of Health Sciences at the University of the Witwatersrand and assisted by academic staff. This setting provided an ideal space to document the interprofessional experiences between these two groups outside of formal lectures or clinical exposures. Therefore, the research question for this study was: *What are the learning experiences of medical and pharmacy students working at an inner-city student-driven clinic?*

Methodology

A convenience sampling method was employed. All students who volunteered at the clinic were invited to participate in a discipline specific focus group discussion. The recordings were transcribed verbatim and analyzed thematically, using Tesch's eight steps. Ethics approval was obtained for the study.

Results

Three themes were identified and formed the basis of a framework for learning at THS. Patient care is placed at the core of the framework, and recognising that learning occurs through serving, three learning outcomes were identified. These are: understanding the impact of homelessness and health; communication; clinical and communication skills as well as primary health care. Learning was facilitated through interactions with peers, supervisors and interprofessional relationships.

Conclusion

Students make an important contribution to care of the homeless, whilst also contributing to the interprofessional health team.

Introduction

A student-run clinic (SRC) has been defined as a setting where the students take the lead in providing healthcare services supervised by licensed healthcare professionals (1). Most SRCs provide healthcare to the underserved including the poor, homeless and/or jobless members of society (2). SRCs are increasing in number globally; a study completed in 2014 identified over a hundred SRCs present in 75% of medical schools in America (3).

The advantages of SRCs to both the students and community have been documented. Students report learning new skills and application of theory taught in lectures (2,4,5), as well as learning to take responsibility (4) and developing social accountability (6). SRCs provide a quality healthcare service (7,8,9) in non-traditional clinical sites which are ideally located in close proximity to the communities they serve (2).

There is less information documenting pharmacy students' involvement in SRCs and their learning experiences. Pammet *et al.* (10) identified tasks in which pharmacy students were involved. These included medication reconciliation, medical assessments and medication education to patients and healthcare providers.

Derington *et al.* (11) describe pharmacy students' clinical and administrative roles in which they took the lead in chronic disease medicine management. Both studies confirmed the importance of including pharmacy students in traditional and non-traditional roles in SRC as part of the interprofessional team.

There are a few SRCs in South Africa (12), with little published information available regarding how they operate, their volunteers and communities they serve (5,13,14). All of these involve medical students while pharmacy students are only present at one of these sites.

Many studies report that students learnt knowledge and skills while volunteering at SRCs however, this was only objectively measured in two studies (4). Before this can be measured, it needs to be established what knowledge and skills were learnt and valued by students.

Therefore, the research question for this study was: *What were the learning experiences of medical and pharmacy students working at an inner-city SRC?*

Description of the setting

Students from the University of the Witwatersrand established Trinity Health Services (THS) at an inner-city church in Johannesburg in 2004. THS is a SRC providing free primary healthcare services for mainly acute conditions to the homeless community in Braamfontein on alternate Monday nights. The clinic consists of three consultation rooms and a pharmacy.

The church, a sanctuary for the homeless, provides regular meals and support to the community. Students and staff from the Faculty of Health Sciences at the University of the Witwatersrand in collaboration with the church formed Trinity Health Services which provides much needed healthcare services to this homeless community. The patient consultation is outlined in Figure 1.

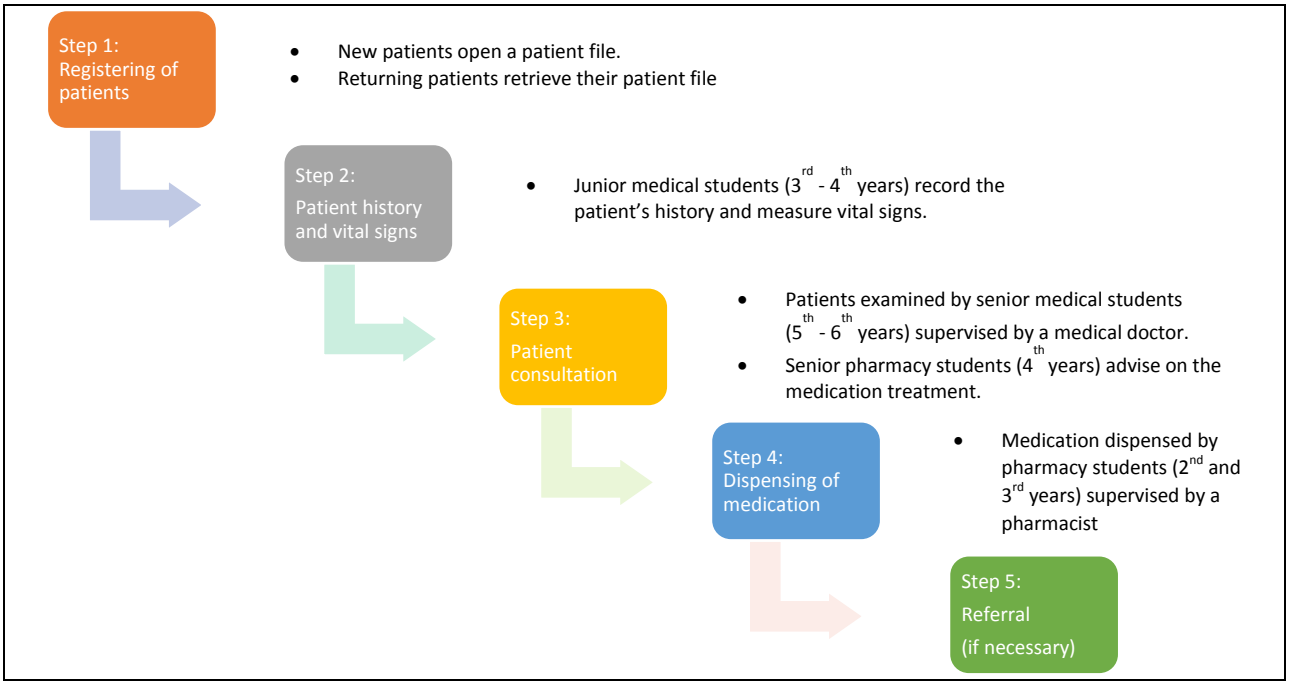


Figure 1: Description of patient consultations

Methodology

This study formed part of a larger project which aimed to describe the perspectives of stakeholders of THS using a grounded theory approach. Stakeholders in the clinic were defined as groups or individuals having a vested interest in the continuation of the clinic and included students, supervising doctors, the church and homeless community. The context for this study, illustrated in Figure 2, describes the relationship between these stakeholders.

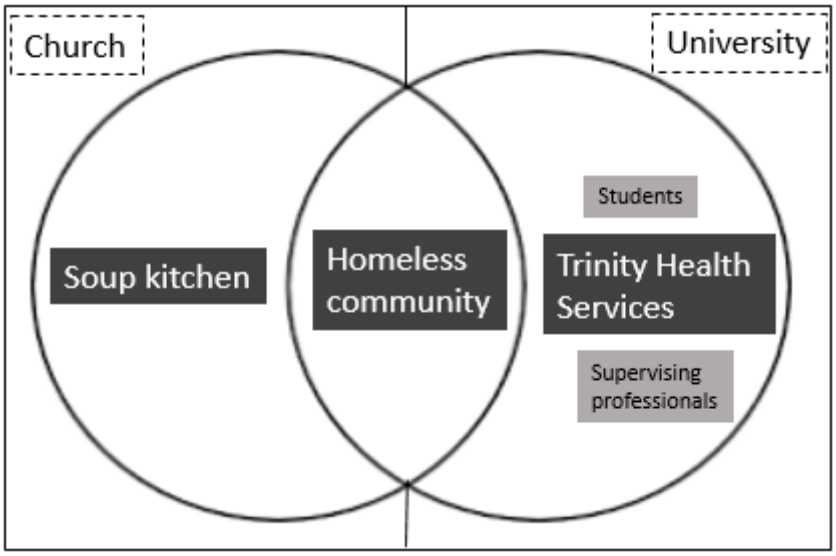


Figure 2: Relationship between stakeholders in the study context

The findings presented here form part of the larger study and describe the learning experiences of pharmacy and medical students volunteering at THS. Data were collected through discipline specific focus group discussions (FGDs). Ethical approval was obtained from the Human Research Ethics Committee of the University of the Witwatersrand (Clearance Certificate No: M161140).

Students who had volunteered at THS on at least one occasion were invited to participate in a FGD. Students who met this criterion were approached through an email inviting them to participate in the FGD. The FGDs were facilitated by a member of staff from the Centre for Health Science Education. Participants were asked primary and probing questions (Table 1), which pertained to their experiences of volunteering at the clinic. The audio recordings from the FGDs were transcribed verbatim. Data analysis began with reviewing the transcriptions line by line, inductively generating the initial codes.

Tesch's 8 steps (15) were used to guide analysis to form themes. The data collected after each FGD were reviewed informing the next discussion as described in the constant comparative method (16).

The following annotation system is used to illustrate the source of the statement. The "M" and "P" after each quote refers to medical and pharmacy student respectively and the number denotes either the first or second FGD. The subsequent number refers to the participant number in each FGD. For example: P1, #3 refers to the first pharmacy students FGD and is a quote from participant three. Four FGDs were held, two per discipline.

Table 1: Primary and probing questions asked in discipline specific FGDs

1. Primary question: *Please tell me why you volunteer at Trinity Health Services.*
2. Primary question: *Please describe your experiences of working with pharmacy / medical students?*
3. Primary question: *Can you elaborate on how working at Trinity Health has contributed to your learning?*
   Probing question: *How has working with a pharmacy / medical student contributed to your learning?*
4. Primary question: *Is there anything you would do to change the system of working with other students at this clinic?*
5. Primary question: *Are there any other professions / groups of students that you think should be included in the interprofessional team?*
   Probing questions: *What additional services do you think the homeless community are in need of?*
   How could the interprofessional team grow? (probe regarding the process of involving other groups i.e. how and where)

Findings

THS provides opportunity for students to learn through serving. Volunteering in the clinic falls outside of the curriculum and there are no prescribed learning objectives and outcomes. Three themes emerged relating to learning experiences: "add more tools to your toolbox"; learning from supervisors and peers, and "we can really make a difference".

"Add more tools to your toolbox"

Students reported learning new information and skills which were described by a student as "tools" which they could add to their "toolbox". Three categories contributed to this theme: understanding the impact of homelessness and health, primary healthcare and communicating with patients.

Understanding the impact of homelessness and health

Students began to identify the interconnectedness between environmental factors and health. This is evident in the following comments from pharmacy students:

"*…patients that come almost every Monday with the same illness, and it's usually because we're treating what you have. But you're still going back to the place that's causing what you have*" (P2; #4).

"…this patient came in and she told me that she had been diagnosed with HIV, but she hadn't taken her pills because she doesn't have food to eat" (P1, #9).

Patients follow the instructions given by healthcare professionals which may include taking the medication with or after meals. In following these instructions patients who have no food to eat, do not take the medication which in turn may lead to treatment failure.

In providing this service to the homeless community, students started to question why these patients did not seek assistance from public clinics and hospitals. They began to understand the gap which THS fills in the health service and advocated for the needs of the patients. This is reflected in these comments:

"*it just exposes people (meaning students) as well to what the realities of healthcare in South Africa (are)*" (M1; #6).

"*I saw how much it actually helps, because on top of the fact that it's quicker for them to get there and also, it doesn't cost them and the lines are not as extreme as having to go to like a hospital*" (P2, #9).

Whilst government clinics do not charge for their services, the cost to patients of attending include transport and loss of daily income or time spent in a queue. Large patient volumes in public facilities lead to less personalized services. These are barriers to healthcare the students were able to describe following these interactions with the community. Acknowledging these factors enabled students' to recognise the contribution they were making to the health of the homeless.

Primary healthcare

It was evident that students at THS learnt about primary healthcare in a different way from that espoused in the formal curriculum. The latter tends to focus on the hospital environment and primary healthcare tends to be given minimal attention. This in turn was concerning for one medical student with the proposed roll out of a national health insurance (NHI) in the near future:

"(The) healthcare system is pushing towards this NHI which is largely primary healthcare based and someone mentioned earlier, we don't learn that, we don't get taught that very well…" (M1, #5).

In primary healthcare patients present differently from those seen more frequently by the students in the hospital setting. Patients presenting in the clinic are undifferentiated and students need to apply their knowledge and skills in establishing a diagnosis, as described in this comment:

"*So, it is really nice to actually see patients who also, where the pathology is a little more subtle, or it's the beginning stage of a disease, and it is proper primary healthcare…*" (M1, #6).

Communicating with patients

Both groups of students feared communicating with patients before volunteering at the clinic. One student stated:

"*I am very scared. I don't have confidence and I feel like I am lost, in terms of, if I am put there, in a situation, I have to talk to them, I have to think while talking, I have to really, you know, make decisions, write down something, be confident about it…*" (M1, #1).

Whilst another reflected:

"*I was really bad like with people, like interacting with other people. Like that was my weakness…*" (P1, #1).

Students learnt to engage with patients and gained confidence when counselling patients regarding their condition and medication. One student described it as follows:

"*…at Trinity I think we've got a really great space where you can talk to the patients…giving information about drug adherence, TB (medication) adherence, HIV and ARV's…also learning how to engage with patients*…" (M1, #6).

As students identified their need to improve their communication skills, they also seemed to be learning something about themselves and were embarking on a process of self-development.

Learning from supervisors and peers

Students working in the clinic are supervised by qualified pharmacists and doctors, many of whom are not academic members of staff. They role model professional behaviours for students but do not overtly facilitate learning and interprofessional collaborations. Students described not only learning from supervisors but also from their peers. The two categories within this theme were engaging with supervisors and peer learning.

Engaging with supervisors

Supervising professionals impart practical information cherished by students. Students seemed to acknowledge that this was not information found in a textbook, as one student noted:

"These little gems of knowledge these doctors have… that makes it easier, and I was picking up all these things, standing behind the [doctor]…" (M2, #3).

The pharmacy students confirmed that their experiences in the consultation rooms depended on who was supervising. One pharmacy student described the supervising doctor encouraging contribution from both students present:

"*I was working with (a medical student) and the…supervising doctor was very interactive. So, we had a patient where we weren't actually sure what was wrong. She was just complaining of headaches and pain... So, me and the student doctor actually worked together… Then the doctor would come and he would like examine, and then he would say, okay, pharmacist, you tell her first…what medication you would give*" (P2, #7).

Peer learning

As shown in Figure 1, THS recruits medical and pharmacy students from across the years of study and provides an opportunity for them to interact. This is in contrast to the formal curriculum where students tend to only mix with students in their class. One student noted that:

"(In class) *we're all very much in our own squads, in our own groups"* (P1, #6).

Through interacting at the clinic students learn from each other:

"*generally students pay attention more to what other students say, and they remember more than what like a lecturer says*" (M1, #4).

Having both medical and pharmacy students in the consultation rooms contributes to a collaboration between the disciplines. Medical students often need help in prescribing as their therapeutic pharmacology knowledge is perceived as

insufficient. A medical student expressed the contribution that each of the disciplines make as follows:

"*we have the clinical knowledge and they have the pharmacology knowledge and to like exchange it and see this…come together in a treatment plan is the most beautiful thing*" (M2, #2).

Through these interactions relationships are built between students that extend beyond working in the clinic:

"*I've had that with one of the pharmacy students that I've befriended here that, just approaching one of my exams…I just sent him a text and I was like 'please help me I don't understand', he helped me understand, explained it to me*" (M1, #5).

Learning in a different space

Students working in the clinic described it as an authentic environment and contrasted it to the clinical encounters within the curriculum. They interacted with patients and relationships were formed when patients returned for further care. Students also described feeling a sense of responsibility to both patients and the clinic. Despite the responsibility felt by volunteers, it was also described as a safe space to learn where students felt comfortable to ask questions. Therefore, the categories identified in this theme were continuity of care, taking responsibility and "*It is a very safe space*".

Continuity of care

Students, when volunteering on a continuous basis, may see patients they had previously seen. Patients returning for further care often discussed their progress when seeing the students who previously cared for them. One student described being able to see the outcome of the care provided as follows:

"*you can actually see the difference you're making, because patients come back, and you can see the progress that has been made*" (M1, #2).
"*I actually made an impact on this person's life*" (P2, #5).

Taking responsibility

Students also felt accountable as they were actively involved in tasks such as prescribing medication and writing the referral letters.

"*You have a lot more responsibility on your shoulders and I think that that is something that kind of ingrains into your mind*" (M1, #3).

As a SRC, students take the leading role in managing and maintaining the clinic. These tasks include staffing of the clinic through implementing a roster system, recruiting volunteers through social media, fundraising as well as working in the clinic. This adds to the sense of responsibility felt by the students to ensure sustainability of the services.

"It is a very safe space"

The clinic was described as a safe place to learn and ask for help. A medical student described this as follows:

"*It seems to be this culture, you can chat to doctors, you can chat amongst yourselves and really just struggle with cases and you learn to think about them and in a safe space*" (M1, #6).

As volunteering at the clinic falls outside the mandated curriculum and does not contribute to assessment of learning, it becomes a learning environment where students are focused on serving without academic concerns.

"*The minute you take the academic stress away, it just becomes, solely your place of learning and a place of helping your patient*" (M1, #5).

This safe and authentic learning environment was appreciated by students and was contrasted to traditional learning spaces. To encapsulate these findings a framework for learning at THS was formed.

A Framework for Learning at THS

The learning experiences highlight the content and context of learning as well as identifying aspects that facilitate learning. The findings presented form a framework for learning at THS (see Figure 3). This framework consists of three concentric circles.

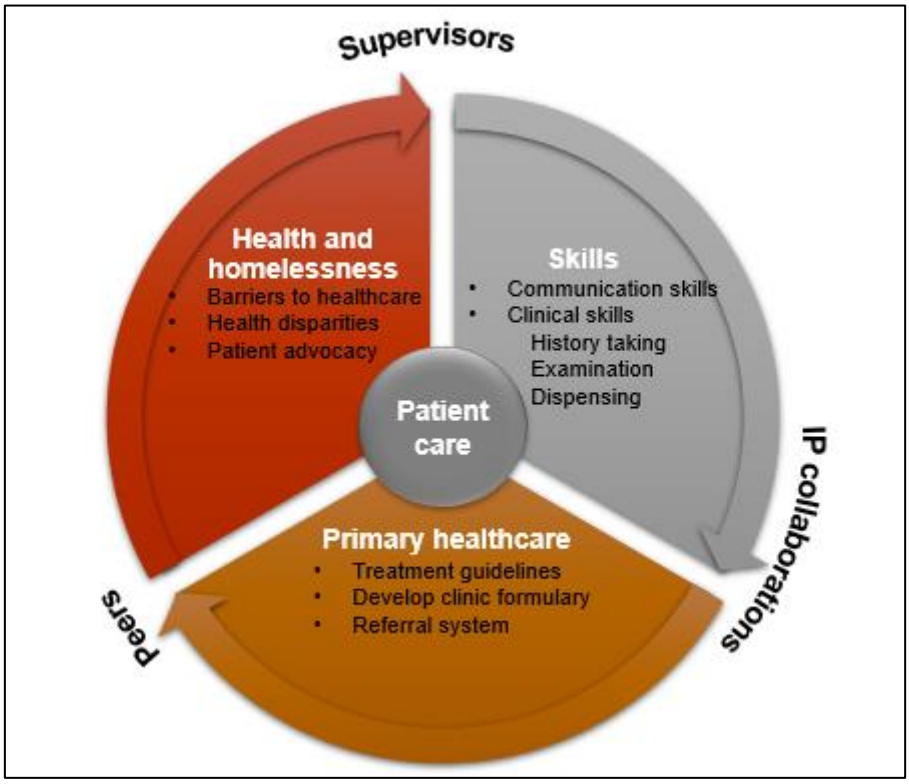


Figure 3: A framework for learning at THS

The innermost circle represents patient care for the homeless. Those seeking care are the reason the clinic exists and so form the focus.

The middle circle provided a layer of learning through serving. The learning described by the students has identified three core areas, namely the students understanding the impact of health on homelessness, primary healthcare and skills, that may be regarded as learning outcomes with more clearly identified objectives to be learnt within each. As a patient-centred SRC what students gain in each of these outcomes is dependent on their level of interaction and engagement in the clinic.

Students learning about health and homelessness includes understanding the challenges the homeless community face for example, access and affordability.

Through the patient consultation process students practice clinical skills such as history taking, measuring of vital signs, physical examination and dispensing of medication as well as learning to communicate.

The outer most circle is the capsule that supports learning through interactions with supervisors and peers as well as interprofessional collaborations. Without these interactions learning would not take place. Through these encounters' students were able to articulate their role as well as that of other professionals in providing a holistic healthcare approach.

This framework for learning depicts the importance of the clinic from the students' perspectives. These are the learning experiences identified by students which motivate them to volunteer at the clinic despite the time constraints and pressures imposed by the formal curricula; and demonstrate the positive epistemological and axiological value to students in their development as healthcare professionals.

Discussion

This study described the learning experiences of pharmacy and medical students when volunteering together in a SRC. The three themes identified were "add more tools to your toolbox", learning from supervisors and peers and learning in a different space. The identified themes contributed to a framework for learning, which form the basis for the discussion.

This framework describes the learning opportunities which exist at THS; it also identifies what facilitates learning and the resources needed to enhance the learning opportunities. The learning opportunities are not fixed and may well develop further as students grow in confidence. These provided a framework for encouraging others to participate but may also offer some guidelines to those participating for the first time. This suggests that a "curriculum" has evolved however, this "curriculum" may be experienced by students differently.

The inner circle of the framework places patient care centrally as opposed to learning. This represents that all decisions made should be evaluated first and foremost for their potential impact on patient care. The balance between serving and achieving education goals is pivotal in a SRC (17).

The second layer identifies three key areas of learning. The first refers to learning about the homelessness and how this impacts health. Indigent communities are most in need of healthcare services. Research has shown that medical students who have engaged with the homeless have more positive attitudes to these communities (18). Furthermore, students are more likely to return to work with the homeless if they have volunteered at SRCs serving these communities (19). In a systematic review of service learning and community based medical education, Hunt *et al*. (20) found that social determinants of health, barriers to healthcare and health disparities were difficult to teach using traditional teaching methodologies. However, encountering patients in community settings facilitated the learning and understanding of these concepts evident in the findings of this study. Students from working in these clinics can identify barriers in the healthcare system and advocate for their patients (21).

The second section within this layer refers to the skills learnt by students. Important triggers to learning include real-life situations and taking responsibility for patient care (4) as opposed to simulation. It is reported that medical students learnt to present a patient to a physician at a SRC as well as performing a variety of clinical skills (5,2). However, it is essential that students do not perceive the homeless as an opportunity to practice their skills. Supervising professionals need to ensure that the wellbeing of the patient is placed ahead of potential learning by students (17).

Both the medical and pharmacy students valued the interactions with patients and found volunteering at THS improved their communication skills. Although it is noted that SRCs provide students an opportunity to improve communication with patients (17), little is documented regarding the communication between students and patients. The findings presented here indicate that students' confidence increased when communicating with patients in contrast to their clinical encounters in the formal curricula.

The third section refers to primary healthcare. Various models of SRCs exist providing a variety of services (2). The services offered in turn influence the learning experiences of students. The Crimson Care Collaborative was primarily developed to attract students to careers in primary healthcare and increased students' exposure to primary healthcare (22).

Similar, to our findings Mendelsohn (5) reported that students working at the Students' Health and Welfare Centres Organisation of the University of Cape Town learnt about primary healthcare which they too felt was not sufficiently emphasised in the medical curriculum. The treatment guidelines and formulary used in the clinic align the Standard Treatment Guidelines and Essential Medicines List published by the Department of Health (23). This in turn prepares students for future practice in the public sector.

The outermost layer of our framework depicts that learning is facilitated through interactions with peers, supervisors and interprofessional collaborations. It is reported that students learn in SRCs from supervisors, senior students and other professionals as well as the patient (24). Although the patients are not included in this layer, it is argued that placing the patient care centrally implies that students learn first and foremost from the patients.

Experiences between pharmacy and medical students within the same university have been documented (25). One of the themes identified in that study was "shared teaching and learning", where pharmacy students taught the medical students pharmacology and the medical students taught pharmacy students clinical skills. In South Africa pharmacists and doctors working in community practices have minimal interaction (26). Therefore, students may find it challenging to role model interprofessional behaviour. However, they need to understand the importance of forming communities of practice for future practice.

The interprofessional space allows students to work collaboratively as a team (24,10). SRCs have also been described as ideal spaces for the development of interprofessional education (27,28,29). The expansion of the interprofessional team at THS is guided by the needs of the community and not directed by the need to learn with and/or from other professionals.

Following the development of a framework for learning, future studies include testing the framework and developing it further through peer review with an expert group including the supervisors.

Conclusion

This study described the experiences of students serving the homeless community in the inner-city of Johannesburg. Students learnt through serving the homelessness community. Not only did the opportunity provide an authentic learning opportunity but also contributed to the development of non-technical skills such as accountability and responsibility.

References:

1. Berlin N, Purdy K,Chau B. Sustaining and Developing Student-Run Clinics: A Toolkit 2017.Available at: https://static1.squarespace.com/static/51d24f80e4b0d032675d5a63/t/58d548163a0411396f7aa366/1490372631635/SRC_ToolKit_2017.pdf [Accessed on: 17 July 2017].
2. Simpson SA, Long JA. Medical student-run health clinics: important contributors to patient care and medical education. Journal of General Internal Medicine. 2007 Mar 1;22(3):352-6.
3. Smith S, Thomas R, Cruz M, Griggs R, Moscato B, Ferrara A. Presence and characteristics of student-run free clinics in medical schools. JAMA. 2014 Dec 10;312(22):2407-10.
4. Schutte T, Tichelaar J, Dekker RS, van Agtmael MA, de Vries TP, Richir MC. Learning in student-run clinics: a systematic review. Medical Education. 2015 Mar;49(3):249-63.
5. Mendelsohn SC. Student doctors (umfundi wobugqirha): The role of student-run free clinics in medical education in Cape Town, South Africa. African Journal of Health Professions Education. 2014;6(1):28-32.
6. Duke P, Brunger F. The MUN Med Gateway Project: marrying medical education and social accountability. Canadian Family Physician. 2015 Feb 1;61(2):e81-7.
7. Ryskina KL, Meah YS, Thomas DC. Quality of diabetes care at a student-run free clinic. Journal of Health Care for the Poor and Underserved. 2009;20(4):969-81.
8. Zucker J, Gillen J, Ackrivo J, Schroeder R, Keller S. Hypertension management in a student-run free clinic: meeting national standards?. Academic Medicine. 2011 Feb 1;86(2):239-45.
9. Gorrindo P, Peltz A, Ladner TR, Miller BM, Miller RF, Fowler MJ. Medical students as health educators at a student-run free clinic: improving the clinical outcomes of diabetic patients. Academic Medicine. 2014 Apr;89(4):625.
10. Pammett R, Landry E, Weidmann AE, Jorgenson D. Interprofessional student-run primary health care clinics: educational experiences for pharmacy students. Canadian Pharmacists Journal/Revue des Pharmaciens du Canada. 2015 May;148(3):125-8.

11. Derington CG, Boom GD, Choi DK, Mader K, Johnson JD, Trinkley KE. Pharmacy Student Involvement in the Implementation of a Student-Run Free Clinic. Journal of Basic and Clinical Pharmacy. 2017 Aug 15;8(3).
12. Gordon C. Volunteer, community-based student-run clinics for the underserved: can they be used to attain 21st century medical education goals? (Doctoral dissertation, Stellenbosch: Stellenbosch University). 2016.
13. Favara DM, Mendelsohn SC. The Students' Health and Welfare Centres Organisation (SHAWCO) of the University of Cape Town: a review of the past 69 years. South African Medical Journal. 2012 Jun;102(6):400-2.
14. Lohrmann GM, Botha B, Violari A, Gray GE. HIV and the urban homeless in Johannesburg. Southern African Journal of HIV Medicine. 2012;13(4):174-7.
15. Creswell JW, Research design: Qualitative, quantitative, and mixed methods approaches, 4th Edition, California: Sage publications; 2014.
16. Glaser BG, Strauss AL. The discovery of grounded theory: Strategies for qualitative research New York: Aldine Transaction; 1967.
17. Buchanan D, Witlen R. Balancing service and education: ethical management of student-run clinics. Journal of Health Care for the Poor and Underserved. 2006;17(3):477-85.
18. Buck DS, Monteiro FM, Kneuper S, Rochon D, Clark DL, Melillo A, Volk RJ. Design and validation of the health professionals' attitudes toward the homeless inventory (HPATHI). BMC Medical Education. 2005 Dec;5(1):2.
19. Buchanan D, Jain S. Teaching students about health care of the homeless. Academic Medicine. 2001 May 1;76(5):524-5.
20. Hunt JB, Bonham C, Jones L. Understanding the goals of service learning and community-based medical education: a systematic review. Academic Medicine. 2011 Feb 1;86(2):246-51.
21. Meah YS, Smith EL, Thomas DC. Student-run health clinic: novel arena to educate medical students on systems-based practice. Mount Sinai Journal of Medicine: A Journal of Translational and Personalized Medicine: A Journal of Translational and Personalized Medicine. 2009 Aug 1;76(4):344-56
22. Berman R, Powe C, Carnevale J, Chao A, Knudsen J, Nguyen A, Edgman-Levitan S. The crimson care collaborative: A student–faculty initiative to increase medical students' early exposure to primary care. Academic Medicine. 2012 May 1;87(5):651-5.

23. National Department of Health South Africa Essential Drugs Programme. Primary Healthcare Standard Treatment Guideline and Essential Medicine List. 6th ed. Republic of South Africa: National Department of Health. 2018.
24. Lie DA, Forest CP, Walsh A, Banzali Y, Lohenry K. What and how do students learn in an interprofessional student-run clinic? An educational framework for team-based care. Medical Education Online. 2016 Jan 1;21(1):31900.
25. Johnston D, McInerney PA, Fadahun O, Green-Thompson LP, Moch S, Shiba PG, Magida A. Experiences of medical and pharmacy students' learning in a shared environment: A qualitative study. African Journal of Health Professions Education. 2015;7(2):183-6.
26. Egieyeh EO. Inter-professional collaboration between general practitioners and community pharmacists: general practitioners' perspectives. (Doctoral dissertation, University of Western Cape). 2012.
27. Kim D, Leeb N. Early Interprofessional Collaboration Through Student–Run Clinics. UBCMJ. 2015 Mar 20:26.
28. Haggarty D, Dalcin D. Student-run clinics in Canada: an innovative method of delivering interprofessional education. Journal of Interprofessional Care. 2014 Nov 1;28(6):570-2.
29. Sick B, Sheldon L, Ajer K, Wang Q, Zhang L. The student-run free clinic: an ideal site to teach interprofessional education?. Journal of Interprofessional Care. 2014 Sep 1;28(5):413-8.

4.4. Supervising professionals

This section explains the role of supervising pharmacists and doctors volunteering at THS. Their experience of supervising students and at the same time helping the homeless is described.

Supervising professionals are a stakeholder in THS fulfilling a legislative role, without which the service would cease to exist. However, their role extends beyond this as they facilitate learning and ensure patient care. The research questions for this section were:

Why did supervising professionals volunteer at the clinic and what were their perceptions of the clinic?

What are the roles and responsibilities of the supervising professionals of THS?

What were the perceptions of the stakeholders regarding the management of the clinic?

The objectives were outlined in Table 2.2. Five in-depth interviews were held with supervisors and were between 25 – 30 minutes in duration (see Table 1). The interviewees provided consent to be interviewed and for voice recording. The interviews were transcribed verbatim. The transcriptions were read line by line to identify commonalities. Tesch's eight steps (Creswell, 2014) were used to guide the analysis.

Table 4.1: Demographic information of supervising professionals

SUPERVISORS	GENDER	CURRENT AREA OF PRACTICE
Doctors	Female: 2 Male: 1	Academic: 1 Public sector: 1 Retired: 1
Pharmacists	Female: 1 Male:1	Private sector: 1 Public sector: 1

4.4.1. Process of supervision

Undergraduate medical and pharmacy students register as students with the HPCSA and the SAPC respectively. They are permitted to work within a scope of practice provided they are supervised by a registered professional. To ensure students work

under supervision, supervising doctors and pharmacists supervise students as outlined in Figure 4.1. The supervisors are registered with their respective regulatory authorities.

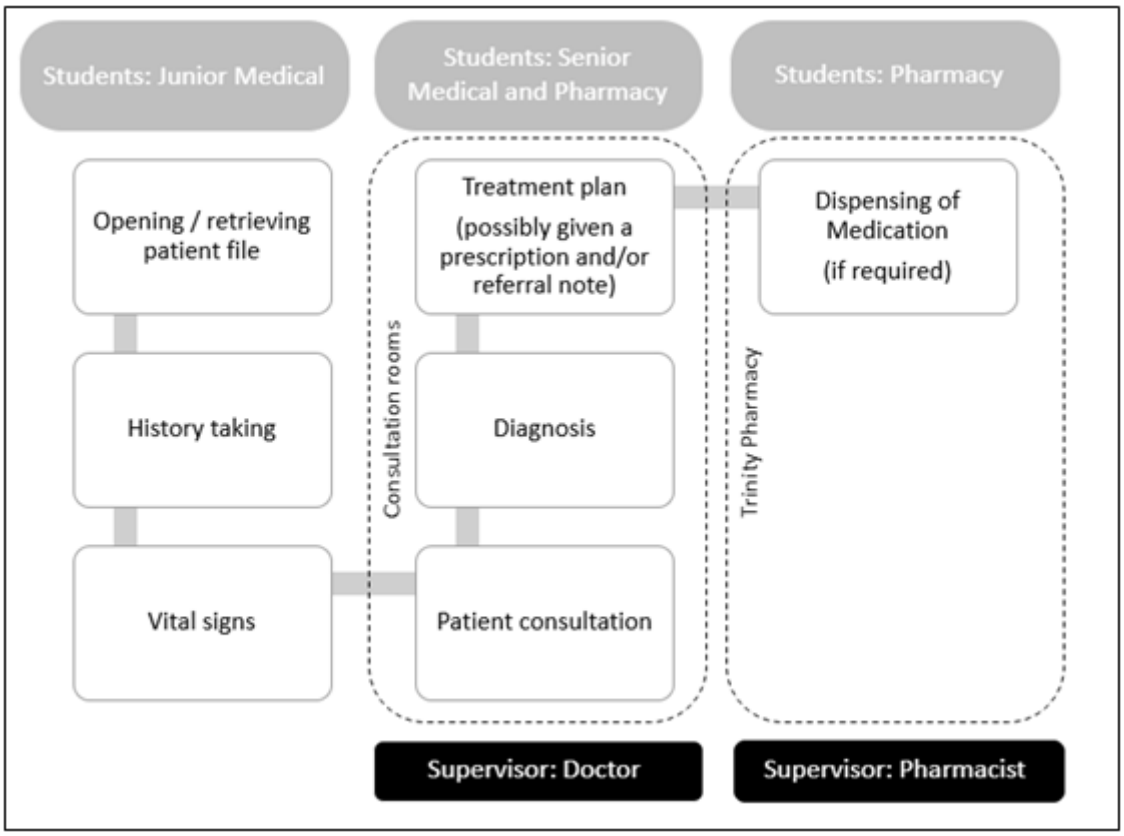


Figure 4.1: Outline of the pathway patients follow indicating the students and supervisors involved in these tasks

The process of supervision was explained. However, there was insufficient data for this to form an additional theme. Their approach to supervision is central in understanding the themes.

The supervising professionals were aware of their responsibility from a legislative perspective. The process of supervision in both consultation rooms and the pharmacy was to work alongside students in completing the tasks as explained in this comment from a supervising doctor:

> *(The students) working within a certain regulatory framework need to be closely supervised with respect of their delivery of service in the context of the clinic… (I)t's a case of not really handing over tasks to the students but working with (students)* (Doctor 2).

4.4.1.1. Role of supervising doctors

The initial patient consultation is conducted by a medical student together with the pharmacy student (see Figure 4.1). The supervising doctor waits outside the consultation room until the students are ready to present their findings. The supervising doctor either agrees with the diagnosis and treatment plan presented or works with the students in correcting their findings. The supervising doctor then countersigns the prescription and/or referral note as per regulatory legislation.

The process followed allows the students to take initial responsibility while having the supervising doctor as a safety-net:

> *We leave them solely responsible to a point, let them make the full plan and then come in and help* (Doctor 1).

Another supervising doctor explained to the students that their purpose was not to assess the students but to assist them:

> *I make it quite clear as well that I'm not an examiner...this is a chance for them to be learning in an informal setting, no one's marking, no one's feeding back to some sort of assessment. It's purely a process where we can learn and I've often emphasized that I'm learning with them* (Doctor 3).

4.4.1.2. Role of supervising pharmacists

After leaving the consultation rooms, patients are directed to the pharmacy if they need to collect medication (see Figure 4.1). The patient presents the prescription to

the pharmacy, where the pharmacy students evaluate, interpret and dispense the medication under the direct supervision of the pharmacist. All medication is checked and signed for by the supervising pharmacist before being dispensed.

One of the supervising pharmacists explained the value of Trinity Pharmacy as the first licensed pharmacy to be incorporated in a student-run clinic in South Africa:

> *Trinity clinic has something that I don't think any other pharmacy school has* (Pharmacist 1).

Supervising pharmacists explained that their approach was to create a supportive learning environment where the students were able to complete tasks at their own pace:

> *I just watch over them, help them when needed and guide them if they're going on the wrong path...I will not rush a person...I will let them go through it because you can only get better through experience* (Pharmacist 2).

4.4.2. Thematic analysis

The supervising professionals described the purpose of the clinic as two-fold. The first was that the clinic provides an opportunity for students to learn. The second was to provide optimum care to the patients accessing the services and ensuring they are treated with dignity and respect.

This in turn formed the two themes (see Table 4.2) which emerged from the interviews. The first theme, *student learning*, describes the learning opportunities THS provides compared to traditional learning activities and working together as an interprofessional team. The second theme, *patient care*, describes serving the community and the continuity of care needed as patients were referred for further healthcare needs.

Table 4.2: Themes and categories identified from interviews held with the supervising professionals

Theme 1: Student learning
• Learning oppertunities • Working together
Theme 2: Patient care
• Serving the community • Continuity of care

Theme 1: Student learning

There were two categories which contributed to the theme student learning: learning opportunities and working together. The supervisors commented on the learning opportunities at THS as compared to other experiential learning placements. Benefits for students to work in an interprofessional team was also highlighted by supervisors in preparing them for eventual practice.

Working at THS provides supervisors with an opportunity to teach students and give back to the profession:

> *I was able to share so much of my experience that I've gained over the years of working as a doctor with the students* (Doctor 3)*.*

All the supervising professionals, doctors and pharmacists, agreed that students learnt when volunteering at the clinic. They compared learning in this environment as opposed to traditional learning settings where their ...*supervisory role is very much driven by the students... (Doctor 1).*

Learning opportunities

The differences between hospital settings and THS were described by this supervising doctor. In the hospital settings students observe. This was contrasted to the active role they had in patient consultations at the clinic, where they needed to determine the diagnosis and establish a treatment plan:

> *In a hospital environment you've got patients that have gone through the emergency department, that come through to the medical admissions, and then being seen by an intern, registrar, medical officer. Then (that case) may be cherry picked for a student because of good clinical science. They don't see undifferentiated patients... (At THS) they now become the first contact and they're seeing an undifferentiated patient (Doctor 1).*

A pharmacist elaborated on the key distinction that pharmacy students working at THS spent more time engaging with patients as compared to other pharmacy settings:

> *There's much more time to spend with the patient compared to any other setting. So students ask the questions they want to ask...you can see they get a lot from the clinic...compared to (other pharmacy) settings where...a patient is basically just a number (Pharmacist 1).*

The supervisors remarked on the students' attitudes and willingness to learn. The enthusiasm of the students was noted in this comment from a supervisor:

> *I mean for someone to sacrifice so much time, in the evening, to come to a place where they're volunteering means they really want to be there (Pharmacist 1).*

The difference in learning experiences across clinical settings was attributed, by this supervising doctor, to the students' ownership of the SRC and system:

> *The ownership of the system that a student comes across as having within the Trinity clinic environment as opposed to being something of an addition or at best a visitor, at worst an interloper on the services that are being provided within the government system as a student entering into that process* (Doctor 2).

Working together

THS offers medical and pharmaceutical services and provides an opportunity for students studying in these disciplines to interact with the goal of optimising patient care. The supervising professionals discussed the importance of interprofessional practice and how students interact at the clinic.

There is little interaction between undergraduate students studying health professional degrees at university yet once they graduate and enter the workplace they are expected to work together which is noted by a supervising doctor:

> *We separate them all out...then we throw them all back together in internship and expect them to work together magically* (Doctor 1).

A similar point was raised by this pharmacist that healthcare professionals should learn to interact with fellow students while at university:

> *If you don't know how to interact with these people at the level of a student, when you are students, how are you going to interact when you are actually qualified professionals?* (Pharmacist 2).

The importance of working in an interprofessional practice in primary healthcare was explained by this supervisor, who noted the complexity of working in a team, where there may be overlapping competencies and allocation of roles becomes essential:

> *The question of who does what and who should do what and who shouldn't do what...the earlier everyone gets involved in primary health care the earlier we can identify and define those roles as well* (Pharmacist 1).

THS provides medical and pharmacy students an opportunity to work together where *the walls are definitely broken down* (Pharmacist 1). This supervisor noted that students worked together and communicated as an interprofessional team:

> *There is a far greater willingness and appreciation for them working in an interprofessional capacity...It's around teamwork and communication as opposed to purely clinical practice* (Doctor 2).

Theme 2: Patient care

There were two categories within the theme 'patient care'. The category, serving the community, explains the role of the clinic in improving access to primary care to the community as well as the balance between serving and learning that is facilitated through supervision. The category, continuity of care, identifies the short comings of the clinic and the importance of linkages with public healthcare facilities.

Some supervisors were drawn to volunteer at the clinic as it provided them an opportunity as healthcare professionals to serve the community:

> *We need to give back to our communities and the people around us* (Pharmacist 2).

Serving the community

The advantage of the clinic to the community it serves was clear to the supervisors as explained in this comment:

> *(The role of the clinic is) improvement of access to healthcare, particularly primary healthcare at a community level* (Doctor 2).

The supervisors understood their responsibility in serving the community and instilling this in the student volunteers:

> *It should primarily be a case of service. And I think if we keep that at the heart of what we're doing, a lot will fall into place and build the teaching and build the experience the students are gaining around that. But unless you are aware of the service aspect at all times, I don't think you're doing the clinic and service justice. It's not just a place to come and learn. It is a place of service...I think it's an honour for us to see these patients. They're also not there by choice* (Doctor 3).

Although *training and treatment go hand in hand* (Pharmacist 2), the balance between serving and learning is paramount and is facilitated through supervision. This supervising doctor illustrated that the dignity of the patient needs to be placed ahead of student learning:

> *It does sometimes bother me that there are too many people in the rooms and especially when we need to do maybe vaginal examinations or a rectal examination, that exposes the patients. I normally ask everybody but the senior student to leave the room and I think that's to also teach them how to never ever forget that patients have a right to dignity* (Doctor 3).

Continuity of care

Patients needing further care were referred to nearby public healthcare facilities as only acute care services were provided by the clinic. Due to the limited services provided, supervisors raised concern that THS did not meet the social and psychological needs of the patients. They too, were concerned about the reception patients received at referral sites and whether they received the care needed.

THS has a curative approach and the need to understand the social circumstances of the community was raised by supervisors:

> *We don't really deal with the social ills enough. We are focused on the physical health* (Pharmacist 1).

> *But we're not providing all the things they need…this clinic should be raising it up and saying…what's happening? Let's go to Home Affairs. Why don't they have a place to stay, why don't they have IDs (identification documents)? That element should also be coming through in terms of their overall care* (Doctor 1).

This supervisor was concerned whether patients referred to public healthcare facilities received the care they needed:

> *I'm not entirely sure that if I send them where I send them they'll get what they need. I think this clinic should have better links developed so we...can have a contact person at each point to kind of facilitate that* (Doctor 1).

The supervising professionals suggested the faculty should be more active in facilitating the expansion of services and in promoting collaboration with the public healthcare facilities especially through the joint-appointed (i.e. staff who hold posts in the provincial health department and the university) staff members:

> *What is critical around any facility or any level of service that's been provided is continuity of care and that for linking up with the…government healthcare sector… I do see a role of joint appointees* (Doctor 2).

4.4.3. Discussion

In both the pharmacy and consultation rooms, the supervisors allow the students to work independently in completing tasks. Supervisors drew comparisons with other settings and explained how students were able to engage with patients at THS. They also commented on the advantages of working in an interprofessional team in preparing the students for future practice. The supervisors noted that the primary role of the clinic was to serve the community and raised concerns regarding the

limited services the clinic offered as well as the referral of patients to public healthcare services.

Supervisors at Gustavsberg primary health care SRC in Sweden also commented on the interprofessional collaboration between students and supervisors (Fröberg *et al*., 2016). Likewise, supervisors at the GOODLIFE clinic, based at the University of Nebraska Medical Centre, described the benefits of “cross-training” (pg. 493) where there was input from supervisors and students across disciplines (Robinson et al., 2004). Furthermore, they highlighted the importance of the patient as a member of the team.

The definition of a SRC includes the provision of patient care while learning (Society of Student Run Free Clinics, 2019). Buchanan and Witlen (2006) discuss the balance between service delivery and education as the responsibility of the faculty. However, many of the supervisors at THS are not university staff members. The balance between service delivery and education at THS is maintained by the supervisors and not the faculty.

This balance in roles between being a healthcare provider focused on patient care and facilitating student learning is illustrated in Figure 4.2. The standard of care provided should remain consistent regardless of the balance in roles. There are times where the supervisor may need to give immediate attention to the patient in the case of an emergency or when privacy may be needed. In contrast sometimes students may be inexperienced or not have the necessary skills to conduct the consultation. In these situations, the supervisor’s role shifts from observing to teaching.

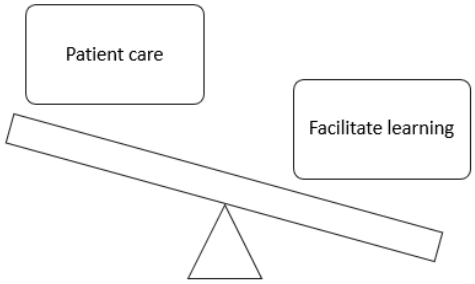
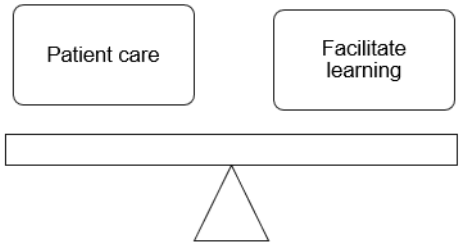
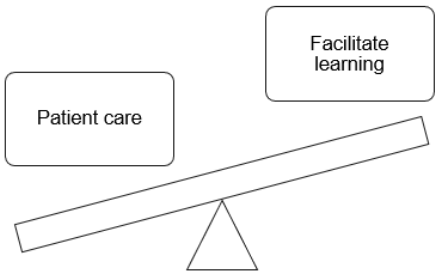
	EXAMPLE
	• Patient presents with a complex case which the student is unable to handle. • Emergency care where the patients requires immediate attention. • Patient requests privacy and only wants to be treated by the supervisor.
	• Supervisor observers and provides minimal input until the student has completed the task and presents findings to the supervisor.
	• Student needs to be taught as they do not have the knowledge or skills to manage the patient. • Student lacks the confidence to conduct a patient consultation and needs additional guidance from the supervisor.

Figure 4.2: Role of supervisors in balancing patient care and facilitating learning

4.4.4. Conclusion

The role of supervisors as a stakeholder in THS was explained and their approach and process of supervision was described. However, they have varying amounts of teaching experience. Supervisors too require training to prepare them for the tasks they are responsible for in SRCs (Fröberg *et al*., 2016). There were no studies found that discussed or compared supervision at SRC to other learning environments. Future studies should interrogate this further. THS should consider developing training material to distribute to supervisors prior to volunteering introducing them to their supervisory role.

4.5. Student management committee

The last stakeholder group included in Chapter 4 is the student management committee. This section describes the management of THS by students and voices the perceptions of committee members.

THS, as a student-run clinic, is managed by a student committee. When THS was re-established in 2016, two committees were formed (see Figure 4.3). The student committee comprised of student volunteers responsible for managing and operating the clinic.

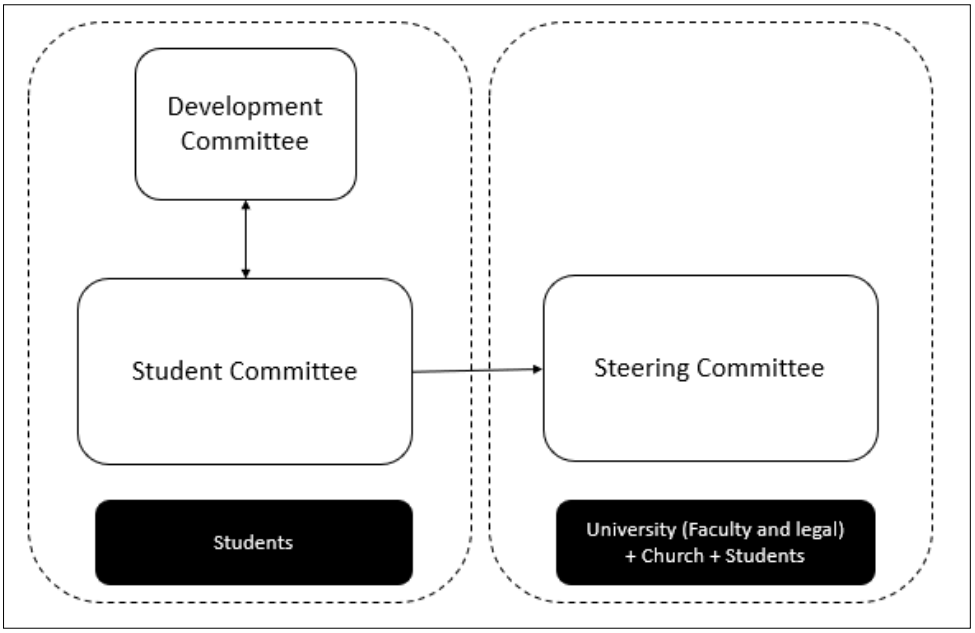


Figure 4.3: Managing committees and reporting channels

The process of appointment as well as the defined roles and responsibilities was determined by the student management committee. The formation of the committee and the management of the clinic provides insight into student leadership.

All students registered in the Faculty of Health Sciences were eligible to serve on the student committee. Students were required to have previously volunteered at THS and to submit their curriculum vitae if interested in serving on this committee. Successful applicants were short-listed, and the previous committee voted to appoint the new members following interviews. The student committee has allocated portfolios (see Table 4.3).

Table 4.3: Student committee portfolios and responsibilities

PORTFOLIO	DESCRIPTION	RESPONSIBILITIES
	Chairperson	• Chair committee meeting • Represent the committee at official functions • Issue statements for or on behalf of the committee • Supported by the vice-chairperson
	Secretary	• Records minutes from meetings • Organises clinic's security
	Treasurer	• Manages finances • Prepare financial reports upon request • Managing petty cash
	Medical representative (Medical student)	• Recruit and organise medical student volunteers • Recruit and organise medical doctors to supervise • Training of volunteers • Updating of protocols
	Pharmacy representative (Pharmacy student)	• Recruit and organise pharmacy student volunteers • Assist in updating of the clinic formulary • Training of volunteers • Updating of protocols
	Fundraising	• Managing donations received and maintaining relationships with donors
	Information technology	• Updates electronic record of patient visits weekly • Investigate means of using technology to assist in the management of patient records and clinic operations
	Communications	• Manage various social media accounts • Maintain contact with various media outlets • Capturing of photos and videos, with permission • Working with the Fundraising Officer or Campaigns Officer on any relevant material • Corresponding with the volunteers
	Campaigns	• Creating and maintaining awareness about THS • Plan and implement health promotion programs
	Logistics	• Monitoring and ordering of stock • Management of waste disposal • Ensuring consulting rooms are stocked and cleaned

The student management committee received guidance from the steering committee. The steering committee, comprised of students, faculty, church and legal representatives, was instrumental in providing support in the reestablishment of THS. At the time of this FGD the steering committee was still in existence and aided the student management committee. Lately, it has dwindled to only one member of staff.

The student management committee is a stakeholder in THS and this section sought to elicit their experiences and opinions of managing THS (see Table 2.2). The student management committee was invited to participate in a FGD. The FGD was 56 minutes in duration and six members of the student management committee participated. The FGD was facilitated by a member of staff from the Centre for Health Science Education, who is an experienced qualitative researcher and does not teach undergraduate students. Informed consent was obtained for participation in the FDG and to have the discussion voice recorded. The primary and probing questions (see Appendix 9) explored the management structure, their responsibilities, as management of the clinic and the challenges they faced. The audio recording was transcribed verbatim and analysed thematically using Tesch's eight steps (Creswell, 201). The transcriptions were read line by line and commonalities were identified so that initial codes were allocated., The codes underwent further grouping and categories were identified, which were then synthesized into themes. An annotation system was used with the letters SC referring to the student committee FGD and the proceeding number represents the participant number.

4.5.1. Thematic analysis

The overarching theme *foster student leadership* comprised of four categories (see Table 4.4). The first category, *it's very democratic*, explains the leadership style of the committee. The committee in ensuring continuity in management had taken steps in *cultivating the next generation of leadership*, forming the second category. The support from the Faculty and an advisory board was explained and formed the third category, *oversight*. The final category, *responsibility to the community*, describes that the students understood THS has become a service the community depends on.

Table 4.4: Theme and categories identified from the FGD held with the student management committee

Theme: *Foster student leadership*
• *It's very democratic* • *Cultivating the next generation of leadership* • Oversight • Responsibility to the community

It's very democratic

The students, who formed the management committee, jointly decided on the structure of the committee and the appointment process. The election process was important to the committee and their appointment was validated as described by this student:

> *So, we were elected to (the)committee. At some point in time all of us had to go through an interview process to be on the committee…it was by an election which previously had not been the case* (SC 1).

The roles and responsibilities, outlined in Table 4.3, were updated by the committee annually as explained in this comment:

> *The committee was completely restructured last year, and I think that again and again it's been, it's been restructured and relooked at and I think that, that should keep happening* (SC 2).

Although there is a defined hierarchy of portfolios, this student emphasised that decisions are made jointly:

> *I don't feel like we have a top down (approach). It's a very democratic experience in my opinion, and we do talk to each other, and we all are approachable* (SC 1).

Cultivating the next generation of leadership

The student management committee took the following measures to ensuring continuity and sustainability:

Assigning of more than one student per portfolio (Strategy 1)

There were two students assigned to each portfolio to ensure continuity of the service and that the allocated tasks were not dependent on one person.

This student explains the teamwork between students as they share responsibility for the associated tasks:

> *For each portfolio, so for (example, the role of the) treasurer there's also like a, like a sub position, so all of the strategic, basically all the positions on (the) committee have a sub (deputy) person…you're working together, (the) transition from year to year is a lot smoother than having to start from scratch* (SC 1).

Involvement of students from multiple years of study (Strategy 2)

Students from various years of study formed part of the committee. This allows for the shifting of duties between students according to their workload:

> *There's so many different years…the third-years, the fourth-years, fifth-year medical students. There's the third and fourth-year pharmacists… I think we're rarely under pressure at the same time*(SC 2).

In addition to these measures the student committee in 2017 decided to appoint a development committee. The development committee comprised of more junior students who wanted to be part of the management of the clinic, but needed more experience. This committee member explains the need for the development committee in the sustainability of the project:

> *We need to start cultivating the next generation of leadership, so that when the time comes they're ready for it* (SC 1).

The development committee, whose main task is to assist with the running of the clinic, was also involved with community projects such as the mapping of services. This task encompassed researching nearby services such as shelters and soup

kitchens, geographically plotting these on a map. This was used in referring those in need of these services.

This task was valued by this student in understanding the services needed by homeless:

> *A lot of the work that the development team was doing outside of just learning how the clinic worked is also really like the community mapping, for example, (it) is something that is a really valuable resource to have* (SC 3).

Many of the students who were part of the development committee where elected onto the student management committee the subsequent year. This student reflects on the how this prepared them to serve on the committee:

> *When we did decide to join the committee at the end of third-year, and we really had quite a good idea of what we were getting ourselves into. I think that the development committee was a really, really good idea…it also made us feel a little bit more likely we took ownership (of the clinic) earlier* (SC 2).

Oversight

The students were aware that multiple stakeholders were needed for the clinic to succeed called for a *board of elders and advisers* (SC1), although *the management and the running of the clinic, it's very much student-run* (SC 1). The role of the oversight board and faculty were discussed in detail explaining the support the clinic needs.

Role of the oversight board

The student committee was aware that they were inexperienced in managing the clinic and needed assistance from a more senior committee, as indicated in this comment:

> *So it's, it's still a work in progress in terms of ensuring that the student committee, you know, we're students and so we don't know everything, and so we do need this board of elders and advisers who can say, okay, you're going in the wrong direction, this is what you need to do* (SC 1).

However, the guidance they requested was not in the day-to-day management of the clinic:

> *I think that the support we are looking for isn't directional. We're not asking them to tell us what to do… I don't think we're asking them to kind of step on our independence* (SC 2)

They were concerned that the steering committee was too involved in the managing of the clinic and suggested this committee should be renamed as an advisory committee.

Role of the Faculty

The support of the clinic by the faculty was not obvious to the student committee. Although there were faculty representatives who were part of the steering committee, the students perceived they were involved in their personal capacity. These comments voice the students' frustration of the level of commitment from the faculty:

> *I don't think necessarily one or two people that happened to be in the Faculty of Health Science constitutes the faculty being involved…I don't know what's going on in the faculty, but maybe they hide behind (the) fact that these two people or three people are actually involved* (SC 6).

> *I think that's been a major disappointment…the lack of a role that they've played in the clinic thus far. Any other Medical School I think, would give their left eye tooth to have a project of this nature on their doorstep, because it*

fosters all the things that faculties want to have as their poster children, these student-run initiatives (SC 1).

The students felt that support by the faculty would assist with the recruitment of students and supervising professionals:

If some of our supervising doctors, who are members of the faculty, that would sort of encourage people to come because you know that your lecturer is going to teach you (SC 5).

Our whole faculty is made up of doctors and pharmacists we would love those volunteers…It would, it would make it a completely different experience if we had that buy-in from professionals in the field that we are working in (SC 2).

Furthermore, they felt that if the faculty were more involved there would be greater interest from other disciplines, such as dentistry, to participate:

I think also if the faculty were involved in a more dynamic way it could also help us to increase the services that we offer. So, for example, a year ago we started the, more than a year ago we started the conversation of getting the dental students involved and bringing the dental truck (mobile clinic)…And it's not that the students are not involved, the students are interested, but it's the hierarchy within the dental school that is just dragging their feet (SC 1).

Responsibility to the community

The committee understood their *immense responsibility* (SC 6) to the community THS serves and the responsibility to ensure that the current services continue. One student explained this as follows:

I think that it's really important that we are and remain something that people can depend on. That (will) hopefully (be open) every week, but at the very least every two weeks (SC 2).

However, the responsibility extends beyond THS. The following comment demonstrates an understanding that the patients' experiences at the clinic are

important and may impact the patients interaction with healthcare services in the future:

> *The clinic is sometimes the first point of call that these patients have with the health system. We have the immense responsibility of fostering trust in the health system with these patients. And if they have trust in the health system the chances that they will access health care again is much greater* (SC 6).

4.5.2. Discussion

The student management committee comprises of an interprofessional team of students who assume responsibility for the operation and management of the clinic. SRCs provide students with an opportunity to lead (Scott and Swartz, 2013; Meah *et al*., 2009; Simpson and Long, 2007). Similar opportunities to lead and manage are often not found as part of undergraduate training (Gordon, 2016).

The FGD with the student management committee elucidated their function and organisation structure as well as highlighting the challenges they faced. Students wanting to serve on the committee were voted in democratically and assigned to specific portfolios. The management structure described in the FGD was similar to that depicted by clinic founders despite THS closing from 2011 – 2016 (Johnston *et al*, 2018). The major difference once reopening was representation from disciplines across the faculty.

In addition to the management and leadership skills imparted to the students, participating as part of the management committee may have further advantages. The students who were part of the leadership board of the HAVEN free clinic at Yale University reported improved attitudes towards interprofessional collaboration and following their experience would consider working with underserved communities (Scott and Swartz, 2013). Although the student management committee at THS did not describe in detail the interprofessional collaboration, they did note the importance of representation from professional groups within the faculty.

Measures to “improve institutional memory” (Hemba and Plumb, 2011, pg. 171) are important in a SRC as the student management committee normally changes on an annual basis. To ensure continuity in leadership THS has put various measures in

place such as assigning more than one student per portfolio and the involvement of students from different years of study. In addition, they appointed a development committee.

The committee described the responsibility they had to both the community THS serves and the students in ensuring the continuation of the project. Students at times felt unequipped to deal with these tasks in addition to their studies. They called for guidance from an oversight board, especially in expanding services and the recruitment of volunteers. It is essential that there is collective responsibility with support from stakeholders such as the faculty and church. Initially it was decided that the church, was accountable for maintaining the premises while the faculty was responsible for the day-to-day administration and management of the services (Johnston *et al.*, 2019). However, most of these tasks have been left to the students. With the demise of the steering committee, the student management committee has even less support and the formation of an advisory committee is now pivotal.

Participating in the management of a SRC may positively influence the careers of students. The JeffHOPE clinics in Philadelphia observed that student leaders were more likely to work in primary healthcare post-graduation (Hemba and Plumb, 2011). While Mendelsohn (2014) explains the importance of SHAWCO, based at the University of Cape Town, in developing future healthcare advocates and leaders. The experience of leading and managing in a SRC seems unmatched in the formal curriculum, therefore participation should be encouraged and the necessary support provided.

4.5.3. Conclusion

The interprofessional student management committee at THS assume responsibility for the operation and management of the clinic. Students are assigned to specific portfolios with defined duties. Students involved reported to have learnt leadership and management skills. To ensure sustainability in leadership the committee has put various measures in place. The committee understanding the responsibility they have to both the students and the community call for assistance and guidance from an advisory committee. Further studies need to investigate whether participating in the student management committee influenced their future careers.

CHAPTER 5: COMPONENT 3 – PROFILING THE HEALTH OF THE HOMELESS

The good physician treats the disease; the great physician treats the patient who has the disease.
Osler as cited in Barber (2017)

5.1. Introduction

The fifth chapter profiles the health of the homeless presenting at THS. This retrospective record review analysed patient demographics, presenting and prevailing complaints, treatment provided, as well as the frequency of patient visits to THS and referrals.

The results of this component contributed towards the manuscript entitled *A Profile of the Health of Homeless at an Inner City Primary Health Care Clinic in South Africa* accepted for publication in the Journal of Health Care for the Poor and Underserved.

The results from this study contextualise the services provided by THS versus the needs of the homeless. Parallels can be drawn between these results and the findings from the FGDs with the homeless (see Section 4.2) and contributed towards the proposed model of sustainability in Chapter 8.

5.2. Paper 4: A Profile of the Health of Homeless at an Inner City Primary Health Care Clinic in South Africa

The journal permits use of the article by author(s) as stipulate in Appendix 21.

ORIGINAL PAPER

A Profile of the Health of Homeless at an Inner City Primary Health Care Clinic in South Africa

Deanne Johnston, BPharm, MPharm
Patricia McInerney, PhD
Jacqui Miot, BPharm, PhD

Abstract: People who are homeless present for care with poor health status, influenced by their physical and social environment. Trinity Health Services is an interprofessional student- run clinic providing free health care to the inner city homeless of Johannesburg, South Africa. This descriptive survey profiled the disease conditions of the homeless through a retrospective review of patient files, documented on a predesigned case report form. The data were analysed using descriptive statistics. A total of 240 patient visits were reviewed from January– December 2016. Several patients reported consuming alcohol (n=76), smoking cigarettes (n=80) and/or using recreational drugs (n=17). Patients commonly presented with conditions related to the respiratory (n=56) and digestive systems (n=32). The clinic dispenses medication according to a restricted formulary where analgesics (n=93), antibiotics (n=33), antihistamines (n=25) and vitamins (n=20) were prescribed frequently. This study provided baseline information to which the clinic can tailor the services provided. *Key words:* Homeless, student- run clinic, inner- city, primary health care.

Homelessness can be divided into three levels of housing: primary (no shelter or housing), secondary (temporary housing) and tertiary (access to a form of housing). Homelessness is also categorized according to duration as temporary, episodic, or permanent.[1] Almost ten years ago, the homeless population in South Africa was estimated to be between 100,000 and 200,000.[1] Johannesburg is the largest city in South Africa with an estimated population of 4.4 million according to the 2011 census.[2] A study conducted in 1998 found 7,456 homeless people in the inner city with more than 80% living on the pavements and streets, and the remaining 20% residing in shelters and homes.[3]

The homeless, a vulnerable group in society, are more prone than others to physical and mental health care problems.[4] Numerous psycho- social factors such as substance

DEANNE JOHNSTON *is affiliated with Department of Pharmacy and Pharmacology, Faculty Health Sciences, University of the Witwatersrand, Johannesburg, South Africa.* ***PATRICIA MCINERNEY*** *is affiliated with Centre for Health Science Education, Faculty Health Sciences, University of the Witwatersrand, Johannesburg, South Africa.* ***JACQUI MIOT*** *is affiliated with Health Economics and Epidemiology Research Office, Department of Internal Medicine, School of Clinical Medicine, Faculty of Health Sciences, University of Witwatersrand, Johannesburg, South Africa. Please address all correspondence to Deanne Johnston, Department of Pharmacy and Pharmacology, Faculty Health Sciences, University of the Witwatersrand, Johannesburg, South Africa. Email address: deanne.johnston@wits.ac.za.*

© Meharry Medical College Journal of Health Care for the Poor and Underserved 30 (2019): 1455–1466.

abuse, and mental and physical health problems are drivers of homelessness upon which interventions may be structured.[1] Communicable, respiratory, and cardiovascular diseases in the homeless have been linked to poor living conditions.[5]

Documentation of the health of the homeless worldwide is limited. However, available information shows high rates of acute and chronic illnesses.[6,7,] This could be explained with reference to the reasons documented by the Institute of Medicine (U.S.) Committee on Health Care for Homeless People,[7] who described interactions between the homeless and health that are not observed elsewhere. The homeless may have existing health problems (e.g., mental disorders, addictions) which contribute to homelessness, and other health problems (e.g., malnutrition, physical assault) may arise because of homelessness as well as because of the homeless person facing specific challenges such as the storage of medication.

In the South African setting, the homeless report accessing public health care services but face further challenges such as the cost of travelling and long waiting times at clinics as well as inability to produce proof of residential address and identification documents.[8] Therefore numerous non- profit organizations, often associated with religious groups, have stepped in to fill this gap and provide limited health care services [9,10]

Trinity Health Services (THS), a student- run clinic, was established in the early 2000s by students from the Faculty of Health Sciences, School of Clinical Medicine, in collaboration with priests from the Holy Trinity Catholic Church. A few medical students observed the need to provide basic wound care to the homeless community who attended a soup kitchen at the church on Monday evenings. The services of the clinic quickly expanded and the need for a pharmacy was identified. The clinic was closed in 2010, until a pharmacy license could be obtained for Trinity Pharmacy. It reopened in January 2016, offering acute medical care and pharmaceutical services provided by medical and pharmacy students under supervision. Patients needing to be treated for chronic conditions or specific services that cannot be supplied by THS are referred to the nearest community health care facility.

There is limited information regarding the health of the homeless across South Africa[11] and, particularly, those in the inner city of Johannesburg.[3,12,13] Faced with the dearth of local information relating to the health of the homeless, we saw the need to document the number of patient visits and describe the disease profile of the patients. This in turn will help the clinic evaluate the current services offered and identify additional services needed. Thus, the research question for this study was, What were the conditions that the patients presented with at THS and how were they managed?

Methods

A cross- sectional record review of all patient files (n=178) from 1 January to 31 December 2016 was undertaken for patients 18 years and over. The setting was the THS clinic, which operates every second Monday evening.

When visiting the clinic for the first time, patients are given a patient number corresponding to their file number, in which subsequent visits are documented. Each patient visit is recorded with documentation of the presenting complaint, previous medical and surgical history, social and travel history, family history, examination, assessment and treatment plan. The presenting conditions/d iseases were assigned a code in accordance with the International Statistical Classification of Disease and Related Health Problems (ICD-10).[14]

Data analysis. Data were transcribed onto a purpose- designed case report form and captured electronically in Microsoft Excel 2010. Statistica™ (version 13.2) analysis software was used to generate descriptive statistics.

Ethical considerations. Study approval was obtained from the Human Research Ethics Committee (Medical) of the University of the Witwatersrand (M1703109). Each patient file was assigned a unique study number. A list of study numbers with corresponding patient names and surnames was kept in a password- protected document, only accessible to the researchers.

Results

Patient demographic characteristics. A total of 178 patient files with 240 consultations were reviewed. The mean age was 37.1 years, with a range of 18 to 73 years. The majority of the patients identified as male (n=142: 79.7%). Most patients (n=144: 80.9%) visited the clinic once during 2016 (see Figure 1).

Vital signs. Blood pressure was recorded in 211 of the consultations where the systolic and diastolic ranges were 88–2 14 mmHg and 50–116 mmHg respectively. When categorised according the 8th Joint National Committee (JNC 8) Guidelines[15] for managing adults with hypertension, 16% (n=38) of the patients presented at the clinic with a blood pressure in the range of Stage 1 hypertension, ≥140/9 0mmHg (see Figure 2). Two patients were in hypertensive crisis, systolic greater than 180mmHg and/or diastolic greater than 120mmHg (see Figure 2).

Heart rates ranged between 50– 120 beats per minute (n=212). Further analysis

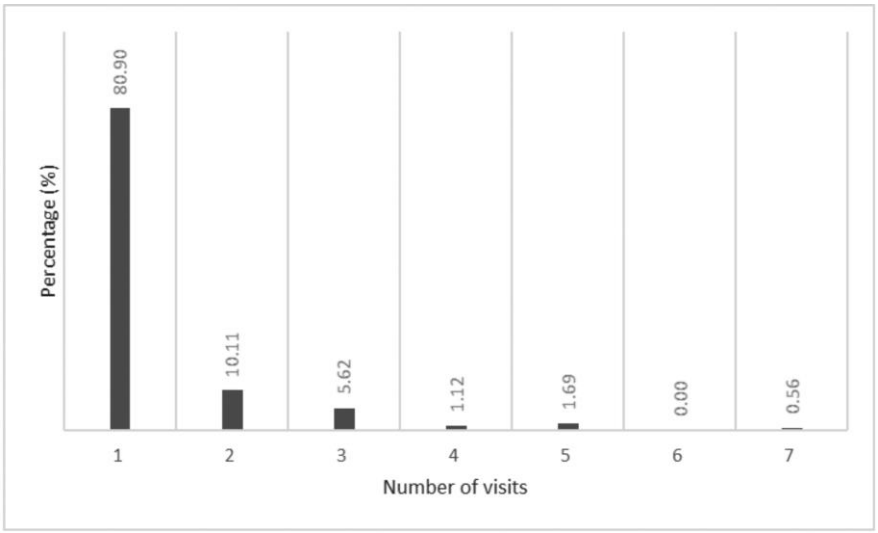


Figure 1. Distribution of number of visits to THS (n=240).
Note: THS = Trinity Health Services.

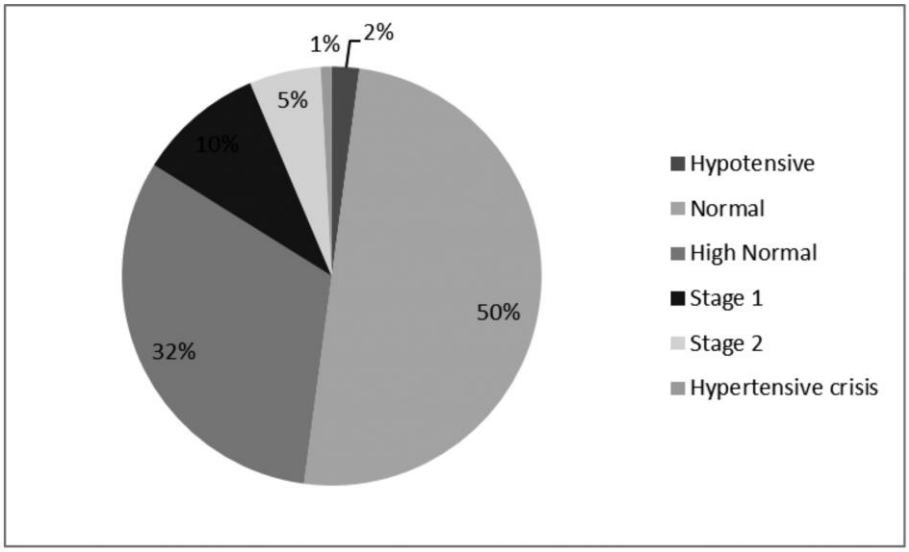


Figure 2. Classification of blood pressure measurements according to JNC 8 Guideline (n=236).
Note: JNC = Joint National Committee

revealed that 3.8% (n=8) were bradycardic (less than 60 bpm), 84.4% (n=179) normal (60– 90 bpm) and 11.8% (n=25) tachycardic (>90bpm).

Social history. A total of 112 patients reported smoking cigarettes (n=76), consuming alcohol (n=80), and/or using recreational drugs (n=17). The recreational drug most commonly used was cannabis (n=13), while cough syrup, "nyaope," methaqualone, and methamphetamine were used by one patient in each instance. Nyaope, a street drug commonly used in South Africa, contains a cocktail of ingredients: heroin, efavirenz (antiretroviral medication), rat poison, and acid. It is combined with cannabis and smoked.[16] It was common, in this smaller group, that patients demonstrated more than one of these habits (see Figure 3).

Past medical history. A total of 74 chronic diseases were documented, with just under half being on medication (see Figure 4). Two or more co-morbidities were documented in 11 patients, and nine of these patients reported taking medication.

Thirty-one patients (17.4%) knew they were HIV positive and ten of these patients reported taking antiretroviral treatment. Twenty patients were hypertensive but only five were taking antihypertensive medicine(s) (see Figure 4). Seventeen patients reported having previously had tuberculosis (TB). A further three patients had active TB and were currently on treatment (see Figure 4).

Diagnosis at consultation and medication dispensed. The diagnosis at the time of the visit and the prescribed medication were documented. In 17.5% (n=42) of consultations the diagnosis was not documented. Figure 5 summarises the diagnoses in categories using the alphabetical index of the ICD code. There were 258 codes assigned according to the diagnoses provided.

Medication prescribed was documented in 72% (n=171) of the consultations. Figure 6 summarises the medication prescribed according to the route of administration.

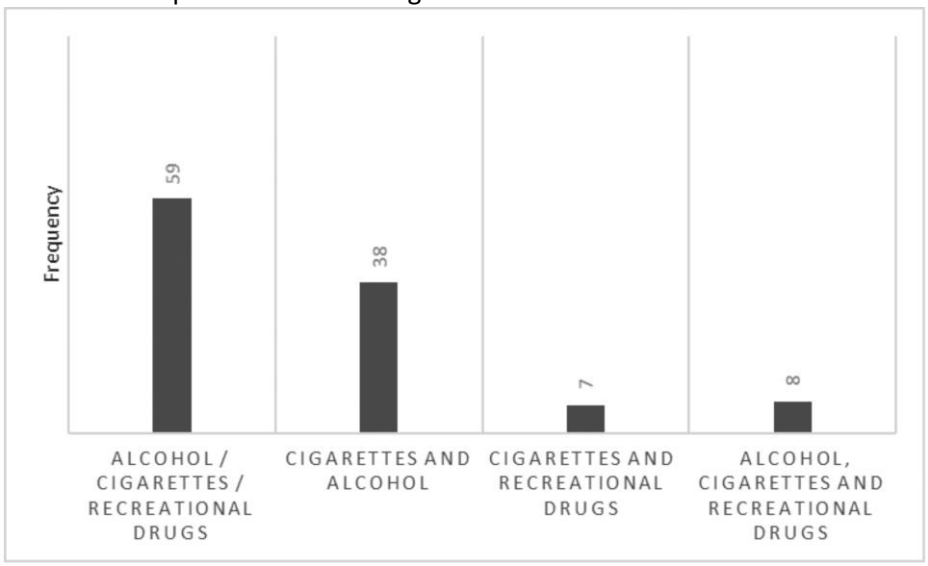


Figure 3. Distribution of habits (n=104).

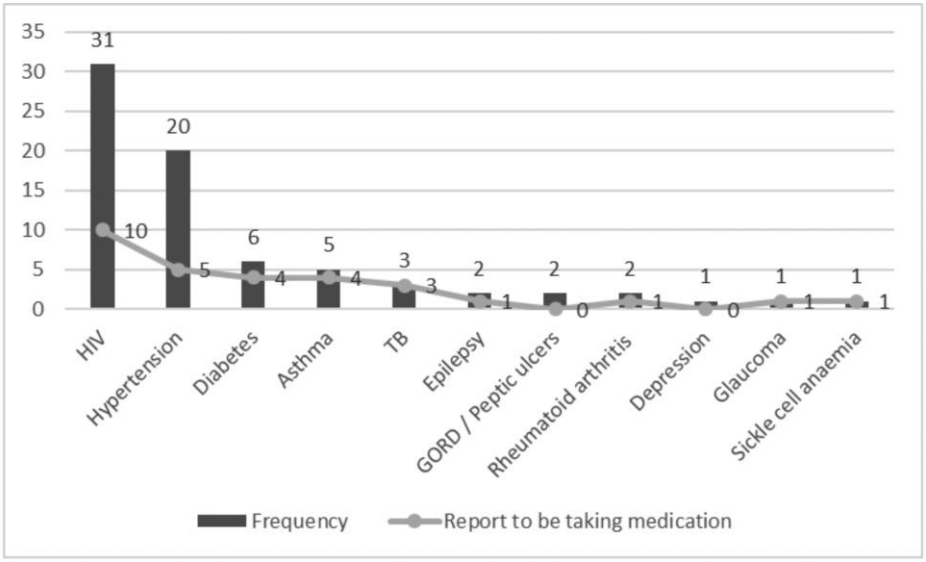


Figure 4. Distribution of previous medical histories treated (n=74).

The most frequently prescribed medications (38.8%; n=93) were analgesics, antibiotics (13.8%; n=33), antihistamines (10.4%; n= 25) and vitamins (8.3%; n=20).
As reflected in Figure 5, the most commonly presenting diagnoses were associated with diseases of the respiratory system (21.7%, n=56), digestive system (12.4% (n=32), infectious and parasitic diseases (10.9%, n=28) and injury, poisoning and certain other consequences of external causes (10.1%, n=26). The commonly occurring codes within these categories and the treatment provided were as follows:

Table 1.

PATIENT INFORMATION RELATING TO DEMOGRAPHICS, VITAL SIGN MEASUREMENTS, AND SOCIAL HABITS

	N	Mean	Median	Min.	Max.
Age (years)	174	37.142	35	18	73
Systolic	211	121.340	120	88	214
Diastolic	211	78.81	78	50	116
HR	212	76.14	76	50	120
	Males	Females	Not specified		
Sex (%)	142 (79.66)	17 (9.60)	19 (10.73)		
Social habits	N	%			
Alcohol consumption	76	42.70			
Cigarette smoking	80	44.94			
Recreational drugs	17	9.55			

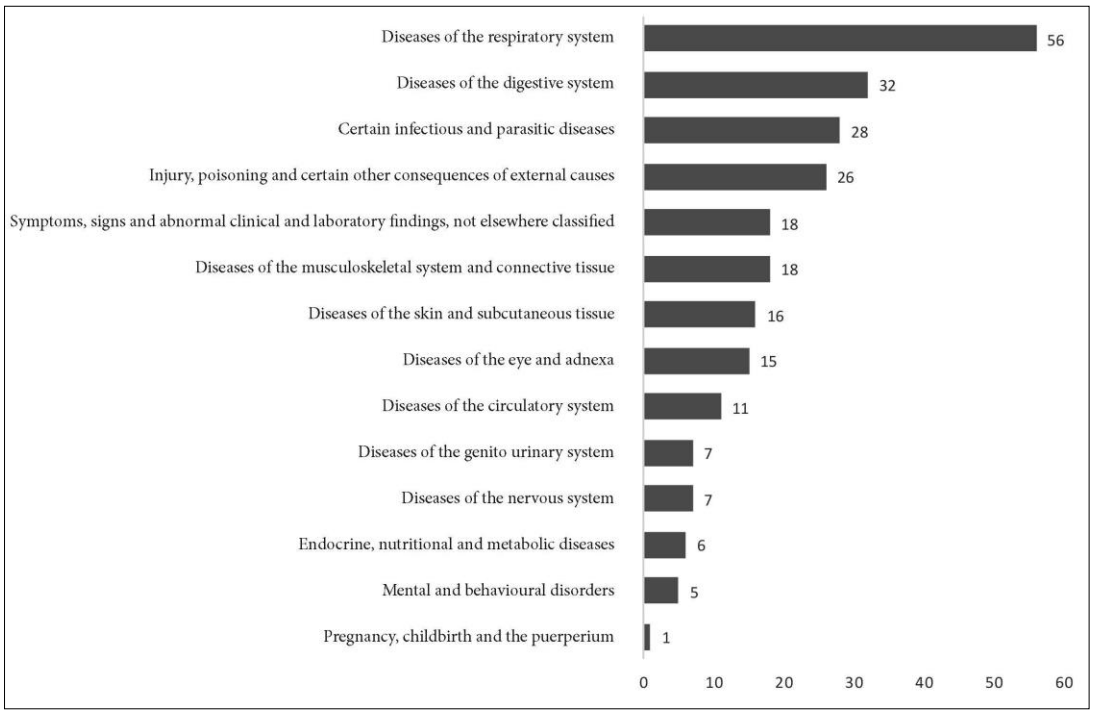


Figure 5. Frequency of diagnoses categorized according to ICD10 codes (n=258).

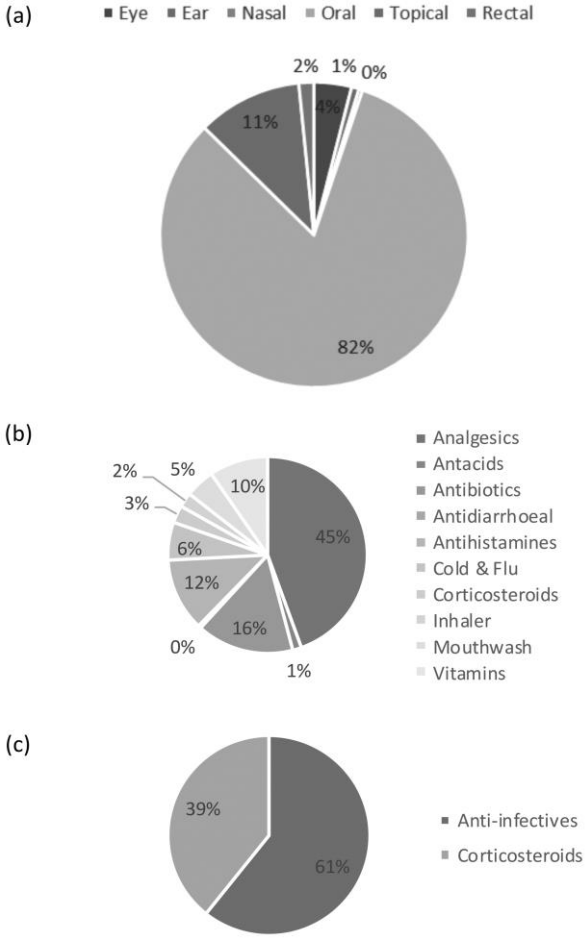


Figure 6. Medication categorised according to route of administration (n=254), (b) medication dispensed via the oral route of administration (n= 209), and (c) medication dispensed via the topical route of administration (n=28).

Diseases of the respiratory system (code J) (n=56). These included upper respiratory tract infections (33.9%), lower respiratory tract infections (18.6%) and pneumonia (10.8%). Antibiotics were prescribed for 35.7% (n=33). Respiratory diseases were more common in patients who smoked, had HIV, active TB or history of TB.
Diseases of the digestive system (code K) (n=32). Sixteen of the diagnoses related to the oral cavity. Most (n=10) presented with dental caries, followed by periodontal disease (n=3), mucositis (n=2) and periapical abscess (n=1). Seven patients were prescribed an antiseptic mouthwash while oral antibiotics were used infrequently in these patients (n=2).
Certain infectious and parasitic diseases (code A–B) (n=28). Tuberculosis and HIV were suspected in seven and four patients respectively based on patient history, presenting conditions and findings upon examination. These were all referred to a community health centre for testing and treatment. Seven patients presented with infections of the anogential region which may have been sexually transmitted. These were treated using the syndromic treatment approach.
Injury, poisoning and certain other consequences of external causes (code S– T) (n=26). Due to the variety of codes assigned within this group it was difficult to draw parallels between common ailments. Muscular strains (n=4) and joint sprain (n=4) were treated with oral analgesics and/or anti-inflammatories. Lacerations (n=2) and superficial injuries (n=3) were rarely diagnosed; those diagnosed were treated with topical antiseptics or antibiotics.
Few patients were diagnosed with mental and behavioral disorders (code F) (n=5) or diseases of the nervous system (code G) (n=7). Anecdotally, doctors working in the clinic have stated that they think there is a pattern of underdiagnosing such conditions.
Referrals. Almost half (42.1%, n=100) of the patients were referred to nearby public health care facilities. These were to a community health care clinic (n=73) and public hospitals (n=14).

Discussion

This study reviewed 178 patient files with a total of 240 consultations over the period of one year. The study sample, although small, provides some information on the health problems facing the homeless in Johannesburg. These results provide valuable feedback to THS and related health care providers in terms of common conditions and treatment of the homeless as well as insight into services needed.
The percentage of patients found to use recreational drugs was lower than expected and lower than that reported by Seager and Tamasane.[11] It was also much lower than what was found in a health care facility in Boston, where alcohol, tobacco, or drug use contributed to half the deaths of homeless people over a five- year period.[17] This study showed that there were higher incidences of respiratory diseases in patients who smoked. This calls for health education and highlights the importance of smoking cessation programs.
Illnesses relating to the respiratory system, upper and lower respiratory tract infections, as well as pneumonia were the most commonly diagnosed. Six patients reported to have been previously treated for TB or active TB and five were asthmatics. Wrezel[18], in reviewing respiratory tract infections in the homeless, deduced that tuberculous and non- tuberculous respiratory conditions have a higher prevalence among the homeless than among others and may be associated with higher mortality rates. This is further compounded by chronic lung conditions such as asthma and chronic obstructive pulmonary disease. Approximately 0.8% of South Africans annually develop active TB.[19] It is expected that a higher prevalence of TB would be found in the homeless due to inadequate housing and overcrowding and poor ventilation in shelters.[20] Many patients (n=74) presented with chronic diseases. The burden of non- communicable diseases is reported to be the highest in poor urban communities.[21] Of concern was the reported (non-)compliance with taking medication in treating existing chronic conditions. Documented factors affecting medication adherence among the homeless, related to accessing medication and health care and to retaining medications once dispensed,[22] may explain non- compliance in this community. The study confirmed the need for treatment of chronic diseases and suggests a review of the scope of the clinic as well as the development of strategies to improve medication compliance.

In 2016 the clinic did not offer voluntary HIV testing and counselling. There were 31 patients who self- reported they were HIV positive. This percentage is lower compared with a previous study in which the HIV prevalence in the inner city homeless clinic in Johannesburg was 23.5%,[13] yet is higher than the overall HIV prevalence rate (12.57%) among the South African population in 2017.[23] Of concern is that less than a third of these patients reported taking antiretrovirals. Homelessness has been established as a structural barrier to adherence to antiretroviral therapy.[24] The clinic has recently joined with a research institute associated with the university to offer HIV testing as part of the clinic services. In line with the universal test and treatment guidelines adopted by South Africa in 2016,[25] patients testing positive are referred for further testing and to start antiretroviral treatment. Dental treatment is not offered at the clinic, but a clear need exists. A high prevalence of dental caries in the homeless has been reported and these patients are less likely to visit a dentist.[26] In South Africa this is further compounded by a shortage of dentists[27] and research shows that people of lower socioeconomic status are less likely to visit dentists routinely for preventative consultations.[28]

Just over half of the patients (n=100) were referred to public health care facilities. This may be due to the limited services offered at THS and the restricted medication formulary. Although the clinic is fulfilling a health care need, far more is needed to address local and national needs of the homeless. A coordinated effort beyond the immediate treatment of prevailing conditions is needed, including policies to address homelessness and reduce health disparities.[29]

Study limitations and further recommendations. Reviewing patient information retrospectively is inherently difficult as missing information often cannot be retrieved and confirmation of information with the clinician is not possible. An electronic system to enable the recording of consultations and assignment of an ICD10 code by the clinician would assist in continual evaluation of records. Patients frequently presented with conditions relating to respiratory conditions. Future studies could investigate if commonly occurring conditions are treated in accordance with guidelines.

Conclusion. This study provides baseline information in profiling the health of the homeless community in Braamfontein, South Africa and identified areas of need for further services in this community. This includes addressing chronic conditions, dental services and health promotion and education. The health care of the homeless should be prioritised; coordination between non-governmental organizations and public health care systems is pivotal to providing sustainable services that this community can access.

Acknowledgments

We acknowledge the following students, who assisted with data collection: Robin Andrews, Buhle Mquku, Simphiwe Buthelezi, Santhiska Pather, Simbarashe Dungwa, Kelebogile Mafokate, Debra Harmuth, Makhosazane Radebe, Anastasia Mallabone, Jarryd Stephenson, Robert McKay, Vuyisile Tshangela, Nwabisa Mesatywa, Margaretha Zondagh and Ntheti Morapeli.

References

1. Rule- Groenewald C, Timol F, Khalema E, et al. More than just a roof: unpacking homelessness. Pretoria, South Africa: The Human Sciences Research Council (HSRC), 2015. Available at: http:// www .hsrc.ac.za/ en/ research- outputs/ view/ 7360.
2. Statistics South Africa. City of Johannesburg. Pretoria, South Africa: Statistics South Africa, 2018. Available at: http:// www .statssa .gov.za/ ?page_id=1021&id=city-of -johannesburg- municipality.
3. Olufemi O. Street homelessness in Johannesburg inner- city: a preliminary survey. Environment and Urbanization. 1998 Oct;10(2):223– 34. https:// doi .org/ 10.1177/ 095624789801000210
4. Larkin M. Vulnerable groups in health and social care. London, England: Sage Publication Ltd, 2009. https:// doi .org/ 10.4135/ 9781446279472
5. World Health Organization (WHO). Housing and Health. Geneva, Switzerland: WHO, 2018. Available from: http:// www .who.int/ hia/ housing/ en.
6. Fazel S, Geddes JR, Kushel M. The health of homeless people in high-income countries: descriptive epidemiology, health consequences, and clinical and policy recommendations. Lancet. 2014 Oct 25;384(9953):1529– 40.

https:// doi .org/ 10.1016/ S0140-6736(14)61132-6
7. Institute of Medicine (US) Committee on Health Care for Homeless People. Homelessness, Health, and Human Needs. Washington, DC: National Academies Press, 1988. Available at: https:// www .ncbi.nlm.nih .gov/ books/ NBK218232.
8. Wentzel D, Voce A. Health seeking experiences and behaviours of homeless people in Durban, South Africa. Africa Journal of Nursing and Midwifery. 2012;14(2): 77– 89.
9. Denis Hurley Centre. Usizo Lwethu Afrisun Clinic. Durban, South Africa: Denis Hurley Centre, 2018. Available at: http:// www .denishurleycentre .org/ page/ outreach #%2FPage%2F17784%2Fusizo-lwethu- afrisun- clinic.
10. MES. MES Johannesburg. Johannesburg, South Africa: MES, 2018. Available at: http:// mes .org.za/ index .php/ 2015-11-17-13-25-02/ mes- johannesburg.
11. Seager JR, Tamasane T. Health and well- being of the homeless in South African cities and towns. Development Southern Africa. 2010 Mar 1;27(1):63– 83. https:// doi .org/ 10.1080/ 03768350903519358
12. Moyo U, Patel L, Ross E. Homelessness and mental illness in Hillbrow, South Africa:
a situation analysis. Social Work. 2015 May;51(1):1– 21.https:// doi .org/ 10.15270/ 51-1-425
13. Lohrmann GM, Botha B, Violari A, Gray GE. HIV and the urban homeless in Johannes burg. Southern African Journal of HIV Medicine. 2012 Oct;13(4):174– 7.
https:// doi .org/ 10.4102/ sajhivmed.v13i4.111
14. World Health Organization (WHO). International statistical classification of diseases and health related problems, 10th Revision, Volume 1. Geneva, Switzerland: WHO, 2016.
15. Whelton PK, Carey RM, Aronow WS, et al. 2017 ACC/ AHA/ AAPA/ ABC/A CPM/ AGS/ APhA/ ASH/ ASPC/ NMA/ PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: a report of the American College of Cardiology/ American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018 May 15;71(19):2199– 2269. Epub 2017 Nov 13.
https:// doi .org/ 10.1016/ j.jacc.2017.11.005
PMid:29146533
16. Mokwena KE, Huma M. Experiences of'nyaope'users in three provinces of South Africa: substance abuse. African Journal for Physical Health Education, Recreation and Dance. 2014 Dec 1;20(Supplement 1):352– 63. (Can't find.)
17. Baggett TP, Chang Y, Singer DE, et al. Tobacco-, alcohol-, and drug- attributable deaths and their contribution to mortality disparities in a cohort of homeless adults in Boston. Am J Public Health. 2015 Jun;105(6):1189– 97. Epub 2014 Dec 18. https:// doi .org/ 10.2105/ AJPH.2014.302248 PMid:25521869
18. Wrezel O. Respiratory infections in the homeless. UWO Med J. 2009;78(2):61– 5.
19. Kanabus A. Information about tuberculosis. West Sussex, England: Global Health Education (GHE), 2017. Available at: https://w ww.tbfacts. org/ tb- statistics- south- africa.
20. Draper B, Pienaar D, Parker W, et al. Recommendations for policy in the Western Cape province for the prevention of major infectious diseases, including HIV/ AIDS and tuberculosis. Cape Town. 2007 Jun.
21. Mayosi BM, Flisher AJ, Lalloo UG, et al. The burden of non- communicable diseases in South Africa. Lancet. 2009 Sep 12;374(9693):934– 47. Epub 2009 Aug 24. https:// doi .org/ 10.1016/ S0140-6736(09)61087-4
22. Whitney N, Glazier R. Factors affecting medication adherence among the homeless:
a qualitative study of patients' perspectives. Univ Toronto Med J. 2004 Dec 1;82(1): 6– 9.
23. Statistics South Africa. Mid- year population estimates. Pretoria, South Africa: Statistics South Africa, 2018. Statistical release P0302.
24. Rudy BJ, Murphy DA, Harris DR, et al. Patient- related risks for nonadherence to antiretroviral therapy among HIV-infected youth in the United States: a study of prevalence and interactions. AIDS Patient Care STDS. 2009 Mar;23(3):185– 94.
https:// doi .org/ 10.1089/ apc.2008.0162 PMid:19866536
25. World Health Organization (WHO). Prevent HIV, test and treat all: WHO support for country impact. Geneva, Switzerland: WHO, 2016. Available at: https:// www .who .int/ hiv/ pub/ progressreports/ 2016-progress- report/ en.
26. Celberg L, Linn LS, Rosenberg DJ. Dental health of homeless adults. Spec Care Dentist.
1988 Jul– Aug;8(4):167– 72. https:// doi .org/ 10.1111/ j.1754-4505.1988.tb00725.x

27. Vedan TA, Kotsane DF. 'Dentistry: Not a Critical Skill?'. South African Dental Journal. 2016 Jun;71(5):206–11.
28. Ayo- Yusuf IJ, Ayo- Yusuf OA, Olutola BG. Health insurance, socio- economic position and racial disparities in preventive dental visits in South Africa. Int J Environ Res Public Health. 2013 Jan 2;10(1):178– 91. https:// doi .org/ 10.3390/ ijerph10010178 PMid:23282482
29. Koh HK, O'Connell JJ. Improving health care for homeless people. JAMA. 2016 Dec 27;316(24):2586– 7. https:// doi .org/ 10.1001/ jama.2016.18760
PMid:28027356

CHAPTER 6: COMPONENT 4 – COST ANALYSIS

…you have value...

Participant 4 (FGD homeless community 3, Chapter 4.1)

6.1. Introduction

The sustainability of THS is greatly affected by the operating costs, dictating the funds it needs to raise to maintain the current services. This chapter comprises of a cost analysis determining and calculating the economic and financial costs in establishing and operating a SRC. The cost of treatment per patient was determined based on the cost of consumables used in the consultation and the medication dispensed.

The cost analysis manuscript, *Volunteering, health and the homeless – The cost of establishing a student-run primary healthcare clinic serving the inner-city homeless in South Africa*, was submitted to BMC Health Systems Research on 24 May 2019. The success of maintaining the current services and possible expansion are impacted by the results presented in this chapter and inform the proposed model of sustainability.

6.2. Paper 4: Volunteering, health and the homeless – The cost of establishing a student-run primary healthcare clinic serving the inner-city homeless in South Africa

This section is formatted according to BMC Health Systems Research style requirements.

Title: Volunteering, health and the homeless – The cost of establishing a student-run primary healthcare clinic serving the inner-city homeless in South Africa

Running title: Cost of establishing a student-run primary healthcare clinic serving the inner-city homeless

Abstract

Background: Those who are homeless are more prone to communicable, respiratory and cardiovascular diseases and are less likely to access healthcare services. In South Africa there are no specific public healthcare services tailored to the needs of these communities, particularly if they are immigrants. Trinity Health Services is a student-run inner-city clinic providing free healthcare to the homeless of Johannesburg, South Africa. The clinic operates two nights per month and provides treatment for mainly acute conditions. The purpose of this study was to determine the costs of establishing and operating a student-run clinic for an indigent population.

Methods: This costing analysis used a mixed-methods approach combining an ingredients-based and top-down methodology. The costs, capital and recurrent, pertaining to the establishment and operating of the clinic as well as the cost of treatment per patient were identified and quantified from 1st January 2016 – 31st December 2017.

Results: The capital costs incurred in establishing the clinic were calculated to be £10 968.57 (ZAR 214 157.08) and included building alterations, equipment purchased, installations, furniture, application for a pharmacy license, consumables and medications. The recurrent costs per annum were estimated at £17 730.72 (ZAR 346 185.54) and comprised of overheads and maintenance, rental, personnel, pharmacy license, consumables and medication. The cost of treatment per patient, included medication dispensed and consumables used in the consultation, was estimated at £3.54 (ZAR 69.05) per visit.

Conclusions: This study summarised the costs of establishing and operating a student-run clinic providing pertinent information essential to the sustainability of the service. It also provides a model for costs associated with free clinics in faith-based and university settings.
Word count: 267

Keywords:

Cost analysis, Establishment, Operational, Student-run clinic

Background

The number of homeless globally was estimated at 100 million in 2005 [1]. The homeless population in South Africa was estimated between 100 000 – 200 000 in 2008 [2]. Many South Africans come to Johannesburg, the economic hub of the county, in search of employment. A study conducted in 1998 surveyed 7456 people who were homeless in the inner-city with the majority residing on the streets and pavements [3]. These numbers are most likely to have increased with the decline in employment rates [4], increasing population and the ever-increasing cost of living. In South Africa, social determinants relating to housing, water and sanitation, nutrition, alcohol and substance abuse as well as social cohesion, lead to premature mortality [5]. These social determinants have perhaps the greatest impact on these vulnerable population groups such as the homeless. Furthermore, there are no specialised healthcare services for the homeless provided by the state. This gap is often filled by non-profit organisations such as the Usizo Lwethu Clinic [6] in Durban and MES Impilo Clinic [7] in Johannesburg.

Seager and Tamasane [8] assessed the health characteristics and access to health care of 1247 homeless adults and children in Gauteng, Mpumalanga, Limpopo and the Western Cape. Their study identified sexual assault, sexually transmitted infections, tuberculosis, human immunodeficiency virus, skin diseases, pregnancy and malnutrition as prominent health issues and more than 20% of the adult respondents reported drug and alcohol abuse. The barriers to access to healthcare faced by the homeless included long waiting times and inability to provide proof of residence and/or identification documentation [9] as well as discrimination by staff [8]. In South Africa there is a fragmented healthcare system where approximately only 17% of the population is covered by private medical insurance schemes [10]. The resource limited public healthcare sector provides care for the vast majority of the population. In 2015/2016 the healthcare bill provided for R3 332.00 to be spent per person using public healthcare services [11]. However, there is a move to radically transform the healthcare sector through the implementation of a national health insurance (NHI) policy. The NHI aims to provide equitable, affordable and universal coverage to all South Africans [12]. Primary healthcare forms the foundation of such a system which requires substantial funding and resources to provide cost-effective care for all. There is, too, a shift from curative to preventative models of care in bringing these services to communities.

There is no information relating to the morbidity and mortality amongst the homeless in South Africa. Several studies have shown mortality and morbidity rates to be higher in the homeless [13, 14, 15]**.** Homelessness itself is an independent risk factor for mortality for certain conditions, however mortality rates were higher in the homeless in those with substance abuse disorders and infectious diseases [16]. Medical students have responded to the need for additional healthcare services through the establishment of student-run clinics (SRCs). SRCs provide healthcare services where health sciences students take the leading role supervised by professional staff. There are growing numbers of SRCs globally. Simpson and Long [17] surveyed 111 SRCs in 49 Medical Schools in the United States. In Canada there are eight SRCs providing primary healthcare services [18], while in South Africa there are five SRCs associated with Medical Schools [19]. There are different models of SRCs and these vary considerably according to the location of the clinic, services provided and costing of treatment (Table 1).

Table 1: Various models of SRCs

Location	**Within shelter/facility** E.g. Project Light [20]	**Community based** E.g. University of Saskatchewan SRC [21]	**Mobile** E.g. Students' Health and Welfare Centers Organization [22]
Services	**Interprofessional team approach** E.g. Student Wellness Initiative Toward Community Health [18]	**Specialized services** E.g. Hands of hope [23]	
Cost of treatment	**Free service** E.g. Community Aid, Relief, Education, and Support (C.A.R.E.S.) clinic [24]	**Paid by patient** E.g. Chester Community Physical Therapy Clinic [25]	

The services provided by SRCs are supported by the communities they serve, although the number of patients served in such facilities is often unknown. Patients report to be satisfied with the services provided [26, 27, 28]. While studies have shown that SRCs are valued by both students and patients very little is known of the cost of such services or the cost impact to the healthcare system. The number of SRCs in the United States doubled in less than ten years (Smith, 2014), thus the need identify and quantify the costs involved in establishing and managing this service. The various models of SRCs (Table 1) further add to the complexity of the

costs involved. This study provides pertinent costing information to individuals and institutions considering establishing a volunteer clinic as well as identifying factors that would need to be addressed in order to ensure the continued sustainability of such a service. Thus both economic and financial costs as well as capital and operations costs were important to include.

Study setting

Trinity Health Services (THS) is a student-run clinic established in 2004 and is a partnership between the Faculty of Health Sciences, University of the Witwatersrand, and an inner-city church. The church is a place of refuge for homeless people residing in the city and provides daily soup kitchens. The clinic was started when two medical students saw an opportunity to provide basic first aid assistance to people attending the soup kitchen at the church. Soon the services expanded to provide acute primary healthcare and the need for a pharmacy to dispense medication was identified. The clinic was closed from 2011-2015 until a community pharmacy license was granted and reopened in 2016. THS operates on alternate Monday nights providing healthcare and treatment for people with mainly acute conditions. Those needing further assistance are referred to nearby public healthcare facilities. On average there have been 271 patient visits per year since the clinic reopened in 2016. The clinic not only benefits the homeless community through the provision of free healthcare services but is valued by student volunteers as an opportunity to serve the community while applying skills and knowledge learnt. THS is self-funded and is dependent on donations received from individuals and companies. The financial sustainability of the clinic is a concern as the community is growing more dependent on the services it provides. Understanding the costs of operating this type of clinic is an essential component towards ensuring financial sustainability of the service. The financial sustainability would also include ensuring ongoing supply of volunteer students, accessing affordable medications and consumables, managing increasing patient numbers and determining the services the clinic can afford to offer. The startup costs, including the cost of donated goods and services, offer useful information to organisations that are considering establishing a similar service. Therefore, the research questions for this study were:

What were the costs which contributed to the establishment and operating of a SRC?

What was the cost of treatment per patient in a SRC?

Methods:

The design of the study was a retrospective cost analysis which estimated the costs incurred when the clinic was established as well as the ongoing costs of operating the clinic as well as the cost of treatment per patient. The costing analysis used a mixed-methods approach combining an ingredients-based with a top-down methodology where appropriate.

The study period was from 1st January 2016 to 11th December 2017. The costing year was set at 2018 and costs outside that period were adjusted accordingly using the annual average Consumer Price Index [29]. South African Rands (ZAR) were converted to Pounds (£) using an exchange rate of 0.051 [30] (XE Currency Converter, 2018).

The costs pertaining to the establishment and operating of a SRC as well as the cost of treatment per patient were identified, quantified and valued. Costs were divided into capital and recurrent costs as per Table 2. Capital costs were costs incurred in establishing the clinic for instance building alterations. Recurrent costs refer to operating costs and were calculated per annum, for example consumables used. The costs were further divided into financial and economic costs. Financial costs refer to costs which the clinic incurred and paid for, such as medication. This is compared to economic costs which refer to costs that are valued, however, were not paid for by THS, for example donations of equipment. An Equivalent Annual Cost (EAC) for capital items was calculated at an interest rate of 5% based on recommendations from the South African Pharmacoeconomic Guidelines. It was assumed that the renovations, installations and license would have a life of 20 years, whereas furniture and equipment will have a life of 5 years. The upfront cost of stocking the medicines was not annualized due to the recurrent costs of maintaining the stock.

Descriptive statistics, illustrated using graphs and tables, were used to describe the costs obtained. Sources of data included procurement records, service agreements, patients' records and pharmacy prescriptions, architectural drawings and asset reports. Costs were captured and analysed using Microsoft Excel® 2010.
Ethical approval was obtained from the Human Research Ethics Committee of the University of the Witwatersrand (M170953). Pharmacy prescription records were

assigned study numbers and the list of study numbers and patient names were kept in a locked cupboard and only accessible to the researchers.

Table 2: Description of capital and recurrent costs

Capital costs	Recurrent costs
Building: *Description:* Area used by the clinic which includes the consultations rooms, pharmacy and waiting area *Costing method:* Proportion of floor space used *Valuation method:* Rental fees	**Consumables:** *Description:* Any items used in the consultation process that is neither a pharmaceutical or re-usable item (e.g. disposable gloves) *Costing method:* Per patient consumed quantity *Valuation method:* Expenditure records
Equipment: *Description:* Equipment used in the consultation rooms (glucometers, ECG machine) and pharmacy (e.g. dispensing system, temperature monitoring system, electronic balance) *Costing method:* Ingredient based *Valuation method:* Replacement and contract prices	**Medicines:** *Description:* Medicines which are used/administered in the consultation or dispensed to the patient to take home *Costing method:* Shared proportion of patients Not shared-quantity consumed *Valuation method:* Expenditure records
Furniture: *Description:* Includes tables, chairs, cabinets, shelving, beds etc *Costing method:* Proportion of lifetime use *Valuation method:* Replacement and contract price, rental fees	**Overheads and maintenance:** *Description:* Overhead costs include electricity, telephone, internet and stationary. Maintenance costs include pest control, fire extinguishers, waste disposal and house keeping *Costing method:* Proportion of personnel time, proportion of floor space *Valuation method:* Expenditure records
Consumables: *Description:* The cost of consumables purchased in stocking the consultation rooms and store rooms for the first-time *Costing method:* Ingredient based *Valuation method:* Expenditure records	**Personnel:** *Description:* Costs relating to supervising doctors and pharmacists as well as student volunteers *Costing method:* Locum rates for students and professional volunteers (doctors, nurses and pharmacists) *Valuation method:* Gross salary
Medicines: *Description:* Medicines ordered to stock the pharmacy for the first-time. *Costing method:* Ingredient based *Valuation method:* Expenditure records	

Results

Capital and recurrent costs

The costs of establishing and operating the clinic were identified and valued. The capital costs (i.e. cost of establishing the clinic) were £ 10 968.57 (ZAR 214 157.08)

(Table 3a). The recurrent costs (i.e. cost of operating the clinic) were calculated per annum and amounted to £17 730.72 (ZAR 346 185.54) (Table 3b). The economic and financial costs are reported in Figure 2.

Table 3: Summary of (a) capital and (b) recurrent costs

(a)

		Pharmacy		*Clinic*		*Total*	
Capital	Building	£985.41	ZAR 19 239.73	£1 377.17	ZAR 26 888.72	£2 362.58	ZAR 46 128.45
	Equipment	£1 601.19	ZAR 31 262.63	£862.93	ZAR 16 848.37	£2 464.12	ZAR 48 111.00
	Installation costs	£2 470.87	ZAR 48 242.78			£2 470.87	ZAR 48 242.78
	Furniture	£123.95	ZAR 2 420.00	£1 318.95	ZAR 25 752.00	£1 442.90	ZAR 28 172.00
	Pharmacy licensing	£826.99	ZAR 16 146.71			£826.99	ZAR 16 146.71
	Consumables	£58.92	ZAR 1 150.40	£810.24	ZAR 15 819.67	£869.16	ZAR 16 970.07
	Medicines	£531.95	ZAR 10 386.07			£531.95	ZAR 10 386.07
	Total Capital Costs					£10 968.57	ZAR 214 157.08

(b)

Recurrent (annual)	Overheads & Maintenance					£4 194.44	ZAR 81 894.77
	Rental	£2 700.79	ZAR 52 731.84	£2 251.72	ZAR 43 964.04	£4 952.51	ZAR 96 695.88
	Personnel	£2 291.88	ZAR 44 748.00	£4 842.35	ZAR 94 545.00	£7 134.23	ZAR 139 293.00
	Pharmacy licensing	£184.58	ZAR 3 603.88			£184.58	ZAR 3 603.88
	Consumables	£108.99	ZAR 2 127.90	£478.04	ZAR 9 333.56	£587.03	ZAR 11 461.46
	Medicines (incl labels and packaging)	£677.94	ZAR 13 236.55			£677.94	ZAR 13 236.55
	Total Recurrent Costs					£17 730.72	ZAR 346 185.54

Capital costs

The capital costs included the building alterations and installation costs, purchasing of furniture, equipment, consumables and medications as well as the pharmacy licensing fees.

Building alterations

The church provides a permanent space for the clinic and pharmacy. The clinic consists of three consultation rooms and a storage room. The consultation rooms were fitted with wash-hand basins including hot water totaling £ 895.34 (ZAR 17 481.21). The storage room, used to keep additional consumable materials and equipment, was fitted with fixed shelving amounting to £ 481.83 (ZAR 9407.51).. The alterations to the pharmacy were more extensive to meet the minimum requirements to be registered as a community pharmacy at a cost of £ 985.41 (ZAR 19 239.73) (Table 3a). The alterations included adding an additional entrance for

receiving stock, separate hand basin and sink with cold and hot running water, fixed counters for compounding and dispensing of prescriptions as well as storage of medications.

Equipment

The total cost of equipment was £ 2 464.12 (ZAR 48 111.00) (Table 3a). Equipment purchased for the consultation rooms, costing £ 653.66 (ZAR 16 848.37) (Table 3a) included point of care test machines, thermometers, ear, nose and throat diagnostic sets and blood pressure meters. The equipment for the pharmacy was guided once again by the legislative requirements and cost £ 1 601.19 (ZAR 31 262.63) (Table 3a). It included reference materials (£ 940.22, ZAR 18 357.49), dispensing and compounding equipment (£ 133.48, ZAR 2 606.14), portable air-conditioner (£ 230.43, ZAR 4 499.00) and a refrigerator (£ 245.84, ZAR 4 800.00).

Installation costs

Installation costs, £ 2 470.87 (ZAR 48 242.78) (Table 3a), included the temperature monitoring system (£ 38.41, ZAR 750.00) and computerized dispensing system (£ 2 432.46, ZAR 47 492.78).

Furniture

The cost of furniture was £1 442.90 (ZAR 28 172.00) (Table 3a). Furniture for the consultation rooms included examination beds, desks, chairs, storage cupboards and light stands. Trestle tables, chairs and curtain dividers were purchased for the waiting area. Less furniture was needed for the pharmacy and included chairs and shelving.

Pharmacy licensing

The cost of the pharmacy license, £ 826.99 (ZAR 16 146.71) (Table 3a), was a considerable expense in establishing the pharmacy. This cost included pharmacy premise's application for licensing paid to the National Department of Health of South Africa while the Recording of New Pharmacy, Recording of Pharmacy Owner and Application for Registration of the Responsible Pharmacist were fees paid to the South African Pharmacy Council. The Responsible Pharmacist, appointed by the

owner, is a registered pharmacist with defined duties and responsibilities to ensure the pharmacy complies with applicable legislation.

Consumables

Consumables needed to stock the consultation and storage rooms were purchased initially to ensure services could be provided. The consumable items purchased were costed at £ 869.16 (ZAR 16 970.07) (Table 3a). The clinic established minimum stock levels for consumable items based on projected patient numbers per month. Stationery purchased at £ 58.92 (ZAR 1 150.40) also contributed to the cost of consumables.

Medication

As per consumables purchased, a once-off consignment of medication was purchased according to the clinics' formulary to initially stock the pharmacy. This holding stock was considered a capital cost, thereafter the replenishment of medicines was attributed to the operating costs of the clinic. The clinic purchases medication at the single-exit price (SEP) through a wholesaler. The SEP is the regulated price at which a medication may be sold at in the private sector in South Africa. The clinics formulary consisting of 53 items, was in alignment with Standard Treatment Guidelines and the Essential Medicines List of South Africa [31]. It also includes additional medications as requested by prescribers in consultation with the pharmacist. Minimum quantities for medication were established and amounted to £ 531.95 (ZAR 10 386.07) (Table 3a).

The total cost of medication is however dependent on several factors which include the availability of active ingredients needed to manufacture the medicine, the cost of originator versus the generic medicine and the additional cost of medication if packed in patient-ready packs or blisters packs.

Recurrent costs

Overheads and maintenance

The costs of overheads and maintenance were £1 718.35 (ZAR 33 550.11) and £ 24 76.09 (ZAR 48 344.66). Costs contributing to the overheads were electricity, water, security and internet. Maintenance costs included pest control, servicing of the fire extinguishers, calibration of the pharmacy scale, disposal of pharmaceutical and

medical waste as well as services fees for the temperature monitoring and dispensing systems.

Rental

Monthly rental in the area the church is located area is approximately £5.01/m^2 (ZAR 98.00/m^2). The rental cost of permanent space i.e. pharmacy (44.84m^2), consultation (22.52m^2) and storage (7.02m^2) rooms, was £4098.76 (ZAR 80 026.76). The rental of shared space, the waiting area, was portioned according to monthly usage at a cost of £472.48 (ZAR 9 225.00) per annum.

The church allows the clinic to use this space at no cost. This is an economic cost and contributes 29.7% to the overall annual operating cost.

Personnel

The clinic relies on volunteers, both qualified professionals and students, to form the workforce of the clinic. Although all personnel were volunteers, their cost was calculated according to hourly locum rates. The annual cost of pharmacy staff was calculated as £22 91.88 (ZAR 44 780.00) for a pharmacist and five pharmacy assistants. There were two medical doctors and ten undergraduate medical students working each evening and calculated costs were £4 842.35 (ZAR 94 545.00) per annum.

The cost of personnel was accounted for during the times the clinic was operational, however administrative duties that staff, and students complete at other times were not taken into consideration.

Pharmacy licensing

Following the initial registration fees for the pharmacy license, annual fees (£184.58, ZAR 3603.88) for the pharmacy and responsible pharmacist were paid to the regulatory authority. All pharmacy personnel paid annual registration fees however these were not included.

Consumables

The cost of consumables was £ 587.03 (ZAR 11 461.46) and included stationery and disposable items used in the consultations. The exact cost of consumables used in the consultations could not be determined from patient records. Therefore, the cost

was estimated based on average of 12 consultations per/night and provided a minimum cost of consumables used which included gloves, masks and linen savers.

Medicines

A total of 573 prescriptions were reviewed from 2016 and 2017, consisting of 1054 items dispensed. The cost of medication dispensed in 2016 and 2017 was £ 394.20 (ZAR 7 555.58) and £ 981.32 (ZAR 18 808.65) respectively. The average cost of medicines for the two-year period was calculated (including the cost labelling and packaging) as £677.94 (ZAR 13 263.55) (Table 3b) and contributed 3.8% to the total operating costs.

Figure 1 groups medication and depicts expenditure and the number of prescriptions. There was a marked increase in the antimicrobials and antipyretic/anti-inflammatory medications dispensed with a correlating increase in cost. Paracetamol 500mg tablets (£82.16, ZAR 1611.02; prescriptions: 132), framycetin/gramicidin/dexamethasone eye drops (£52.37, ZAR 1026.85; prescriptions: 6), and cefuroxime 500mg tablets (£32.97, ZAR 646.50; prescriptions: 3) were the highest contributors to the total costs of medication in 2016 as compared to amoxicillin/clavulanate 1000mg tablets (£215.41, ZAR 4 223.68; prescriptions: 25), paracetamol 500mg tablets (£ 128.82, ZAR 2 525.79; prescriptions: 174) and cefuroxime 500mg tablets (£87.91, ZAR1 724.00; prescriptions: 8) in 2017.

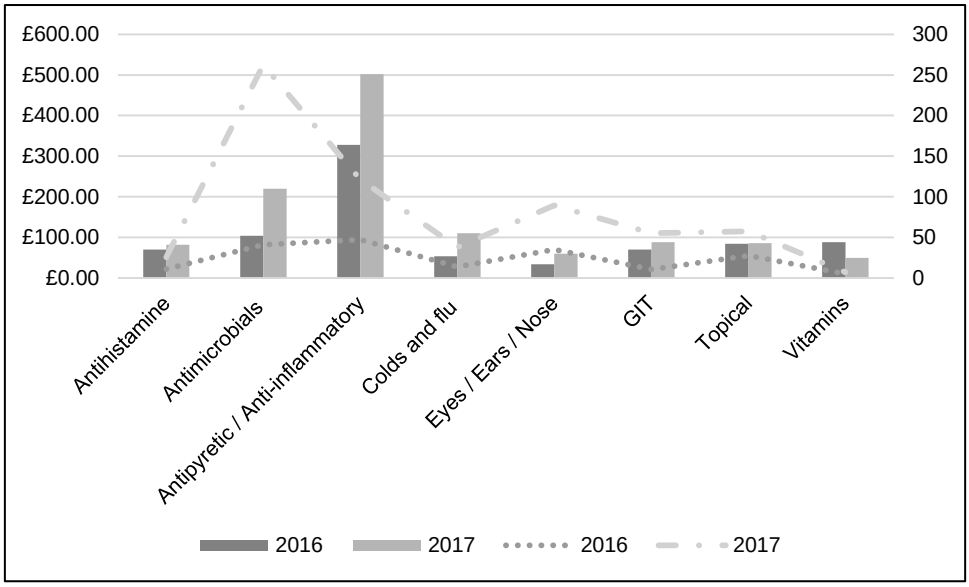


Figure 1: Cost and quantity medication dispensed in 2016 and 2017 (GIT: gastrointestinal tract)

Running cost of treatment per patient

The average running cost of treatment per patient per visit was £3.53 (R69.05) and comprised of medication (£2.36, ZAR46.36) and consumables used in the consultation (£1.18, R22.69). It represents the financial cost incurred by the clinic in treating a patient per visit. All the additional recurrent costs are donated either by the church or through volunteer services. If these are included in the running costs, the total cost per visit is £61.73 (ZAR 1210.43). If the annualized cost of the capital items (£319.02; ZAR 6 255.27) is included, this would add an additional £ 1.12 (ZAR 21.87) per visit. If both financial and economic capital and operating costs were included, the total cost per consultation would be £62.85 (ZAR 1 232.31).

Financial versus economic costs

The analysis of the financial and economic costs, Figure 2, distributes the costs described in Table 2. The majority of costs, 66%, were economic costs. The salaries of personnel and rental costs were the highest in this group.

Costs relating to building alternations, equipment and installation costs contributed the most to capital costs (65%). Equipment and installation costs were donations the clinic received. Therefore, building alterations and furniture, contributing 62% to the financial costs, were the most expensive capital costs incurred.

The pharmacy license directly contributed 7% of the capital costs. There were numerous costs incurred for the renovations, equipment and installation costs required to meet the minimum standards for a community pharmacy as set out in Pharmacy Act 53 of 1974 of South Africa [32]. The minimum standards include a computerised dispensing and temperature monitoring system, contributing 22% of the capital costs.

The costs relating to personnel and rent contribute 68% of the recurrent costs yet both of these are economic costs. The maintenance costs of the computerized dispensing and temperature monitoring system were donations received. Therefore, the financial costs relating to overheads and maintenance were £ 2163.63 (ZAR 42 424.17) and contributed 60% of the financial recurrent costs. The cost of medication (19%) and consumables (16%) were substantial financial costs incurred.

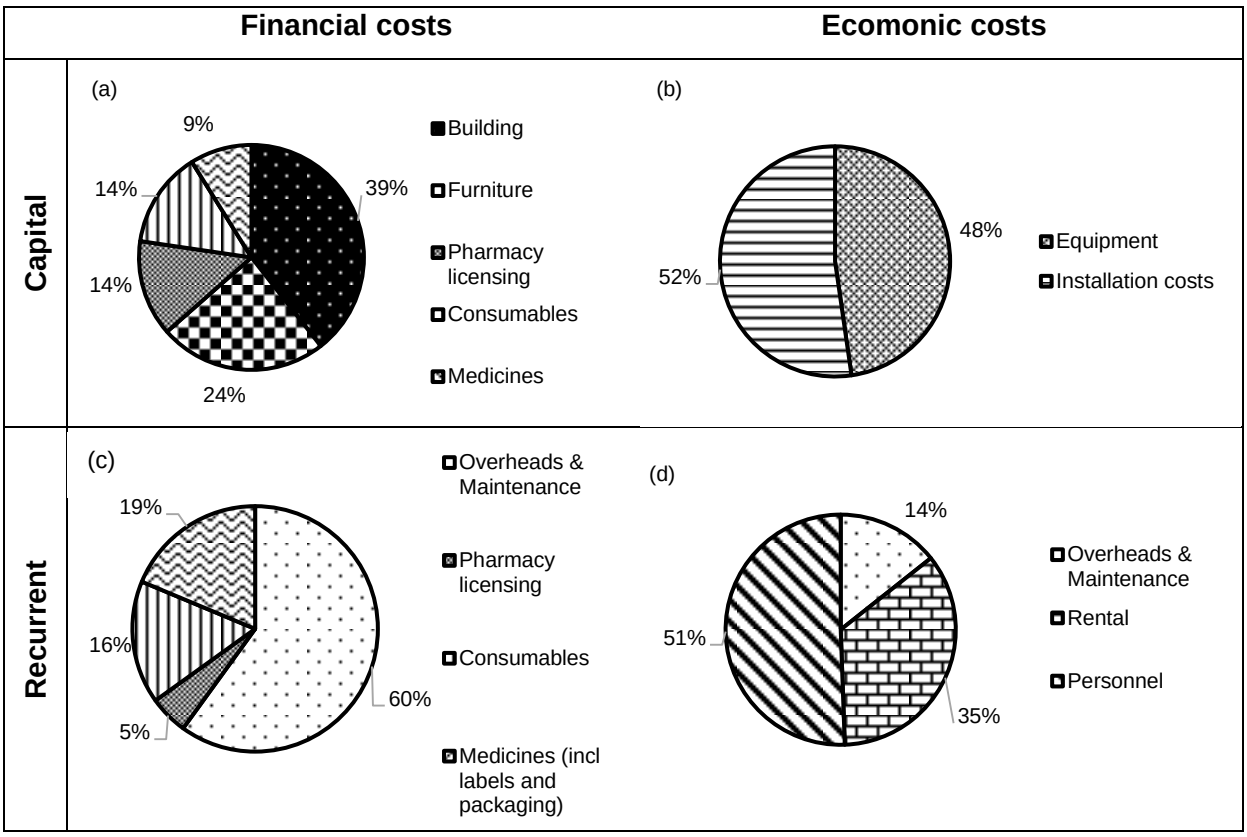


Figure 2: Capital and recurrent costs itemized as financial and economic costs

Discussion

This study provided an in-depth cost analysis of a student-run clinic in South Africa and serves as model which could be of value in the establishment of other SRCs and free clinics. The results pertaining to the recurrent costs are of intrinsic value to THS in determining the feasibility of the services provided.

The clinic fundraises to cover costs of medication and consumables, waste disposal as well as annual pharmacy license fees. To ensure the financial viability of THS both the financial and economic costs need to be considered, ensuring there are sufficient funds are raised to cover all costs and not only the current expenses. This study has helped THS develop short- and medium-term budgets contributing to the model of sustainability. If the annualized capital costs and recurrent donated costs and services are taken into consideration, the total cost per visit is high at £62.85 (ZAR1232.31) compared to the actual running cost £3.53(ZAR 69.05) currently incurred by THS in supplying these services to the patients attending this clinic. This is a reflection of the fact that the clinic only operates twice a month, if it were to operate more frequently and increase the number of visits, the total cost per visit

would be reduced. However, this could result in a reduction in willingness to provide volunteer or donated services. A balance is needed between these economic and financial factors to ensure the sustainability of the THS clinic.

Findings in relation of other studies

The costs associated with establishing a SRC was not found in the literature. Though little information of the operating costs is available, details of the costs incurred were lacking. A survey conducted in free clinics (2005/2006) in the United States, including SRCs, determined a mean operating budget in 748 clinics of $287 810.00/annum [33]. The median operating budget in SRCs in the United States was $12 000.00 ($500.00-95 000.00) per annum of which most sources of funding were private and community grants or through student fundraising [17]. A lack of funding has been identified as a major challenge facing no fee SRCs [34].
The clinic relies on the altruistic nature of volunteers, both students and professional staff, to enable the clinic to function. The cost of personnel contributed 40% to the recurrent costs. The cost of personnel in primary healthcare forms a substantial component of the budget. The cost drivers in an HIV-infected Adult Clinic in South Africa were human resources and antiretrovirals, each contributing a third of the total costs [35]. In Ghana personnel accounted for 60% of the expenditure in Health Centers and Community-based Health Planning and Services [36]. The difference between the cost of personnel between studies could be attributed to the operational hours of the services. THS operates every fortnight and the analysis was based on the number of hours worked, if THS were open more often the cost of personnel would escalate.

The cost of treatment per patient provided an overview of the costs incurred. The cost incurred in accordance to a specific diagnosis could not be calculated with the data available. The majority of the local studies found in the literature provide a cost pertaining to specific conditions for example human immunodeficiency virus [37] and tuberculosis [38]. A study conducted in 2000/1 at a rural primary healthcare clinic in KwaZulu-Natal found the cost of treatment varied substantially from ZAR37.38 (chronic care) to ZAR87.94 (mental health) depending on the diagnosis and severity of the condition [39]. The cost per treatment per patient provided in this study is of intrinsic value to the clinic when budgeting for patient care. However, including the

diagnosis when gathering data is imperative for future studies as well as comparing treatment costs in various settings.

Medication purchased contributed 9% to the capital and 19% to the recurrent costs. The Columbia-Harlem Homeless Medical Project found the greatest expenditure in their budget was medication [40]. THS through implementation of a clinic formulary attempts to reduce medication costs. Fee-free clinics elsewhere often dispense free samples or donations provided by pharmaceutical manufacturers [33], however, the Medicines and Related Substances Act 101 of 1965 [41] in South Africa prohibits any donations and sampling of scheduled medicines.

SRCs are often linked to religious based organizations [42, 43]. These organizations provide substantial financial resources for SRCs. The church at which THS is located provides the premises rent free and pays for maintenance and overheads relating to the facilities which amounts to £ 2 056.59 (ZAR 40 154.11). The church in providing such assistance is seen as a stakeholder.

Implications for health and research

Free and charitable healthcare services over time have filled the gap for patients needing medical assistance without the financial means, especially in the United States [44]. Likewise a SRC at the University of New England, Australia, was estimated to save the healthcare system around $437 000.00 in 2013/2014 [45]. This was determined through savings from averting visits to the emergency department. There is insufficient published data on the costs of healthcare in South Africa which could determine the cost savings to the Department of Health. Furthermore, THS provides services to the homeless, many of whom are foreigners and face challenges when accessing public healthcare services [46].

There is no doubt that free clinics provide a much-needed service however, financial sustainability of free clinics is always a challenge and needs innovative cost-effective solutions. Models for developing student-run clinics as sustainable of community-based projects should be considered [24]. Alternate forms of funding of SRCs need to be investigated such as research grants and assistance from universities as well as developing community partnerships [42]. Under the NHI there will be an opportunity to contract with the National Department of Health as a private sector healthcare provider [12] and this study may assist in negotiating the contracting

agreement. Furthermore, partnering with the NHI could possible address feasibility concerns facing the SRC.

The homeless community in accessing the services provided by THS has indicated the need for such organizations. The clinic has a responsibility to ensure the continuity of services provided. The services typically focused on acute care as it is unable to provide a full spectrum of services [47]. Thus, it is essential that adequate referral systems are established and these services are integrated within the public healthcare system.

This study provides valuable information to institutions embarking on similar projects, especially with the rising number of SRCs [34]. Furthermore, these findings may, too be of great value in the South African setting as it establishes the NHI.

Recommendations for further studies

An accurate cost of consumables used in the consultation could not be calculated retrospectively. A system to record this information is essential for accurate stock control as well as budgeting.

The cost of treatment could not be calculated for specific conditions which would allow for comparison in other sites. Implementation of electronic management system where patient data is recorded would assist in documenting the associated costs such as consumables used, and medication prescribed link to a specific diagnosis. Furthermore, the cost of treatment per patient relative to the benefit it brings to the patient should be investigated in future studies.

The development of a clinic formulary helps in the management of stock and assists those prescribing. Further studies could assess the medications included against evidence-based practice.

Conclusion

This study summarised the costs for establishing and operating a student-run clinic and providing pertinent information essential to the sustainability of the service. The

costs of establishing the clinic included building alterations and installations, purchasing of equipment, furniture, consumables and medication as well as licensing of the pharmacy. Rental, personnel, overheads and maintenance costs were the highest expenses contributing to the recurrent costs; however the majority of these are economic costs. The highest financial costs the clinic incurred were overheads, medication, consumables and pharmacy license fees. The results from this study provide a basis of costs which may be of value in the establishment of free clinics in faith-based organisations or universities. In the South African setting where there are limited studies regarding the cost of primary healthcare, it may even have broader application with the emerging national health insurance scheme.

Word count: 4424

References:

1. Kothari M. Report of the Special Rapporteur on adequate housing as a component of the right to an adequate standard of living. UN; 2007.
2. Rule-Groenewald C, Timol F, Khalema E, Desmond C. More than just a roof: unpacking homelessness. Human Sciences Resource Center. www. hsrc. ac. za/en/review/hsrc-review-march-2015/unpacking-homelessness. Accessed (07 Sept. 2015.). 2015.
3. Olufemi O. Street homelessness in Johannesburg inner-city: a preliminary survey. Environment and urbanization. 1998 Oct;10(2):223-34.
4. Statistics South Africa. Quarterly labour force survey – QLFS Q1: 2018. Statistics South Africa. 2018
5. Gray A, Vawda Y. Health policy and legislation. South African health review. 2016 Jan 1;2016(1):3-15.
6. Dennis Hurley Centre Projects [Internet]. Denishurleycentre.org. 2018 [cited 4 April 2018]. Available from: http://www.denishurleycentre.org/page/outreach#%2FPage%2F17784%2Fusizo-lwethu-afrisun-clinic
7. MES - MES Johannesburg [Internet]. Mes.org.za. 2018 [cited 4 April 2018]. Available from: http://mes.org.za/index.php/2015-11-17-13-25-02/mes-johannesburg
8. Seager JR, Tamasane T. Health and well-being of the homeless in South African cities and towns. Development Southern Africa. 2010 Mar 1;27(1):63-83.
9. Wentzel D, Voce A. Health seeking experiences and behaviours of homeless people in Durban, South Africa. Africa journal of nursing and midwifery. 2012 Jan 1;14(2):77-89.
10. Statistics South Africa. General Household survey. Pretoria: Statistics South Africa. 2017a. Statistical release P0318.
11. Statistics South Africa. Public healthcare: How much per person? Pretoria: Statistics South Africa 2017. Available from: http://www.statssa.gov.za/?p=10548 accessed on the 11 January 2019
12. National Department of Health. National Health Insurance for South Africa: Towards Universal Health Coverage. Government Gazette. 2015;1230.
13. Stenius-Ayoade A, Haaramo P, Kautiainen H, Gissler M, Wahlbeck K, Eriksson JG. Mortality and causes of death among homeless in Finland: a 10-

year follow-up study. Journal of epidemiology and community health. 2017 Sep 1;71(9):841-8.

14. Beijer U, Wolf A, Fazel S. Prevalence of tuberculosis, hepatitis C virus, and HIV in homeless people: a systematic review and meta-analysis. The Lancet infectious diseases. 2012 Nov 1;12(11):859-70.
15. O'connell JJ, Mattison S, Judge CM, Allen HJ, Koh HK. A public health approach to reducing morbidity and mortality among homeless people in Boston. Journal of public health management and practice. 2005 Jul 1;11(4):311-6.
16. Morrison DS. Homelessness as an independent risk factor for mortality: results from a retrospective cohort study. International journal of epidemiology. 2009 Mar 21;38(3):877-83.
17. Simpson SA, Long JA. Medical student-run health clinics: important contributors to patient care and medical education. Journal of general internal medicine. 2007 Mar 1;22(3):352-6.
18. Holmqvist M, Courtney C, Meili R, Dick A. Student-run clinics: Opportunities for interprofessional education and increasing social accountability. Journal of research in interprofessional practice and education. 2012 Aug 29;2(3).
19. Gordon C. *Volunteer, community-based student-run clinics for the underserved: can they be used to attain 21st century medical education goals?* (Doctoral dissertation, Stellenbosch: Stellenbosch University).
20. Goodier R, Uppal S, Ashcroft H. Making international links to further interprofessional learning: a student-led initiative for the homeless population. Journal of interprofessional care. 2015 May 4;29(3):265-7.
21. Bird Y, Islam A, Moraros J. Community-based clinic volunteering: an evaluation of the direct and indirect effects on the experience of health science college students. BMC medical education. 2016 Dec;16(1):21.
22. Favara DM, Mendelsohn SC. The Students' Health and Welfare Centres Organisation (SHAWCO) of the University of Cape Town: a review of the past 69 years. SAMJ: South African medical journal. 2012 Jun;102(6):400-2.
23. Black JD. " Hands of Hope": A Qualitative Investigation of a Student Physical Therapy Clinic in a Homeless Shelter. Journal of physical therapy education. 2002 Oct 1;16(2):32.
24. Ellett JD, Campbell JA, Gonsalves WC. Patient satisfaction in a student-run free medical clinic. Family medicine. 2010 Jan 1;42(1):16-8.

25. Palombaro KM, Dole RL, Lattanzi JB. A case report of a student-led pro bono clinic: a proposed model for meeting student and community needs in a sustainable manner. Physical therapy. 2011 Nov 1;91(11):1627-35.
26. Fröberg M, Leanderson C, Fläckman B, Hedman-Lagerlöf E, Björklund K, Nilsson GH, Stenfors T. Experiences of a student-run clinic in primary care: a mixed-method study with students, patients and supervisors. Scandinavian journal of primary health care. 2018 Jan 2;36(1):36-46.
27. Kent F, Keating J. Patient outcomes from a student-led interprofessional clinic in primary care. Journal of interprofessional care. 2013 Jul 1;27(4):336-8.
28. Hallin K, Henriksson P, Dalén N, Kiessling A. Effects of interprofessional education on patient perceived quality of care. Medical teacher. 2011 Jan 1;33(1):e22-6.
29. Statistics South Africa. Consumer Price index. Pretoria: Statistics South Africa. 2018b. Statistical release P0141
30. XE Currency Converter [Internet]. www.xe.com/ [cited 18 September 2018]. Available from: https://www.xe.com/currencyconverter/convert/?Amount=177+750.14&From=ZAR&To=GBP
31. National Department of Health. Standard treatment guidelines and essential medicines list for South Africa, Primary Health Care level. 2014
32. South Africa. Pharmacy Act (Act 53 of 1974).
33. Darnell JS. Free clinics in the United States: a nationwide survey. Archives of internal medicine. 2010 Jun 14;170(11):946-53.
34. Smith S, Thomas R, Cruz M, Griggs R, Moscato B, Ferrara A. Presence and characteristics of student-run free clinics in medical schools. JAMA. 2014 Dec 10;312(22):2407-10.
35. Martinson N, Mohapi L, Bakos D, Gray GE, McIntyre JA, Holmes CB. Costs of providing care for HIV-infected adults in an urban, HIV clinic in Soweto, South Africa. Journal of acquired immune deficiency syndromes (1999). 2009 Mar 1;50(3):327.
36. Dalaba MA, Welaga P, Matsubara C. Cost of delivering health care services at primary health facilities in Ghana. BMC health services research. 2017 Dec;17(1):742.

37. Badri M, Maartens G, Mandalia S, Bekker LG, Penrod JR, Platt RW, Wood R, Beck EJ. Cost-effectiveness of highly active antiretroviral therapy in South Africa. PLoS medicine. 2005 Dec 6;3(1):e4.
38. Floyd K, Wilkinson D, Gilks C. Comparison of cost effectiveness of directly observed treatment (DOT) and conventionally delivered treatment for tuberculosis: experience from rural South Africa. Bmj. 1997 Nov 29;315(7120):1407-11.
39. Matsheke T. *A cost analysis of rural primary health care (PHC) services in KwaZulu-Natal* (Doctoral dissertation, University of Cape Town).
40. Diah J. [Internet]. Nmfonline.rg. 2016 [cited 26 September 2018]. Available from: https://nmfonline.org/wp-content/uploads/2016/01/Diah-Jonathan-Final-Poster.pdf
41. South Africa. Medicines and Related Substances Act, Act 101 of 1965, as amended.
42. Beck E. The UCSD student-run free clinic project: Transdisciplinary health professional education. Journal of health care for the poor and underserved. 2005;16(2):207-19.
43. Steinbach A, Swartzberg J, Carbone V. The Berkeley Suitcase Clinic: homeless services by undergraduate and medical student teams. Academic Medicine. 2001 May 1;76(5):524.
44. Birs A, Liu X, Nash B, Sullivan S, Garris S, Hardy M, Lee M, Simms-Cendan J, Pasarica M. Medical Care in a Free Clinic: A Comprehensive Evaluation of Patient Experience, Incentives, and Barriers to Optimal Medical Care with Consideration of a Facility Fee. Cureus. 2016 Feb;8(2).
45. Stuhlmiller CM, Tolchard B. Developing a student-led health and wellbeing clinic in an underserved community: collaborative learning, health outcomes and cost savings. BMC nursing. 2015 Dec;14(1):32.
46. Johnston D, Egan A, McInerney P. The rise, fall and re-establishment of Trinity Health Services: Oral history of a student-run clinic based at an inner-city Catholic Church. Studia Historiae Ecclesiasticae. 2018;44(3):1-21.
47. Johnston D, McInerney P, Miot J. A Profile of the Health of Homeless at an Inner City Primary Health Care Clinic in South Africa. Journal of Health Care for the Poor and Underserved. 2019;30(4):1455-66.

CHAPTER 7: DISCUSSION AND DEVELOPMENT OF MODEL

Medical School has rendered itself relevant and so has Holy Trinity and I think that is something that any institution should be doing. [We] shouldn't remain as ivory towers, we should become institutions that are making a difference outside the institution and that's precisely what the clinic has managed to do…
Mardai (Chapter 3, Interview, 2018)

7.1. Introduction

The discussion chapter incorporates the findings and results from the qualitative and quantitative components. In the chapter a framework and model are presented. The framework integrates the qualitative findings and visually depicts their relationships to one another. The model merges the findings of the qualitative and quantitative components to construct a theory.

The chapter begins with the integration of the findings from the stakeholder groups and using a grounded theory approach presents a theoretical framework. The theoretical framework is combined with the history of THS, retrospective analysis of patient files and cost analysis to form a model for sustainability.

7.2. Theoretical stakeholder framework

The grounded theory approach allows the researcher to discover the theory grounded in the findings from participants (Strauss and Corbin, 1998). Charmaz (2006) discusses the use of grounded theory to integrate "rich-detailed and full-data and placing them in their relevant situational and social contexts" (pg. 11). Thus, a grounded theory approach was used in this study to understand the meaning of THS from multiple stakeholders, i.e. the homeless, students, supervising healthcare professionals and student management committee. The framework presented is grounded in the views and experiences of these stakeholder groups.

The grounded theory approach is a set of "principles and packages" which "can complement other qualitative approaches to qualitative analysis" (Charmaz, 2006, pg. 9). Descriptive qualitative research was conducted to obtain perspectives from the major stakeholders at THS. This produced rich data. Findings generated from the

FGDs and in-depth interviews with stakeholders were synthesized. The synthesis produced nine categories and three themes (see Table 7.1).

Table 7.1: Synthesised categories and themes

STAKEHOLDERS	CATEGORY	THEMES	SYNTHESIZED CATEGORIES	SYNTHESIZED THEMES
HOMELESS (see Chapter 4.1)	Food and nutrition	Homelessness affecting health	Impact of homelessness on health	Serving
	Ablution facilities		Impact of homelessness on health	Serving
	Shelter and belongings		Impact of homelessness on health	Serving
	Prevailing ailments	Health needs	Impact of homelessness on health	Serving
	Accessing healthcare services		Compassion, dignity & respect	Serving
	Treated with compassion and respect	THS in addressing health needs	Compassion, dignity & respect	Serving
	Professionalism		Compassion, dignity & respect	Serving
	Expanding the services		Continuity of care	Serving
STUDENT VOLUNTEERS (see Chapter 4.2)	Understanding the impact of homelessness and health	"Add more tools to your toolbox"	Impact of homelessness on health	Serving
	Primary healthcare		Primary health care	Learning
	Communicating with patients		Primary health care	Learning
	Engaging with supervisors	Learning from supervisors and peers	Collaborative practice	Learning
	Peer learning		Collaborative practice	Learning
	Continuity of care	Learning in a different space	Continuity of care	Serving
	Taking responsibility		Responsibility, social accountability & advocacy	Learning
	"It is a very safe space"		Collaborative practice	Learning
SUPERVISING PROFESSIONALS (see Chapter 4.3)	Learning opportunities	Student learning	Primary health care in the homeless	Learning
	Working together		Collaborative practice	Serving
	Serving the community	Patient care	Compassion, dignity & respect	Serving
	Continuity of care		Continuity of care	Serving
STUDENT MANAGEMENT COMMITTEE (see Chapter 4.4)	"It's very democratic"	"Fostering student leadership"	Leadership & Democracy	Managing
	"cultivating the next generation of leadership"		Leadership & Democracy	Managing
	Oversight		Support	Managing
	Responsibility to the community		Responsibility, social accountability & advocacy	Learning

The grounded theory coding process is outline in Figure 7.1. The synthesised categories and themes formed the stakeholder framework, represented in Figures 7.2 and 7.3. The categories and themes from the stakeholders were collapsed forming the synthesised categories and themes (open coding). The categories and themes were positioned within the model (axial coding) and the interconnectedness between the categories and themes were depicted (selective coding).

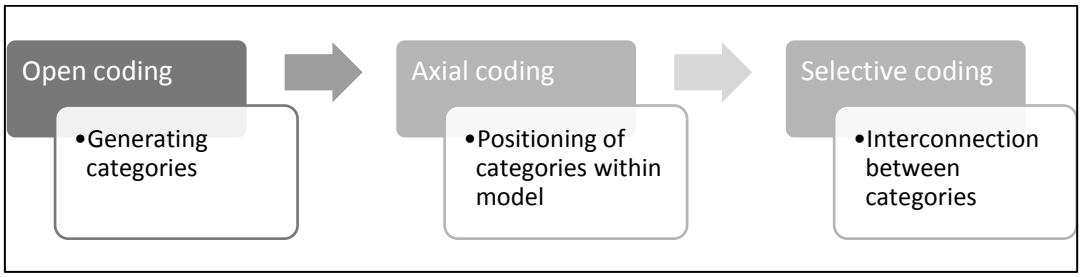


Figure 7.1: Grounded theory coding process (Charmaz, 2006)

The development of the framework shows the positioning of stakeholders (see Figure 7.2a). The homeless are placed centrally indicating that THS foremost exists to serve this community. They are flanked by the students and supervising healthcare professionals. The students are enabled in helping the homeless through the supervision provided by healthcare professionals.

The homeless, students and supervising healthcare professionals are connected via the two themes, *serving* and *learning* (see Figure 7.2b). The synthesised categories are placed adjacent to the themes (see Figure 7.2c).

Serving formed the stimulus for many students and professionals to volunteer. The impact of homelessness on health was described by the community. The need for healthcare services by the homeless is evident yet they often face stigma and discrimination when seeking help. They valued THS where they were treated with compassion, dignity and respect. However, the importance of establishing referral pathways was repetitively highlighted by stakeholder groups as THS cannot provide a full spectrum of healthcare services.

THS is a place of *learning* for students where they gain an understanding of primary healthcare and work collaboratively as an interprofessional team. In this environment

they are more responsible for patient care while learning to be socially accountable and advocate for the needs of the homeless.

The addition of the third theme, *management*, stabilises the framework (see Figure 7.3a). It positions the faculty, church, student management committee and advisory committee, as stakeholders in the framework.

As a SRC, the student management committee, is primarily responsible for management of THS. Student ownership of THS is an important motivating factor for student involvement. It also provides students with an opportunity to lead. This was evident in their emphasis of the importance of decisions being made democratically. However, they lacked experience and needed the support of an advisory committee.

The steering committee, that ceased to exist in 2018, should be regenerated as the advisory committee. The advisory committee, with representation from stakeholder groups, is essential in providing administrative and operational support to the students.

The linkages between stakeholders, themes and categories is reflected in Figure 7.3b. Two examples elucidating these relationships are provided below:

Example 1: Impact of homeless on health, primary healthcare and continuity of care

The linkages between categories, *impact of homeless on health*, *primary healthcare* and *continuity of care*, are illustrated in Figure 7.3b by the blue solid lines with bidirectional arrows as these relationships emerged from the findings. Limited access to shelter and ablution facilities negatively impacts the health of the homeless. Free primary healthcare services are provided by THS and if further care is needed, patients are referred to nearby clinics. To establish the referral system the student management committee needs support from the advisory committee.

Example 2: Advisory committee, student management committee, faculty and church

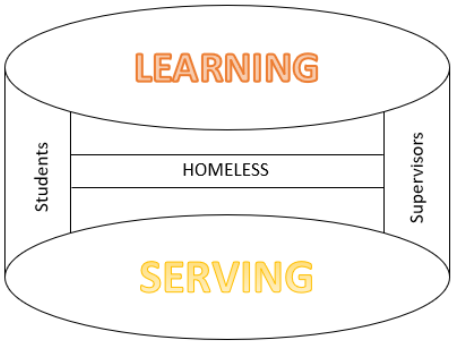
The relationship between stakeholder groups is reflected in Figure 7.3b by the green dashed lines with bilateral arrows, illustrating that these relationships

are not yet formalised. The advisory committee needs representation from the faculty, church, students, supervising professionals and student management committee. The advisory committee in turn needs to establish communication channels with the homeless community. This increases the accountability THS has to the community and is the first step towards becoming patient centred service.

(a)



(b)



(c)

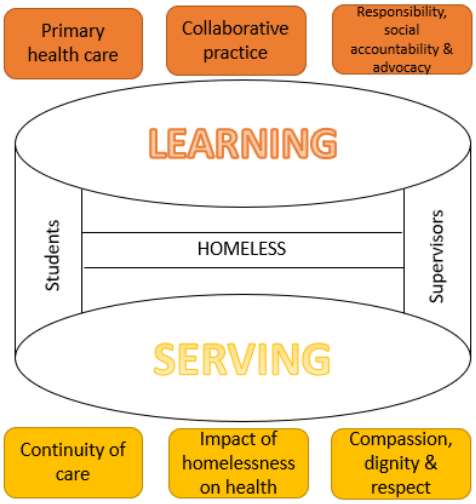
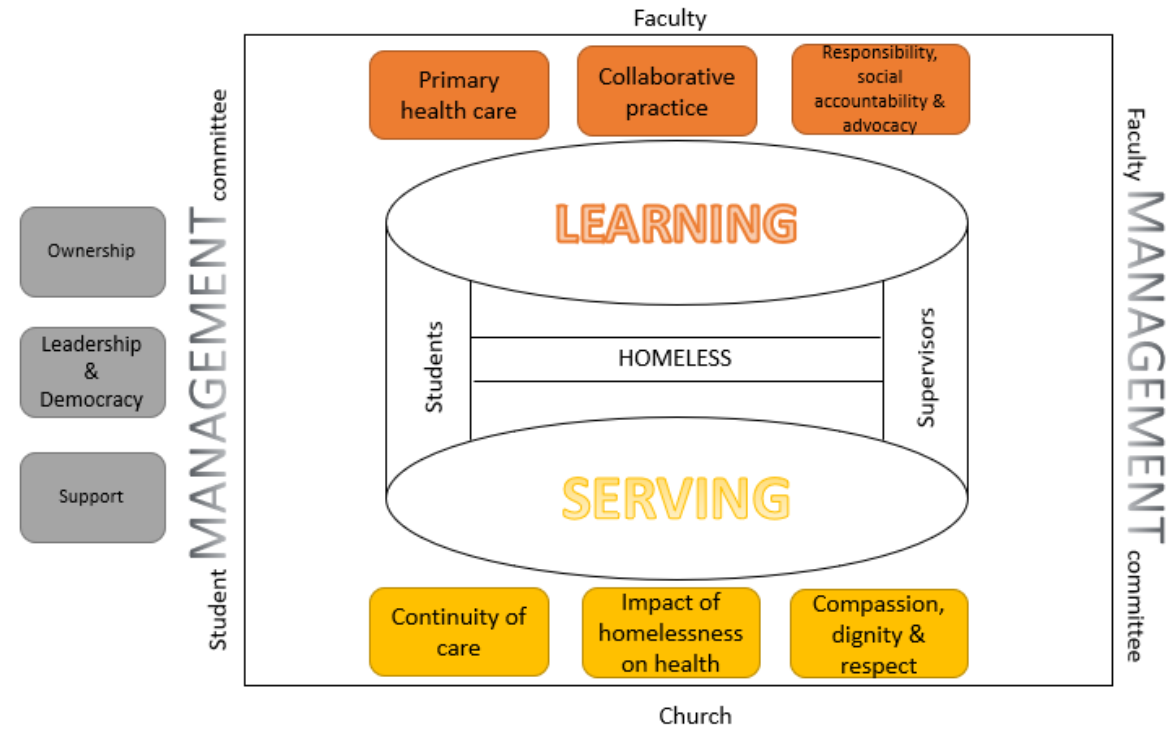


Figure 7.2: Development of stakeholder framework (a) – (c)

(a)



(b)

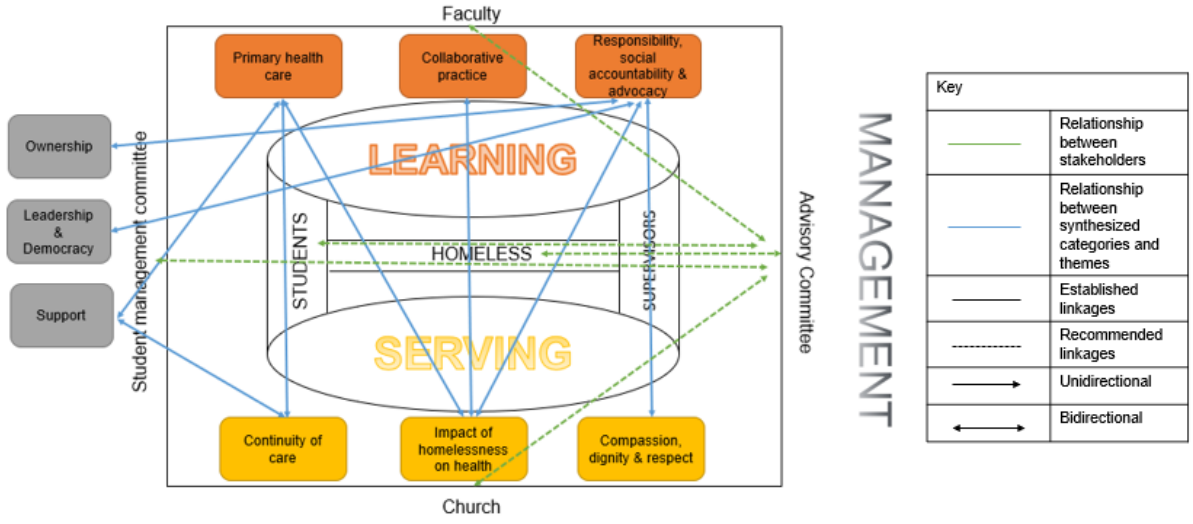


Figure 7.3: Stakeholder framework (a) incorporating themes and categories as well as (b) relationships between stakeholders, themes and categories

7.3. Development of the model for sustainability

The overall aim of the study was to describe the establishment of the clinic and investigate the various factors affecting the sustainability of THS. The stakeholder framework identifies and incorporates stakeholders' perceptions of THS and their respective roles. The theoretical framework poses the question:

How is serving, learning and management sustainable at THS moving forward?

The parallel mixed method analysis integrates the qualitative and quantitative findings from different data sources (Teddlie and Tashakkori, 2009). Findings from the history of THS, the financial costs incurred as well as the health needs of the homeless were incorporated with the stakeholder framework to form a model for sustainability.

The core components of a practice model (see Figure 7.4) include the beliefs and values upon which the model is based; the goal of the model as well as skills and knowledge needed to attain these goal (Pearson and Vaughan, 1986). These components were applied in the THS proposed model of sustainability illustrated in Figure 7.5.

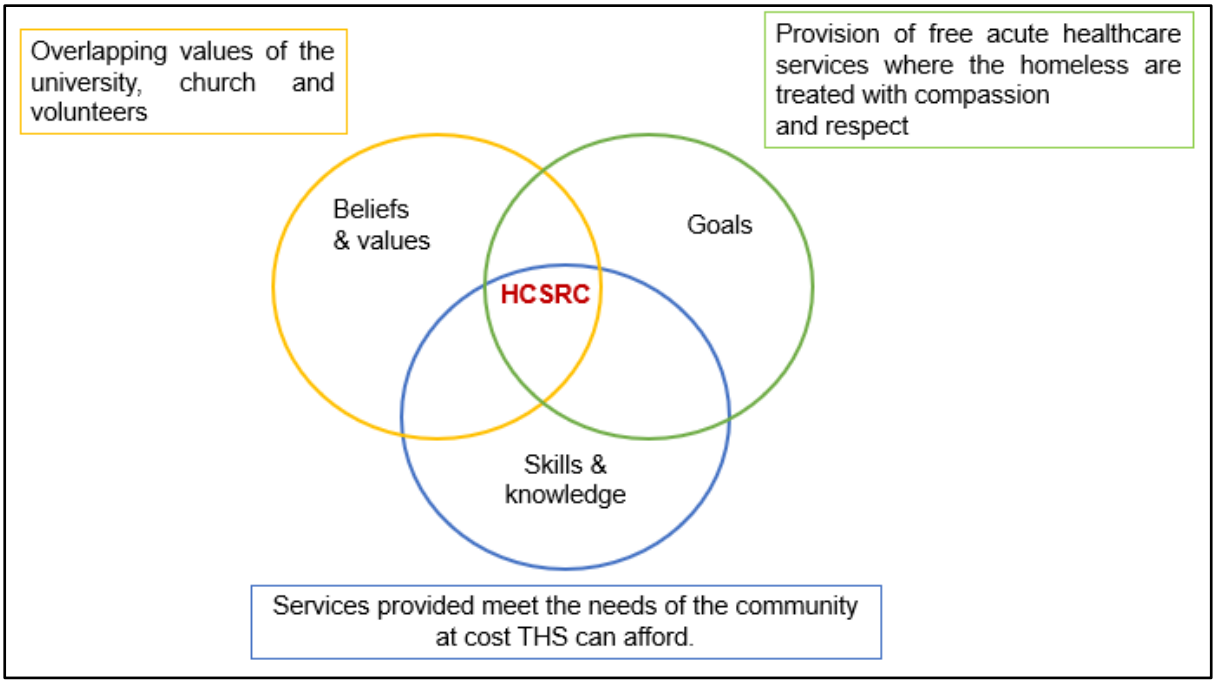


Figure 7.4: Components of a model for practice (Pearson and Vaughan, 1986) adapted for THS

*HCSCR: Homeless-centred student-run clinic

7.3.1. Goal of the model

The sustainability of SRCs is an ongoing concern (Buckley *et al*., 2014; Black *et al*., 2013; Holmqvist *et al*., 2012; Palombaro *et al*., 2011; Sheu *et al*., 2011). SRCs face many challenges affecting their sustainability such as human resources, finances and support while retaining a certain level of independence (Holmqvist *et al*., 2012). Failure to provide a consistent and continuous service may result in the community loosing trust in the SRC and potentially damaging relationships (Palombaro *et al*., 2011). Thus, the goal of this model was to identify variables affecting the sustainability and propose the way forward to ensure continuity of services.

7.3.2. Design of model and concepts reflected

The integrated qualitative findings from Component 1 (Chapter 3) and Component 2 (Chapter 4), were merged with the quantitative results from Component 3 (Chapter 5) and Component 4 (Chapter 6). The model depicts a building consisting of three levels: foundation (level 1); pillars (level 2) and a roof (level 3).

7.3.3. Expert panel

The model for sustainability for THS was developed and presented to an expert panel. Pearson *et al*. (2005) describes the purpose of critiquing models where both the structure and external validity of the model are considered. The expert panel consisted of 12 representatives from various stakeholder groups (see Table 7.2). The panel was requested to review the model and comment on the questions in Table 7.3.

Table 7.2: Expert panel

STAKEHOLDER	NUMBER OF PARTICIPANTS	OCCUPATIONAL BACKGROUND / YEAR OF STUDY
Faculty	5	Physiotherapist (1) Nurse (1) Pharmacist (1) Medical doctor (1) Clinical associate (1)
Students (part of student management committee)	4	Pharmacy student (BPharm 3) (1) Pharmacy student (BPharm 4) (1) Medical student (5^{th} year) (1) Medical student (4^{th} year) (1)
Church	3	Priest (2) Assistant chaplain (1)

Table 7.3: Questions posed to expert panel

1. Is the model clear and easy to understand? Is the model consistent (use of words and concepts)?
2. Does the model adequately address sustainability for THS?
3. Is the model useful?
4. Are a wide scope of phenomena covered? To what extent could the model be applied in other SRCs?

The initial model reflected the history of THS on a rocky base upon which a solid foundation of lessons learned was laid. Upon this foundation were five pillars of sustainability: volunteers, services, financial, operational and managerial as well as governance, housed under a homeless-centred healthcare service. The sustainability aspects within each pillar were described in further detail.

The participants of the expert panel agreed that the model presented was comprehensive and incorporated all the components. There was a rich discussion with the expert panel, where stakeholders were able to discuss the model in detail. They were also asked to provide written feedback. The discussion with the expert panel did extend beyond the study objectives and scope of the model. Thus, agreement could not be reached on all points raised such as to approach the City of Johannesburg in managing the plight of the homeless as well as the role and response of the University. However, consensus was reached regarding the findings from all the stakeholder groups. The model proposed was considered to be applicable and relevant to THS. The following recommendations were proposed:

- The value system of the university and the church should be reflected in the foundation.
- Revision of the pillars of sustainability:
    - The model needs to focus on the current services provided by THS.
    - Integration between the broad themes needs to be emphasised in the model.
    - Incorporate more details of the components within each pillar.
- Visually depict the relationship between pillars, aspects and/or stakeholders.

- The students voiced their concern regarding losing the identity of THS as a SRC. Therefore, the roles and responsibilities of the stakeholders need to be described.

7.3.4. Model of Sustainability

The proposed sustainability model for THS visually depicts the interconnectedness between the concepts identified from this study (see Figure 7.5). The contribution of the components (see Chapter 3-5) are important in understanding the development of the model.

7.3.4.1. Level 1: Foundation (see Figure 7.5)

The rocky base represents the history of THS (Chapter 3) and describes the establishment of the clinic (2004), the extension of the services (2004 – 2011), the closure (2011) and reestablishment with lessons learned, to form the bedrock (2016). The findings of this component identified that the roles and responsibilities of stakeholders were not clearly defined, there was little involvement from the faculty and there was an urgent need to adhere to legislative requirements for the dispensing of medication. The history of THS provides important lessons from which much can be learnt in moving forward.

Upon this rocky base, the foundation laid consisted of the value system of the university and church. The value system resonating with Holy Trinity Catholic Church are underpinned in Jesuit education. The core values where “love is shown in deeds”, “faith that does justice” and concern for the individual person especially in poor and marginalised communities (Sjweb.info., 2019), provided the motivation for the church’s involvement in THS. The University of the Witwatersrand is committed to academic excellence and scholarship. Its involvement in THS is reflected in values such as social engagement and responsiveness, diversity, accountability as well as debate and critical engagement (The University of the Witwatersrand, 2019b). There is considerable overlap between these value systems leading to the partnership in forming THS.

The management of THS is incorporated within the foundation. A SRC provides opportunity for student leadership and management (Gordon, 2016; Meah *et al*.,

2009; Simpson and Long, 2007). Only one study could be found describing experiences of a student leadership board. Two studies report improved leadership and management skills as well as pursuing leadership roles in the future following participation (Gordon, 2016; Scott and Swartz, 2015). However, the role of student management boards/committees and the support they need is not clearly identified in the literature.

The findings of this study show that the student management committee needs more assistance. It is suggested that administrative, operational, financial and psychosocial support be provided by the advisory committee. Thus, the reinstitution of an advisory committee with representation from stakeholders is pivotal to the success of THS. The proposed roles and responsibilities of stakeholder groups (see Table 7.4) balances the ownership of THS by students while providing them with the required support.

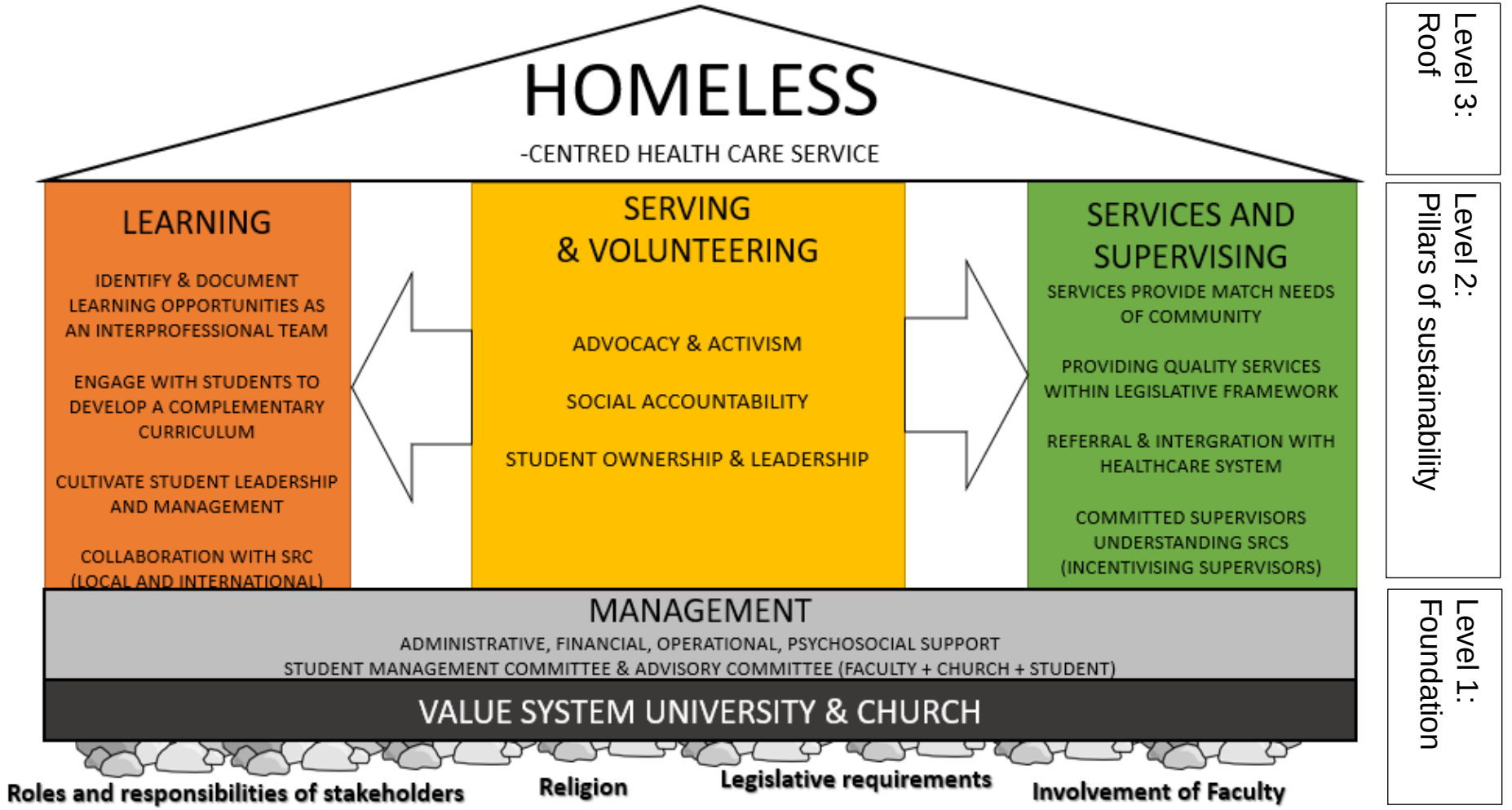


Figure 7.5: Model of sustainability

Table 7.4: Roles and responsibilities of stakeholders

STAKEHOLDER	ROLES	RESPONSIBILITIES
Students	Provision of patient care with supervisors	• Provision of patient care under supervision
Supervisors	Legislative requirements ensuring patient care	• Standard of care • Facilitate learning
Faculty	Oversight Promotion and support	• Fundraising • Incentivize staff to supervise • Promote the participation from Faculties and schools to holistically address the healthcare needs (biopsychosocial)
Church	Facilities management Promotion and support	• Fundraising • Maintenance of THS facilities • Psychosocial support for homeless and volunteers • Provision of additional services e.g. soup kitchen as well as ad hoc supply of toiletries, blankets and clothes • Promote participation of the church community particularly those in the health sector
Student management committee	Administration and management	• Compile and implement standard operating procedures • Fundraising • Recruitment of student volunteers • Recruitment of supervising volunteers • Ensure continuity in leadership
Advisory committee	Oversight	• Fundraising • Administrative and managerial support • Quality assurance

The majority of SRCs provide free healthcare and rely solely on donations and fundraising to cover their costs. This is an onerous task mostly left to the students (Meah *et al*., 2009). The financial sustainability of THS is critical. Based on the cost analysis conducted and reported in Chapter 6, it was recommended that THS raise sufficient funds to cover operational costs both financial and economic. The proposed responsibilities of stakeholders suggest that fundraising be a collaborative effort (see Table 7.4), where the church and faculty assist in building long-term relationships with sponsors and donors.

Diversifying funding strategies increases the financial viability of SRCs (Palombaro *et al*., 2011). Self-sustainable funding models such as social enterprises have made SRCs more sustainable (Favara and Mendelsohn, 2012). Potential funding sources for THS are provided in Table 7.5. Long-term funding projects, for example social entrepreneurships, need to be collectively considered and could have added advantages such as skills development and employment of the homeless.

Table 7.5: Potential funding sources for THS

SPONSORSHIPS / DONATIONS	SOCIAL ENTREPRENEURSHIP	GRANTS
Corporate sponsorships with companies e.g. corporate social investment	Provision of services rendering a fee to the those who can afford it or claiming the cost from their medical aid scheme	Apply for grants linked to service-delivery
Crowd funding including peer-to-peer fundraising	Rendering of other services and/or goods (possible employment of the homeless)	Identify research opportunities in healthcare delivery to the homelessness and apply for possible funding
Individual donors e.g. establishing alumni and “Friends of THS” networks		
Apply for donations: Nonscheduled medicines Medical and diagnostic equipment		

The cost of medication and medical supplies are cost drivers in SRCs and require targeted strategies to reduce these financial burdens without comprising patient care (Batra *et al*., 2009). Likewise, the purchasing of medicines and consumables were the highest direct cost incurred by THS (see Chapter 6). The rational medicine usage should be reviewed informing the clinic formulary and development of treatment protocols.

7.3.4.2. Level 2: Pillars of sustainability (see Figure 7.5)

The second level consists of three pillars of sustainability. The two outer pillars, *learning* and *services and supervising*, derive from the central pillar, *volunteering to serve*.

Volunteering to serve

There is a decline in willingness to work with the homeless as students' progress through their medical training and into practice, calling for innovative approaches to encourage participation with underserved impoverished communities (Smith and Weaver; 2006). Most students volunteering at THS chose to do so, motivated out of concern for the well-being of the homeless (see Chapter 4.2). They respond to the presenting health needs and become advocates for the homeless. Thus, involving students from the beginning of their studies is essential to the sustainability of the clinic.

Students' sense of ownership of a SRC is an important element to its success (Beck, 2005). The identity of THS as an interprofessional student-led and owned initiative demonstrates a social responsibility that advocates for the poor (see Chapter 4.4) and needs to be further developed to create a legacy for future generations to follow. The study does not include an individual person 'driving' THS but rather considers the students collectively as the 'drivers' of the project ensuring sustainability of the services.

Learning

Learning stems from *volunteering to serve*. THS should avoid learning being the primary motivating reason students volunteer. However, appreciation and acknowledgement of learning is essential. The learning framework that emerged in

Chapter 4 provides detail of the learning opportunities THS provides in a safe space that was contrasted to the formal curriculum.

Putman *et al*. (2014) questioned incorporating learning in a SRC either into the formal curriculum or alternatively developing a complementary curriculum. However, Gordon (2016) strongly argues against formalising learning at SHAWCO, as the SRC would lose its identity. For similar reasons it is not advised that THS should fall within the formal curriculum. If THS was incorporated into the curriculum, it is likely to lose its identity as a SRC. Students would no longer volunteer to serve since participation would become compulsory, and performance would be assessed. However, establishing a complementary curriculum should be considered. This would involve a shift in roles where the students actively participate in designing the curriculum.

Management and leadership skills could be included in the complementary curriculum. This would help provide continuity between student management committees and *cultivating the next generation of leaders* (see Chapter 4.4).
THS currently works in isolation from other student initiatives at the university and is yet to make connections with other SRCs in South Africa or abroad. Understanding the broader context of SRCs is important in learning from and with each other. THS should investigate participating in the Society of Student-run Free Clinics (Studentrunfreeclinics.org., 2019)

Services and supervision

The retrospective review of patient files, Chapter 5, established that the homeless community frequently presented with upper and lower respiratory tract infections (21.7%, n=56), diseases of the digestive tract (12.4%, n=32), sexually transmitted infections including HIV and TB (10.1%, n=26). These healthcare needs were confirmed in the FGDs with the homeless (Chapter 4.1). In addition, they explained the need for social and psychological support (Chapter 4.1).

The needs of the community call for the expansion of the current model to include dentistry and psychosocial services (see Chapter 4.1 and Chapter 4.3). Dentistry, psychology, social work and psychiatry are all disciplines located within the university structure. Expansion within the University of the Witwatersrand framework would expose students to the biopsychosocial approach to the care of the homeless,

working as an interprofessional team. Collaboration between faculties and schools requires involvement of the Faculty of Health Sciences (see Table 7.4). The financial implications of the expansion of the current model should be carefully considered to ensure continuity.

Most SRCs have established referral processes and sites for referral (Simpson and Long, 2007). Limited acute healthcare services are provided by THS. Although in time the services offered may expand, integration with the public healthcare services is essential. Almost half the patients seen at THS are referred (42.1%) to nearby clinics and hospitals (see Chapter 5). The homeless found this to be a disadvantage as they described the stigma and discrimination encountered when accessing these referral sites (see Chapter 4.1). Furthermore, identification documents are required before using these facilities (see Chapter 4.1). Establishing a relationship between THS and these clinics is important to expedite the referral process.

Vulnerable patients, such as the homeless, often do not have the freedom to choose the healthcare services they wish to access, thus placing a greater responsibility on SRCs (Buchanan and Witlen, 2006). Therefore, THS has an obligation to ensure the services they provide are of a high standard and meet legislative requirements. The supervisors fulfil a legislative role in the provision of patient care (see Chapter 4.3). The advisory committee and faculty need to guide the student management committee to establish policies and procedures to meet these quality standards.

The supervising professionals not only ensure patient care but facilitate learning at THS (see Chapter 4.3). Therefore, the recruitment and training of supervisors who understand their role in a SRC is crucial. It was found that faculty members are driven to volunteer at SRCs as it provides an opportunity to teach students and service impoverished communities (Rubenstein *et al*, 2016). Although these reasons may hold true for some supervisors at THS, the recruitment of supervisors was the greatest challenge the student management committee faced and have asked the Faculty for assistance (see Chapter 4.4). The faculty needs to value participation of staff at THS and consider volunteering as part of their academic duties. They may also incentivise staff in allowing them to claim “time-back” for hours worked. Non-university staff could be encouraged to participate through accreditation of supervision at THS as a continuing professional development activity or through

honorary appointments. Although contrary to the ethos of the service, financial reimbursement (locums) of supervisors should be considered and incorporated in the budget, should volunteers not be found.

7.3.4.3. Level 3: Roof: Homeless-centred healthcare service (see Figure 7.5)

In SRCs care of patients should be considered first before learning (Buchanan and Witlen, 2006). The roof of the model is formed by the concept of a *homeless-centred healthcare service*. Placing the homeless at the top of the model represents a commitment to providing healthcare services to meet their needs. The homeless are encouraged to be actively in charge of their health as opposed to being passive recipients of care.

The services offered by THS need to be tailored to the community it serves. The following are examples that support this statement:

Example 1: Provision of advice

When providing information to patients it needs to be individualised and specific to the homeless. Such as when advising patients with hypertension regarding dietary modifications, the students need to take into consideration that the homeless often have little choice in the food they are given from soup kitchens (see Chapter 4.1).

Example 2: Advocate for needs of the homeless

Identifying health disparities and advocating for the health of the homeless were incorporated in the framework for learning (see Chapter 4.2). The homeless explained the need for soap, tooth brushes and toothpaste (see Chapter 4.1). In turn students could raise awareness, initiate campaigns and collection points to gather these items for distribution through THS.

Example 3: Dispensing of medication that requires the patient to take it with a meal

Many of the homeless do not have regular meals (see Chapter 4.1). Those needing to take medication with a meal often missed their dose if they had no food to eat (see Chapter 4.1). This needs to be considered by the healthcare professionals when prescribing and dispensing medication that must be taken

with food (for example nonsteroidal anti-inflammatories) and alternate treatment options should be considered.

The World Health Organisation (WHO) (2015 and 2016b) listed empowerment of individuals and the community as one on the strategies in forming an integrated people-centred health service. The homeless often feel disempowered when accessing healthcare (Williams and Stickley, 2011; Wen *et al*., 2007). Interventions should encourage patient involvement and engagement in the clinical decision-making process (WHO, 2016b). De Beer and Vally (2017) explained the need for collaborative action working with and not for the homeless. This calls for action in moving away from “community engagement to engaged communities” (De Beer and Vally, 2017, pg 394).

A stepwise approach (see Figure 7.6) to empower community involvement should be considered and consist of the following:

Comments or suggestion box

This allows patients an opportunity to voice their concerns or comments anonymously.

Feedback to the community

Identifying opportunities to communicate to the larger community providing feedback and consultation.

Appointment of representatives from the homeless community as stakeholders on the advisory committee

This poses a challenge due to the migratory nature of the homeless. However, this needs to remain the goal to ensure that the homeless are seen and valued as a stakeholder in THS.

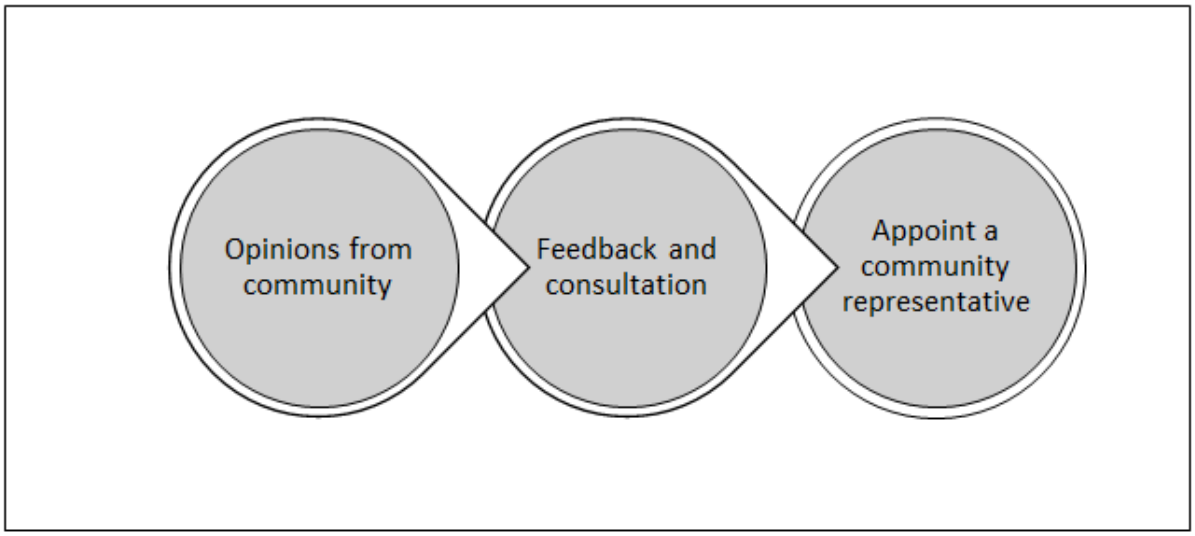


Figure 7.6: Stepwise approach to community involvement

7.4. Conclusion

Chapter 7 discussed and integrated the findings and results from Chapters 3 – 6. The findings from the qualitative components formed the theoretical framework using a grounded theory approach. The presented framework was combined with the history of THS, the retrospective review of patients' files as well as the cost of establishing and operating THS forming the proposed model.

The model of sustainability consists of three levels. The first level represents the overlapping value systems of the church and university as well as the effective management of THS through the student management committee and the establishment of the advisory committee. The next level contains the pillars of sustainability, (1) volunteering to serve, (2) learning and (3) services and supervision. These pillars are housed under a homeless-centred healthcare service forming the third level. The final chapter summarises the study conclusions, identifies the limitations of the study and makes recommendations for further research.

CHAPTER 8: CONCLUSION AND RECOMMENDATIONS

[A]n inner-city parish somewhere in a poor city started a project like this based on the vision of a fourth-year student, and sheer doggedness has brought it to something like this…

Pugin (Chapter 3, Interview, 2017)

8.1. Introduction

This chapter summarises the study and suggests the road forward for THS in prioritising tasks aligned to the proposed model. It also notes the importance of the integration of THS as part of a regional vision addressing homelessness in the city. The limitations of the study are identified and recommendations for further research are suggested.

8.2. Summary

THS is an example of social engagement and a responsive student-run initiative where students are actively providing patient care to an underserved community and advocating for their needs. This is similar to previous SRCs at University of the Witwatersrand such as Muldersdrift, Riverlea and Katlehong. The exact reasons for closure of these SRCs could not be found, although it is surmised that they did not have sufficient support and resources to continue. Muldersdrift Clinic has continued, however, it has lost its identity as a SRC and has minimal student involvement. Thus, this study was important in understanding the variables effecting the sustainability of THS and proposing a model to strengthen and maintain its current services.

The sustainability of THS is multi-layered. It consists of free primary healthcare, where students take the lead in managing and operating the services, targeting an indigent, marginalised community. Adding to the complexity is the partnership between religious and secular entities involving multiple stakeholders.

This mixed method study comprised of four components. The documentation of the history of THS explained the evolution of the clinic as a student initiative driven from their encounters with the homeless. Convergent and divergent themes linked THS and more traditional Catholic healthcare endeavours. It too presented the problems THS faced leading to its closure in 2011, providing lessons to be learnt in moving forward.

The perceptions of the stakeholder groups, student and professional volunteers, student management committees and homeless community, described their experiences of THS. From these findings the stakeholder framework emerged with three broad themes, *serving*, *learning* and *management*.

The retrospective review of patient files determined the prevailing conditions of the homeless and management thereof. It identified areas requiring expansion based on the needs of the community and the importance of coordination with referral sites.

The cost analysis determined the costs of establishing and operating a SRC as well as the cost of treatment per patient. The financial and economic operational costs were identified and should form the basis of the budget in the future. Potential revenue streams are identified and will require assistance across stakeholder groups to raise sufficient funds.

These four components contributed to the model of sustainability. The building of the model is important in understanding its meaning, starting with the foundation, then supporting pillars and lastly the roof.

The foundation represents the overlap in value systems of the church and university. The management of THS is critical moving forward. The student management committee need support by the advisory committee, faculty and church.

Three pillars of sustainability follow. The central and largest pillar represents student volunteers. It provides opportunity to serve and advocate for the homeless. Through serving, students have the opportunity to learn. Acknowledging and appreciating the learning experiences could contribute to a complementary curriculum. The final pillar represents service and supervising. The health needs of the homeless were identified and identify the need to strengthen the core services and referral system. The supervisors play a pivotal role in ensuring the standard of care and facilitating learning.

These components are housed under the concept of a ‘homeless-centred healthcare service’ supporting the view that the homeless and service delivery are first and foremost in the model. THS needs to actively engage with the community,

empowering the homeless to voice their opinions and over time become part of the advisory committee.

The proposed model involves collaboration from all stakeholders where there is joint planning and shared responsibility with the primary goal of providing a sustainable healthcare service meeting the needs of the homeless. The homeless are more than the recipients of care but are empowered to take an active role in THS and their health.

8.2.1. Implementation of the model

The recommendations and implementation of the proposed model should be staged. Figure 8.1 prioritises tasks into three stages mapping the road forward.

The first stage focuses on management, including reviewing financial support, service delivery as well as identifying strategies to recruit staff and students. Stage 2 addresses the active recruitment of volunteers, strengthening the referral system and collaboration with other SRCs. The third stage focuses on learning and research. These three stages provide a starting point, however, the progression will be informed through the students and the management structure.

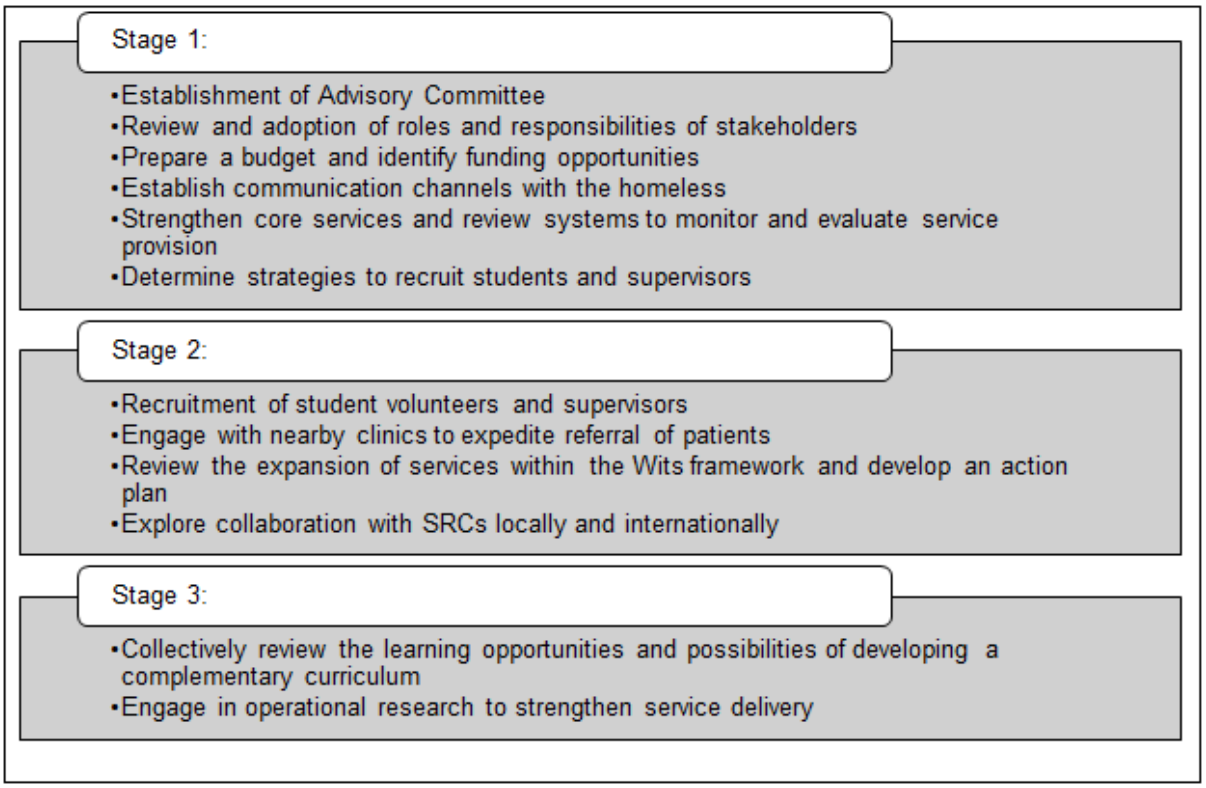


Figure 8.1: Prioritisation of tasks into three stages

8.2.2. Joint vision addressing homelessness

The focus of THS is the provision of primary healthcare to the homeless residing in Braamfontein and only partially addresses the needs of the community. Access to ablution facilities and shelters as well as nutritional requirements impact their health. Furthermore, unemployment negatively affects their psychological health. These needs fall outside the realm of THS and call for a joint vision for supporting the homeless from the university, church and City of Johannesburg.

8.3. Study limitations and recommendations for further research

The study provided information and data that contribute to the sustainability of the clinic. It highlighted the importance of research to inform the decisions made and paves the way forward for further research endeavours.

The study proposed a stakeholder framework and a model of sustainability. Although these were presented to a stakeholder panel, they need to be implemented and tested at THS, thus providing opportunities for further research. Chapter 4 refers to THS striving to become a patient-centred clinic. The Picker's Institute identifies

various principles which define person-centred care. These include accessibility to care, the standard of care provided, continuity of care and integration with existing services (Picker, 2020). Further research is needed to ensure that available health centres consider these criteria when adopting a patient-centred approach for care of the homeless.

Students and supervising professionals described the learning opportunities. However, mechanisms to investigate levels of learning should be considered in further studies. The development of a complementary curriculum to understand and contextualise learning should be considered and documented. The findings from the FGDs with students volunteers allude to interprofessional learning, future studies need probe this further investigating what students are learning about and from each other.

This encounter allows students and supervisors to interact with the homeless. A survey instrument such as the Health Professionals Attitudes Toward the Homeless Inventory (Buck *et al*., 2005) could be used to assess the attitude of volunteers before and after volunteering at THS. Furthermore, a comparison could also be made between students who volunteer and those who don't.

Little is known about the supervising volunteers and their reasons for volunteering. It would be of interest to explore their previous work experience in a SRC and community engagement activities.

The original THS founders and student committee (2004 – 2011) mentioned the influence THS had had on their professional careers. Further studies should explore the impact THS has had on their professional workplace activities and their choice of service, ie whether urban or rural; public or private sector.

The evaluation of paper-based records to determine the standard of care and health trends is time-consuming and often incomplete. The implementation of electronic records and the assignment of ICD-10 codes would allow for continuous monitoring and evaluation of adherence to treatment guidelines. This would also assist in determining the cost of treatment per patient and according the disease state, forming a vital part of the annual budget.

The cost analysis was conducted retrospectively including the costs of establishing and operating the clinic. Although this provides an indication of the costs involved, it does not take into consideration the expansion or increased utilization of the services. A longitudinal cost comparison on a year-to-year basis could prove more valuable in forecasting costs.

Future cost analyses studies could compare the cost of public healthcare facilities to that of SRCs. In addition, it would be of value to measure variables such as the average waiting time, length of consultations and time spent at the dispensary.

Collaborative research projects between staff and students should be considered. Opportunities to present these findings at conferences could assist in connecting THS with other SRCs.

8.4. Conclusion

This study documented the establishment and operating of THS. A mixed method approach integrated the qualitative and quantitative findings that addressed sustainability from multiple perspectives. The model proposes that THS is a patient-centred service for the homeless community staffed by student and professional volunteers. THS is collaborative project, where students take the lead in maintaining and operating the services supported by the advisory committee, university and church.

The principal challenges affecting sustainability emerging from this study were raising the necessary funds to maintain the current services as well as ensuring a sufficient stream of supervisor and student volunteers.
The proposed model may have broader application beyond THS. It provides insight into healthcare provided in non-traditional settings such as faith-based organisations and universities. Specifically, in the South African setting it may provide important information regarding the needs of the homeless with the emerging NHI.

References

Africa, S. (2018). Metropolitan Municipality | Statistics South Africa. Available at: http://www.statssa.gov.za/?page_id=1021&id=city-of-johannesburg-municipality [Accessed 4 April 2018].

Ambrose, E., Baker, D., Mahal, I., MicFlikier, A. and Holmqvist, M. (2015). Interprofessional Experiences at a Student-run Clinic: Who Participates and What Do They Learn?. *Journal of Research in Interprofessional Practice and Education*, *5*(2).

America Papal Visit 2015. (2019). 'The Son of God Came Into This World as a Homeless Person'. Available at: http://papalvisit.americamedia.org/2015/09/24/the-son-of-god-came-into-this-world-as-a-homeless-person/ [Accessed 16 August 2019].

Anderson, C., (2010). Presenting and evaluating qualitative research. *American Journal of Pharmaceutical Education*, *74*(8), p.141.

Ayo-Yusuf, I., Ayo-Yusuf, O. and Olutola, B. (2013). Health insurance, socio-economic position and racial disparities in preventive dental visits in South Africa. *International Journal of Environmental Research and Public Health*, *10*(1), p.178-191.

Azetsop, J. (Ed.). (2016). *HIV & AIDS in Africa: Christian Reflection, Public Health*, Social Transformation. Orbis: Maryknoll, NY.

Badri, M., Maartens, G., Mandalia, S., Bekker, L.G., Penrod, J.R., Platt, R.W., Wood, R. and Beck, E.J. (2005). Cost-effectiveness of highly active antiretroviral therapy in South Africa. *PLoS Medicine*, *3*(1), p.e4.

Baggett, T.P., Chang, Y., Singer, D.E., Porneala, B.C., Gaeta, J.M., O'Connell, J.J. and Rigotti, N.A. (2015). Tobacco-, alcohol-, and drug-attributable deaths and their contribution to mortality disparities in a cohort of homeless adults in Boston. *American Journal of Public Health*, *105*(6), p.1189-1197.

Bangert, W.V. (1986). *A History of the Society of Jesus* (No. 3). Institute of Jesuit Sources.

Barber, K. (2017). The Good Physician Treats the Disease; the Great Physician Treats the Patient Who Has the Disease"/«Le bon médecin traite la maladie; le grand médecin traite le patient atteint de la maladie*. Journal of Cutaneous Medicine and Surgery*, *21*(3), p.193-194

Batra, P., Chertok, J.S., Fisher, C.E., Manseau, M.W., Manuelli, V.N. and Spears, J., (2009). The Columbia-Harlem Homeless Medical Partnership: a new model for learning in the service of those in medical need. *Journal of Urban Health*, *86*(5), p.781-790.

Bate, S.C. and Munro, A. (2014). Catholic Responses to AIDS in Southern Africa. South African Catholic Bishops' Conference.

Baumstarck, K., Boyer, L. and Auquier, P. (2015). The role of stable housing as a determinant of poverty-related quality of life in vulnerable individuals. *International Journal for Quality in Health Care*, *27*(5), p.356-360.

Beck, E. (2005). The UCSD student-run free clinic project: Transdisciplinary health professional education. *Journal of Health Care for the Poor and Underserved*, *16*(2), p.207-219.

Beijer, U., Wolf, A. and Fazel, S. (2012). Prevalence of tuberculosis, hepatitis C virus, and HIV in homeless people: a systematic review and meta-analysis. *The Lancet Infectious Diseases*, *12*(11), p.859-870.

Berlin N, Purdy K,Chau B. (2017). Sustaining and Developing Student-Run Clinics: A Toolkit 2017. Available at: https://static1.squarespace.com/static/51d24f80e4b0d032675d5a63/t/58d548163a0411396f7aa366/1490372631635/SRC_ToolKit_2017.pdf [Accessed 17 July 2017].

Berman, R., Powe, C., Carnevale, J., Chao, A., Knudsen, J., Nguyen, A. and Edgman-Levitan, S. (2012). The crimson care collaborative: A student–faculty initiative to increase medical students' early exposure to primary care. *Academic Medicine*, *87*(5), p.651-655.

Bhikhoo, Z. (2018). Interview, 22 February. Johannesburg: Wits Medical School.

Bird, Y., Islam, A. and Moraros, J. (2016). Community-based clinic volunteering: an evaluation of the direct and indirect effects on the experience of health science college students. *BioMed Central Medical Education*, *16*(1), p.21.

Birs, A., Liu, X., Nash, B., Sullivan, S., Garris, S., Hardy, M., Lee, M., Simms-Cendan, J. and Pasarica, M. (2016). Medical Care in a Free Clinic: A Comprehensive Evaluation of Patient Experience, Incentives, and Barriers to Optimal Medical Care with Consideration of a Facility Fee. *Cureus*, *8*(2).

Black, J.D. (2002). " Hands of Hope": A Qualitative Investigation of a Student Physical Therapy Clinic in a Homeless Shelter. *Journal of Physical Therapy Education*, *16*(2), p.32.

Black, J.D., Palombaro, K.M. and Dole, R.L. (2013). Student experiences in creating and launching a student-led physical therapy pro bono clinic: A qualitative investigation. *Physical Therapy*, 93(5), p.637-648.

Botha, B. (2018). Interview, 10 January. Johannesburg: Jesuit Institute.

Brain, J.B. (1982). *Catholics in Natal II, 1886-1925* (Vol. 2). Archdiocese of Durban: Durban.

Brain, J.B., (1991). *The Catholic Church in the Transvaal*. Missionary Oblates of Mary Immaculate: Johanessburg.

Buchanan, D. and Jain, S. (2001). Teaching students about health care of the homeless. *Academic Medicine*, *76*(5), p.524-525.

Buchanan, D. and Witlen, R. (2006). Balancing service and education: ethical management of student-run clinics. *Journal of Health Care for the Poor and Underserved*, *17*(3), p.477-485.

Buck, D.S. and King, B.T. (2009). Medical student self-efficacy and attitudes toward homeless patients. *American Medical Association Journal of Ethics*, *11*(1), p.32-37.

Buck, D.S., Monteiro, F.M., Kneuper, S., Rochon, D., Clark, D.L., Melillo, A. and Volk, R.J. (2005). Design and validation of the health professionals' attitudes toward the homeless inventory (HPATHI). *BioMed Central Medical Education*, *5*(1), p.2.

Buckley, E., Vu, T. and Remedios, L. (2014). The REACH project: implementing interprofessional practice at Australia's first student-led clinic. *Education for Health*, *27*(1), p.93.

Butala, N.M., Murk, W., Horwitz, L.I., Graber, L.K., Bridger, L. and Ellis, P. (2012). What is the quality of preventive care provided in a student-run free clinic?. *Journal of Health Care for the Poor and Underserved*, *23*(1), p.414-424.

CATHCA. (2011). *In the Service of Healing: A History of Catholic Health Care in Southern Africa*. Catholic Health Care Association: Johannesburg.

Celberg, L., Linn, L.S. and Rosenberg, D.J. (1988). Dental health of homeless adults. *Special Care in Dentistry*, 8(4), p.167-172.

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Sage: London.

Collins, K.M., Onwuegbuzie, A.J. and Jiao, Q.G. (2008). Prevalence of mixed-methods sampling designs in social science research. *Evaluation & Research in Education*, *19*(2), pp.83-101.

Committee on Quality Committee on Quality of Health Care in America and Institute of Medicine Staff (2001). Crossing the quality chasm: A new health system for the 21st century. National Academies Press of Health Care in America, Institute of Medicine Staff. Crossing the quality chasm: A new health system for the 21st century. National Academies Press.

Creswell, J.W. (2014). *Research Design: Quantitative, Qualitative, and Mixed Methods Approaches*, 2nd ed., Sage Publications: California.

Cross, C. and Seager, J.R. (2010). Towards identifying the causes of South Africa's street homelessness: Some policy recommendations. *Development Southern Africa*, *27*(1), p.143-158.

Cross, C., Seager, J., Erasmus, J., Ward, C. and O'Donovan, M. (2010). Skeletons at the feast: A review of street homelessness in South Africa and other world regions. *Development Southern Africa*, *27*(1), p.5-20.

Dalaba, M.A., Welaga, P. and Matsubara, C. (2017). Cost of delivering health care services at primary health facilities in Ghana. *BioMed Central Health Services Research*, *17*(1), p.742.

Darnell, J.S. (2010). Free clinics in the United States: a nationwide survey. *Archives of Internal Medicine*, *170*(11), p.946-953.

de Beer, S. and Vally, R. (Eds.). (2015). *Pathways out of Homelessness, Research Report 2015*. Unpublished Research Report, University of Pretoria, Pretoria

de Beer, S. and Vally, R. (2017). (Finding) Pathways out of homelessness: An engaged, trans-disciplinary collaborative in the City of Tshwane. *Development Southern Africa*, *34*(4), p.385-398.

Denishurleycentre.org. (2018). Usizo Lwethu Afrisun Clinic. Available at: http://www.denishurleycentre.org/page/usizo-lwethu-afrisun-clinic [Accessed 4 April 2018].

Dellinger, A.B. and Leech, N.L. (2007). Toward a unified validation framework in mixed methods research. Journal of Mixed Methods Research, 1(4), p.309-332.

Der, D.E., You, Y.Q., Wolter, T.D., Bowen, D.A. and Dale, L.C. (2001). A free smoking intervention clinic initiated by medical students. *Mayo Clinic Proceedings,* 76(2), p.144-151.

Derington, C.G., Boom, G.D., Choi, D.K., Mader, K., Johnson, J.D. and Trinkley, K.E. (2017). Pharmacy Student Involvement in the Implementation of a Student-Run Free Clinic. *Journal of Basic and Clinical Pharmacy*, *8*(3).

Diah, J. (2018). [online] Nmfonline.org. Available at: https://nmfonline.org/wp-content/uploads/2016/01/Diah-Jonathan-Final-Poster.pdf [Accessed 26 September 2018].

Draper, B., Pienaar, D., Parker, W. and Rehle, T. (2007). Recommendations for policy in the Western Cape province for the prevention of major infectious diseases, including HIV/AIDS and tuberculosis. Available at: https://www.westerncape.gov.za/sites/www.westerncape.gov.za/files/documents/2007/6/cd_volume_3__major_infectious_diseases_hiv_t.doc [Accessed 13 Sep 2019].

Duke, P. and Brunger, F. (2015). The MUN Med Gateway Project: marrying medical education and social accountability. *Canadian Family Physician*, *61*(2), p.e81-e87.

Egan, A. (2017). Interview 28 November. Johannesburg: Jesuit Institute.

Egieyeh, E.O. (2012). *Inter-professional collaboration between general practitioners and community pharmacists: general practitioners' perspectives* (Doctoral dissertation, University of Western Cape).

Ellett, J.D., Campbell, J.A. and Gonsalves, W.C. (2010). Patient satisfaction in a student-run free medical clinic. *Family Medicine*, *42*(1), p.16-18.

Epstein, R.M. and Street, R.L., (2011). The values and value of patient-centered care. *Annals of Family Medicine*, 9(2), p.100-103

Favara, D.M. and Mendelsohn, S.C. (2012). The Students' Health and Welfare Centres Organisation (SHAWCO) of the University of Cape Town: a review of the past 69 years. *South African Medical Journal*, *102*(6), p.400-402.

Fazel, S., Geddes, J.R. and Kushel, M. (2014). The health of homeless people in high-income countries: descriptive epidemiology, health consequences, and clinical and policy recommendations. *The Lancet*, *384*(9953), p.1529-1540.

Fine, N. (2018). Interview, 25 January. Eastern Cape: Zithulele Hospital (by telephone).

Flynn, M. (2018). Interview, 6 February. London: Stockwell (by telephone).

Floyd, K., Wilkinson, D. and Gilks, C. (1997). Comparison of cost effectiveness of directly observed treatment (DOT) and conventionally delivered treatment for tuberculosis: experience from rural South Africa. *British Medical Journal, 315*(7120), p.1407-1411.

Francis, P. (2015). Cited in America Papal Visit 2015. (2019). 'The Son of God Came Into This World as a Homeless Person'. Available at: http://papalvisit.americamedia.org/2015/09/24/the-son-of-god-came-into-this-world-as-a-homeless-person/ [Accessed 16 August 2019].

Frenk, J., Chen, L., Bhutta, Z.A., Cohen, J., Crisp, N., Evans, T., Fineberg, H., Garcia, P., Ke, Y., Kelley, P. and Kistnasamy, B. (2010). Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *The Lancet*, *376*(9756), p.1923-1958.

Fröberg, M., Leanderson, C., Fläckman, B., Hedman-Lagerlöf, E., Björklund, K., Nilsson, G.H. and Stenfors, T. (2018). Experiences of a student-run clinic in primary care: a mixed-method study with students, patients and supervisors. *Scandinavian Journal of Primary Health Care*, *36*(1), p.36-46.

G C 32. (1975). 32nd General Congregation of the Society of Jesus, 1974–1975. “Service of Faith and the Promotion of Justice.” Available at: https://www.scu.edu/ic/programs/ignatian-tradition-offerings/stories/decree-4-gc-32-serviceof-faith-and-the-promotion-of-justice.html [Accessed 5 August 2018].

Gaudium et Spes (1965). “Pastoral Constitution on the Church in the Modern World” (promulgated 7 December 1965). Vatican Council II: The Conciliar and Post Conciliar Documents. Edited by Flannery, Austin. Dominican Publications: Dublin.1975, p.903-1001.

Gelberg, L., Andersen, R.M. and Leake, B.D. (2000). The Behavioral Model for Vulnerable Populations: application to medical care use and outcomes for homeless people. *Health Services Research*, *34*(6), p.1273.

Glaser, B.G. and Strauss, A.L. (1967). *The discovery of grounded theory: strategies for qualitative research.* Aldine Transaction: London and New York.

Goodier, R., Uppal, S. and Ashcroft, H. (2015). Making international links to further interprofessional learning: a student-led initiative for the homeless population. *Journal of Interprofessional Care*, *29*(3), p.265-267.

Gordon, C. (2016). *Volunteer, community-based student-run clinics for the underserved: can they be used to attain 21st century medical education goals?* (Doctoral dissertation, Stellenbosch University).

Gorrindo, P., Peltz, A., Ladner, T.R., Miller, B.M., Miller, R.F. and Fowler, M.J. (2014). Medical students as health educators at a student-run free clinic: improving the clinical outcomes of diabetic patients. *Academic Medicine*, *89*(4), p.625.

Green-Thompson, L. (2018). Interview, 1 March. Johannesburg: Wits Medical School.

Guba, E.G. and Lincoln, Y.S. (1981). *Effective evaluation: Improving the usefulness of evaluation results through responsive and naturalistic approaches*. Jossey-Bass: San Francisco.

Graff, J.C. (2016). Mixed Methods Research. *Evidence-Based Practice*, Jones and Barlett Learning: Burlington.

Gray, A. and Vawda, Y. (2016). Health policy and legislation. *South African Health Review*, *2016*(1), p.3-15.

Haggarty, D. and Dalcin, D. (2014). Student-run clinics in Canada: an innovative method of delivering interprofessional education. *Journal of Interprofessional Care*, *28*(6), p.570-572.

Hallin, K., Henriksson, P., Dalén, N. and Kiessling, A. (2011). Effects of interprofessional education on patient perceived quality of care. *Medical Teacher*, *33*(1), p.e22-e26.

Hamso, M., Ramsdell, A., Balmer, D. and Boquin, C. (2012). Medical students as teachers at CoSMO, Columbia University's student-run clinic: a pilot study and literature review. *Medical teacher*, *34*(3), p.e189-e197.

Hastings, J., Zulman, D. and Wali, S. (2007). UCLA mobile clinic project. *Journal of Health Care for the Poor and Underserved*, *18*(5), p.744-748.

Health Professions Council of South Africa (2014). *Medical and Dental Professions Board: Core competencies for undergraduate students in clinical associate, dentistry and medical teaching and learning programmes in South Africa*. Pretoria: Health Professions Council of South Africa.

Hemba, K.E. and Plumb, J. (2011). JeffHOPE: the development and operation of a student-run clinic. *Journal of Primary Care & Community Health*, *2*(3), pp.167-172.

Holmqvist, M., Courtney, C., Meili, R. and Dick, A. (2012). Student-run clinics: Opportunities for interprofessional education and increasing social accountability. *Journal of Research in Interprofessional Practice and Education*, *2*(3).

Hsu, L.D., DeJong, W., Hsia, R., Chang, M., Ryou, M. and Yeh, E. (2003). Student leadership in public health advocacy: lessons learned from the hepatitis B initiative. *American Journal of Public Health*, *93*(8), p.1250-1252.

Hugo, J. (2015). Homelessness in Tshwane: Health report from the Department of Family Medicine, in de Beer, S. and Vally, R (ed.) *Pathways out of Homelessness, Research Report 2015*. University of Pretoria, Pretoria, p.14-16.

Hunt, J.B., Bonham, C. and Jones, L. (2011). Understanding the goals of service learning and community-based medical education: a systematic review. *Academic Medicine*, *86*(2), p.246-251.

Institute of Medicine (US) Committee on Health Care for Homeless People. (1988) *Homelessness, Health, and Human Needs*. National Academies Press: Washington (DC). Available from: https://www.ncbi.nlm.nih.gov/books/NBK218232/ doi: 10.17226/1092 [Accessed 13 September 2019].

Izutsu, S., Omori, J.S., Riklon, S., Wong, V.S. and Lee, D.F. (2012). Medical school hotline: The Hawai ‘i homeless outreach and medical education project: Servicing the community and our medical students. *Hawai'i Journal of Medicine and Public Health*, 71(9), p.262.

Johnston, D., McInerney, P.A., Fadahun, O., Green-Thompson, L.P., Moch, S., Shiba, P.G. and Magida, A. (2015). Experiences of medical and pharmacy students’ learning in a shared environment: A qualitative study. *African Journal of Health Professions Education*, *7*(2), p.183-186.

Johnston, D., Egan, A. and McInerney, P. (2018). The rise, fall and re-establishment of Trinity Health Services: Oral history of a student-run clinic based at an inner-city Catholic Church. *Studia Historiae Ecclesiasticae*, *44*(3), p.1-21.

Johnston, D., McInerney, P., Miot, J. (in press). A profile of the health of the homeless at an inner city primary health care clinic in South Africa. *Journal of Health Care for the Poor and Underserved.*

Joshua, S.M. (2010a). A critical historical analysis of the South African Catholic Church's HIV/AIDS response between 2000 and 2005. *African Journal of AIDS Research*, *9*(4), p.437-447.

Joshua, S.M. (2010b). The Dowling Controversy, the" Message of Hope" and the Principle of Oikonomia: A historical-critical reflection on the South Africa Catholic Church's stance on the use of condoms in HIV prevention between 2000 and 2005. *Journal of Theology for Southern Africa*, (137), p.4.

Joshua, S.M. (2014). " Tell me where I can find the condom!" Catholic AIDS discourses in South Africa during the 1990s. *Historia*, *59*(1), p.72-87.

Kalk, F. (1963). Katlehong Clinic, *The Auricle*, 14(1), p.2

Kanabus, A. (2017). Information about Tuberculosis: TB Statistics-Global, Regional and High Burden. Global Health Education (GHE).

Keenan, James F. et al. (Eds). (2000). *Catholic Ethicists on HIV/AIDS Prevention*. Continuum: New York.

Kelly, K.T. (1998). *New directions in sexual ethics: moral theology and the challenge of AIDS*. Bloomsburg Publishing: London.

Kent, F. and Keating, J. (2013). Patient outcomes from a student-led interprofessional clinic in primary care. *Journal of Interprofessional Care*, *27*(4), p.336-338.

Kilbourne, A.M., Switzer, G., Hyman, K., Crowley-Matoka, M. and Fine, M.J. (2006). Advancing health disparities research within the health care system: a conceptual framework. *American Journal of Public Health*, *96*(12), p.2113-2121.

Kim, D. and Lee, N. (2015). Early Interprofessional Collaboration Through Student-Run Clinics. *University British Columbia Medical Journal*, *6*(2), p.26-27.

Kim, M.M., Swanson, J.W., Swartz, M.S., Bradford, D.W., Mustillo, S.A. and Elbogen, E.B. (2007). Healthcare barriers among severely mentally ill homeless adults: Evidence from the five-site health and risk study. *Administration and Policy in Mental Health and Mental Health Services Research*, *34*(4), p.363-375.

Koenig, H.G., Mccollough, M. and Larson, D.B. (2001). *Handbook of Religion and Health*, Oxford University: New York.

Koh, H.K. and O'Connell, J.J. (2016). Improving health care for homeless people. *Journal of the American Medical Association*, *316*(24), p.2586-2587.

Kothari, M. (2007). *Report of the Special Rapporteur on adequate housing as a component of the right to an adequate standard of living*. UN.

Larkin, M. (2009). *Vulnerable groups in health and social care*. Sage: London

Lester, H. and Bradley, C.P. (2001). Barriers to primary healthcare for the homeless: the general practitioner's perspective. *The European Journal of General Practice*, *7*(1), p.6-12.

Liberman, K.M., Meah, Y.S., Chow, A., Tornheim, J., Rolon, O. and Thomas, D.C. (2011). Quality of mental health care at a student-run clinic: care for the uninsured exceeds that of publicly and privately insured populations. *Journal of Community Health*, *36*(5), p.733-740.

Lie, D.A., Forest, C.P., Walsh, A., Banzali, Y. and Lohenry, K. (2016). What and how do students learn in an interprofessional student-run clinic? An educational framework for team-based care. *Medical Education Online*, *21*(1), p.31900.

Lingle, L. (2004). Keynote Speech to the Chamber of Commerce of Hawaii (Affordable Housing/Homelessness. Available at: https://votesmart.org/public-statement/63019/keynote-speech-to-the-chamber-of-commerce-of-hawaii-affordable-housinghomelessness#.XUHp9PZuLIW. [Accessed on 1 Aug 2019].

Lorhman, G. (2018). Interview, 8 February. Boston: Roxbury (by telephone).

Lohrmann, G.M., Botha, B., Violari, A. and Gray, G.E. (2012). HIV and the urban homeless in Johannesburg. *Southern African Journal of HIV Medicine*, *13*(4), p.174-177.

Lough, L.E., Ebbert, J.O. and McLeod, T.G. (2011). Evaluation of a student-run smoking cessation clinic for a medically underserved population. *BioMed Central Research Notes*, *4*(1), p.55.

Lumen Gentium. (1964). “Dogmatic Constitution on the Church” (promulgated 21 November 1964). Vatican Council II: The Conciliar and Post Conciliar Documents, edited by Austin Flannery. Dublin: Dominican Publications 1975, p.350–426.

Mandela, N. (1994). *Inaugural Speech, Pretoria - 5/10/94*. Available at: https://www.africa.upenn.edu/Articles_Gen/Inaugural_Speech_17984.html [Accessed 16 Aug. 2019].

Mardai, G. (2018). Interview, 10 January. Harare: Arrupe Jesuit University (by telephone).

Martinson, N., Mohapi, L., Bakos, D., Gray, G.E., McIntyre, J.A. and Holmes, C.B. (2009). Costs of providing care for HIV-infected adults in an urban, HIV clinic in Soweto, South Africa. *Journal of Acquired Immune Deficiency Syndromes (1999)*, *50*(3), p.327.

Matsheke, T. (2004). *A cost analysis of rural primary health care (PHC) services in KwaZulu-Natal* (Doctoral dissertation, University of Cape Town).

Mayosi, B.M., Flisher, A.J., Lalloo, U.G., Sitas, F., Tollman, S.M. and Bradshaw, D. (2009). The burden of non-communicable diseases in South Africa. *The Lancet*, *374*(9693), p.934-947.

Meah, Y.S., Smith, E.L. and Thomas, D.C. (2009). Student-run health clinic: Novel arena to educate medical students on systems-based practice. *Mount Sinai Journal of Medicine: A Journal of Translational and Personalized Medicine: A Journal of Translational and Personalized Medicine*, *76*(4), p.344-356.

Medical and Dental Professions Board of the Health Professions Council South Africa. (2014). Core competencies for undergraduate students in clinical associate, dentistry and medical teaching and learning programmes in South Africa

Medical Students' Council. (1966). Riverlea, *The Auricle*, 18(1), p.1.

Medical Students' Council. (1974). Muldersdrift News, *The Auricle*, p.6.

Medical Students' Council. (1987a). Riverlea Clinic, *The Auricle*, 3(1), p.9.

Medical Students' Council. (1987b). Muldersdrift Clinic, *The Auricle*, 3(1), p.9.

Mendelow, D. (1967). Students disappoint at Clinic, *The Auricle*, 19(2), p.1.

Mendelsohn, S.C. (2014). Student doctors (umfundi wobugqirha): The role of student-run free clinics in medical education in Cape Town, South Africa. *African Journal of Health Professions Education*, *6*(1), p.28-32.

MES - MES Johannesburg. (2018). Available at: http://mes.org.za/index.php/2015-11-17-13-25-02/mes-johannesburg [Accessed 18 April 2018].

Mischell, S., Yegya-Raman, N., Frenchu, K. and Lin, K. (2017). Patient expectations and satisfaction when using a student-run health clinic. *Journal of Student-Run Clinics*, *3*(1).

Mokwena, K.E. and Huma, M. (2014). Experiences of 'nyaope' users in three provinces of South Africa: substance abuse. *African Journal for Physical Health Education, Recreation and Dance*, *20*(Supplement 1), p.352-363.

Moolman, J. (2018). Interview, 22 February. Malawi (by telephone).

Morgan, Y. and Goemans, L. (2013). "*Catholic Health Care: The CATHCA Story." In A Story Worth Telling: Essays in Honour of Cardinal Napier*, edited by Bate, S. C. and Egan, A., 191–207. Pretoria: South African Bishops Conference.

Morrison, D.S. (2009). Homelessness as an independent risk factor for mortality: results from a retrospective cohort study. *International Journal of Epidemiology*, *38*(3), p. 877-83.

Moyo, U., Patel, L. and Ross, E. (2015). Homelessness and mental illness in Hillbrow, South Africa: a situation analysis. *Social Work*, *51*(1), p.1-21.

National Department of Health. (2015). National Health Insurance for South Africa: Towards Universal Health Coverage. *Government Gazette*, *1230*.

National Department of Health South Africa (2018). *Essential Drugs Programme. Primary Healthcare Standard Treatment Guideline and Essential Medicine List.* 6th ed. Republic of South Africa: National Department of Health.

O'Connell, J.J., Mattison, S., Judge, C.M., Allen, H.J.S. and Koh, H.K. (2005). A public health approach to reducing morbidity and mortality among homeless people in Boston. *Journal of Public Health Management and Practice*, *11*(4), p.311-316.

Olufemi, O. (1998). Street homelessness in Johannesburg inner-city: a preliminary survey. *Environment and Urbanization*, *10*(2), p.223-234.

Ouyang, D., Yuan, N., Sheu, L., Lau, G., Chen, C. and Lai, C.J. (2013). Community health education at student-run clinics leads to sustained improvement in patients' hepatitis B knowledge. *Journal of Community Health*, *38*(3), p.471-479.

Palaganas, E.C., Sanchez, M.C., Molintas, V.P. and Caricativo, R.D. (2017). Reflexivity in qualitative research: A journey of learning. *Qualitative Report*, *22*(2).

Palombaro, K.M., Dole, R.L. and Lattanzi, J.B. (2011). A case report of a student-led pro bono clinic: a proposed model for meeting student and community needs in a sustainable manner. *Physical Therapy*, *91*(11), p.1627-1635.

Pammett, R., Landry, E., Weidmann, A.E. and Jorgenson, D. (2015). Interprofessional student-run primary health care clinics: educational experiences for pharmacy students. *Canadian Pharmacists Journal/Revue des Pharmaciens du Canada*, *148*(3), p.125-128.

Paul VI. (1968). Available at: http://w2.vatican.va/content/paulvi/en/encyclicals/documents/hf_p-vi_enc_25071968_humanae-vitae.html [Accessed 25 July 2018].

Pearson, A. and Vaughan, B. and FitzGerald, M. (1986). *Nursing models for practice*. Elsevier Health Sciences: Oxford.

Pearson, A., Vaughan, B. and FitzGerald, M. (2005). *Nursing models for practice*. Elsevier Health Sciences: Oxford.

Pitman, B. (2018). Interview, 4 January. Cape Town: Wynberg (by telephone).

Pollitt, R. (2017). Interview, 20 December. Johannesburg: Jesuit Institute.

Pugin, G. (2017). Interview, 18 December. Johannesburg: Holy Trinity Catholic Church.

Putman, M., Reddy, S., Siebert, D., Espinoza, J. and Jones, K. (2014). Student-run free clinics and complementary curricula. *Medical Teacher*, *36*(12), p.1087-1088.

Random Acts of Kindness. (2015). Random Acts of Kindness, Trinity Health Services. Available at: http://www.702.co.za/articles/9843/random-act-of-kindness-

trinity-health-service. [Accessed 3 July 2018].

Rocha, R. (2000). *Helder, the gift: A life that marked the course of the church in Brazil*. Editora Vozes: Bloomington, IN.

Ranchod, S., Adams, C., Burger, R., Carvounes, A., Dreyer, K., Smith, A., Stewart, J. and van Biljon, C. (2017). South Africa's hospital sector: old divisions and new developments. *South African Health Review*, *2017*(1), p.101-110.

Roberts, P., Priest, H. and Traynor, M. (2006). Reliability and validity in research. *Nursing Standard*, 20(44).

Robinson, W.D., Barnacle, R.E.S., Pretorius, R. and Paulman, A. (2004). An Interdisciplinary Student-Run Diabetes Clinic: Reflections on the Collaborative Training Process. *Families, Systems, & Health*, *22*(4), p.490.

Rosenbaum, B.E., Kruger, J. and Goldwaser, E. (2016). Prioritizing Community-Focused Care: The Journal of Student-Run Clinics. *Journal of Student-Run Clinics*, *2*(2).

Rubenstein, W., Rifkin, R., Huber, B., Pedowitz, E., Rabkin, J., Thomas, D. and Meah, Y. (2016). What Drives Faculty to Volunteer at a Student-Run Clinic for the Underserved?. *Journal of Student-Run Clinics*, *2*(1).

Rudy, B.J., Murphy, D.A., Harris, D.R., Muenz, L. and Ellen, J. (2009). Patient-related risks for nonadherence to antiretroviral therapy among HIV-infected youth in the United States: a study of prevalence and interactions. *AIDS patient care and STDs*, *23*(3), p.185-194.

Rule-Groenewald, C., Timol, F., Khalema, E. and Desmond, C. (2015). More than just a roof: unpacking homelessness. Available at: www. hsrc. ac. za/en/review/hsrc-review-march-2015/unpacking-homelessness [Accessed 7 Sept. 2015].

Ryan, J.A. (1990). *An examination of the achievement of the Jesuit Order in South Africa, 1879-1934* (Doctoral dissertation, Rhodes University).

Ryskina, K.L., Meah, Y.S. and Thomas, D.C. (2009). Quality of diabetes care at a student-run free clinic. *Journal of Health Care for the Poor and Underserved*, *20*(4), p.969-981.

SACBC Aids Office. (2012). Nazareth House Johannesburg. Available at: http://aidsoffice.sacbc.org.za/nazerth-house-johannesburg/ [Accessed 3 July 2018].

SACBC Aids Office. (2014). [online] “Gauteng Department of Health signs MOU with Nazareth House, Johannesburg.” Available at: http://aidsoffice.sacbc.org.za/gauteng-department-ofhealth-signs-mou-with-nazareth-house-johannesburg/ [Accessed 3 July 2018].

Schutte, T., Tichelaar, J., Dekker, R.S., van Agtmael, M.A., de Vries, T.P. and Richir, M.C. (2015). Learning in student-run clinics: A systematic review. *Medical Education*, *49*(3), p.249-263.

Scott, E.A. and Swartz, M.K. (2015). Interprofessional student experiences on the HAVEN free clinic leadership board. *Journal of interprofessional care*, *29*(1), p.68-70.

Seager, J.R. and Tamasane, T. (2010). Health and well-being of the homeless in South African cities and towns. *Development Southern Africa*, *27*(1), p.63-83.

Searle, C. (1965). *The History of the Development of Nursing in South Africa 1652 – 1960*, The South African Nursing Association: Pretoria.

Seif, G., Coker-Bolt, P., Kraft, S., Gonsalves, W., Simpson, K. and Johnson, E. (2014). The development of clinical reasoning and interprofessional behaviors: service-learning at a student-run free clinic. *Journal of interprofessional care*, *28*(6), p.559-564.

Shawco.org. (2019). SHAWCO | Improving the quality of life for individuals in developing communities. Available at: http://shawco.org/ [Accessed 22 May 2019].

Sheu, L.C., Zheng, P., Coelho, A.D., Lin, L.D., O’sullivan, P.S., O’brien, B.C., Albert, Y.Y. and Lai, C.J. (2011). Learning through service: student perceptions on volunteering at interprofessional hepatitis B student-run clinics. *Journal of Cancer Education*, *26*(2), p.228-233.

Sick, B., Sheldon, L., Ajer, K., Wang, Q. and Zhang, L. (2014). The student-run free clinic: an ideal site to teach interprofessional education?. *Journal of Interprofessional Care*, *28*(5), p.413-418.

Simpson, S.A. and Long, J.A. (2007). Medical student-run health clinics: important contributors to patient care and medical education. *Journal of General Internal Medicine*, *22*(3), p.352-356.

Sjweb.info. (2019). [online] Available at: http://sjweb.info/documents/education/characteristics_en.pdf [Accessed 21 June 2019].

Smith, J.K. and Weaver, D.B. (2006). Capturing medical students' idealism. The *Annals of Family Medicine*, 4(suppl 1), p.S32-S37.

Smith, S., Thomas, R., Cruz, M., Griggs, R., Moscato, B. and Ferrara, A. (2014). Presence and characteristics of student-run free clinics in medical schools. *Journal of the American Medical Association*, *312*(22), p.2407-2410.

Smith, S.D., Johnson, M.L., Rodriguez, N., Moutier, C. and Beck, E. (2012). Medical student perceptions of the educational value of a student-run free clinic. *Family Medicine-Kansas City*, *44*(9), p.646.

South Africa. Medicines and Related Substances Act, Act 101 of 1965, as amended.

South Africa. Pharmacy Act, Act 53 of 1974, as amended.

Spector A, Alpert H, Karam-Hage M. (2007). Smoking cessation delivered by medical students is helpful to homeless population. *Academic Psychiatry,*31(5), p.402-5.

Springer, S. (2000). Homelessness: a proposal for a global definition and classification. *Habitat International*, *24*(4), p.475-484.

Statistics South Africa. (2017). [online] Public healthcare: How much per person? Pretoria: Statistics South Africa 2017. Available at: http://www.statssa.gov.za/?p=10548 [Accessed on the 11 January 2019].

Statistics South Africa. (2017). General Household survey. Pretoria: Statistics South Africa. Statistical release P0318.

Statistics South Africa. (2017). Mid-year population estimates. Pretoria: Statistics South Africa. Statistical release P0302.

Statistics South Africa. (2018). Consumer Price index. Pretoria: Statistics South Africa. Statistical release P0141.

Statistics South Africa. (2018). Quarterly labour force survey – QLFS Q1: 2018. Statistics South Africa.

Steinbach, A., Swartzberg, J. and Carbone, V. (2001). The Berkeley Suitcase Clinic: homeless services by undergraduate and medical student teams. *Academic Medicine,* 76(5), p.524.

Stenius-Ayoade, A., Haaramo, P., Kautiainen, H., Gissler, M., Wahlbeck, K. and Eriksson, J.G. (2017). Mortality and causes of death among homeless in Finland: a 10-year follow-up study. *Journal of Epidemiology and Community Health*, *71*(9), p.841-848.

Stephens, L., Bouvier, N., Thomas, D. and Meah, Y. (2015). Voluntary participation in a medical student-organized Clinic for Uninsured Patients Significantly Augments the formal curriculum in teaching underrepresented Core competencies. *Journal of Student-Run Clinics*, *1*(1).

Strauss, A. and Corbin, J. (1998). *Basics of qualitative research techniques*. Sage publications: Thousand Oaks, CA.

Studentrunfreeclinics.org. (2019). Available at: https://www.studentrunfreeclinics.org/ [Accessed 20 Jun. 2019].

Stuhlmiller, C.M. and Tolchard, B. (2015). Developing a student-led health and wellbeing clinic in an underserved community: collaborative learning, health outcomes and cost savings. *BioMed Central Nursing*, *14*(1), p.32.

Tambudze, K. (2018). Interview, 8 February. Bloemfontein (by telephone).

Teddlie, C. and Tashakkori, A. (2003). Major issues and controversies in the use of mixed methods in the social and behavioural sciences. *Handbook of mixed methods in social & behavioral research*.

Tashakkori, A. and Teddlie, C. eds., 2010. *Sage handbook of mixed methods in social & behavioral research*. sage.

Teddlie, C. and Tashakkori, A. 2009. *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Sage: California.

The University of the Witwatersrand. (2019a). Community Engagement - Wits University. Available at: https://www.wits.ac.za/therapeuticsciences/nursing/about-us/community-engagement/ [Accessed 22 May 2019].

The University of the Witwatersrand. (2019b). Vision and Mission - Wits University. Available at: https://www.wits.ac.za/about-wits/governance/vision-and-mission/ [Accessed 4 June 2019].

Tipple, G. and Speak, S. (2005). Definitions of homelessness in developing countries. *Habitat International*, *29*(2), p.337-352.

Trevena, L.J., Simpson, J.M. and Nutbeam, D. (2003). Soup kitchen consumer perspectives on the quality and frequency of health service interactions. *International Journal for Quality in Health Care*, *15*(6), p.495-500.

Trinity Health Services. (2011). Standard Operation Procedures. THS Archives (in possession of Zeenat Bhikhoo).

United Nations General Assembly (1948). Universal declaration of human rights. *UN General Assembly*, *302*(2).

Universities South Africa (2017). Strategic Framework for Universities South Africa (2015 – 2019). Available at: https://www.usaf.ac.za/strategic-framework/ [Accessed 2 August 2019].

Van der Wielen, L.M., Vanderbilt, A.A., Dumke, E.K., Do, E.K., Isringhausen, K.T., Wright, M.S., Enurah, A.S., Mayer, S.D. and Bradner, M. (2014). Improving public health through student-led interprofessional extracurricular education and collaboration: a conceptual framework. *Journal of Multidisciplinary Healthcare*, *7*, p.105.

Vatican Council, I.I. (1965). *Pastoral constitution on the Church in the modern world*. ACTS.

Vedan, T.A. and Kotsane, D.F., (2016). 'Dentistry: not a critical skill?'. *South African Dental Journal*, *71*(5), p.206-211.

Weber, B. (2005). Trinity Health Service. *The Auricle*, January, p.10.

Wee, L.E., Yeo, W.X., Tay, C.M., Lee, J.J. and Koh, G.C., (2010). The pedagogical value of a student-run community-based experiential learning project: the Yong Loo Lin School of Medicine Public Health Screening. *Annals Academy of Medicine Singapore*, *39*(9), p.686.

Wen, C.K., Hudak, P.L. and Hwang, S.W. (2007). Homeless people's perceptions of welcomeness and unwelcomeness in healthcare encounters. *Journal of General Internal Medicine*, *22*(7), p.1011-1017.

Wentzel, D. and Voce, A., (2012). Health seeking experiences and behaviours of homeless people in Durban, South Africa. *Africa Journal of Nursing and Midwifery*, *14*(2), p.77-89.

Whelton, P.K., Carey, R.M., Aronow, W.S., Casey, D.E., Collins, K.J., Himmelfarb, C.D., DePalma, S.M., Gidding, S., Jamerson, K.A., Jones, D.W. and MacLaughlin, E.J. (2018). 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Journal of the American College of Cardiology*, 71(19), p.e127-e248.

Whitney, N. and Glazier, R. (2004). Factors affecting medication adherence among the homeless: A qualitative study of patients' perspectives. *University of Toronto Medical Journal*, *82*(1), p.6-9.

Williams, S. and Stickley, T. (2011). Stories from the streets: people's experiences of homelessness. *Journal of psychiatric and mental health nursing*, *18*(5), p.432-439.

Wong, R., Chakravarthy, R., Jones, A., Sengkhounmany, C., Jordan, S. and Miller, R. (2018). *Model of an Interdisciplinary Medical-Legal Partnership at a Student Run Free Clinic.* Available at: https://www.acponline.org/membership/medical-students/acp-impact/archive/november-2018/model-of-an-interdisciplinary-medical-legal-partnership-at-a-student-run-free-clinic [Accessed 26 August 2019].

Woodrow, A. (1990). *The Jesuits: A story of power*. Geoffrey Chapman: London.

Worcester, T. ed. (2008). *The Cambridge companion to the Jesuits*. Cambridge University Press.

World Health Organization. (2011). Housing and Health. Available at: http://www.who.int/hia/housing/en/ [Accessed 5 April 2018 and 18 July 2018].

World Health Organization (2015). *WHO global strategy on people-centred and integrated health services: interim report* (No. WHO/HIS/SDS/2015.6). World Health Organization.

World Health Organization, (2016). *Progress report 2016: prevent HIV, test and treat all: WHO support for country impact (No. WHO/HIV/2016.24).* World Health Organization.

World Health Organization. (2016b). *Report on the public consultation to inform development of the Framework on integrated people-centred health services* (No. WHO/HIS/SDS/2016.4). World Health Organization.

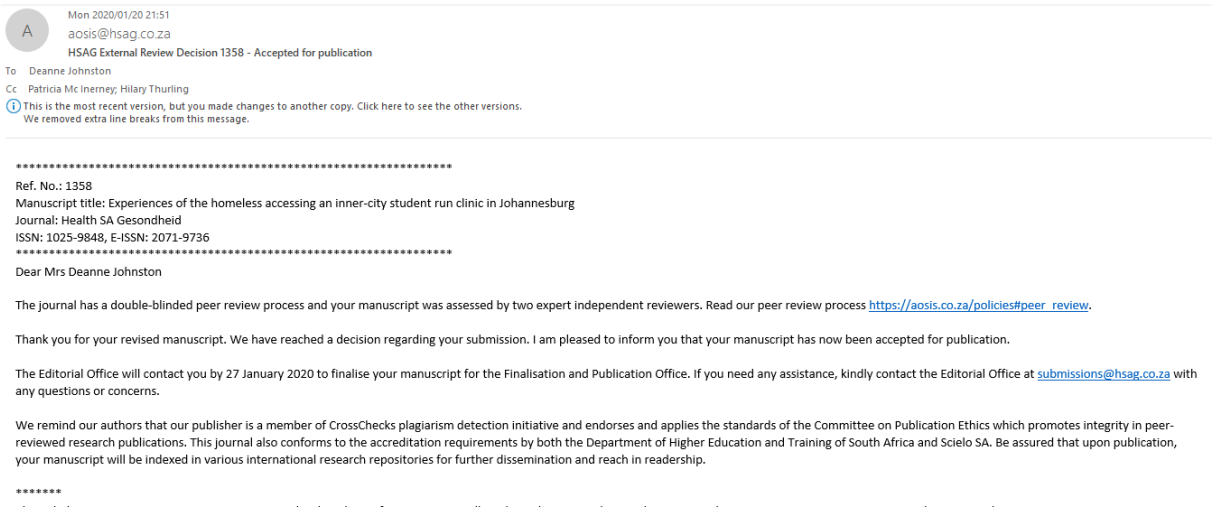
World Health Organisation. (2018). *International statistical classification of diseases and health related problems*, 10th Revision, Volume 1 Tabular [Accessed 19th July 2018].

Wrezel, O. (2009). Respiratory infections in the homeless. *University of Western Ontario Medical Journal*, *78*(2), p.61-5.

XE Currency Converter. (2018). Available from: https://www.xe.com/currencyconverter/convert/?Amount=177+750.14&From=ZAR&To=GBP [Accessed 18 September 2018]

Zucker, J., Gillen, J., Ackrivo, J., Schroeder, R. and Keller, S. (2011). Hypertension management in a student-run free clinic: meeting national standards?. *Academic Medicine*, *86*(2), p.239-245.

Appendix 1: Health SA Gesondheid



Mon 2020/01/20 21:51
aosis@hsag.co.za
HSAG External Review Decision 1358 - Accepted for publication

To Deanne Johnston
Cc Patricia Mc Inerney; Hilary Thurling

This is the most recent version, but you made changes to another copy. Click here to see the other versions.
We removed extra line breaks from this message.

****
Ref. No.: 1358
Manuscript title: Experiences of the homeless accessing an inner-city student run clinic in Johannesburg
Journal: Health SA Gesondheid
ISSN: 1025-9848, E-ISSN: 2071-9736
****
Dear Mrs Deanne Johnston

The journal has a double-blinded peer review process and your manuscript was assessed by two expert independent reviewers. Read our peer review process https://aosis.co.za/policies#peer_review.

Thank you for your revised manuscript. We have reached a decision regarding your submission. I am pleased to inform you that your manuscript has now been accepted for publication.

The Editorial Office will contact you by 27 January 2020 to finalise your manuscript for the Finalisation and Publication Office. If you need any assistance, kindly contact the Editorial Office at submissions@hsag.co.za with any questions or concerns.

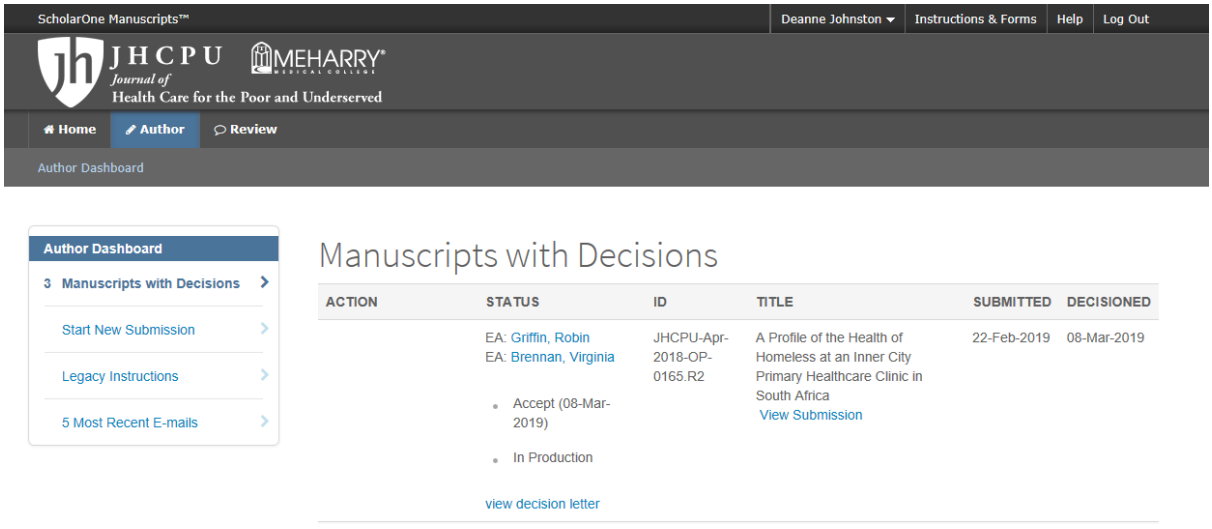
We remind our authors that our publisher is a member of CrossChecks plagiarism detection initiative and endorses and applies the standards of the Committee on Publication Ethics which promotes integrity in peer-reviewed research publications. This journal also conforms to the accreditation requirements by both the Department of Higher Education and Training of South Africa and Scielo SA. Be assured that upon publication, your manuscript will be indexed in various international research repositories for further dissemination and reach in readership.

****

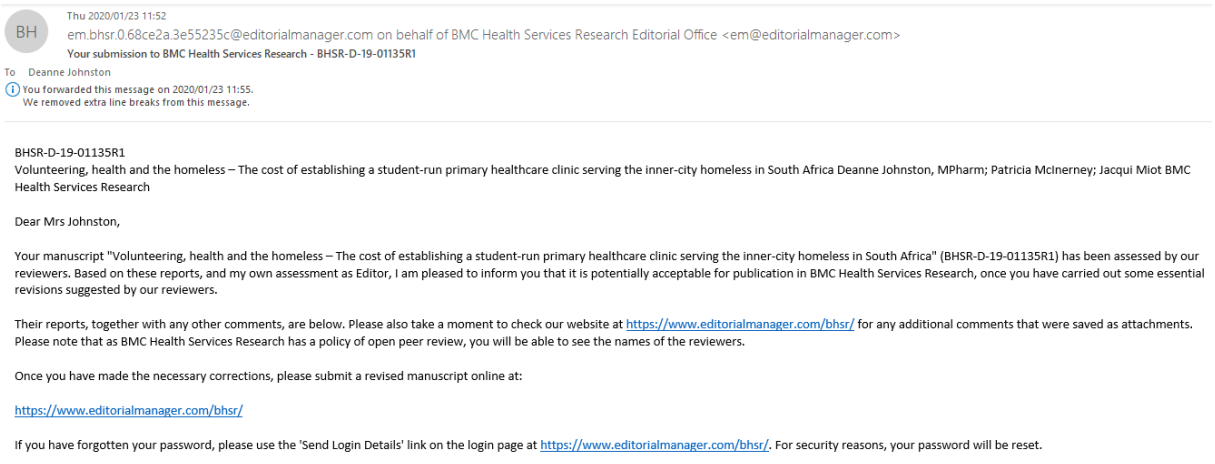
Appendix 2: Education for Health



Appendix 3: Journal for Health Care for the Poor and Underserved



Appendix 4: BioMed Central Health Services Research



BH

Thu 2020/01/23 11:52

em.bhsr.0.68ce2a.3e55235c@editorialmanager.com on behalf of BMC Health Services Research Editorial Office <em@editorialmanager.com>

Your submission to BMC Health Services Research - BHSR-D-19-01135R1

To Deanne Johnston

You forwarded this message on 2020/01/23 11:55.
We removed extra line breaks from this message.

BHSR-D-19-01135R1
Volunteering, health and the homeless – The cost of establishing a student-run primary healthcare clinic serving the inner-city homeless in South Africa Deanne Johnston, MPharm; Patricia McInerney; Jacqui Miot BMC Health Services Research

Dear Mrs Johnston,

Your manuscript "Volunteering, health and the homeless – The cost of establishing a student-run primary healthcare clinic serving the inner-city homeless in South Africa" (BHSR-D-19-01135R1) has been assessed by our reviewers. Based on these reports, and my own assessment as Editor, I am pleased to inform you that it is potentially acceptable for publication in BMC Health Services Research, once you have carried out some essential revisions suggested by our reviewers.

Their reports, together with any other comments, are below. Please also take a moment to check our website at https://www.editorialmanager.com/bhsr/ for any additional comments that were saved as attachments. Please note that as BMC Health Services Research has a policy of open peer review, you will be able to see the names of the reviewers.

Once you have made the necessary corrections, please submit a revised manuscript online at:

https://www.editorialmanager.com/bhsr/

If you have forgotten your password, please use the 'Send Login Details' link on the login page at https://www.editorialmanager.com/bhsr/. For security reasons, your password will be reset.

Appendix 5: Permission to conduct the study from University of the Witwatersrand



UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

OFFICE OF THE DEPUTY REGISTRAR

10 November 2017

Mrs Deanne Johnston
PhD Therapeutic Sciences Candidate
School of Therapeutic Sciences

TO WHOM IT MAY CONCERN

"Development of a Sustainable Student-run Clinic Serving the Homeless of the Inner City"

This letter serves to confirm that the above project has received permission to be conducted on University premises, and/or involving staff and/or students of the University as research participants. In undertaking this research, you agree to abide by all University regulations for conducting research on campus and to respect participants' rights to withdraw from participation at any time.

If you are conducting research on certain student cohorts, year groups or courses within specific Schools and within the teaching term, permission must be sought from Heads of School or individual academics.

No research can commence before ethical clearance has been obtained. Kindly forward a copy of the clearance certificate to this office.

Nioleon Potgieter
University Deputy Registrar

Appendix 6: Permission to conduct the study from Holy Trinity Catholic Church

1 September 2017

Dear Mrs Johnston,

RE: Development of a Sustainable Student-run Clinic Serving the Homeless of the Inner City

We have reviewed your research protocol and we are aware that you will be conducting the research at Trinity Health Services and that this will involve focus group discussions and/or interviews with both the clergy involved and members of the homeless community.

We grant you permission to conduct the study you have proposed, provided that ethical permission from the Human Research Ethics Committee of the University of the Witwatersrand is obtained and further, that only participants who explicitly and freely volunteer to participate in your project will be included.

We believe this is an important project worthy of investigation and we wish you all the best in completing it.

Yours faithfully,

Fr Graham Pugin, S.J.
Parish Priest & Chaplain

Fr Matthew Charlesworth, S.J.
Assistant Parish Priest & Assistant Chaplain

Appendix 7: In-depth interview questions

Clinic founders:

- When was the clinic established?
- What services were initially offered at the clinic?
- What was the role of the Church in the establishment of the clinic?
- What was the role of the Faculty in the clinic?
- Why did you get involved?
- How did your worldview (religious/secular) influence your involvement?
- How did you perceive the role of religion in the clinic, if any?

Stakeholders involved in operating the clinic:

- During which period did you work in the clinic?
- How did the clinic operate?
- What was your role in the clinic?
- How was the clinic managed?
- What was the role of the church in the running of the clinic?
- What was the role of the Faculty in the running of the clinic?
- How did your worldview (religious/secular) influence your involvement?
- How did you perceive the role of religion in the clinic, if any?

Stakeholders involved in the closure of the clinic 2011:

- Why was the clinic closed? In your opinion was this a valid reason?
- How did the students react to this closure?
- How did the patients react to its closure?

Re-establishment/opening of the clinic:

- What was your role in the reopening of the clinic?
- What was the attitude of the students when it was reopened?
- What was the role of the Faculty in reopening of the clinic?
- What was the role of the Church in reopening of the clinic?
- How did the patients react to its closure?

Appendix 8: Focus group questions for student volunteers

Primary question: Please tell me why you volunteer at Trinity Health Services.

Primary question: Please describe your experiences of working with pharmacy / medical students?

Primary question: Can you elaborate on how working at Trinity Health has contributed to your learning?

Prompting question:

How has working with a pharmacy / medical student contributed to your learning?

Primary question: Is there anything you would do to change the system of working with other students at this clinic?

Primary question: Are there any other professions / groups of students that you think should be included in the interprofessional team?

Prompting questions:

What additional services do you think the homeless community are in need of?
How could the interprofessional team grow? (probe regarding the process of involving other groups i.e. how and where)

Appendix 9: Focus group questions for THS student management committee

1. *Primary question:* Please describe the structure of the student committee.

   Prompting question:

   - What are the roles and responsibilities of the members of the committee?

2. *Primary question:* How does this committee contribute to the management of the clinic?

   Prompting questions:

   - How does this committee feed into the steering committee?
   - What is the role of the steering committee?

3. *Primary question:* What is the role of the Faculty and Church in the management of the clinic?

4. *Primary question:* What are the challenges this committee faces?

   Prompting question:

   - What recommendations do you have to improve the management of the clinic?

5. *Primary question:* How do you manage with the demands of your studies and the work you need to complete for the clinic?

   Prompting question:

   - How much time do you need to spend on clinic activities? Approximately, how many hours per week are spent on clinic activities?

6. *Primary question:* What is your vision for the clinic?

   Prompting questions:

   - What do you think is the future of the clinic?
   - Would you like to return to the clinic to supervise students after you community service?

Appendix 10: Focus group questions for supervising professionals

1. *Primary question:* In your opinion, what is the role of the clinic?

2. *Primary question:* Why do you volunteer at THS?

   Prompting questions:

   - How often have you worked at THS?
   - Do you supervise students in your current workplace? If so, how does this differ?
   - Did you volunteer either as a student or once qualified as a clinic similar to THS?

3. *Primary question:* Please describe how you supervise students working in the clinic?

   Prompting questions:

   - When you have worked at the clinic have there been enough supervising professionals?
   - How do the students respond to the feedback you provide them?
   - What is the value of both medical and pharmacy students been part of the consultation process?

4. *Primary question:* What are your opinions of how the clinic is managed?

   Prompting questions:

   - Is the clinic managed efficiently?
   - What is the role the students, Faculty and Church in managing the clinic?

5. *Primary question:* What additional services do you think the homeless community are in need of?

   Prompting question:

   - How could the interprofessional team grow? (probe regarding the process of involving other groups i.e. how and where)

6. *Primary question:* How could the service the clinic provides improve?

   - Probe regarding the patients, students and supervising professionals

Appendix 11: Focus group questions for the homeless community

1. *Primary question:* Please tell me why you attend Trinity Health Services.

2. *Primary question:* What are the health needs of the homeless community?

   Prompting questions:

   - What services are available to the homeless?
   - Where are there located? Are they easily accessible?

3. *Primary question:* How does the clinic serve this community?

   Prompting questions:

   - How does it differ from other clinics you have visited?
   - How do you communicate your needs to the clinic?

4. *Primary question:* Please describe your experiences of the clinic?

   Prompting questions:

   - How did you hear about the clinic?
   - How often have you visited the clinic?

5. *Primary question:* What additional services do you or the community need?

   Prompting questions:

   - How could the care provided to the community be improved?
   - Do you have any other suggestions?

Appendix 12: Pre-designed case report form

1. Study number:
   _____
2. Visit number:
   _____
3. Total number of times patient has attended THS:
   _____
4. Is this visit a new consultation or a follow-up?
   _____

Social: Data extracted from patient file

5. Social history:
   - Alcohol consumption
   - Cigarette smoking
   - Recreational drug use
   - No social history stated
   - Other (Please specify)
     _____
6. If alcohol history, please quantify if possible (e.g. 3 cans of beer week):
   _____
7. If smoking history, what is the pack year history?
   _____
8. If recreational drug use, please specify:
   - Marijuana
   - Mandrax
   - Nyaope
   - Tik
   - Heroin
   - Cocaine
   - Crack cocaine
   - MDMA/ecstasy
   - LSD
   - Cat/Kat
   - Specified that patient does not take drugs
   - Not specified
   - Other (Please specify)
     _____

Vitals: Data extracted from patient file

9. Heart rate: _____
10. Heart rate (please categorise)
    - Bradycardic (less than 60 beats per minute)
    - Normal (60-90 beats per minute
    - Tachycardic (more than 90 beats per minute)
11. Blood pressure: _____

12. Blood pressure (please categorise)
    - Hypotensive (systolic less than 90 and/or diastolic less than 60)
    - Normal (90-119 and/or diastolic 60-79)
    - High normal / pre-hypertensive (systolic 120-139 and/or diastolic 80-89)
    - Hypertensive Stage 1 (140-159 and/or 90-99)
    - Hypertension Stage 2 (160-80 and/or 100-110)
    - Hypertensive crisis (systolic greater than 180 and/or diastolic greater than 110)
13. Respiratory rate: _____
14. Respiratory rate (please categorise)
    - Bradypnoeic (less than 12)
    - Normal (12-18)
    - Tachypnoeic (over 18)
15. Weight: _____

Co-morbidities: Data extracted from patient file

16. Pre-existing conditions recorded in history:
    - Diabetes Type 1
    - Diabetes Type 2
    - Epilepsy
    - Asthma
    - Rheumatic fever history
    - Rheumatoid arthritis history
    - Rheumatic heart disease
    - TB History
    - TB – Current infection
    - HIV
    - Hypertension
    - Psychiatric illness
    - Other (Please specify):

      _____
17. If you selected “psychiatric illness” above, please specify:

    _____
18. Current chronic medication
    - ARVs
    - Psychiatric medication
    - Anti-hypertensives
    - Diabetic medication
    - Anti-epileptics
    - Asthma medication
    - TB medication
    - Other. Please specify:

      _____

If the patient is on chronic medication, please state what medication (trade and generic name, doses if available)

_____
_____
_____
_____

Consultation: Data extracted from patient file

19. Presenting complaint(s)

_____
_____
_____
_____

20. Findings on examination

_____
_____
_____
_____

21. Final diagnosis

_____
_____
_____
_____

22. What bodily system is the problem in?
    - Cardiovascular
    - Respiratory
    - Gastrointestinal
    - Musculoskeletal
    - Endocrine
    - Renal
    - Haematological or immune
    - Integumentary or Dermatological
    - Neurological
    - Other (Please specify)

      _____

23. ICD-10 code (if not stated, classify according to diagnosis)

_____

Management Plan: Data extracted from patient file

24. Was medication prescribed?
    - Yes
    - No

25. If medication was prescribed, what was it? Please specify trade and generic name as well as doses and duration.

    _____
    _____

26. If medication was prescribed, did the patient state that he/she complied with the treatment?
    - Yes
    - No
    - Not stated
27. If medication was prescribed, did the patient subsequently visit THS?
    - Yes
    - No
    - Not stated
28. Was the patient referred?
    - Yes
    - No
29. If referred, where was the patient referred to?

    _____

Appendix 13: Description, costing method and valuation method pertaining to the identified capital and recurrent costs

Capital costs	Recurrent costs
Building: *Description:* Area used by the clinic which includes the consultations rooms, pharmacy and waiting area *Costing method:* Proportion of floor space used *Valuation method:* Replacement and contract price, rental fees	**Consumables:** *Description:* Any items used in the consultation process that is neither a pharmaceutical or re-usable *Costing method:* Shared proportion of patients Per patient consumed quantity *Valuation method:* Expenditure records
Equipment: *Description:* Equipment used by the clinic in the consultation rooms (glucometers, ECG machine) and pharmacy (e.g. dispensing system, temperature monitoring system, electronic balance) *Costing method:* *Valuation method:* Replacement and contract price	**Medicines:** *Description:* Medicines which are used/administered in the consultation or dispensed to the patient to take home *Costing method:* Shared proportion of patients Not shared-quantity consumed *Valuation method:* Expenditure records
Furniture: *Description:* Includes tables, chairs, cabinets, shelving, beds etc *Costing method:* Proportion of lifetime use *Valuation method:* Replacement and contract price, rental fees	**Overheads and maintenance:** *Description:* Overhead costs include electricity, telephone, broadband and stationary. Monthly insurance cost (building, stock and indemnity) will be taken into account. Maintenance costs include pest control, fire extinguishers, waste disposal and house keeping *Costing method:* Proportion of personnel time, proportion of floor space, 8% mark-up for maintenance *Valuation method:* Expenditure records
	Personnel: *Description:* Costs relating to administrative functions, supervising doctors and pharmacists, student volunteers *Costing method:* Administrative personnel – proportion of working hours spent on THS Locum rates for students and professional volunteers (doctors, nurses and pharmacists) *Valuation method:* Gross salary
	Marketing and Advertising *Description:* Costs incurred through promoting THS. *Costing method:* *Valuation method:* Expenditure records

Appendix 14: HREC (Medical) Clearance certificate No. M170953

R14/48 Mrs Deanne Johnston

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M170953

NAME: (Principal Investigator)	Mrs Deanne Johnston
DEPARTMENT:	Pharmacy and Pharmacology Trinity Health Services
PROJECT TITLE:	Development of Sustainable Student-Run Clinic Serving the Homeless of the Inner City
DATE CONSIDERED:	29/09/2017
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Prof Patricia Mc Inerney and Dr Anthony Egan
APPROVED BY:	Professor P. Cleaton-Jones, Chairperson, HREC (Medical)
DATE OF APPROVAL:	11/12/2017

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on the 3rd floor, Phillip Tobias Building, Parktown, University of the Witwatersrand. I/We fully understand the conditions under which I am/we are authorised to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit to the Committee. **I agree to submit a yearly progress report**. The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially review September and will therefore be due in the month of September each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

Appendix 15: HREC (Medical) Clearance certificate No. M161140



R14/49 Ms Deanne Johnston et al

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M161140

NAME: (Principal Investigator)	Ms Deanne Johnston et al
DEPARTMENT:	Pharmacy and Pharmacology Trinity Health Services
PROJECT TITLE:	Student Volunteers' Interprofessional Learning Experiences at an Inner City Student-Lead Clinic
DATE CONSIDERED:	25/11/2016
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	
APPROVED BY:	Professor P Cleaton-Jones, Chairperson, HREC (Medical)
DATE OF APPROVAL:	03/02/2017

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary in Room 301, Third Floor, Faculty of Health Sciences, Phillip Tobias Building, 29 Princess of Wales Terrace, Parktown, 2193, University of the Witwatersrand. I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report**. The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially reviewed in November and will therefore be due in the month of November each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature Date

Appendix 16: HREC (Medical) Clearance certificate No. M1703109

R14/49 Miss Robin Andrews et al

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M1703109

NAME: (Principal Investigator)	Miss Robin Andrews et al
DEPARTMENT:	Health Sciences Holy Trinity Catholic Church 16 Stimens Street, Braamfontein
PROJECT TITLE:	The Burden of Disease and the Utilisation of Student Run Clinics Amongst the Homeless Population of Braamfontein
DATE CONSIDERED:	Adhoc
DECISION:	Approved unconditionally
CONDITIONS:	Sub-Study (M120344)
SUPERVISOR:	Mrs Deanne Johnston
APPROVED BY:	Professor P. Cleaton-Jones, Chairperson, HREC (Medical)
DATE OF APPROVAL:	26/04/2017

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary 3rd floor, Phillip Tobias Building, Parktown, University of the Witwatersrand. I/We fully understand the the conditions under which I am/we are authorised to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to resubmit to the Committee. **I agree to submit a yearly progress report**. The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. in this case, the study was initially review in March and will therefore be due in the month of March each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature _____ Date _____

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

Appendix 17: HREC (Medical) Clearance certificate No. M170953 Amendment

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG	HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

07/03/2018

Ms D Johnston
School of Therapeutic Sciences
Department of Pharmacy and Pharmacology
Medical School
University

Sent by e-mail to: Deanne.Johnston@wits.ac.za

Dear Ms D Johnston

Re: **Protocol Ref No: M170953**
Protocol Title: *Development of a student-run clinic serving the homeless in the inner city*

Principal Investigator: Ms D Johnston

Thank you for your letter of 13/12/2017.

I confirm that the proposed amendment to Protocol No. M170953 in respect of the costing of Trinity Health Services has been noted and approved.

Thank you for keeping us informed and updated.

Yours Sincerely

.....
Mr I Burns
For the Human Research Ethics Committee (Medical)

Appendix 18: Information documents

Information document for in-depth interviews
INFORMATION DOCUMENT
History of Trinity Health Services (THS)

Good day,

I am inviting you to participate in our study as you have been involved in Trinity Health Services (THS). The study aims to document the history of THS. You are invited to participate in an in-depth interview where you will be asked to share your memories of how the clinic was established and operated, the events leading to its foreclosure and the subsequent re-establishment.

The interview will take approximately one hour. It will be audio recorded and transcribed verbatim.

Your participation in this study is entirely voluntary and you can decline to participate, or stop at any time, without giving reason. The audio recording will be kept in a locked cupboard in researcher's office for a minimum of two years after publication or six years in the absence of publication.

The results of this study will be made available to the participants of the study. They may also be presented at research meetings within the Faculty, nationally and internationally, and may be published in a peer-reviewed journal.

Should you require more information regarding the study please contact the study researcher or study supervisors:

Deanne Johnston (researcher)	Deanne.Johnston@wits.ac.za	011 717 2369
Patricia Mc Inerney (supervisor)	Patricia.McInerney@wits.ac.za	011 717 2073
Anthony Egan (supervisor)	Anthony.Egan@wits.ac.za	072 938 4553

If you have any questions or concerns relating to the ethics of this study, please contact the chairperson of the Wits Human Research Ethics Committee, Prof P Cleaton-Jones on 011 717 1234 or at zanele.ndlovu@wits.ac.za.

Thank you for taking time to consider participation.

INFORMATION DOCUMENT
Student volunteers' interprofessional learning experiences at an inner city student-lead clinic

Good day,

I am inviting you to participate in our study as you have volunteered at Trinity Health Services. The study that we are conducting aims to determine and describe the interprofessional learning taking place at Trinity Health Services (THS) when pharmacy and medical students work together. You are invited to participate in a focus group where you will be asked to share your experiences.

All students, who have volunteered more than once at THS, will be invited to participate in a focus group discussion where they will be asked to describe their experiences. Focus groups are small groups of the study participants who meet and are invited to share their views and opinions prompted by a study coordinator. The focus group will take approximately 45 minutes. The focus groups will be audio recorded and transcribed verbatim.

Your participation in this study is entirely voluntary and you can decline to participate, or stop at any time, without giving reason. Confidentiality cannot be ensured in focus group discussions, but participants are requested not to divulge the identity of other participants in the group and not to discuss issues that were raised during the session with outsiders to the group. The audio recordings will be kept in a locked cupboard in researcher's office.

The results of this study will be made available to the participants of the study. They may also be presented at research meetings within the Faculty, nationally and internationally, and may be published in a peer-reviewed journal.

Should you require more information regarding the study please contact one of the study coordinators:

Deanne Johnston	Deanne.Johnston@wits.ac.za	011 717 2369
Patricia Mc Inerney	Patricia.McInerney@wits.ac.za	011 717 2073
Shirra Moch	Shirra.Moch@wits.ac.za	011 717 2586
Gaolatlhe Mothoagae	Gaolatlhe.Mothoagae@wits.ac.za	011 717 2588

If you have any questions or concerns relating to the ethics of this study, please contact the chairperson of the Wits Human Research Ethics Committee, Prof P Cleaton-Jones on 011 717 1234 or at zanele.ndlovu@wits.ac.za.

Thank you for taking time to consider participation.

INFORMATION DOCUMENT

Focus Groups Discussions: THS student management committee

Good day,

I am inviting you to participate in our study as you are a member of the THS Student and/or Steering Committee. The study aims to determine and describe the operating and management of THS. You are invited to participate in a focus group where you will be asked to share your opinions and experiences. Two focus groups discussions will be held, one for each committee.

All members of these committees will be invited to participate in their respective focus group discussion. Focus groups are small groups of the study participants who are invited to share their views and opinions prompted by a study coordinator. The focus group will take approximately 45 minutes. The focus groups will be audio recorded and transcribed verbatim.

Your participation in this study is entirely voluntary and you can decline to participate, or stop at any time, without giving reason. Confidentiality cannot be ensured in focus group discussions, but participants are requested not to divulge the identity of other participants in the group and not to discuss issues that were raised during the session with outsiders to the group. The audio recording will be kept in a locked cupboard in researcher's office for a minimum of two years after publication or six years in the absence of publication.

The results of this study will be made available to the participants of the study. They may also be presented at research meetings within the Faculty, nationally and internationally, and may be published in a peer-reviewed journal.

Should you require more information regarding the study please contact one of the study coordinators:

Deanne Johnston (researcher)	Deanne.Johnston@wits.ac.za	011 717 2369
Patricia Mc Inerney (supervisor)	Patricia.McInerney@wits.ac.za	011 717 2073

If you have any questions or concerns relating to the ethics of this study, please contact the chairperson of the Wits Human Research Ethics Committee, Prof Cleaton-Jones on 011 717 1234 or at zanele.ndlovu@wits.ac.za.

Thank you for taking time to consider participation.

INFORMATION DOCUMENT

Focus Groups Discussions: Supervising Professionals

Good day,

I am inviting you to participate in our study as you have volunteered at THS supervising students. The study aims to describe the clinic from the perspective of the supervising professionals. You are invited to participate in a focus group where you will be asked to share your opinions and experiences of THS.

Focus groups are small groups of the study participants who are invited to share their views and opinions prompted by a study coordinator. The focus group will take approximately 45 minutes. The focus groups will be audio recorded and transcribed verbatim.

Your participation in this study is entirely voluntary and you can decline to participate, or stop at any time, without giving reason. Confidentiality cannot be ensured in focus group discussions, but participants are requested not to divulge the identity of other participants in the group and not to discuss issues that were raised during the session with outsiders to the group. The audio recording will be kept in a locked cupboard in researcher's office for a minimum of two years after publication or six years in the absence of publication.

The results of this study will be made available to the participants of the study. They may also be presented at research meetings within the Faculty, nationally and internationally, and may be published in a peer-reviewed journal.

Should you require more information regarding the study please contact one of the study coordinators:

Deanne Johnston (researcher)	Deanne.Johnston@wits.ac.za	011 717 2369
Patricia Mc Inerney (supervisor)	Patricia.McInerney@wits.ac.za	011 717 2073

If you have any questions or concerns relating to the ethics of this study, please contact the chairperson of the Wits Human Research Ethics Committee, Prof Cleaton-Jones on 011 717 1234 or at zanele.ndlovu@wits.ac.za.

Thank you for taking time to consider participation.

INFORMATION DOCUMENT

Focus Groups Discussions: Homeless community

Good day,

I am inviting you to participate in our study which describes the clinic from the view of the homeless community. The study that we are conducting aims to determine and describe the experiences of the homeless community when accessing the clinic. You are invited to participate in a focus group where you will be asked to share your opinions and experiences.

Focus groups discussions are small groups of study participants who meet and are invited to share information prompted by a study coordinator. The focus group will take approximately 45 minutes. The focus groups will be audio recorded and transcribed verbatim.

Your participation in this study is entirely voluntary and you can decline to participate, or stop at any time, without giving reason. Confidentiality cannot be ensured in focus group discussions, but participants are requested not to divulge the identity of other participants in the group and not to discuss issues that were raised during the session with outsiders to the group. You will not be asked to share any information relating to your medical conditions. The audio recording will be kept in a locked cupboard in researcher's office for a minimum of two years after publication or six years in the absence of publication.

The results of this study will be made available to the participants of the study. They may also be presented at research meetings within the Faculty, nationally and internationally, and may be published in a peer-reviewed journal.

Should you require more information regarding the study please contact one of the study coordinators:

Deanne Johnston	Deanne.Johnston@wits.ac.za	011 717 2168
Patricia Mc Inerney	Patricia.McInerney@wits.ac.za	011 717 2073

If you have any questions or concerns relating to the ethics of this study, please contact the chairperson of the Wits Human Research Ethics Committee, Prof P Cleaton-Jones on 011 717 1234 or at zanele.ndlovu@wits.ac.za.

Thank you for taking time to consider participation.

Appendix 19: Informed consent documents

Informed consent for in-depth interviews

INFORMED CONSENT TO PARTICIPATE IN STUDY:

I hereby confirm that I have been informed by the researcher _____ about the nature, conduct, benefits and risks of the study entitled:

History of Trinity Health Services (THS)

- I have also received, read and understood the above written information (Information Leaflet and Informed Consent) regarding the study.
- In view of the requirements of research, I agree that the information collected during this study can be assessed by The Centre for Health Science Education and the Department of Pharmacy and Pharmacology, University of the Witwatersrand.
- I have been informed that I will be asked to share my memories of the history of THS and that this will be audio recorded.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

PARTICIPANT:

Printed Name	Signature	Date and Time

I, _____,(researcher) herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

RESEARCHER:

Printed Name	Signature	Date and Time

INFORMED CONSENT FOR VOICE RECORDING:

I hereby confirm that I have been informed by the researcher, _____ about AUDIO RECORDING the interview in the study entitled:

History of Trinity Health Services (THS)

- I am aware that my voice will be recorded during this study and I hereby grant the researcher permission to record my voice.
- I will also review transcripts of the audio recording (for veracity of transcription) if I so wish or at the request of the researcher.

PARTICIPANT:

Printed Name Signature Date and Time

I, _____ (researcher) herewith confirm that the above participant has been fully informed about audio recording the interview.

RESEARCHER:

Printed Name Signature Date and Time

INFORMED CONSENT TO PARTICIPATE IN STUDY:

I hereby confirm that I have been informed by the researcher _____ about the nature, conduct, benefits and risks of the study entitled:

Development of a Sustainable Student-run Clinic Serving the Homeless of the Inner City:
A Mixed Method Study

- I have also received, read and understood the above written information (Participant Information Leaflet and Informed Consent) regarding the study.
- In view of the requirements of research, I agree that the information collected during this study can be assessed by The Centre for Health Science Education and the Department of Pharmacy and Pharmacology, University of the Witwatersrand.
- I have been informed that I will be asked to share my opinions and perceptions of THS and that this will be recorded on an audio recorder.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

PARTICIPANT:

Printed Name	Signature	Date and Time

I, _____,(researcher) herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

RESEARCHER:

Printed Name	Signature	Date and Time

INFORMED CONSENT FOR VOICE RECORDING:

I hereby confirm that I have been informed by the researcher, _____ about AUDIO RECORDING the focus groups in the study:

Development of a Sustainable Student-run Clinic Serving the Homeless of the Inner City:
A Mixed Method Study

- I am aware that my voice will be recorded during this study and I hereby grant the researcher permission to record my voice.
- I will also review transcripts of the audio recording (for veracity of transcription) if I so wish or at the request of the researcher.
- I am aware that focus groups are not confidential, but that participants will be requested not to divulge the identity of other participants in the group and not to discuss issues that were raised during the session with outsiders to the group.
- I am aware that confidentiality of my responses will be protected in the typed transcripts of the audio recorded sessions by allocating randomly generated participation numbers to members of the group so that no actual names appear in the transcripts.

PARTICIPANT:

Printed Name	Signature	Date and Time

I, _____ (researcher) herewith confirm that the above participant has been fully informed about the audio recording of the focus groups.

RESEARCHER:

Printed Name	Signature	Date and Time

Appendix 20: Editorial policy Studia Historiae Ecclesiasticae

Copyright Notice

Authors who publish with this journal agree to the following terms:

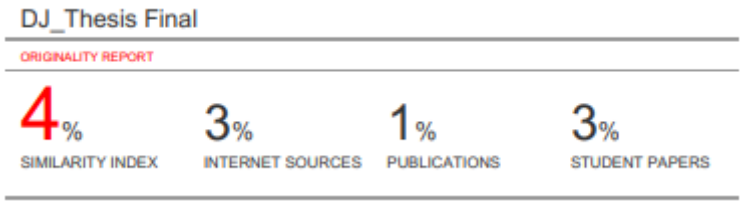
1. Authors retain copyright and grant the journal right of first publication with the work simultaneously licensed under a Creative Commons Attribution License that allows others to share the work with an acknowledgement of the work's authorship and initial publication in this journal.
2. Authors are able to enter into separate, additional contractual arrangements for the non-exclusive distribution of the journal's published version of the work (e.g., post it to an institutional repository or publish it in a book), with an acknowledgement of its initial publication in this journal.
3. Authors are permitted and encouraged to post their work online (e.g., in institutional repositories or on their website) prior to and during the submission process, as it can lead to productive exchanges, as well as earlier and greater citation of published work (See The Effect of Open Access).

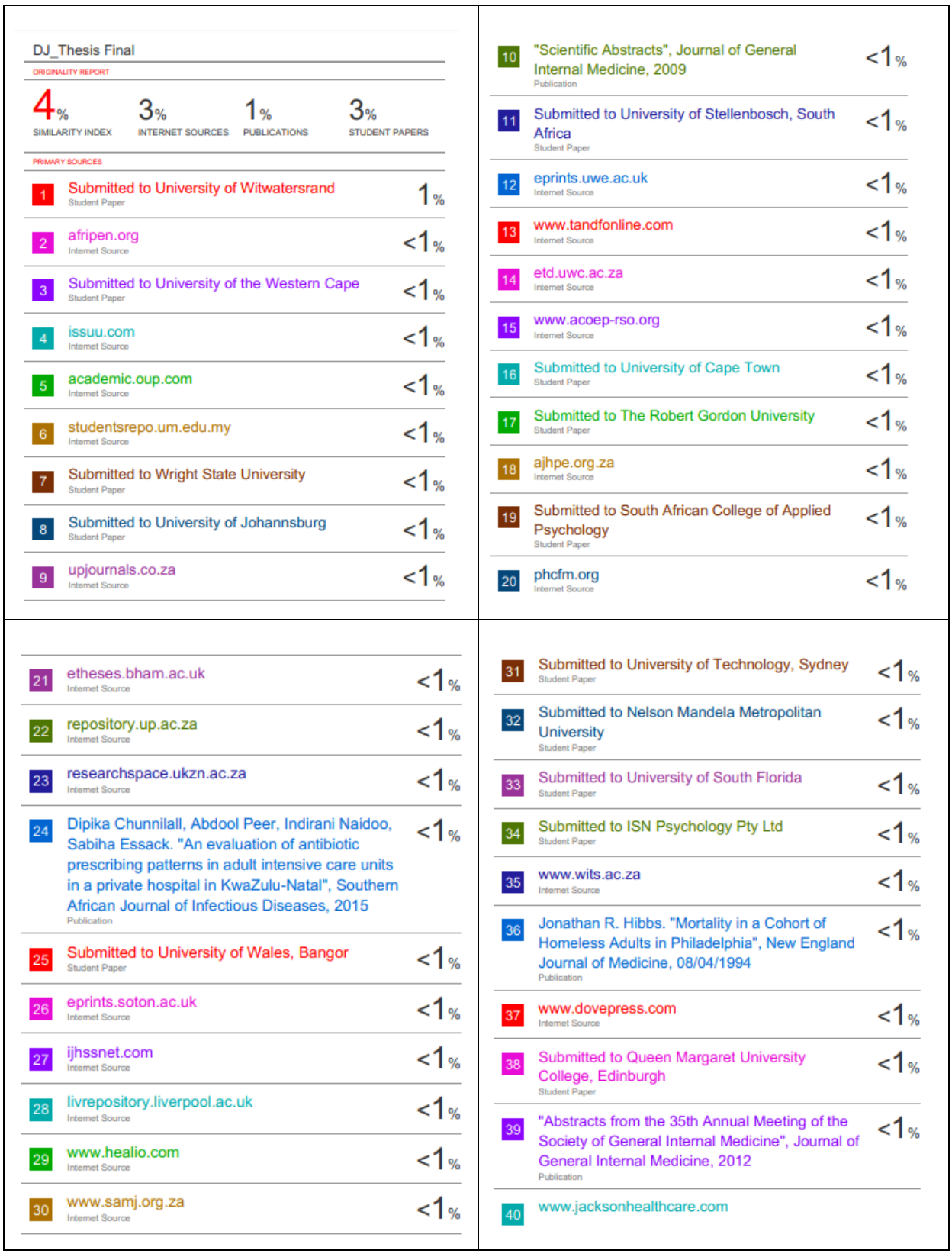
Appendix 21: Editorial policy Journal of Health Care for the Poor and Underserved

Rights of the Author: You have the following nonexclusive rights: (1) to use the Article in your own teaching activities; (2) to publish the Article, or permit its publication, as a part of any book you may write or edit; (3) to include the Article in your own personal or departmental institutional database or on-line site; (4) to include the Article in your institutional repository provided the repository is institution specific and not a discipline-based database that accepts contributions from outside the institution; (5) to include your Article, *if required by law,* in an open access archive such as PubMedCentral. All on-line posting uses (3, 4, 5) are granted for the final manuscript version of the Article only, not the final published version in any format, including PDF. For all rights granted in this paragraph you agree to credit the Press as publisher and the copyright holder as follows:

Copyright © <**year**> Meharry Medical College. This article first appeared in *JOURNAL OF HEALTH CARE FOR THE POOR AND UNDERSERVED*, Volume <#>, Issue <#>, <**Month**>, <**Year**>, pages <#-#>. Published by Johns Hopkins University Press.

Appendix 22: Turnitin report





DJ_Thesis Final

ORIGINALITY REPORT

4%	3%	1%	3%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to University of Witwatersrand Student Paper	1%
2	afripen.org Internet Source	<1%
3	Submitted to University of the Western Cape Student Paper	<1%
4	issuu.com Internet Source	<1%
5	academic.oup.com Internet Source	<1%
6	studentsrepo.um.edu.my Internet Source	<1%
7	Submitted to Wright State University Student Paper	<1%
8	Submitted to University of Johannsburg Student Paper	<1%
9	upjournals.co.za Internet Source	<1%
10	"Scientific Abstracts", Journal of General Internal Medicine, 2009 Publication	<1%
11	Submitted to University of Stellenbosch, South Africa Student Paper	<1%
12	eprints.uwe.ac.uk Internet Source	<1%
13	www.tandfonline.com Internet Source	<1%
14	etd.uwc.ac.za Internet Source	<1%
15	www.acoep-rso.org Internet Source	<1%
16	Submitted to University of Cape Town Student Paper	<1%
17	Submitted to The Robert Gordon University Student Paper	<1%
18	ajhpe.org.za Internet Source	<1%
19	Submitted to South African College of Applied Psychology Student Paper	<1%
20	phcfm.org Internet Source	<1%
21	etheses.bham.ac.uk Internet Source	<1%
22	repository.up.ac.za Internet Source	<1%
23	researchspace.ukzn.ac.za Internet Source	<1%
24	Dipika Chunnilall, Abdool Peer, Indirani Naidoo, Sabiha Essack. "An evaluation of antibiotic prescribing patterns in adult intensive care units in a private hospital in KwaZulu-Natal", Southern African Journal of Infectious Diseases, 2015 Publication	<1%
25	Submitted to University of Wales, Bangor Student Paper	<1%
26	eprints.soton.ac.uk Internet Source	<1%
27	ijhssnet.com Internet Source	<1%
28	livrepository.liverpool.ac.uk Internet Source	<1%
29	www.healio.com Internet Source	<1%
30	www.samj.org.za Internet Source	<1%
31	Submitted to University of Technology, Sydney Student Paper	<1%
32	Submitted to Nelson Mandela Metropolitan University Student Paper	<1%
33	Submitted to University of South Florida Student Paper	<1%
34	Submitted to ISN Psychology Pty Ltd Student Paper	<1%
35	www.wits.ac.za Internet Source	<1%
36	Jonathan R. Hibbs. "Mortality in a Cohort of Homeless Adults in Philadelphia", New England Journal of Medicine, 08/04/1994 Publication	<1%
37	www.dovepress.com Internet Source	<1%
38	Submitted to Queen Margaret University College, Edinburgh Student Paper	<1%
39	"Abstracts from the 35th Annual Meeting of the Society of General Internal Medicine", Journal of General Internal Medicine, 2012 Publication	<1%
40	www.jacksonhealthcare.com	

	Internet Source	<1%
41	Chris N. Gu, Jane A. McElroy, Blake C. Corcoran. "Potential advantage of student-run clinics for diversifying a medical school class", Journal of Educational Evaluation for Health Professions, 2012 Publication	<1%
42	Danhausen, Kathleen, Deepa Joshi, Sarah Quirk, Robert Miller, Michael Fowler, and Mavis N. Schorn. "Facilitating Access to Prenatal Care Through an Interprofessional Student-Run Free Clinic", Journal of Midwifery & Women s Health, 2015. Publication	<1%
43	esj.journalhosting.ucalgary.ca Internet Source	<1%
44	Submitted to University of Ulster Student Paper	<1%
45	hpp.tbzmed.ac.ir Internet Source	<1%
46	wrap.warwick.ac.uk Internet Source	<1%
47	mobile.wiredspace.wits.ac.za Internet Source	<1%

48	Submitted to University of Glamorgan Student Paper	<1%
49	Submitted to University of Southern Queensland Student Paper	<1%
50	Submitted to Hoover High School Student Paper	<1%
51	www.adsa.org.za Internet Source	<1%
52	bmcpublichealth.biomedcentral.com Internet Source	<1%
53	Submitted to University of Pretoria Student Paper	<1%
54	www.idealhealthfacility.org.za Internet Source	<1%
55	Jan H. F. Meyer, Gillian M. Boulton-Lewis. "On the Operationalisation of Conceptions of Learning in Higher Education and Their Association with Students' Knowledge and Experiences of Their Learning", Higher Education Research & Development, 2006 Publication	<1%
56	Submitted to Florida International University Student Paper	<1%
57	Oliver McGarr, Janet Moody. "Scaffolding or	<1%

	stifling? The influence of journal requirements on students' engagement in reflective practice", Reflective Practice, 2010 Publication	
58	Submitted to Liverpool John Moores University Student Paper	<1%
59	Tom R Hill, Maria M O'Brien, Christel Lamberg-Allardt, Jette Jakobsen, Mairead Kiely, Albert Flynn, Kevin D Cashman. "Vitamin D status of 51–75-year-old Irish women: its determinants and impact on biochemical indices of bone turnover", Public Health Nutrition, 2007 Publication	<1%
60	Stephanie M. Wille, Katherine A. Kemp, Brenna L. Greenfield, Melissa L. Walls. "Barriers to healthcare for American Indians experiencing homelessness", Journal of Social Distress and the Homeless, 2017 Publication	<1%
61	Submitted to University of KwaZulu-Natal Student Paper	<1%
62	scholarcommons.usf.edu Internet Source	<1%
63	Submitted to University of Sheffield Student Paper	<1%
64	www.science.gov	

	Internet Source	<1%
65	www.scribd.com Internet Source	<1%
66	Melanie Walker, Samuel Fongwa. "Universities, Employability and Human Development", Springer Science and Business Media LLC, 2017 Publication	<1%
67	Submitted to Royal Holloway and Bedford New College Student Paper	<1%
68	Submitted to London Metropolitan University Student Paper	<1%
69	Submitted to The Hong Kong Polytechnic University Student Paper	<1%
70	Submitted to University of Lancaster Student Paper	<1%
71	Submitted to University College Worcester Student Paper	<1%
72	www.catholicbishops.ie Internet Source	<1%
73	sajp.org.za Internet Source	<1%

74	www.chinahumanrights.org Internet Source	<1%
75	Submitted to Middle East Technical University Student Paper	<1%
76	Submitted to Cranfield University Student Paper	<1%
77	John H. Coverdale, Laurence B. McCullough. "Responsibly Managing Students' Learning Experiences in Student-Run Clinics: A Virtues-Based Ethical Framework", Teaching and Learning in Medicine, 2014 Publication	<1%
78	Submitted to University of Hong Kong Student Paper	<1%
79	Submitted to California InterContinental University Student Paper	<1%
80	Submitted to University of Leicester Student Paper	<1%
81	Amy B. Dellinger, Nancy L. Leech. "Toward a Unified Validation Framework in Mixed Methods Research", Journal of Mixed Methods Research, 2016 Publication	<1%
82	pdfs.semanticscholar.org	
	Internet Source	<1%