

Assessment of Health Literacy Among Adult Inpatients and Implications for Self-Care Management at Harare Central Hospital and Parirenyatwa Group of Hospitals in 2019



ITAYI MUCHENJEKWA

Dissertation Submitted In Partial Fulfillment of the Masters of Public Health (Health Promotion) Degree, University of Zimbabwe

College of Health Sciences

Department of Community Medicine

University of Zimbabwe

September 2019

DECLARATION BY THE RESEARCHER

This dissertation is the original work of **Itayi Muchenjekwa**. It has been prepared in accordance with the guidelines for MPH (HP) dissertations for the University of Zimbabwe. It has not been submitted elsewhere for another degree at this or any other university.

Name of student: Itayi Muchenjekwa

Signature: _____ Date: 2/09/19

Name of Academic Supervisor: Dr. J. Maradzika

Signature: _____ Date: _____

Chairman of Community Medicine, University of Zimbabwe Medical School

Signature: _____

Date: _____

ABSTRACT

Background: The success of clinical care depends on the provision of relevant information by the health care practitioner and the patient's appropriate understanding of the diagnosis and subsequent management of their health condition. The aim of this study was to assess the level of health literacy among admitted patients at two central hospitals in Zimbabwe.

Methods: A cross sectional survey was used to determine the level of health literacy among admitted patients at Harare central hospital and Parirenyatwa group of hospitals. An interviewer administered questionnaire was used to collect data from 208 participants. Epi Info 7.2.2.6 was used to generate means, frequencies and proportions. Chi square test was performed to test for association between demographic variables and health literacy variables.

Results: On functional literacy 36.1 % of the participants reported that they rarely need help in reading and writing while 45.6% said they sometimes needed help and only 18.3% highlighted that they often needed help. On communicative literacy 40.4% reported that they often probe for explanation, while 5.8% said they don't probe and 53.9 % sometimes probe for explanation when talking to healthcare workers. Thirty-one (14.9%) of participants 'often' think carefully about health information given by healthcare workers, whereas 44.2% rarely does that and 40.9% sometimes does that. There was a statistically significant association between the level of education of the participants and their level of health literacy ($p < 0.05$). Self-care practices were statistically associated with the level of health literacy of patients ($p < 0.01$)

Conclusion and recommendations: There were low levels of critical health literacy among the participants but marginal levels on functional and communicative literacy were reported. Health education is necessary to assist those with poor educational backgrounds.

Key words: Health literacy, health communication, functional literacy, communicative literacy

DEDICATION

This piece work is dedicated to my mother Wadzanai Matenga and everyone who made it possible for me to produce this work. Your support has taken me this far. May God bless you.

ACKNOWLEDGEMENTS

I would like to thank the following individuals for making it possible for me to produce this academic piece of work:

Dr. J Maradzika my supervisor who was patient with me when I was progressing at a very slow pace, Ms Katena for all the support she provided when all things seemed lost and gone. I would also like to give a lot of appreciation to all my classmates who were always with me.

Most importantly I would like to thank God for everything.

LIST OF ABBREVIATIONS AND ACRONYMS

AAHLS	All Aspects of Health Literacy Scale
AIDS	Acquired Immuno-Deficiency Syndrome
CAHPS	Consumer assessment of Healthcare Providers and Systems
CEO	Chief Executive Officer
HL	Health Literacy
ICT	Information and Communication Technologies
ICU	Intensive Care Unit
IOM	Institute of Medicine
JREC	Joint Research Ethics Committee
KAP	Knowledge Attitudes and Practices
MDR TB	Multi Drug Resistant Tuberculosis
MRCZ	Medical Research Council of Zimbabwe
NVS	Newest Vital Sign
PGH	Parirenyatwa Group of Hospitals
REALM	Rapid Estimate of Adult Literacy in Medicine
S-TOFHLA	Short Test of Functional Health Literacy in adults
WHO	World Health Organization

Q

Question

Table of Contents

DECLARATION BY THE RESEARCHER	ii
ABSTRACT.....	iii
DEDICATION	iv
ACKNOWLEDGEMENTS.....	v
LIST OF ABBREVIATIONS AND ACRONYMS.....	vi
List of figures.....	x
List of tables.....	x
CHAPTER 1	1
1.1 Introduction.....	1
1.2 Background.....	2
1.3 Problem Statement	3
1.4 Justification.....	4
1.5 Study Assumptions	5
1.6 Definition of new terms	5
CHAPTER 2	7
Introduction.....	7
2.1 Literature review on health literacy dimensions	7
2.2 Research Question	12
2.3 Objectives	13
2.3.1 Broad objective	13
2.3.2 Specific objectives	13
2.4 Conceptual Framework.....	14
2.4.1 Explanation of the conceptual framework	14
CHAPTER 3	17
3.0: METHODS	17
3.1 Study Design:.....	17
3.2: Study setting:	17
3.3: Study population:.....	17
3.4 Study sample:.....	17
3.5 Inclusion criteria	18
3.6 Exclusion criteria	18

3.7 Sample size	18
3.8 Sampling procedure	19
3.9 Data collection tool	19
3.10 Data analysis	19
3.11 Study and Outcome Factors	20
3.11.1 Study factors/ independent variables	20
3.11.2 Outcome factor.....	22
-is the capacity of individuals to obtain, process and understand essential health information and services required to make appropriate health decisions	22
3.12 Permission to proceed	22
3.13 Ethical considerations	23
CHAPTER 4	24
4.1 Results Presentation and data analysis.....	24
4.2 Health literacy Dimensions.....	26
Chapter 5.....	37
5.1 Discussion.....	37
5.2 Strengths and limitations of the study.....	41
5.3 Conclusion	41
5.4 Recommendations.....	42
References.....	43
Appendix 1: English Consent Form.....	52
Appendix 2: Shona Consent Form.....	56
Appendix 3: English Questionnaire Form	59
Appendix 4: Shona Questionnaire Form.....	64
Appendix 5: Harare Hospital ethic committee Approval.....	69
Appendix 6: Parirenyatwa Hospital Approval	70
Appendix 7: JREC Approval	72

List of figures

Figure 1 conceptual framework	14
-------------------------------------	----

List of tables

Table 1: Demographics variables.....	25
Table 2: Association between functional literacy and demographic variables.....	27
Table 3: Association between communicative health literacy constructs and Demographic Variables	29
Table 4: Critical Health Literacy Constructs and Association with Demographic Variables	31
Table 5: Association between self-care knowledge and functional health literacy	33
Table 6: Association between communicative literacy and self-care practice knowledge.....	34
Table 7: Association of Critical health literacy and knowledge on self-care practices	35

CHAPTER 1

1.1 Introduction

Health literacy is defined as the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions (1). It can also be regarded as how well an individual can get the healthcare information and services that they need, and how well they understand them (2–4). Health literacy goes beyond getting information and understanding it, but one has to use it to make good health decisions which produce positive outcomes(5). Health literacy involves the differences that people show in areas such as access to healthcare information, having the ability to find such information, communicating it with the healthcare providers and living a healthy lifestyle (6). Other factors which determine one's health literacy level include knowledge of medical words and personal factors such as age, educational level, language abilities and to some extent culture (7–9).

Health literacy is one of the major predictors of the quality of life because it involves both learning the information concerning a health condition and the ability to comprehend and use that information (10,11). Individuals with low health literacy have trouble understanding and following the instructions provided by healthcare workers as noted in a number of studies(7,12,13). Patients with limited health literacy incur additional medical costs through repeated and unnecessary referrals to emergency rooms or to doctors and longer hospital stays (6,14,15). Some studies have also discovered that patients with limited health literacy often use emergency services and rarely use preventive care as compared to patients with adequate or marginal health literacy (16–19).

1.2 Background

The term health literacy has been in use for a number of years especially in the developed world as evidenced by a number of researches which have taken place on this topic(15,20–22). Research has shown that there is a relationship between limited health literacy and patients' knowledge, health behaviors, health outcomes, and medical costs as has been highlighted previously (11,23–25). However the term health literacy has been viewed differently by various authors.

Health literacy definition is broad and varies from one scholar to another. In western studies it has been argued that if health literacy is the ability of a patient in accessing, navigating and using healthcare services wisely, then the level of this literacy depends on characteristics of both the individual patient and the healthcare system (16,26). According to this definition health literacy is a dynamic state of a patient which is determined by the situation and condition of an individual during a healthcare encounter. This suggests that the level of health literacy of an individual cannot be the same always but determined by the medical problem being treated, the healthcare provider and also the system providing the care(3). The Institute of Medicine's (IOM) divided the domains of health literacy into four which include; cultural and conceptual knowledge, oral literacy, including speaking and listening skills, print literacy, including writing and reading skills, and numeracy (20).

However, in some literature health literacy has been incorporated with more domains depending on the measurement tool used, for example 'The American College of Physicians Foundation' has introduced informational cards that healthcare providers can give to their patients. In this regard health literacy will then depend on the knowledge of a patient and their competence and impetus to learn and the resources provided by the healthcare facility (20).

Health literacy is an extensive and dynamic subject which has evolved with time from the period of its conception. There has been a number of measurement tools that have been developed across the world with most coming from the United States of America (USA) as noted by the number of publications on health literacy which were done in the USA(27). The following are some of the tools that have been used to measure health literacy across the world, The Test of Functional Literacy in Adults, Adult Basic Learning Examination, and Literacy Assessment for Diabetes, Newest Vital Signs, Short Assessment of Health Literacy for Spanish-speaking Adults and All Aspects of Health Literacy Scale

Health literacy in Africa is still a developing subject although countries like South Africa, Ghana and Nigeria have published a few articles on this topic(7,28–31). The measurement of health literacy depends on the understanding of the target population of the tool to be used. There have been no known tool which have been developed in Zimbabwe on health literacy although periodic surveys on different health condition have been used to measure the knowledge of patients on various condition(32–34).

1.3 Problem Statement

Knowledge, Attitude and Practice (KAP) and other surveys which have been carried out across the country on various health conditions such as diabetes, HIV/ AIDS, hypertension and TB have averaged the understanding of patients in terms of knowledge of their conditions between 20% and 60% (32,35,36). However, there is limited literature on the measurement of patients' abilities in accessing, navigating, understanding health information and services to determine the suitability of the information and services offered by healthcare facilities. The Zimbabwe Demographic Health Survey (ZDHS) of 2015 reported that more than half of the population of Zimbabwe had no comprehensive knowledge on HIV/AIDS. On average 46.6% of men and

46.3% had comprehensive knowledge of HIV, which is an alarming knowledge gap considering the socio economic impacts of HIV and AIDS in the country. There is a need to measure the general health literacy level of patients so that their literacy level is considered when designing health information and services.

Only one in five of the T B patients had general knowledge on the treatment and management of TB among patients who were involved in a KAP survey in Zimbabwe under the tuberculosis programme(37). On average 40% of TB diagnosis are delayed owing to patients' lack of knowledge on the condition. An assessment of KAP of patients with high blood pressure reported that more 57% of the participants did not know the normal range of blood pressure and only one patient in ten had knowledge on the use of the blood pressure machine (38). These studies have shown that they could be a gap of knowledge among patients in obtaining, processing and understanding health information to make informed health decision but limited studies have tried to measure health literacy.

1.4 Justification

Health literacy is important to hospital administrators and policy makers as it help them to make informed policies on healthcare interventions. Policies aimed at improving healthcare communications; and creating organizational cultures that place a high priority on culturally competent and safe environments in which clear communications are fundamental to all care processes and interactions can be crafted resulting from information form studies like this one.

It is very important to address the issue of health literacy as it plays a crucial role in chronic disease self-management. There has been an increase in the prevalence of chronic diseases such as diabetes and cancer in Zimbabwe and most referrals come to Harare hospital and Parirenyatwa

group of hospitals as they are the biggest referral centers in Zimbabwe. In order to manage chronic or long-term conditions on a day-to-day basis, individuals must be able to understand and assess health information, which often include complex medical procedures and instructions and this often make them avoid healthcare facilities (10,39).

Improving health literacy will lead to a reduction in healthcare costs as low health literacy levels are strongly linked to high cost of healthcare (1,40). Low health literacy has also been associated with poor health outcomes as a result of poor health knowledge which leads, in the case of injuries and chronic illness to poor medication adherence and self-care management. Improvements in health literacy will save the central hospitals a lot of money which is being channeled to secure drugs for conditions such as drug resistant TB (MDRTB), second and third line Anti-Retroviral (ARV) drugs and other expensive medications.

1.5 Study Assumptions

The assumptions of the study were as follows;

- The information obtained from participants was accurate and to the best of their knowledge
- Knowledge and confidence shown by the participants in responding to questions meant the application of the same in management of their health conditions.

1.6 Definition of new terms

- Basic or functional health literacy is defined as the basic skills of an individual in reading and writing which makes them able to function effectively in everyday situations (41).

- Communicative or interactive literacy are cognitive and literacy abilities which when combined with social skills can be used by one to actively participate in day to day activities to extract information and derive meaning from diverse forms of communication and apply them to new information in different circumstances (41).
- Critical literacy refers to more advanced cognitive skills used to critically analyze information and apply the information to exert greater control over life events and situations (41).
- Health literacy is defined as the capacity of individuals to obtain, process and understand essential health information and services required to make appropriate health decisions(42)

CHAPTER 2

Introduction

This chapter examines the literature on health literacy both in the developed world and in developing countries. The chapter reviews studies which have been carried out in various settings using different research methods. The chapter concludes by reviewing health literacy literature in Southern Africa including some studies which were carried out in Zimbabwe which are relevant to health literacy. The search for literature was conducted using the following data bases; Google scholar, PubMed, CINAHL and PsyInfo. The key words were; health literacy, self care, functional literacy, communicative literacy, health literacy measuring tools

2.1 Literature review on health literacy dimensions

Health literacy is a broad subject which has been studied extensively in some developed countries. A study conducted in the USA which looked on the relationship between health literacy and medical expenses found out that patient with adequate health literacy incurred fewer cost than those with inadequate or limited health literacy (14). This study was conducted in Cleveland, Ohio in the United States of America (USA), the researchers used the Short Test Of Functional Health Literacy in adults where a two part regression model was used to examine the association between health literacy and medical cost after adjusting for age, sex and race. Although the prevalence rate of health literacy was above 60%, lack of adequate health literacy was proved to have a negative effect on the cost of medication as the cost increased to those who had limited health literacy level.

In a co-relational survey which was done to identify the effects of health literacy levels on the health outcomes of admitted patients (43). The survey produced similar results to the one above

were higher annual medical expenditure for those with inadequate health literacy compared to those with high health literacy after adjusting for all confounding variables, inadequate health literacy incurred us\$1267 ($p < 0.0001$) more annually in medical expenditures compared to those with high health literacy (14). It was also discovered that patients with limited health literacy skills were more likely to stay long in the hospital than those who had adequate health literacy skills (43).

Health literacy has a huge impact on patient satisfaction and health care utilization as was reported with patients who were admitted at public hospitals in the USA's five states which are; New Jersey, New York, North Carolina, Ohio, and Texas. A modified version of the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey was used for this study (15). The purpose of this survey was to give a chance to patients to report on and evaluate their experiences and satisfaction with healthcare services offered at points of care. Levels of dissatisfaction with healthcare services was high among those who were considered to have had adequate health literacy levels compared to those who had low levels of health literacy. In the same study it was also noted that there was an increased utilization of certain expensive healthcare services among those with inadequate health literacy compared to those who had high level of health literacy(15). Therefore people with limited health literacy abilities usually buy more expensive medications than those who have adequate health literacy that are able to navigate healthcare systems and come up with better options of medications.

Health literacy plays an important role in self-care practices as supported by some studies which were carried out in America and Asia(17,23,39,43). A systematic review examined quantitative literature for the period between 1999 and 2014 to find out the role of health literacy among heart failure patients. The study found out that poor self-care practices were associated with low

levels of health literacy among heart failure in-patients at various hospitals in America (17). The study concluded that an average of 39% of Heart failure patients from the study population had low health literacy and were at risk of failing to manage their health conditions (17).

Healthcare providers overestimate the health literacy level of their patients leading to re-admissions and further incurring costs towards healthcare services (44). A study which had the aim to assess the health literacy of patients as measured by the investigators against nurses' measurement found some differences. It was revealed that nurses were overestimating the health literacy level of patients. Using NVS scores, 63% of patients had a high likelihood of limited health literacy level; whereas nurses had reported that only 19% of patients had a high likelihood of limited health literacy. The variation suggest that in most cases patients are saved with information which they are not able to understand thus leading to readmissions and an increase in the total cost of healthcare (14).

Guerra & Shea (2007) conducted a study to evaluate the relationship between perceived health and the utilization of healthcare services among patients of different ethnic background. It was discovered that functional health literacy was not independently associated with perceived physical health status or mental health status(P.50 and P5.41, respectively) in a sample of ethnic minorities (45). In this study patients were asked to complete a demographics questionnaire, using the Short Test of Functional Health Literacy in Adults (STOFHLA). Their scores were classified into inadequate, marginal, and adequate functional health literacy. This shows that patients should not be judged because of their physical and social wellbeing in determining their health literacy level when they come for healthcare services (4).

The effects of culture and lack of confidence in seeking healthcare among patients has been attributed to the bad behavior of healthcare workers. The behaviour discouraged patients to ask questions about their care which could otherwise have helped in clearing misunderstanding on the care of the patient (30,46).

An exploratory study was carried out among Ghanaian pregnant women on their understanding and recognition of danger signs in pregnancy and their understanding of newborn care and the results showed some misunderstanding on using anti -natal care education. Data was collected through six focus groups with 68 pregnant women attending antenatal care at an urban hospital in Ghana. The findings from this study showed low health literacy by the patients which was noted by the failure of patients to correctly interpret and operationalize health education received during antenatal care (29). Some of the reasons given for this limitation were cultural beliefs in alternative medicine and poor negative encounters with healthcare workers which could have led to poor utilization of professional midwives (29). The study concluded that when patients have limited health literacy they cannot fully comprehend the full capacity of services that a healthcare system can provide them and their family hence the need to understand the health literacy level of patients as they come in for healthcare services.

An observational study at one of South Africa's Cape Town hospital showed that epilepsy patients lack a lot of understanding in their condition which create opportunities for missed interventions along the continuum of care (31). In this study the observation data were compiled into descriptive field notes which were then content analyzed. The findings revealed some patient and health care provider health literacy-related factors affecting the understanding of epilepsy and treatment outcomes (31). The study concluded that there was poor interaction

between healthcare workers and epilepsy patients suggesting limited health literacy for both patients and healthcare providers.

In South Africa where there are many cultures and ethnic groups health literacy is a challenge especially when the general literacy level is low. One of the observational studies carried out by an associate professor of pharmaceutics in the Faculty of Pharmacy, Rhodes University, Grahamstown, South Africa, discovered that the instructions or directions which are written on prescriptions do not mean the same to everyone. One of her clients who was having a vaginal problem was told to use a cream by inserting the tube inside her private organ. However the patient came back to the hospital because the illness was not getting better. It was discovered later that the patient was not inserting the tube inside her but rubbing the tube on her thigh as was shown by a drawing on the instructions (13). These results are common among patients with limited abilities in navigating healthcare systems and understanding medical instructions. These results have been found to be common in other studies mostly in cross cultural societies where for example it was clearly demonstrated pictures do not necessarily communicate the same concepts to all groups, even when the pictured objects are easily recognizable(28,45,47,48).

A lot of literature has been published regarding the high educational literacy level of the general population of Zimbabwe (44). However, various knowledge, attitudes and practice (KAP) surveys which have been carried out in Zimbabwe on different aspects of health have shown that people lack knowledge of their health conditions in most cases(32,38,49). Although Zimbabwe has a high literacy in reading and writing, the health literacy level of the population is not adequate among people of different backgrounds. A surveys on KAP on the management of diabetes concluded that an average of 50% had no adequate knowledge on diabetes , after

measuring the knowledge of patients on the symptoms and signs of diabetes, management of diabetes and reading results from glucose tests (36).

A study which was carried out at Parirenyatwa group of hospitals, discovered that patients had very low levels of self-care management with a prevalence of poor glycaemic control of about 58.2%(42). The poor result showed a serious lack of health literacy on diabetes which has detrimental effects to the self-care management of patients with diabetes.

The 7th WHO's Global Conference on Health Promotion in Nairobi, Kenya in 2009 emphasized the importance of health literacy and called for individual and collective actions in working together towards the attainment of adequate health literacy(50). This conference agreed on putting in place measures which were meant to increase health literacy such as improving access to information and communication and increasing the flow of ICT through multi-sectorial collaboration(50). However, the progress towards the achievement of these recommendations is yet to be fully recognized in countries like Zimbabwe. In the Southern Africa region, South Africa has made some progress in modifying health literacy measurement tool such as the Sesotho health literacy test showing the importance of understanding patients' level of health literacy(51).

2.2 Research Question

What is the level of health literacy among adult inpatients at Harare central hospital and Parirenyatwa group of hospitals in 2019?

2.3 Objectives

2.3.1 Broad objective

To determine health literacy level among adult inpatients at Harare central hospital and Parirenyatwa Group of Hospitals (PGH) in 2019

2.3.2 Specific objectives

To assess the functional literacy skills of adult inpatients at Harare hospital and PGH

To determine the communicative/ interactive skills level among inpatients at Harare hospital and PGH

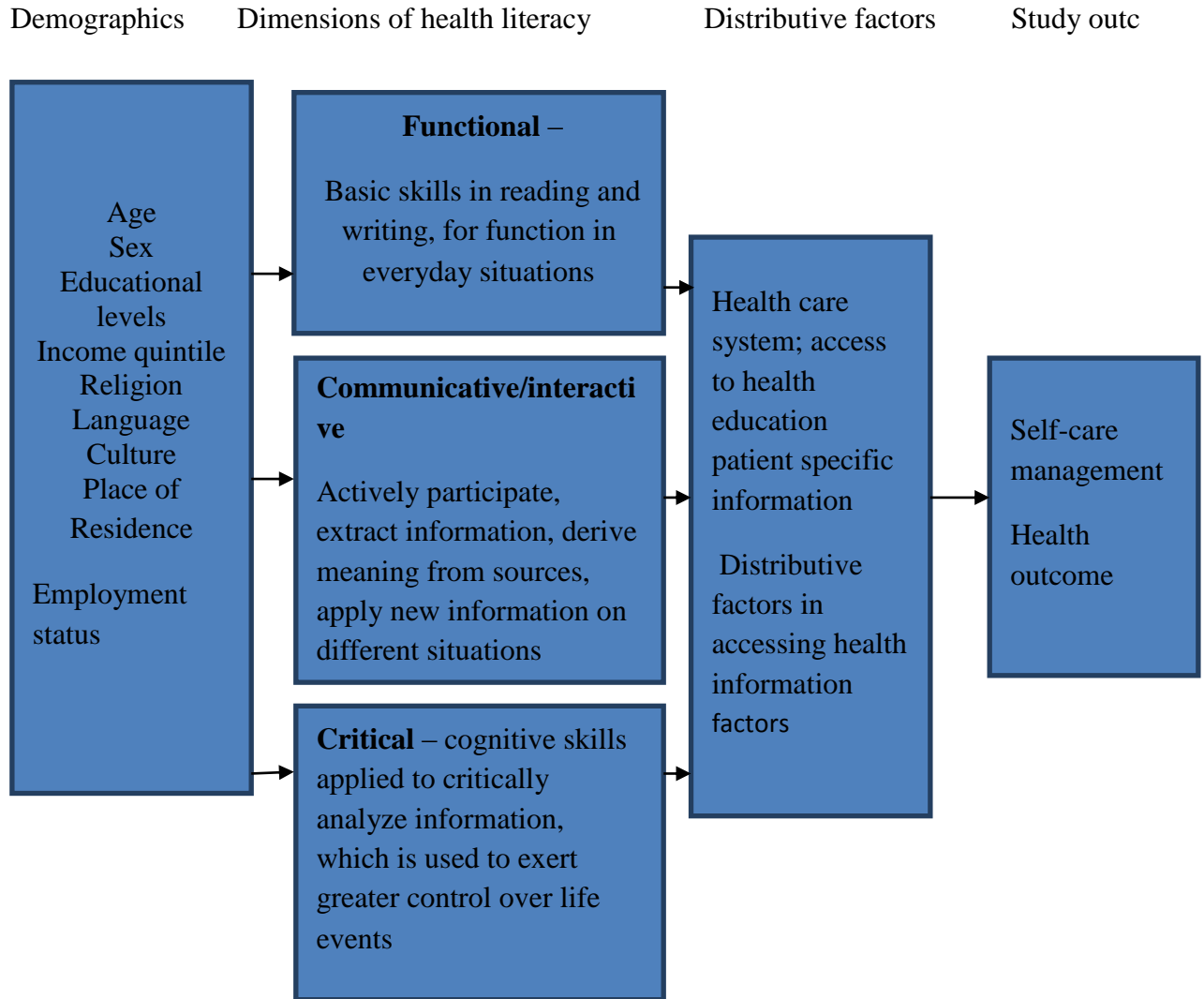
To determine the critical skills level among the admitted patients at Harare hospital and PGH

To determine the socio-economic and demographic factors that are associated with health literacy level among inpatients at Harare hospital and PGH

2.4 Conceptual Framework

Figure 1 conceptual framework

Interaction of factors which determine the level of health literacy among adult inpatients



Source: Adapted from Literature after Nutbeam's model of health literacy (42,52).

2.4.1 Explanation of the conceptual framework

The interaction of these factors on the conceptual framework determine the ability of an individual to obtain, process and understand basic health information and services needed to make appropriate health decisions.

Demographic factors such as age, educational level and employment status can determine the ability to be able to read and write (53). Therefore demographic factors influence patients' skills in actively participating, extracting information and deriving meaning from health sources. However, demographic factors such as culture, sex and place of residence may cause variations in the level of health literacy among patients (23). For example understanding of health concepts is different between those who stay in rural areas and their counterparts in the urban areas; however some studies have also shown that coming from an elite class does not always mean that those people will have high health literacy level(14). On ethnicity, minority groups have been noted to have lower health literacy in some studies hence the ethnicity of an individual can contribute to their level of health literacy(54). Culture also plays an important role in determining one's health literacy level, as noted in a study among young women in rural Uganda where health literacy had a low prevalence among young women as a result of cultural practices which prevented them to actively participate in reproductive health (22).

There are many health literacy dimensions which include functional literacy which is a patient's abilities in reading and writing, this is the only way to make a meaning of the prescribed medication and other health related information (12). In most cases health care providers do not have time to explain prescriptions and if patients are not literate enough will find themselves in difficult situations of having to ask their family or friends to explain the writings.

Communicative or interactive factors involve the combination of skills such as the ability of patients to interact well with healthcare providers and having the confidence to ask and navigate healthcare system which plays a crucial role in one's ability to understand process and use of health information.

Critical factors of health literacy are more advanced cognitive skills which can be applied in the critical analysis of health information, so as to exert greater control over life events and situations(55). These factors are important as they are used to deal with complicated health conditions such as surgical operations.

Patients also use other people's knowledge or influence in dealing with their healthcare problems (2). These factors are referred to as distributive factors, these are skills one uses to draw on the health literacy abilities, skills and practices of others as a resource to seek help, use and understand health information in managing their own condition (56). Health literacy has many measurement domains but the few that have been included in the conceptual framework can determine the level of a patient's health literacy. These factors can help in determining the level of health literacy of an individual.

CHAPTER 3

3.0: METHODS

This chapter focuses on the methods, which have been used to gather the data for this study. A cross sectional study design was used for this study. An interviewer administered questionnaire was used for data collection having been pilot tested at one of the hospitals in Harare.

3.1 Study Design:

A cross sectional study was conducted to assess the level of health literacy among adult inpatients at Harare central hospital and Parirenyatwa group of hospitals in 2019.

3.2: Study setting:

The study was conducted at Harare central hospital and Parirenyatwa group of hospitals in Harare, Zimbabwe.

3.3: Study population:

All adult male and female patients from medical and surgical wards of Harare hospital and Parirenyatwa group of hospitals who were utilizing the health services during the time of study were used as the study population for this survey.

3.4 Study sample:

Study subjects were drawn from general patients admitted at Harare hospital and Parirenyatwa group of hospitals from the medical and surgical wards but excluding those from Intensive Care Units (ICU). The two hospitals were purposively selected because they are the two biggest referral centers in Zimbabwe where all patients with different health conditions can be assessed on their level of health literacy.

3.5 Inclusion criteria

All medical and surgical patients (male and female) who were admitted at the hospitals for at least two days between the ages of 18 and 65 years who were in a stable condition and willing to participate were considered in the study.

3.6 Exclusion criteria

All patients who were admitted for less than two days on the day of survey were excluded from the survey. Seriously ill patients and those in the ICU were not included in the study. Members of staff admitted at the facilities were not allowed to participate in the survey.

3.7 Sample size

Based on the study which was done in South Africa on the applicability of the Rapid Estimate of Adult Literacy in Medicine (REALM) health literacy test to an English second-language South African population, the sample size for this study was calculated using the Dobson formula with a 16% prevalence rate from the South African study (28). The minimum number of study participants for this study was 207 with a 95% confidence interval and a width of 0.05 Formula:

$n = z^2 * p (1-P) / d^2$ where; n= sample size

z^2 = Standard normal deviation (1.96) equivalent to 95% confidence interval

p= proportion/prevalence of target population (usually from previous studies)

d^2 = absolute precision

$n = 1.96^2 * 0.16 (1-0.16) / [0.05^2]$

n=207

However, 208 participants were used for this study.

3.8 Sampling procedure

The sampling procedure for the wards and participants was as follows; a simple random sampling procedure was used to select wards from the medical and surgical wards of the two health facilities (Harare hospital and Parirenyatwa hospitals). From each health facility three medical wards and three surgical wards were selected. Each health facility contributed 50% of the total number of study participants. However on the selection of the participants a number of factors were considered in which the most important factors were the willingness and ability of the patient to respond to the questions. Although there were transfers and discharges during the time of survey the researcher did not face many challenges in the selection of the participants.

3.9 Data collection tool

An interviewer administered questionnaire printed on paper was used to collect data from study participants. The data collection tool was tested with one of the hospitals in Harare (Beatrice Road Infectious Disease Hospital). The tool consisted mostly of closed ended questions which required the participants to choose the most appropriate option. The open ended questions wanted to test the participants of their own understanding of health literacy as it applies to their own health conditions. It did not take more than 20 minutes to administer the tool for each participant.

3.10 Data analysis

EPI info version 7.2.2.6; was used to enter, clean, and analyze the data. The software was used to generate frequencies and proportions. The p-values generated from the chi square test were used to determine the significance of association between demographic factors and health literacy factors. The association between health literacy level and self-care practices was also tested using the chi square test in which p-values determined the significance of the association. The

frequencies and percentages of respondents in each category were used to summarize and compare the responses. Contingency tables were used to tabulate variables.

3.11 Study and Outcome Factors

3.11.1 Study factors/ independent variables

These are variables used to measure the factors that are assumed to influence the problem under study.

Socio-demographic factors:

- Age- total number of years of each participant
- Sex- the biological and physiological differences between men and women
- Employment status- source of income
- Residence- where the participants lived
- Education level-academic level completed

Health literacy dimensions

These are the constructs which are used to measure health literacy level among participants;

1. Functional literacy

- Ability to read and write- This is how good patients are at reading and writing health related information. This was measured by asking the patients if they required any assistance in reading or writing hospital documents.
- Having someone to assist- This measure to degree to which a patient can have someone to help when they need help related to their health

- Ability to fill hospital documents- this measure the ability of patients in completing paperwork needed at the health facility

2. Communicative literacy

- Ability to give out all information- measure the degree at which the patients are able to fully explain their problem to healthcare providers.
- Ability and confidence to ask questions- measure how well how patients ask questions were they do not understand.
- Ability to ask for explanation- measures the confidence in patients in asking for explanation on health information given at health facility.

To measure these constructs patients made self-reports on how often they would ask questions from healthcare providers on aspects they would not have understood. The frequency in which they ask healthcare providers would then differentiate one patient from another.

3. Critical literacy

- Finding information- this measure the degree to which patients have the zeal to look around for information concerning their own health.
- Critical thinking- measures the extent in which patients think carefully on the meaning of health information provided to them if it is relevant or useful to them.
- Trust- this measure the critical cognitive functions of patients in using health information and services provided at healthcare facility.

- Questioning healthcare provider's advice- this measures the ability of a patient in questioning the advice received from healthcare provider based on own their research.
- Participate in decision making- this measures how a patient can be actively involved in matters that concern their health.

4. Self-care practices

- Knowledge of self-care/wellness practices- it measures the level of knowledge among participant on their understanding of what they should do to reduce the burden of their conditions.
- Ability to monitor and manage symptoms of own condition- Measures how well a patient can be in taking care of their own condition even away from a healthcare facility.

3:11.2 Outcome factor

The outcome factor is the variable that is used to measure the problem under study.

Health literacy level

-is the capacity of individuals to obtain, process and understand essential health information and services required to make appropriate health decisions

3.12 Permission to proceed

Permission to proceed with the study was sought from:

- Department of Community Medicine, College of Health Sciences
- Chief Executive Officer (CEO) of Parirenyatwa group of hospitals
- CEO of Harare Central Hospital

3.13 Ethical considerations

Ethical clearances were sought from:

- Joint Research Ethics Committee (JREC) and approved (see attached letter)
- Harare central hospital ethics committee and approved (see attached letter)

Consent

Before participants were admitted into this study, the whole purpose, procedures and any possible risks about the study were explained to them. After the participants had agreed that they had understood the whole study objective that is when they signed consent forms agreeing to participate in the study.

Confidentiality

Participants were not allowed to put their names on questionnaires and confidentiality of the produced material was maintained throughout the study. Completed questionnaires are still being kept in a locked cabinet at all times and only the investigator has the access to the data.

CHAPTER 4

4.1 Results Presentation and data analysis

Introduction

This chapter presents the findings from the study and the data analysis which was carried out.

Analysis of variables was done classifying each dimension of health literacy on its own.

The general level on each dimension was presented and some comparisons were carried out between health literacy variables and demographic variables. The association between study factors and outcomes variables were tested with Chi Square test and p values determined the significance of each association. The chapter concludes by an analysis of the overall health literacy level and association with self-care knowledge.

The following table shows the demographic characteristics of the study participants.

Table 1: Demographics variables

			N=208
Variable	Category	Frequency	Percentage (%)
Age Group	18-30	74	35.6
	31-45	71	34.1
	46-65	63	30.3
Sex	Male	101	48.6
	Female	107	51.4
Residence	Rural	70	33.98
	Urban	136	66.02
Educational level	Primary	66	31.88
	Secondary	116	56.04
	Tertiary	24	11.59
Employment status	Formally employed	32	15.38
	Informally employed	92	44.23
	Not employed	82	40.38
Marital status	Married	138	66.35
	Divorced/widow	37	17.79
	Single	33	15.87
Hospital	Harare	104	50
	Parirenyatwa	104	50
Department	Surgical	93	44.71
	Medical	115	55.29

A larger proportion of the participants were in the 18-30(35.6%) years age group with the smallest proportion falling in the 46-65(30.3%) years age category. In terms of religion the majority 180(87%) were Christians and 25(12%) follow the African tradition with only 2(1%) participant belonging to some other religion

The basic educational level is very high with (206)99.52% participants having attained a minimum of primary school education. The sample consisted of a statistically significant difference in proportion of participants in terms of residence, with those living in urban areas having a higher proportion 136(66.02%) and those from the rural area with 70(33.98%) ($z = -6.5$, $p < 0.01$)

A smaller proportion of 32(15.38%) participants were formally employed with approximately equal proportions divided between those who were informally employed 92(44.23%) and those who were not employed 82(40.38%).

4.2 Health literacy Dimensions

Health literacy was assessed using three dimensions namely functional, communicative and critical literacy each consisting of at most three items on a three point likert scale with options “often”, “sometimes” and “Rarely”. Also some comparisons were carried out to determine the association of each dimension of health literacy and selected demographic variables using a chi squared test with the p-value determining the significance of association. Finally the level of health literacy on all dimensions was tested for association with the knowledge of self-care practices among participants to determine the implications of low health literacy.

The following table shows the association between functional literacy and demographic variables as it was analysed in this study.

Table 2: Association between functional literacy and demographic variables N=208

Variable		Often	Sometimes	Rarely	p-value
Ability to read and write					
Residence	Rural	17 (24.29)	36 (51.43)	17 (24.29)	P=0.03*
	Urban	20 (14.7)	58 (42.65)	58 (42.65)	
Employment status	Formally	2 (5.26)	5 (5.26)	25 (33.33)	P<0.01*
	Informally	14 (36.84)	49 (51.58)	29 (38.67)	
	Not employed	22 (57.89)	41 (43.16)	21 (28)	
Gender	Male	18 (17.82)	43 (42.57)	40 (39.60)	P=0.05
	Female	20 (18.69)	52 (48.60)	35 (32.71)	
Hospital	Harare	26 (25)	46 (44.23)	32 (30.77)	P=0.01*
	Parirenyatwa	12 (11.54)	49 (47.13)	43. (41.35)	
Age	18-30	11(14.9)	34(46)	29(39.1)	P=0.01*
	31-45	7(9.9)	30(42.2)	34(47.9)	
	46-65	20(31.8)	31(49.2)	12(19.1)	
Need help to fill documents					
Residence	Rural	27 (38,57)	27 (38.57)	16 (22.86)	P=0.01*
	Urban	22 (16.18)	57 (41.91)	57 (41.91)	
Employment status	Formally	1 (3.13)	4 (12.50)	27 (84.38)	P<0.01*
	Informally	20 (21.74)	48 (52.17)	24 (26.19)	
	Not employed	29 (34.52)	33 (39.29)	22 (26.19)	
Hospital	Harare	33 (31.73)	41 (39.42)	30 (28.85)	P=0.02*
	Parirenyatwa	17 (16.35)	44 (42.61)	43 (41.35)	
Gender	Male	21 (20.8)	40 (39.6)	6 (5.9)	P= 0.36
	Female	29 (27.1)	45 (42.1)	40 (39.6)	
Age	18-30	13(17.6)	31(41.9)	30(40.5)	P<0.01*
	31-45	10(4.1)	29(40.9)	32(45.1)	
	46-65	27(42.9)	25(39.7)	11(17.5)	
Get hold of someone to assist					
Residence	Rural	37 (52.86)	30 (42.86)	3 (4.29)	P=0.04*
	Urban	58 (42.65)	70 (51.47)	8 (5.88)	
Employment status	Formally	14 (43.75)	15 (46.88)	3 (9.38)	P=0.22
	Informally	38 (41.30)	47 (51.09)	7 (7.61)	
	Not Employed	43 (51.19)	40 (47.62)	1 (1.19)	
Hospital	Harare	40 (38.46)	59 (56.73)	8 (4.81)	P=0.08
	Parirenyatwa	55 (52.88)	43 (41.35)	6 (5.77)	
Gender	Male	39 (38.61)	56 (55.45)	6 (5.94)	P=0.06
	Female	56 (52.34)	46 (42.99)	5 (4.67)	
Age	18-30	33(44.6)	37(50)	4(5.4)	P=0.60
	31-45	28(39.4)	39(54.9)	4(5.6)	
	46-65	34(54)	26(41.2)	3(4.8)	

*significant value

As reported in table 2 most participants 95(45.6%) reported that they “sometimes” need help to read information provided by the doctor with the smallest proportion indicating that they “often” need help whilst 75(36.1%) indicated that they rarely needed reading assistance.

The largest proportion 85(40.5%) reported that they “Rarely” needed help to fill official documents when at the hospital. The smallest proportion of 50(24%) highlighted that they often required help to complete official documents which indicates a low functional health literacy level.

Using the chi-square test, there was no association between sex and any of the construct items for functional health literacy. All constructs had a $p > 0.05$. There was highly statistically significant relationship between functional literacy construct items and general level of education for the inpatients, all constructs had $p < 0.05$

Using the Z-test for comparing proportions from two independent groups there was a statistically significant difference between inpatients at Harare and those at Parirenyatwa who “Often” need help to read given information by doctor or healthcare provider ($z = -2.51, p = 0.01$)

The following table shows the association between communicative literacy variables and demographic variables, the p values from chi square test shows the significance of association.

Table 3: Association between communicative health literacy constructs and Demographic Variables

Variable		often	sometimes	rarely	p-value
Ability to give out all information					
Residence	Rural	28 (40)	41 (58.57)	1 (1.43)	P=0.10
	Urban	75 (55.15)	58 (42.65)	3 (2.21)	
Hosp	Surgical	48 (51.61)	44 (47.31)	1 (1.08)	P=0.71
Department	Medical	57 (49.57)	55 (47.83)	3(2.61)	
Gender	Male	53 (52.48)	47 (46.53)	1 (0.99)	P=0.60
	Female	52 (48.60)	52 (48.60)	3 (2.80)	
Age	18-30	31(51.4)	35(47.3)	1(1.4)	P=0.05
	31-45	43(60.6)	28(39.4)	0	
	46-65	24(38.1)	36(57.1)	3(4.8)	
Education	Primary	23 (34.9)	40 (60.6)	3(4.6)	P<0.03*
	secondary	60 (51.7)	55(47.4)	1(0.86)	
	Tertiary	20 (83.3)	4(16.7)	0	
Ability to ask questions					
Residence	Rural	38 (54.3)	31 (44.3)	1 (1.14)	P=0.05
	Urban	85 (62.5)	41 (30.2)	10 (7.4)	
Employment status	Formally	25 (78.13)	7 (21.88)	0	P=0.12
	informally	49 (53.26)	38 (41.30)	5 (5.43)	
	Not employed	50 (59.52)	28 (33.33)	6 (7.47)	
Education level	Primary	31 (47)	31 (47)	4 (6)	P=0.03*
	Secondary	70 (60.3)	39 (53.6)	7 (6.9)	
	Tertiary	23 (95.8)	1 (4.17)	0	
Gender	Male	62 (61.4)	32 (31.7)	7 (6.9)	P<0.42
	Female	62 (57.5)	4 (3.7)	41 (38.3)	
Age	18-30	43(58.1)	28(37.8)	3(4.1)	P=0.77
	31-45	46(64.8)	21(29.6)	4(5.6)	
	46-65	35(55.6)	24(39.1)	5(6.4)	
Probe for explanation					
Residence	Rural	22 (31.4)	45 (64.3)	3 (4.3)	P=0.10
	Urban	61 (44.9)	66 (48.5)	9 (6.6)	
Hospital department	Surgical	36 (38.71)	52 (55.91)	5 (5.38)	P=0.86
	Medical	48 (4.74)	60 (52.17)	7 (6.09)	
Education level	primary	15 (22.73)	47 (71.21)	4 (6.06)	P<0.01*
	secondary	49 (42.24)	59 (50.86)	8 (6.90)	
	Tertiary	20 (83.33)	4 (16.67)	0	
Gender	Male	39 (38.61)	56 (55.45)	6 (5.94)	P=0.88
	Female	45 (42.06)	56 (52.34)	6 (5.61)	

*significant value

The largest number of rural residents 41(58.57), “sometimes” talk to the healthcare provider giving them all the information they need in order for them to be helped whereas the greatest proportion of urban residents 75(55.15) “Often” did so. Differences in the proportion between rural and urban residents were significant ($p < 0.05$) in the “Often” and “Sometimes” response.

There is no statistically significant association between sex and communicative literacy constructs. Males and females are equally represented in each response category indicating that there are no significant differences in communicative health literacy between males and females ($p > 0.05$).

All the items for the communicative health literacy constructs were statistically significantly associated with education level of the participants. Most patients 40(60.6) with primary education “sometimes” give lots of information to the healthcare provider in order to be helped yet the largest proportion 60(51.7) of patients with secondary education “Often” give lots of information in order to get assistance. In the tertiary education category the majority of patients 20(83.3) tend to “often” give lots of information in order to receive optimum help.

Critical health literacy and demographic variables

The association of the variables of critical health literacy and some demographic variables is shown on the following table.

Table 4: Critical Health Literacy Constructs and Association with Demographic Variables

N=208

Variable		often	sometimes	rarely	p-value
Find a lot information about own health					
Residence	Rural	5 (7.1)	45 (64.3)	20 (28.6)	P=0.03*
	Urban	30 (22.1)	74 (54.4)	32 (23.50)	
Gender	Male	17 (16.83)	62 (61.39)	22 (21.78)	P=0.60
	Female	18 (16.82)	59 (55.14)	30 (28.04)	
Education level	Primary	3 (4.55)	37 (56.1)	26 (39.4)	P<0.01*
	Secondary	17 (14.7)	75 (64.7)	24 (20.7)	
	Tertiary	15 (62.50)	8 (33.3)	1 (4.2)	
Critical thinking on health information					
Residence	Rural	1 (1.43)	28 (40.0)	41 (58.57)	P<0.01*
	Urban	30 (22.06)	55(40.44)	51 (37.50)	
Gender	Male	16 (15.84)	44 (43.56)	41(40.59)	P<0.91
	Female	15 (14.02)	41 (38.32)	51 (47.66)	
Age	18-30	7(9.5)	16(21.6)	51(68.9)	P=0.40
	31-45	10(14.1)	18(25.4)	43(60.6)	
	46-65	3(4.8)	19(30.2)	41(65.1)	
Education	Primary	1 (1.5)	23 (34.9)	42 (63.6)	P<0.01*
	Secondary	15 (12.9)	54 (56.04)	47 (40.5)	
	Tertiary	15 (62.5)	7 (29.2)	2 (8.3)	
Hospital department	Surgical	14 (15.05)	41 (44.09)	38 (40.88)	P=0.70
	Medical	17 (14.78)	44(38.26)	54 (46.90)	
Question healthcare provider's advice based on own research					
Residence	Rural	2 (2.86)	11 (15.71)	57 (81.43)	P=0.03*
	urban	15 (11.28)	31 (23.31)	87 (65.41)	
Gender	Male	8 (8.08)	24 (24.30)	67 (67.68)	P=0.60
	Female	9 (8.49)	19 (17.92)	78 (73.58)	
Age	18-30	4(5.5)	16(21.9)	53(77.6)	P=0.30
	31-45	10(14.5)	13(18.8)	46(66.7)	
	46-65	3(4.8)	14(22.2)	46(73)	
Education	Primary	0	6 (9.23)	59 (90.77)	P<0.01*
	Secondary	7 (6.14)	27 (23.68)	59 (90.77)	
	Tertiary	10 (4.67)	10 (4.67)	4 (16.67)	
Hospital department	surgical	9 (8.04)	29 (25.89)	74 (66.07)	P=0.20
	medical	8 (8.6)	14 (15.05)	71 (76.34)	
Active decision maker					
Residence	Rural	9(12.86)	52(74.29)	9(12.86)	P=0.32
	Urban	29(21.32)	89(65.44)	18(13.24)	
Education	Primary	4(6.06)	51(77.27)	11(16.67)	P<0.01*
	Secondary	18(15.52)	83(71.55)	15(12.93)	
	Tertiary	16(66.67)	7(29.17)	1(4.17)	
Gender	Male	21(20.79)	63(62.38)	17(16.83)	P=0.13
	Female	17(15.89)	80(74.77)	10(9.35)	

The greatest proportion of both males 62(61.39) and females 59(55.14) “sometimes” like to find out lots of information about their health with the least number of both males 17(16.83) and females 18(16.82) reporting the “often” category. There were no significant differences in the proportion males and females reporting in each of the category response ($p > 0.05$). When comparing the proportion of males and females reporting in each response option category, there were no significant difference between males and females ($p > 0.05$).

In responding to the question “How often do you try to work out whether information about your health can be trusted” the highest number of both males 41(40.59) and females 51(47.66) reported that they “Rarely” try. The proportion of males and females reporting in each response category showed no statistical significant differences between males and females.

The greatest proportion of both males 67(67.68) and females 78(73.58) reported that they “rarely” question their healthcare provider’s advice based on their own research about their condition. A small proportion of both males 8(8.08) and females 9(8.49) revealed that they “often” question their healthcare providers. In all response option categories there were no statistical differences in the proportion of males and females ($p > 0.05$).

As shown in the table above all the items under the critical health literacy construct were highly statistically significant on the association between place of residence and critical health literacy constructs.

The following tables show the association between health dimensions and knowledge of self-care practices among participants. The p values were generated from the chi square test of association.

Table 5: Association between self-care knowledge and functional health literacy

		High	Intermediate	Low	
Need help in reading and writing	Often	2(5.26)	9(23.88)	27(71.05)	P=0.01*
	Rarely	10(13.33)	34(45.33)	31(41.33)	
	Sometimes	3(3.16)	34(35.79)	58(61.05)	
Need help to fill official document	Often	3(6)	11(20)	36(72)	P=0.01*
	Rarely	10(13.7)	33(45.2)	30(41.1)	
	Sometimes	2(2.35)	33(38.28)	50(58.28)	

***significant value**

The association between needing help in reading and writing and the knowledge of a patient in self-care practices is statistically significant $p=0.01$. The proportion (71.05%) of those who said they often required help in reading and writing was also rated as having poor knowledge on self-care practices.

Communicative Literacy and self-care knowledge

The table below shows the association of health literacy levels and the knowledge of self-care practices among inpatients. The association was tested using the chi square test.

Table 6: Association between communicative literacy and self-care practice knowledge

		High	Intermediate	Low	
Ability to give out all information	often	10(9.52)	49(46.67)	46(45.81)	P=0.01*
	Rarely	0	1(25)	3(75)	
	Sometimes	5(5.05)	27(27.27)	67(67.68)	
Ability to ask questions	Often	12(9.68)	59(47.58)	53(42.74)	P<0.01*
	Rarely	0	1(9.09)	70(90.19)	
	Sometimes	3(4.11)	17(23.29)	53(72.16)	

***significant value**

All constructs of communicative health literacy were statistically significantly associated with the level of knowledge of patients in self-care practices. Those who had reported that they rarely ask questions 70(90.19) had very low level of knowledge on self-care practices

To test the association between health literacy level and knowledge of self-care practices among participants a chi square test was carried out and the following table shows the results.

Table 7: Association of Critical health literacy and knowledge on self-care practices

	High	Intermediate	Low	
Likes to find out lot of information about own health				
Often	9(25.71)	17(45.57)	9(25.71)	P<0.01*
Rarely	2(3.88)	6(11.54)	44(84.62)	
Sometimes	4(3.31)	54(44.63)	63(52.07)	
Active participation in decision making				
Often	7(18.4)	19(24.68)	12(10.34)	P<0.01*
Rarely	1(6.67)	4(5.19)	22(18.97)	
Sometimes	7(46.67)	54(70.13)	82(70.69)	
Question healthcare worker's advice based on own research				
Often	5(21.41)	8(47.06)	4(23.53)	P<0.01*
Rarely	6(4.14)	48(33.10)	91(62.76)	
Sometimes	4(9.30)	21(48.84)	18(41.86)	

***significant value**

All constructs of critical health literacy were statistically significant, those who rarely question healthcare workers based on their own research had low level of knowledge on self-care practices $p < 0.05$. For those who rarely question healthcare providers based on own research had

the largest proportion (62.76%) of patients with low level of self-care practices as shown in the table above.

Chapter 5

5.1 Discussion

The aim of this study was to measure the level of health literacy among adult inpatients at central hospitals of Harare and Parirenyatwa. It was also in the scope of this study to measure the association of the level of health literacy and the knowledge of patients on self-care practices. There have been no prior studies which have been done in Zimbabwe on measuring health literacy of inpatients using one of the tools developed in the western countries. Although there are a number of tools which can be used to measure health literacy this study used the AAHLS tool which seemed more relevant and easy to use in the current study.

The results of this study have been measured using the terms such as ‘often’, ‘sometimes’ and ‘rarely’ to measure the level of health literacy among inpatients. This study has measured the components of health literacy separately that is functional literacy, communicative literacy and critical literacy to determine where the level of health literacy was low or high among the inpatients. When respondents said they “often “ needed help in reading and writing it means that they had inadequate (low) health literacy, whereas if they reported that they “sometimes” needed assistance it means that their health literacy was marginal (average) and when they reported that they “rarely” needed help then their health literacy level was adequate (high). However the use of the words “marginal”, “adequate”, and “inadequate” depends on the way in which the questions were structured. Self-care practices were measured by two variables which asked the patients about their knowledge on the constructs assuming that what they know is what they practiced to manage their conditions.

The basic educational level of literacy is very high with (206)99.52% participants having attained a minimum of primary school education among the participants. This could have contributed to marginal levels of health literacy among participants on functional literacy as more than 81% of the participants had reported that they “sometimes” or “rarely” needed help in reading and writing health related information. The overall functional literacy level of inpatients at the two central hospitals was well above average, however just like previous studies which had measured health literacy in different parts of the world (11,23,41,54,57), the critical literacy level of the current study was very low as only 8% of the participants would “often” question healthcare provider’s advice based on their own research and about 70% reported that they would “rarely” question their healthcare providers. The components of critical literacy require healthcare providers to deliver their services in a manner that accommodate all patients despite their educational background. In a that was carried out in America it was shown that about 12% of the population had critical health literacy(58).

The current study has shown an association of functional health literacy and the level of education of the participants. All the attributes of health literacy that is functional, communicative and critical literacy were statistically significantly associated with general education level of the inpatients. One of the critical literacy variables (ability to find out lots of information) had $p < 0.01$ and all other constructs had significant p-values as was shown in chapter four. The results of the study are similar to some of the studies which were done around Africa for example the one which was carried out in Ghana in which functional literacy was positively related to the educational level of the participants (55). This was clearly demonstrated by the current study showing that educational background of participants plays an important role in the access, understanding and use of health information and services by patients. In western studies

on the same topic it was discovered that functional health literacy was low among those of poor educational backgrounds and emigrants without proper communication abilities (11,13,23,41).

People with limited health literacy abilities mostly hide their lack of knowledge so that they do not appear as if they belong to the lower class and this further gives problem to the issue of health literacy(59). However the current study could not extract such information from the participants since it was not a qualitative study.

Results from the current study have shown that residence of the participants played an important role in the patient's abilities in critical health literacy. All the items under the critical health literacy construct were highly statistically significant showing that there is a relationship between place of residence and level of critical health literacy. This could be attributed to the exposure of urban participants which is better than those who stay in the rural areas(53). The results from the Chi- squared test showed that all variables on critical health literacy were statistically significant; (i) someone who likes to find lots of information $p=0.03$, (ii) think carefully whether health information makes sense in own particular situation $p<0.01$, and (iii) question healthcare provider's advice based on own research $p=0.03$. The results on this dimension of health literacy are similar to those which were found in some surveys such as the Korean study on gender differences on health literacy and other western studies (14,15,60) although there are some differences in the settings.

Using the chi-square test, there was no association between gender and any of the dimensions of health literacy (functional, communicative and critical). The gender of the participants did not determine the level of health literacy among participants; this is in line with some of the studies which were done around the world(41,61). However some studies found different results on this

relationship (24,52,53,62) suggesting that there could be variations between and or among different study population. Some studies have shown that women had better health literacy than men since they utilised health care services more than men (24).

Comparisons between the two departments, surgical and medical did not provide any statistically significant difference between the participants from the two departments (table 4). Overall there was no relationship between critical health literacy questions and hospital department at which the inpatients were admitted. The question... 'Are you someone who question your healthcare provider's advice based on your own research?' the responses were not statistically significant suggesting that there were no differences in the understanding of critical health literacy between participants from the two departments ($p=0.20$).

The relationship between levels of health literacy and knowledge and understanding of self-care was statistically significant on all three dimensions of health literacy. On all constructs that is functional, communicative and critical literacy the $p<0.05$ showing a strong association between level of health literacy of a patient and their knowledge on self-care practices. Participants who had limited confidence in questioning healthcare workers on the advice they receive based on their own research had low levels of health literacy. However the results of this study do not support one of the studies which was done among heart failure patients and their level of self-care practices. The study did not find any relationship between health literacy and self-care knowledge(25). Other factors such as educational level of patients could play a significant role in increasing the knowledge of self-care practices. For this study more than 99% had at least attained primary education and better knowledge and confidence on reporting on self-care practices was high among those of better educational backgrounds.

The implications of low health literacy which have been revealed in this study are only associations between level of health literacy and the amount of knowledge of a patient in terms of self-care practices. Low levels of health literacy have a negative influence on the knowledge of self-care practices among inpatients.

5.2 Strengths and limitations of the study

This study is among the first to assess the level of health literacy among adults inpatients at the two central hospitals. The study has managed to give a clear picture on where interventions should be directed to improve health literacy. For example people with poor educational background are the mostly affected group on level of communicative and critical health literacy. The study has managed to pave way for further studies in the area of health literacy since it is fairly a new research area in Zimbabwe. The study also managed to show that the level of health literacy had a statistically significant association with the knowledge of self-care practices among patients. Patients with low levels of health literacy had also poor knowledge on self-care practices, therefore intervention can be directed those who have low levels of health literacy to improve self-care practices.

The study had its own limitations; because of its cross sectional nature the temporal sequence of events could not be established the study relied on information that was provided by patients in which the information could have been biased. The study only managed to establish that there is an association between health literacy and self-care practices but could not determine

5.3 Conclusion

The results of this study have shown that the majority of the in-patients at the two central hospitals had marginal health literacy on functional literacy however there were inadequate levels of communicative and very low levels of critical literacy among the patients. Although

there is high functional literacy being contributed by the country's high level of educational literacy, most participants reported that they did not ask questions or actively participate in decision making concerning their health. Health literacy is a complex subject which needs the effort of all stakeholders who are involved in the care and treatment of patients so as to get the maximum possible outcome of providing the services to the patients.

5.4 Recommendations

Policy development

Healthcare workers should spend more time with their clients so as to understand their strength in comprehending medical instructions and information especially those with poor educational backgrounds.

Public health programming

Introduction of more health education programs in the communities targeting those with low health literacy mostly on communicative and critical literacy.

Research

In future, prospective studies should be done to ascertain the temporal sequences of health literacy attributes and subsequent outcomes such as adherence to treatment as this study could not clearly determine that relationship.

Training capacity building

Healthcare workers should be trained on skills which make them competent enough to deal with patients with limited educational and cognitive abilities.

References

1. Koh HK, Berwick DM, Clancy CM, Baur C, Brach C, Harris LM, et al. New Federal Policy Initiatives To Boost Health Literacy Can Help The Nation Move Beyond The Cycle Of Costly 'Crisis Care.' *Health Aff (Millwood)*. 2012 Feb;31(2):434–43.
2. McMichael C, Gifford S. "It is Good to Know Now...Before it's Too Late": Promoting Sexual Health Literacy Amongst Resettled Young People With Refugee Backgrounds. *Sex Cult*. 2009 Jul 8;13(4):218.
3. Manganello JA. Health literacy and adolescents: a framework and agenda for future research. *Health Educ Res*. 2008 Oct 1;23(5):840–7.
4. Davis TC, Wolf MS. Health literacy: implications for family medicine. *Fam Med*. 2004 Sep;36(8):595–8.
5. Osborne ME. *Health Literacy From A to Z*. Jones & Bartlett Publishers; 2012. 282 p.
6. Chang MK, Kelly AE. Patient education: addressing cultural diversity and health literacy issues. *Urol Nurs*. 2007;27(5):411–7.
7. Grosse RN, Auffrey C. Literacy and Health Status in Developing Countries. *Annu Rev Public Health*. 1989;10(1):281–97.
8. Kendrick M, Mutonyi H. Meeting the Challenge of Health Literacy in Rural Uganda: The Critical Role of Women and Local Modes of Communication. *Diaspora Indig Minor Educ*. 2007 Sep 21;1(4):265–83.

9. Dickens C, Lambert BL, Cromwell T, Piano MR. Nurse Overestimation of Patients' Health Literacy. *J Health Commun.* 2013 Dec 4;18(sup1):62–9.
10. Low Health Literacy Linked to Early Death for Cardiovascular Patients [Internet]. *AJMC.* [cited 2019 May 17]. Available from: <https://www.ajmc.com/newsroom/low-health-literacy-linked-to-early-death-for-cardiovascular-patients>
11. Mollakhalili H, Papi A, Zare-Farashbandi F, Sharifirad G, HasanZadeh A. A survey on health literacy of inpatient's educational hospitals of Isfahan University of Medical Sciences in 2012. *J Educ Health Promot* [Internet]. 2014 Jun 23 [cited 2019 May 14];3. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4113979/>
12. Chew LD, Bradley KA, Boyko EJ. Brief questions to identify patients with inadequate health literacy. *Fam Med.* 2004 Sep;36(8):588–94.
13. Robert Wickstead, Adrian Furnham. Comparing mental health literacy and physical health literacy: an exploratory study [Internet]. Taylor & Francis. [cited 2019 May 16]. Available from: <https://www.tandfonline.com/doi/abs/10.1080/09638237.2017.1294743>
14. Howard DH, Gazmararian J, Parker RM. The impact of low health literacy on the medical costs of Medicare managed care enrollees. *Am J Med.* 2005 Apr 1;118(4):371–7.
15. MacLeod S, Musich S, Gulyas S, Cheng Y, Tkatch R, Cempellin D, et al. The impact of inadequate health literacy on patient satisfaction, healthcare utilization, and expenditures among older adults. *Geriatr Nur (Lond).* 2017 Jul 1;38(4):334–41.
16. Pleasant A. Health Literacy Around the World: Part 1 Health Literacy Efforts Outside Of the United States. :90.

17. Cajita MI, Cajita TR, Han H-R. Health Literacy and Heart Failure. *J Cardiovasc Nurs*. 2016;31(2):121–30.
18. Svensson P, Carlzén K, Agardh A. Exposure to culturally sensitive sexual health information and impact on health literacy: a qualitative study among newly arrived refugee women in Sweden. *Cult Health Sex* [Internet]. 2016 Nov 29 [cited 2019 May 16]; Available from: <https://www.tandfonline.com/doi/abs/10.1080/13691058.2016.1259503>
19. Dowse R. The limitations of current health literacy measures for use in developing countries. *J Commun Healthc*. 2016 Jan 2;9(1):4–6.
20. Baker DW. The Meaning and the Measure of Health Literacy. *J Gen Intern Med*. 2006 Aug;21(8):878–83.
21. Gharachourlo M, Mahmoodi Z, Akbari Kamrani M, Tehranizadeh M, Kabir K. The effect of a health literacy approach to counselling on the lifestyle of women with gestational diabetes: A clinical trial. *F1000Research*. 2018 Mar 6;7:282.
22. Jones S, Norton B. On the Limits of Sexual Health Literacy: Insights From Ugandan Schoolgirls. *Diaspora Indig Minor Educ*. 2007 Sep 21;1(4):285–305.
23. Rajah R, Hassali MAA, Murugiah MK. A systematic review of the prevalence of limited health literacy in Southeast Asian countries. *Public Health*. 2019 Feb 1;167:8–15.
24. Lee HY, Lee J. Gender Differences in Health Literacy Among Korean Adults. :10.
25. Chen AMH, Yehle KS, Plake KS, Murawski MM, Mason HL. Health literacy and self-care of patients with heart failure. *J Cardiovasc Nurs*. 2011 Dec;26(6):446–51.

26. Baker DW, Parker RM, Williams MV, Clark WS. Health Literacy and the Risk of Hospital Admission. *J Gen Intern Med*. 1998 Dec;13(12):791–8.
27. Parker RM, Ratzan SC, Lurie N. Health Literacy: A Policy Challenge For Advancing High-Quality Health Care. *Health Aff (Millwood)* [Internet]. 2017 Aug 17 [cited 2019 May 17]; Available from: <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.22.4.147>
28. Dowse R, Lecoko L, Ehlers MS. Applicability of the REALM health literacy test to an English second-language South African population. *Pharm World Sci*. 2010 Aug 1;32(4):464–71.
29. Lori JR, Dahlem CHY, Ackah JV, Adanu RMK. Examining Antenatal Health Literacy in Ghana. *J Nurs Scholarsh*. 2014 Nov 1;46(6):432–40.
30. Level of community mental health literacy in sub-Saharan Africa: Current studies are limited in number, scope, spread, and cognizance of cultural nuances [Internet]. Taylor & Francis. [cited 2019 May 16]. Available from: <https://www.tandfonline.com/doi/abs/10.3109/08039488.2014.947319>
31. Keikelame MJ, Swartz L. Lost opportunities to improve health literacy: Observations in a chronic illness clinic providing care for patients with epilepsy in Cape Town South Africa. *Epilepsy Behav*. 2013 Jan 1;26(1):36–41.
32. Chirombe M, Ngara B, Chibvongodze R, Charuka V, Zhou DT. Glucose Control in Diabetic Patients Attending Parirenyatwa Group of Hospitals in Zimbabwe. *Open Clin Biochem J* [Internet]. 2018 Nov 16 [cited 2019 May 25];8(1). Available from: <https://benthamopen.com/FULLTEXT/TOCCHEMJ-8-12>

33. Chimbetete C, Katzenstein D, Shamu T, Spoerri A, Estill J, Egger M, et al. HIV-1 Drug Resistance and Third-Line Therapy Outcomes in Patients Failing Second-Line Therapy in Zimbabwe. *Open Forum Infect Dis* [Internet]. 2018 Feb [cited 2019 May 29];5(2). Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5801603/>
34. Mudziwepasi P. Patterns and characteristics of hypertension pharmacotherapy in Zimbabwe, 2016.
35. Mbizvo M, Adamchak. Family Planning Knowledge, Attitudes, and Practices of Men in Zimbabwe on JSTOR [Internet]. [cited 2019 May 24]. Available from: <https://www.jstor.org/stable/1966517>
36. Mufunda E, Ernersson Å, Hjelm K. Limited knowledge of diabetes in patients attending an outpatient diabetes clinic at a referral hospital in Zimbabwe: a cross-sectional study. *Pan Afr Med J*. 2018;29:144.
37. Takarinda KC, Harries AD, Nyathi B, Ngwenya M, Mutasa-Apollo T, Sandy C. Tuberculosis treatment delays and associated factors within the Zimbabwe national tuberculosis programme. *BMC Public Health*. 2015 Jan 29;15(1):29.
38. Mpande N, Chinamasa CF, Manangazira P, Mungati M, Takundwa L, Bangure D, et al. Factors Associated With Uncontrolled High Blood Pressure Amongst Patients With Hypertension At Harare Central Hospital in Zimbabwe. *J Hypertens Cardiol*. 2016 Jul 12;2(2):15.
39. Cabellos-García AC, Martínez-Sabater A, Castro-Sánchez E, Kangasniemi M, Juárez-Vela R, Gea-Caballero V. Relation between health literacy, self-care and adherence to treatment

with oral anticoagulants in adults: a narrative systematic review. *BMC Public Health*. 2018 Oct 4;18(1):1157.

40. Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Crotty K. Low Health Literacy and Health Outcomes: An Updated Systematic Review. *Ann Intern Med*. 2011 Jul 19;155(2):97.

41. Siddiqui R. A Comprehensive Approach To Health Literacy: Validating The All Aspects Of Health Literacy Scale (Aahls) In A Representative Sample Of Arabic- Speaking Adult Syrian Refugees. Ma Thesis. :100.

42. Health-literacy-WHO-Geneva-Nov-2015.pdf [Internet]. [cited 2019 May 27]. Available from: <https://www.who.int/global-coordination-mechanism/news/Health-literacy-WHO-Geneva-Nov-2015.pdf>

43. Gordon Singh S, Aiken J. The effect of health literacy level on health outcomes in patients with diabetes at a type v health centre in Western Jamaica. *Int J Nurs Sci*. 2017 Jul 10;4(3):266–70.

44. Is Zimbabwe’s adult literacy rate the highest in Africa? [Internet]. Africa Check. [cited 2019 May 17]. Available from: <https://africacheck.org/reports/is-zimbabwes-adult-literacy-rate-the-highest-in-africa/>

45. Guerra CE, Shea JA. Health literacy and perceived health status in Latinos and African Americans. *Ethn Dis*. 2007;17(2):305–12.

46. Mastroianni F, Chen Y-C, Vellar L, Cvejic E, Smith JK, McCaffery KJ, et al. Implementation of an organisation-wide health literacy approach to improve the understandability and actionability of patient information and education materials: A pre-post

effectiveness study. *Patient Educ Couns* [Internet]. 2019 Mar 30 [cited 2019 May 16]; Available from: <http://www.sciencedirect.com/science/article/pii/S073839911930103X>

47. Bártlová S. Health literacy in selected population groups. *Kontakt*. 2018 Dec 1;20(4):e317–8.
48. Kickbusch IS. Health literacy: addressing the health and education divide. *Health Promot Int*. 2001 Sep 1;16(3):289–97.
49. Mutowo MP, Owen AJ, Billah B, Lorgelly PK, Gumbie KE, Mangwiro JC, et al. Burden attributable to Cardiometabolic Diseases in Zimbabwe: a retrospective cross-sectional study of national mortality data. *BMC Public Health*. 2015 Dec 7;15(1):1213.
50. WHO | Overview: 7th Global Conference on Health Promotion [Internet]. WHO. [cited 2019 May 20]. Available from: <https://www.who.int/healthpromotion/conferences/7gchp/overview/en/>
51. Reid ME, Nel M, Rensburg-Bonthuyzen EJ van. Development of a Sesotho health literacy test in a South African context. In: *African journal of primary health care & family medicine*. 2019.
52. Ledford CJW, Cafferty LA, Russell TC. The Influence of Health Literacy and Patient Activation on Patient Information Seeking and Sharing. *J Health Commun*. 2015 Oct 9;20(sup2):77–82.
53. Clouston SAP, Manganello JA, Richards M. A life course approach to health literacy: the role of gender, educational attainment and lifetime cognitive capability. *Age Ageing*. 2017 May;46(3):493–9.

54. McCune RL. Assessing Health Literacy in Diverse Primary Care Settings. In 2010.
55. Gupta S, Tutu R, Boateng J, Busingye J, Elavarthi S. Self-reported functional, communicative, and critical health literacy on foodborne diseases in Accra, Ghana. *Trop Med Health*. 2018 Dec 1;46.
56. Mitchell SE, Sadikova E, Jack BW, Paasche-Orlow MK. Health Literacy and 30-Day Postdischarge Hospital Utilization. *J Health Commun* [Internet]. 2012 Oct 3 [cited 2019 Jun 16]; Available from: <https://www.tandfonline.com/doi/abs/10.1080/10810730.2012.715233>
57. Glenda_Knight_Dissertation_Dec_2010_2.pdf [Internet]. [cited 2019 Jul 22]. Available from: https://etd.auburn.edu/bitstream/handle/10415/2460/Glenda_Knight_Dissertation_Dec_2010_2.pdf?sequence=2
58. James F. Hanley ; Carlos Wade. Is Low Health Literacy a Significant Risk Factor for Hospital Readmission [Internet]. *SHM Abstracts*. [cited 2019 Jun 16]. Available from: <https://www.shmabstracts.com/abstract/is-low-health-literacy-a-significant-risk-factor-for-hospital-readmission/>
59. Geboers B, Reijneveld SA, Jansen CJM, Winter AF de. Health Literacy Is Associated With Health Behaviors and Social Factors Among Older Adults: Results from the LifeLines Cohort Study. *J Health Commun*. 2016 Aug 1;21(sup2):45–53.
60. Moss TR. The Impact of Health Literacy on Clinical Outcomes for Adults with Type 2 Diabetes Mellitus. *Adv Diabetes Metab*. 2014 Jun;2(1):10–9.

61. Duong TV, Aringazina A, Baisunova G, Nurjanah, Pham TV, Pham KM, et al. Measuring health literacy in Asia: Validation of the HLS-EU-Q47 survey tool in six Asian countries. *J Epidemiol.* 2017 Feb 1;27(2):80–6.
62. Lee JK, Son Y-J. Gender Differences in the Impact of Cognitive Function on Health Literacy among Older Adults with Heart Failure. *Int J Environ Res Public Health.* 2018 Dec;15(12):2711.

Appendix 1: English Consent Form

PARTICIPANT INFORMED CONSENT

STUDY TITLE: Assessment of health literacy among adult inpatients and implications for self-care management at Harare Central Hospital and Parirenyatwa Group of Hospitals in 2019

NAME OF RESEARCHER: Itayi Muchenjekwa

PHONE: +263 776 630812 email address- itayimuchenjekwa@gmail.com

PROJECT DESCRIPTION:

This project aims to measure the level of health literacy of inpatients at Harare Central Hospital and Parirenyatwa Group of Hospitals. Health literacy is defined as the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions. Health literacy involves the differences that people exhibit in areas such as access to healthcare information, having skills for finding such information, communicating it with the healthcare providers and living a healthy lifestyle.

As an inpatient your health literacy level will be measured using an adopted interviewer administered questionnaire to assess your knowledge on your health condition (diagnosis), your ability to read and write, and to manage your condition as directed by healthcare workers.

YOUR RIGHTS

Before you decide whether or not to volunteer for this study, you must understand its purpose, how it may help you, the risks to you, and what is expected of you. This process is called informed consent.

PURPOSE OF RESEARCH STUDY

The aim of the study is to measure the health literacy level of inpatients. The results from the study will be useful in developing solutions to the problems which are faced by inpatients when accessing health care services at central hospitals. Measuring the level of health literacy will help in determining what is lacking on the understanding of inpatients in terms of obtaining health information and services, using the information to manage their condition and reading and or writing health related information. The results will be designed to come up with better health education programmes and, or changing policies to suit inpatients' level of health literacy.

PROCEDURES INVOLVED IN THE STUDY

After you have agreed to participate in the study by signing consent forms, you will then be asked questions from an interviewer administered questionnaire. You will be required to give the most suitable response to each question according to your own understanding and in relation to your health condition.

DISCOMFORTS AND RISKS

It is anticipated that there will be no potential risks or discomfort in this study.

POTENTIAL BENEFITS

There are no direct benefits which you are likely to get from this study, but the information you are going to provide will be used to design simple ways in which patients will be able to understand health information and services. This will be done through the adjustment of policies and procedures in which healthcare services are offered at the central hospitals.

STUDY WITH DRAWAL

You may choose not to enter the study or withdraw from the study at any time without loss of benefits entitled to you.

CONFIDENTIALITY OF RECORDS

Any information that is obtained in connection with this study will not be identified with you. Moreover, the data is confidential and will not be disclosed without your permission or as required by law. Your identity will be kept confidential. You will not be required to put your names on the questionnaire. Confidentiality will be maintained throughout the study period. Completed questionnaires will be kept in a locked cabinet at all times. Only the investigator will have access to the data. The Information can only be shared with the supervisor or the Department of Community Medicine at the University of Zimbabwe. Your names will not be published.

PROBLEMS/QUESTIONS

Please ask questions about this research or consent now. If you have any question in future or queries and you wish to consult other people concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant or research related injuries or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact Dr Maradzika my supervisor on 263 712 280 1238 or Joint Research Ethics Committee (JREC) for the University of Zimbabwe, College of Health Sciences and the Parirenyatwa Group of Hospitals. Their physical address is Office Number 4, 5th Floor, UZ College of Health

Sciences Building Parirenyatwa Group of Hospitals Grounds, Mazoe Street, **HARARE**.
Telephone number +263-0242-708140

AUTHORIZATION

I have read this paper about the study or it was read to me. I understand the possible risks and benefits of this study. I know being in this study is voluntary. I choose to be in this study: I know I can stop being in the study and I will not lose any benefits entitled to me. I will get a copy of this consent form. (Initial all the previous pages of the consent form)

Client Signature Date

Researcher Signature Date

Witness Signature Date

Appendix 2: Shona Consent Form

Fomu Rekubvumirana (consent form)

Musoro wetsvakiridzo: Ruzivo hwevarapwi maringe neurwere hwavo uye zvinozobuda mukugona kuzvichengetedza pazvipatara zve Harare central ne Parirenyatwa group of hospitals muna 2019

Mutsvakurudzi: Itayi Muchenjekwa

Department of Community Medicine, University of Zimbabwe, College of Health Sciences

+263 776 630 812 email: itayimuchenjekwa@gmail.com

Zviri maringe netsakurudzo ino

Tsvakiridzo ino ine chinangwa chekuongorora manzwisisiro amunoita imi varapwi maererano nenhaurwa dzamunoita nana chiremba uye nana mukoti nevamwewo maringe nezveutano hwenyu. Tsvakiridzo iyi inozokwanisa kuburitsa hudzamu rweruzivo rurimamuri maringe nezvinyorwa zvamunopiwa muzvipatara, hurukuro dzamunoita pakuwana rubatsiro muzvipatara. Uye kuti imi munoonawo sei hunhu hwenyu maringe nekutsvak rubatsiro mune zveutano.

Kodzero yenyu

Musati masarudza kupinda mutsvakiridzo ino munofanira kuziva kuti tsvakiridzo yacho inomboita nezvei, pane zvingakuvadza here, pane mubhadharo here uye kuti hazvizokanganise ukama hwenyu nevanokurapai here. Munogona kubuda mutsvakiridzo ino nguva ipi zvayo. Makasununguka kubvunza kana paine zvamunoda kunzwisisa

Zvatichaita

Kana mabvuma kupinda mutsvakiridzo iyi, muchazobvunzwa mibvudzo iyo munotarisirwa kunge kuchipa ruzivo rwenyu nekurevesa maringe nezveutano hwenyu. Hurukuro yangu nemi ichatora maminitisi asingapfuuri makumi maviri.

Njodzi kana kushungurudzika mutsvakiridzo iyi

Zvese zvatichataura tichazvishandisa kune zvekudzidza chete. Kana paine zvamunenge muchida kuzonzwisisa maererano netsvakiridzo iyi, ndichakupai nhare dzevakuru vangu vamunogona kufonera kuti munzwisise. Munogona kusasununguka nekuda kwemhando yemimwe mibvunzo yandichakubvunzai, hapana mhinduro yatichati yakanaka kana kuti yakaipa. Chinangwa chetsvakiridzo chichatsanangurwazve kuti munzwisise pane munenge mave kuda kupindura mibvunzo.

Zvingakuyamuraiwo pakupinda mutsvakiridzo iyi

Chinangwa chetsvakiridzo ino ndechekuti tizive ruzivo rwurimuvarapwi maringe nenhaurwa, zvinyorwa, kushandiswa kwemishonga uye hunhu wevarapwi mukutsvaga runyamuro munezveutano. Hapana kuyamurika kwamunoita pakupinda mutsvakiridzo iyi munguva yamunenge muri mutsvakiridzo asi imi nevamwewo munogona kuzoyamurika mune ramangwana. Hapana mubhadharo wekunge muchipinda mutsvakiridzo iyi.

Kupinda kana kubuda mutsvakiridzo

Kana mabvuma kupinda, makasununguka kubuda chero nguva uye hamubvunzwi. Hamumanikidzwi kupindura mibvunzo yamusina kusununguka kupindura.

Kuchengetedzwa kwehumbowo hwenyu

Hamutarisirwi kunyora zita renyu, kero yepamunogara kana nhamba dzerunhare pagwaro ramuchaisa mutaratadzo wenyu. Izvi tinozviita kuchengetedza chimiro chenyu. Hapana mumwe munhu anobvumirwa kuona nyaya yenyu kunze kwekunge imi matipa mvumo yacho. Zvichawanikwa mutsakiridzo iyi zvichachengetedzwa musherefu matichange tichigara takakiya kwemakore matatu. Mushure mezvo tichaparadza humbowo uhu. Mazita enyu hapana pamuchazoana.

Mibvudzo

Sunungukai kubvunza chiri chese chamungade ikozvino, makasununguka zvakare kuzobvunza pana paine chazouya mupfungwa dzenyu munguva inouya. Kana muchinge muchida kunzwisisa zviri maringe neni mutsvakurudzi kana ipi zvimwewo pamusoro petsvakurudzo ino munogona kuchaya runhare kunve vakuru vangu panamba dzinoti 263 712 280 1238 kana kubata ve Joint Reseach Ethics Committe(JREC) for the University of Zimbabwe, College of Health Sciences and Parirenyatwa Group of hospitals pa hofisi yavo iri pa namba 4, 5Th Floor, Uz College of Health Sciences Building Parirenyatwa Group of Hospitals Grounds, Mazoe Street, HARARE. Runhare +263 0242 708140

Kubvuma kupinda mutsvakiridzo

Ndaverenga, ndanzwisisa chinangwa nemafambiro achaitwa tsvakiridzo iyi. Ndanzwisisa zvese zvakanyorwa uye kuti kupinda mutsvakiridzo hakuna mubhadharo. Ndasarudza kupinda mutsvakiridzo iyi.

Rutaratadzo rwenyu_____ Zuva_____

Rutaratadzo rwemutsvakiridzi_____ Zuva_____

NDATENDA

Appendix 3: English Questionnaire Form

Study Title: Assessment of health literacy among adult inpatients and implications for self-care management at Harare Central Hospital and Parirenyatwa Group of Hospitals in 2019			
English Questionnaire		Questionnaire Number [_____]	
Hospital <input type="checkbox"/> Harare <input type="checkbox"/> Parirenyatwa		Department <input type="checkbox"/> medical <input type="checkbox"/> surgical	

❖ Answer all questions freely; the data collector will put a tick on your most appropriate response.

Demographic information

1. Gender?
 Male Female
2. Race?
 white Black
3. Marital status?
 married single widowed divorced
4. How old were you at your last birthday? Age in complete years
5. What is your religion?

Christianity Traditional Muslim other
specify.....

6. What is the highest grade or level of school that you have completed?

primary secondary tertiary no formal education

7. Where do you normally live if you are not ill?

urban rural

8. What is your employment status?

Formally employed informally employed not employed other,
specify....

9. What language do you mainly speak at home?

English Shona Ndebele other language (print).....

10. What language is being used with healthcare workers when talking to you here?

English Shona Ndebele other language (print).....

Health Literacy dimensions

11. How often do you need someone to help you when you are given information to read by your doctor, nurse or any other healthcare provider?

Often Sometimes Rarely

12. When you need help concerning your health, can you easily get hold of someone to assist you?

Often Sometimes Rarely

13. Do you need help to fill in official documents when you are at the hospital?

Often Sometimes Rarely

14. When you talk to a healthcare provider do you give them all the information they need to help you?
- Often Sometimes Rarely
15. When you talk to a healthcare provider, do you ask the questions you need to ask?
- Often Sometimes Rarely
16. When you talk to a healthcare provider, do you make sure they explain anything that you do not understand?
- Often Sometimes Rarely
17. Are you someone who likes to find out lots of different information about your health?
- Often Sometimes Rarely
18. How often do you think carefully about whether health information makes sense in your particular situation?
- Often Sometimes Rarely
19. How often do you try to work out whether information about your health can be trusted?
- Often Sometimes Rarely
20. Are you the sort of person who might question your healthcare provider's advice based on your own research about your condition?
- Often Sometimes Rarely
21. Within the last 12 months have you taken action to do something about a health issue that affects your family or community?
- Yes No
22. Were you informed about your diagnosis on admission?
- Yes No

23. If YES what information were you given? (rate knowledge and confidence of patient)

high Intermediate low

24. If NO have you tried to look for information on this issue?

Yes No

25. What do you understand about your diagnosis treatment?(rate patient's knowledge and confidence) high Intermediate low

26. What have you been diagnosed of?

infectious non infectious surgical (injuries) co-morbidity

27. What do you understand about adherence to your treatment? (rate knowledge and confidence of patient) high Intermediate low

28. What do you understand about self care or wellness practice (rate knowledge and confidence of patient)? high Intermediate low

29. How did you know about your condition (disease)?

discovered it by myself told by a family member
 told by a healthcare worker Accident (injuries)

30. When were you diagnosed of this condition? Month Year.....

31. How much do you know about your health (disease) condition?

high Intermediate low

32. How much do you actively participate in decision making concerning your health when you are in hospital or when you are discussing with your family?

high Intermediate low

33. To what extent are you able to monitor and manage symptoms of your condition after you have been given all the help you need by healthcare workers?

high Intermediate low

34. Do you use social media to seek health related information?

Often Sometimes Rarely

35. Who helps you in understanding health information in relation to your condition at home?.....

36. How often do you consult your family doctor/ local health facility about your condition?

often Sometimes rarely

END. THANK YOU FOR YOUR TIME

Appendix 4: Shona Questionnaire Form

Shona Questionnaire

Musoro wetsvakiridzo:Ruzivo hwevarapwi maringe neurwere hwavo uye zvinobuda mukugona kuzvichengetedza pazvipatara zve Harare central ne Parirenyatwa group of hospitals muna 2019

Questionnaire Number []

Chipatara Harare

Parirenyatwa

Pindurai mibvunzo yese. Mutsvakurudzi achaisa ka tick apo pamunenge mareva kuti ndizvo zvamunobvumirana nazvo kana kunyora zvamunenge mareva

Demographic information

1. Munhuyi?

murume

mukadzi

2. Rudzi ?

Muchena

mutema

3. Muri muwanano here?

ndakaroorwa/roorwa

handisati ndaroorwa/rora

ndakafirwa

takarambana

4. Makange munemakore mangani pabhavhudhei yenyu yekupedzisira? Makore.....

5. Murivechitendero chipi?

Chikiritso

chivanhu

Islamic

zvimwewo.....

6. Makafunda kusvika pachidanho chipi?

primary secondary tertiary handina kudzidza

7. Munogara kupi kana musiri muno muchipatara?

Mudhorobha Kumaruwa

8. Munoshanda basa ripi?

remumahofisi mabasa emaoko handishande zvimwewo nyorai

9. Kumba munoshandisa mutauro upi?

chirungu chishona chindebele zvimwewo.....

10. Varapi varikushandisa mutauro upi kutaura nemi pakukupai rubatsiro?

chirungu chishona chindebele zvimwewo.....

Zviri maringe nezveutano

11. Kangani muchitsvaga munhu anokubatsirai kuti munzwisise zvamunenge maudzwa nemurapi (chiremba kana mukoti)

kakawanda Dzimwe nguva Kashoma

12. Kana muchida kubatsirwa munezveutano zvakareruka zvakadii kuti muwane anokubatsirai?

zvirinyorezvikuru zviri pakatinepakati hazvisi nyore

13. Kangani kamunoda rubatsiro kunyora magwaro emuchipatara?

kakawanda dzimwe nguva kashoma

14. Kana muchitaura nevanokubatsirai munezveutano hwenyu munokwanisa kuvapa ruvizo rwenyu rweze here kuti vakwanise kukubatsirai zvakazara?

kakawanda dzimwe nguva kashoma

15. Inguva yakawanda zvakadii pamunovhunza mibvunzo kune vezvoutano kana muchiita hurukuro navo maringe nezveutano hwenyu

kakawanda dzimwe nguva kashoma

16. Inguva yakawanda zvakadii pamunobvunza varapi chiri chipi zvacho chamunenge musina kunzwisisa muhurukuro dzeutano hwenyu

kakawanda dzimwe nguva kashoma

17. Inguva dzakawanda zvakadii pamunoita shungu nekutsvaka zvakawanda-wanda maringe nezveutano hwenyu?

kakawanda dzimwe nguva kashoma

18. Inguva dzakawanda zvakadii pamunodzamisa pfungwa dzenyu muchifunga kuti zvinyorwa kana zvitaurwa zveutano zvinokwanisa kukubatsira pane dambudziko reutano ramuinaro?

kakawanda dzimwe nguva kashoma

19. Inguva dzakawanda zvakadii apo munofungisisa kuti zvinyorwa kana zvitaurwa zvezveutano zvinokwanisa kuvimbika here?

kakawanda dzimwe nguva kashoma

20. Kangani mukurarama kwenyu pamunova nekupokana nemurapi zvichienderana netsvakurudzo yenyu mega yamunenge makaita maringe nezvekurudziro yamunenge mapiwa nemurapi?

kakawanda dzimwe nguva kashoma

21. Pamwedzi gumi nemiviri yadarika pane zvakaitawo here zvingadai zvichiwira mhuri yenyu kana dunhu ramunogara maringe nezveutano?

Hongu yes

22. Makaziviswa here nezvakange zvabuda pamakaongororwa pamakazoiswa muno muchipatara?

hongu kwete

23. Kana makaziviswa ndezvipi zvakaudzwa maringe neurwere hwenyu? (Ruzivo remurwere)

ruripamusoro Pakati nepakati rwoshoma

24. Kana musina kuziviswa makamboedza here kuita tsvakurudzo panyaya yacho

hongu kwete

25. Ndezvipi zvamunonzwisisa maringe nezvekurapiwe kweurwere hwenyu? (Ruzivo rwe murwere)

ruripamusoro Pakati nepakati rwoshoma

26. Makawanikwa muine urwere hupi?

hwekutapurirana husingatapuriranwe maronda/tsaona zvakawandawanda

27. Ndezvipi zvamunonzwisisa maringe nezvekushandisa mishonga yamurikupiwa muno muchipatara? (ruzivo)

ruripamusoro Pakati nepakati rwoshoma

28. Ndezvipi zvamurikutarisirwa kuti munge muchiita pachezvenyu sedungamunhu kuti urwere hwenyu hunge uchidzikira kana kuti usazokubatai zvakare kana kuti munge muchirarama hupenyu huneutano?(ruzivo)

ruripamusoro Pakati nepakati rwoshoma

29. Makaziva sei nezveuwere uhu pakutanga?

ndakazviziwa ndoga ndakaziviswa nehama/ shamwari ndakaziviswa nemurapi

30. Makaonekwa kuti muneuwere uhu riini ? Mwedzi.....Gore.....

31. Muneruzivo rwakawanda zvakadii maringe uwere hwamuinawo

rwakawandisa rwuri pakatinepakati rwushoma

32. Inguva yakawanda zvakadii pamunoiwawo pfungwa dzenyu nemaonero enyu maringe nezveutano hwenyu pamunenge muchitaura nevarapi?

kawandisa pakatinepakati kashoma

33. Ruzivo rwenyu rwakawanda zvakadii pakunge muchikwanisa kuongorora uye kuona kuti uwere hwamuinawo hausu kuwedzera kana kukuisai panjodzi yakakura?

rwakawandisa rwuri pakatinepakati rwushoma

34. Munoshandisawo here nzira dzechizvinozvino dzakaita se 'facebook', kutsvaga ruzivo rwezveutano?

kakawanda dzimwe nguva kashoma

35. Ndiani anokubatsirai munezveutano kana muri kumba kwenyu?.....

36. Munomboendawo here kunoonekwa kwachiremba kana kiriniki iri pedyo nemi

muchitsvaka rubatsiro maringe nezveutano hwenyu

kakawanda dzimwe nguva kashoma

MAGUMO NDINOKUTENDAI NENGUVA YENYU, MAZVIITA

Appendix 5: Harare Hospital ethic committee Approval

Telephone: 621100-19
Fax: 621157

Reference: HCHEC 060619/27
HARARE CENTRAL HOSPITAL
P. O. Box 5114
SOUTHERTON
HARARE

ZIMBABWE

20 June 2019

Mr. Itai Muchenjekwa
Number 529 Shortstone
Waterfalls
HARARE

Dear Mr. Muchenjekwa,

REF: THE PREVALENCE OF HEALTH LITERACY AMONG ADULT IN PATIENTS AND IMPLICATIONS FOR SELF-CARE MANAGEMENT AT HARARE CENTRAL HOSPITAL IN 2019

I am glad to advise you that your application to conduct a study entitled: **The Prevalence of Health Literacy Among Adult in Patients and Implications For Self-Care Management at Harare Central Hospital in 2019 (Ref: HCHEC 060619/27)**, has been Approved by the Harare Hospital Ethics Committee.

This approval is premised on the submitted protocol. Should you decide to vary your protocol in any material way please submit these for further approval.

You are advised to avail the results of your study whether positive or negative to the hospital through the committee for our information.

Yours sincerely,



DR. C. Pasi
Chairman Harare Central Hospital Ethics Committee

HARARE CENTRAL HOSPITAL
DEPARTMENT OF MEDICINE
20 JUN 2019
P. O. BOX 5114 SOUTHERTON
HARARE, ZIMBABWE

Board Members, Chairman Dr E Chagonda, Deputy Chairperson Ms A Mashamba, Members:- Mr J Makiya, Mrs P Sibanda, Mr. S. Hlatywayo, Dr A Mahomva and Dr T. Dobbie (Chief Executive Officer)

Appendix 6: Parirenyatwa Hospital Approval

"PLEASE COMPLETE THIS FORM TOGETHER WITH YOUR APPLICATION"

APPLICATION FOR RESEARCH AT PARIRENYATWA HOSPITAL

NAME OF APPLICANT: MUCHENJEKWA ITAJI

ADDRESS OF APPLICANT: 529 SHORTSTONE WATERFALLS
HARARE

NAME OF INSTITUTION: UNIVERSITY OF ZIMBABWE
COLLEGE OF HEALTH SCIENCES.

NAME OF SUPERVISOR: Dr. J. Mwedzika, Dr. Mandzama & Dr. Shamu

PROJECT PROPOSAL:

The prevalence of Health Literacy (HL) among adult inpatients and implications for self care management at Harare hospital and Parirenyatwa group of hospitals (PGHs), 2019

OBJECTIVES

The aim of the study is to measure the prevalence of HL among adult inpatients at Harare hospital and PGHs in 2019

METHODOLOGY: A cross sectional study will be conducted

Study Settings: Harare hospital and PGHs

Study Population: All adult inpatients from medical and surgical wards who will be utilising health services during time of study. Study sample, subjects will be drawn from general inpatients from medical and surgical wards

TIMETABLE: One Month

PATIENT INCLUSION CRITERIA:

All medical and surgical patients who will be admitted at the hospitals (not from ICU) and have been the chance to participate in the study will be included. All inpatients from all over the country who will be at Harare hospital and PGHs and fits the criteria will be included in the study

USE OF RESULTS

To make informed choices on H.A. by hospital administrators and policy makers, intertwining health information and services with the health literacy level of patients

REFERENCES

Dr J MAAADZIKA

NAME TATI MUCHEMUKWA

STATION PERMISSION

1. CONSULTANT

NAME TATI MUCHEMUKWA

PARIRENYATWA GROUP OF HOSPITALS
DIVISION OF MEDICINE
2019-06-10
P.O. BOX CY198
CAUSEWAY, HARARE

2. WARD MANAGER



NAME M. Zendera

PARIRENYATWA GROUP OF HOSPITALS
DEPUTY PRINCIPAL NURSING OFFICER 2
12 JUN 2019
P.O. BOX CY 198
CAUSEWAY, HARARE

M. MAAZANOW
14/6/19

PARIRENYATWA GROUP OF HOSPITALS
CLINICAL DIRECTOR
14 JUN 2019
P.O. BOX CY198
CAUSEWAY
HARARE

Appendix 7: JREC Approval

 **Joint Research Ethics Committee
For The University of Zimbabwe,
College of Health Sciences and
Parirenyatwa Group of Hospitals** 

University of Zimbabwe
College of Health Sciences

JREC Office No. 4, 5th Floor College of Health Sciences Building
Telephone: +263 4 786140/ 791631 Exts 2241/2242
Email: jrec.office@gmail.com/jrec@madach.us.ac.zw website: www.jrec.us.ac.zw

Parirenyatwa
Group of Hospitals

APPROVAL LETTER

Date: 26 July 2019 **JREC Ref:** 174/19

Names of Researcher: Itayi Muchenjekwa
Address: Department of Community Medicine

RE: PREVALENCE OF HEALTH LITERACY AMONG ADULT INPATIENTS AND IMPLICATIONS FOR SELF-CARE MANAGEMENT AT HARARE CENTRAL HOSPITAL AND PARIRENYATWA GROUP OF HOSPITALS IN 2019.

Thank you for your application for ethical review of the above mentioned research to the Joint Research Ethics Committee. Please be advised that the Joint Research Ethics Committee has reviewed and approved your application to conduct the above named study. You are still required to obtain MRCZ and RCZ approval before you commence the study if required by the nature of your study.

- **APPROVAL NUMBER:** JREC/174/19
- **APPROVAL DATE:** 26 July 2019
- **EXPIRY DATE:** 25 July 2020

This approval is based on the review and approval of the following documents that were submitted to the Joint Ethics Committee:

- a) Completed Application Form
- b) Full Study Protocol
- c) Informed Consent in English and/or appropriate local language

After this date the study may only continue upon renewal. For purposes of renewal please submit a completed renewal form (obtainable from the JREC office) and the following documents before the expiry date:

- a. Progress report
- b. A Summary of adverse events
- c. A DSMB report

Advancing Healthcare Training, Research, Innovation and Service Page 1

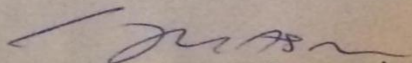
- **MODIFICATIONS:**

Prior approval is required before implementing any changes in the protocol including changes in the informed consent.

- **TERMINATION OF STUDY:**

On termination of the study you are required to submit a completed request for termination form and a summary of the research findings/ results.

Yours sincerely,



Professor Rangarirai Masanganise
JREC Chairman
RM/lm/uh