

# Development of a Hypertension Health Literacy Assessment Tool for use in primary health care (PHC) clinics in South Africa, Gauteng

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# INTRODUCTION & BACKGROUND

- Worldwide, hypertension contributes to about 7.6 million premature deaths and 92 million disability-adjusted life years
- In SA,
  - mortality as a result of hypertension for people  $\geq 30$  years as 41.7%;
  - Stroke - 49.6%
  - Cardiovascular diseases - 21.6%
- Hypertension is a chronic, preventable non-communicable disease causes are genetics, behaviour and life style



# INTRODUCTION & BACKGROUND

The World Health Organization states that the African region has a high prevalence of hypertension than the American region. Hypertension in South Africa affects about 6.3 million people and about half of them are unaware they have hypertension.

Some people, who know that they suffer from hypertension, and are on medication, might be poorly controlled.



# INTRODUCTION & BACKGROUND

This view is supported by South Africa's National Department of Health (NDOH) in its policy for strategic planning which reports that 18% of deaths in 2008 were caused by cardiovascular diseases, including hypertension



# MANAGEMENT OF HYPERTENSION

PHARMACOLOGICAL MANAGEMENT	NON-PHARMACOLOGICAL MANAGEMENT
<p>antihypertensive medication:</p> <ul style="list-style-type: none"><li>• diuretic thiazide,</li><li>• beta-blockers,</li><li>• ACE inhibitors and the calcium channel blockers.</li></ul>	<ul style="list-style-type: none"><li>• Health education</li><li>• control weight;</li><li>• exercise regularly,</li><li>• take not more than a teaspoon of salt a day in all the foods combined;</li><li>• reduce food amounts, fat and sugar intake;</li><li>• Reduce alcohol intake</li><li>• do not smoke or stop smoking.</li></ul>



# HEALTH EDUCATION & HEALTH LITERACY

- Health education - fundamental tool for health promotion and disease prevention
- Health education- adversely affected low literacy level




# PROBLEM STATEMENT & SIGNIFICANCE

- The National Demographic Health Survey:
  - only 39% reported hypertension
  - 29% on medication, only 14% BP well managed
- This can be attributed to:
  - poor compliance due to lack of comprehension on hypertension management



# ASSESSMENT TOOLS

- These instruments are based on word recognition, experience and knowledge
  - Rapid Estimate of Adult Literacy in Medicine Revised (REALM-R)  
  
Microsoft Word Document
  - Wide Range Achievement Test (WRAT3)
  - and the Learning Ability Battery (LAB)
- Based on the principles of the REALM-R the HHLAT was developed, to identify those at risk for poor HHL





# PURPOSE OF THE STUDY

Based on the principles of the REALM-R develop a HHLAT to identify and determine health literacy specific to hypertension in patients attending primary health care facilities.



# OBJECTIVES

**Phase 1:** Explore the oral and existing printed health education content on prevention, management and control of hypertension; to create a list of common words or phrases used in hypertension health education;

**Phase 2:** develop a HHLAT to identify and determine the literacy level of hypertensive patients attending primary health care clinics in Tshwane, Gauteng Province, South Africa;



# RESEARCH QUESTIONS

## **Research question 1:**

What is the content of oral and existing printed health education materials that is presented to hypertensive patients at PHC, Tshwane, Gauteng Province, South Africa?

## **Research question 2:**

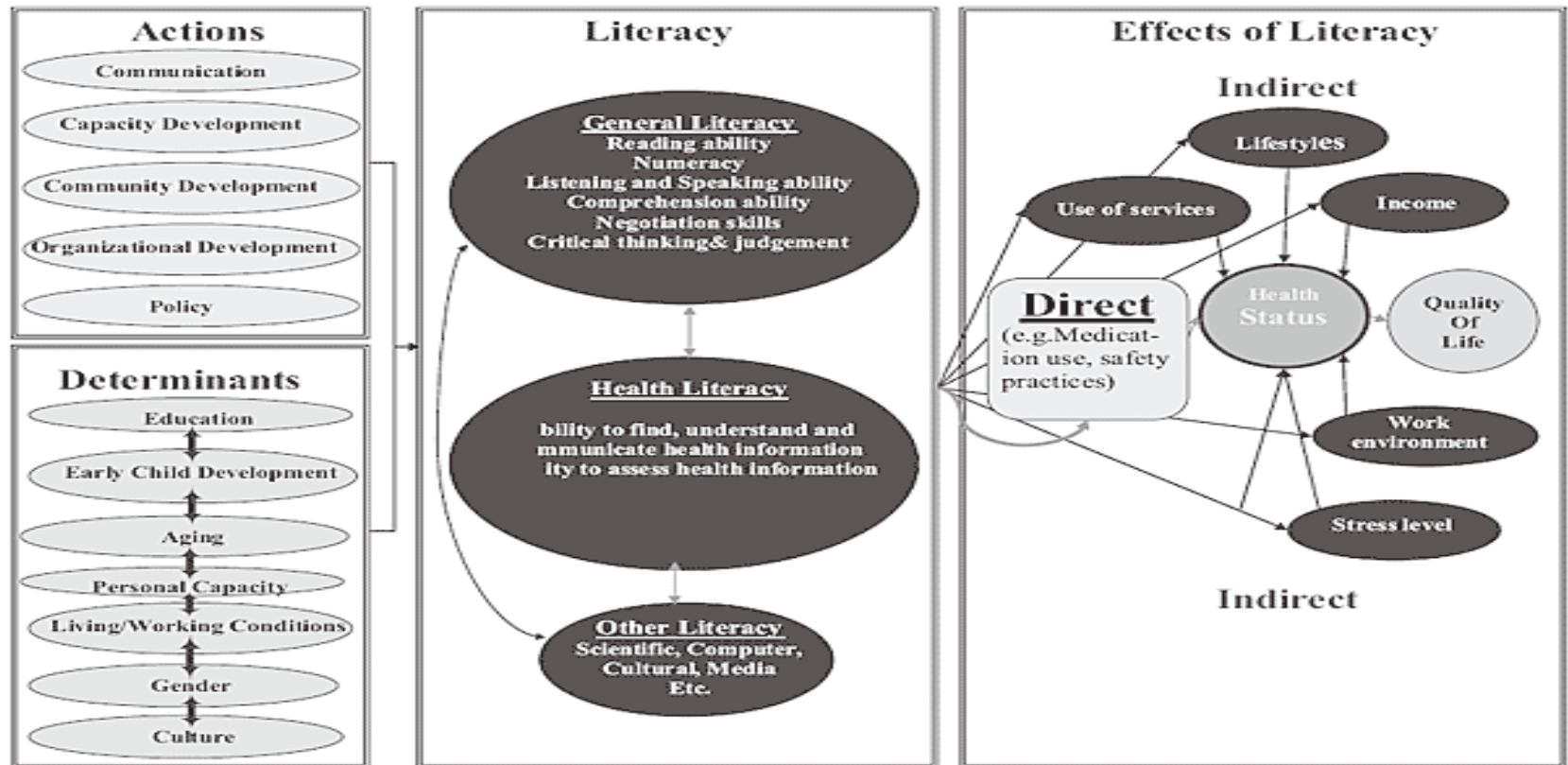
How can the REALM-R be adapted to develop a hypertension health literacy assessment tool?

## **Research question 3:**

Using the adapted REALM-R as the hypertension health literacy assessment tool, what is the hypertension health literacy level of patients at Tshwane primary health care clinics?



# FRAMEWORK



# METHODS & DESIGN

- Descriptive,
- Quantitative
- Contextual



# POPULATION & SAMPLING STRATEGY


## Phase 1

POPULATION	SAMPLING METHODS	CONTEXT	DATA COLLECTION	DATA ANALYSIS
<ul style="list-style-type: none"><li>Health promoters of Gauteng clinics (N=12)</li><li>Pamphlets/posters N=50=11</li></ul>	<p>Purposive and convenience</p> <p><u>Inclusion criteria:</u></p> <ul style="list-style-type: none"><li>Willing to participate</li><li>Health promoter in Gauteng PHC</li></ul>	12 PHC in Tshwane	Audio recording & collection of pamphlets and posters	Quantitative content analysis and descriptive statistics



# POPULATION & SAMPLING STRATEGY

## Phase 1

POPULATION	SAMPLING METHODS	CONTEXT	DATA COLLECTION	DATA ANALYSIS
<ul style="list-style-type: none"><li>Adaptation ( N=20)</li><li>Validation (N=30)</li></ul>	Non-probability Purposive <u>Inclusion criteria:</u> Expert and willing to participate	Adaptation- TUT building 4 Validation- own places	Modified Delphi Technique  Microsoft Word Document	Descriptive statistics e.g. frequency distribution



# POPULATION & SAMPLING STRATEGY

## Phase 2

POPULATION	SAMPLING METHODS	CONTEXT	DATA COLLECTION	DATA ANALYSIS
<ul style="list-style-type: none"><li>Hypertensive patients (N=195)</li></ul>	Non-probability purposive and Convenience <u>Inclusion criteria:</u> <ul style="list-style-type: none"><li>Ability to read English</li><li>Hypertensive</li></ul>	4 PHC	Self report – HHLAT & LAB	Descriptive and inferential statistics: chi-squared Spearman's rho





# RESEARCH SETTING

**Phase 1:** n=24 PHCs however only n=12 were realised due to consent given by only n=12 health promoters in the City of Tshwane, Gauteng South Africa.

The n=20 adaptation panel at the Tshwane University of Technology.

The n=30 validation panel context was in the comfort of their own homes/or offices.

**Phase 2:** The n=195 patients were from 4 PHCs in the City of Tshwane, Gauteng South Africa.



# PHASE 1: DATA COLLECTION & ANALYSIS

Round 1: following a modified Delphi technique :

- Process of generating words, concepts, phrases
  - N=12 recorded health education provided by health promoters (Translated and transcribed)
  - N=50 printed health education materials, 11 remained after duplicates removed



# PHASE 1: DATA COLLECTION & ANALYSIS

For data analysis themes were identified guided by literature on content for hypertension health education in terms of:

definition of hypertension, risk factors, signs and symptoms, pharmacological management, non-pharmacological management and the complications of poorly-controlled hypertension

Quantitative content analysis was used and frequency distribution e.g alcohol 1,2

A list of common words, phrases and concepts was developed



Microsoft Excel  
Worksheet



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# PHASE 2: DATA COLLECTION & ANALYSIS

- Round 2: following the modified Delphi technique common words/concepts/phrases were identified to develop the HHLAT
- a panel of experts voted for the commonly used words/phrases/concepts to be used in the development of hypertension
- Two research assistance counted and recorded the votes per word/phrase/concept



Microsoft Excel  
Worksheet



# PHASE 2: DATA COLLECTION & ANALYSIS

- Phase 3: of the modified Delphi technique involved development of the HHLAT



Microsoft Word  
Document

- REALM-R, the tool has 11 words. Three of these always have one syllable and the other eight have between two and six syllables.
- To decide on the 11 words, phrases and concepts, the words, phrases and concepts with the highest scores (5 and above) were considered.
- Words, phrases and concepts with scores below 5 were not considered.
- For example, the highest scores of words, phrases and concepts with between one and six syllables were considered for the development of tool 1.
- 3 tools were developed



Microsoft Word  
Document



# PHASE 2: DATA COLLECTION & ANALYSIS

Round 4: face validation of the HHLAT, 2nd group of experts

The 3 tools along with informed consent via- email was sent to 50 prospective participants, 60 days to respond

Responses recorded in a frequency distribution, only 30 responded.

The selected tool was then pretested in 5 patients in a PHC



# DATA COLLECTION AND ANALYSIS PHASE 3

- 195 patients in 4 PHC conveniently selected with hypertension using the newly developed HHLAT & the LAB
- Secured a private room, asked to pronounce out loud words/phrases/concept as they appear on the tool
- Taking more than 5 sec they were asked to “pass”
- A scoring sheet, (✓) and (X) incorrect and (-) not attempted
- All ticks (✓) were added up for final score /8 determining the HHL of the patient
- Score of 6 or lower considered at risk for poor HHL



# VALIDITY AND RELIABILITY

- The REALM-R a validated shortened version of the REALM for PHC settings to identify patients with low health literacy levels at the General Internal Medicine Clinic at the University of Kentucky in the year 2000. The REALM-R has been shown to correlate with a number of other tests used in health to determine health literacy, such as WRAT-R, TOFHLA, PIAT-R and SORT-R.<sup>12</sup> The test–retest reliability of the REALM-R was 0.99.<sup>13</sup>
- In round 4 of the tool development, the validation panel evaluated the tool to ensure face validity by expressing their opinion on whether they thought the tool would measure what is supposed to measure.
- For concurrent validity, the HHLAT was administered simultaneously with LAB.





# ETHICAL CONSIDERATION

- The research was given ethical clearance by the Tshwane University of Technology (REF: 2013/06/001 (2) (SCI)
- Gauteng Department of Health (REF: PROJ: 43/2013).
- All participants in the study were provided with information leaflet, and they gave consent prior to participation.



# RESULTS

- Tool 1 = 19 (63%); Tool 3 (23%) Tool 2 ( 13%) selected by validation experts
- From the 195 (n=123 females; 72 males)
- Age 18 to 85
- HHLAT indicated 37% of the 195 were at risk for poor hypertension health literacy  
17.7% (f) v 22.2 (m)
- Time to administer less than 2 min
- Concurrent validity HHLAT & lab



Microsoft Word  
Document



# DISCUSSION

- The Delphi technique has been found to be suitable for examining health promotion and health education
- Considering that men (72) representing quarter of the total sample posed a higher risk (22.2%) of being at risk for poor hypertension health literacy.
- Poor health literacy is associated with poor health status those with poor health literacy are at risk for frequently using emergency rooms, missing hospital appointments and having a record of poor compliance.
- The association between the HHLAT and the LAB was confirmed by fitting a linear regression model of LAB on the HHLAT.



# CONCLUSION

- Determining the hypertension health literacy levels of patients will enable the health care provider to specifically individualise their health education.
- Further research is required to investigate the compliance to pharmacological and non-pharmacological management related to hypertension as this findings indicate that most (81%) of the participants are hypertension health literate while the country is experiencing poor control of hypertension.
- What still need to be further explored is whether they use this knowledge to live a healthy lifestyle and comply with the management of hypertension.

