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Protocol for exploring the use of hospitals as a learning organisation: a cross-sectional study in South Africa's Eastern Cape province

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ABSTRACT

Introduction In today's highly competitive environment, where changes happen at a rapid pace, organisations that stand a chance to survive are those that are proactive and easily adapt to changes. Hospitals are faced with various challenges including scrutiny from stakeholders. This study seeks to investigate learning strategies used by hospitals in one of South Africa's provinces to achieve the principle of a learning organisation.

Methods and analysis This study will employ a quantitative approach using a cross-sectional survey on health professionals of a South African province. Stratified random sampling will be used to select hospitals and participants in three phases. The study will use a structured self-administered questionnaire, designed to collect data on learning strategies used by hospitals to achieve the principle of a learning organisation between June and December 2022. Descriptive statistics (mean, median, percentages, frequency, etc) will then be used to describe the raw data and allow the discovery of patterns. Inferential statistics will also be used to make inferences and predictions about the learning habits of health professionals in the selected hospitals.

Ethics and dissemination The approval to access the research sites with reference number: EC_202108_011 has been granted by the Provincial Health Research Committees of the Eastern Cape Department. Ethical clearance with Protocol Ref no: M211004 has been approved at the Human Research Ethics Committee of the Faculty of Health Sciences at the University of Witwatersrand. Finally, results will be shared with all key stakeholders, including hospital management, clinical staff, through public presentation and direct engagements with stakeholders. The findings may guide hospital leaders and other relevant stakeholders to develop guidelines and policies on creating a learning organisation that contributes to the improvement of quality patient care.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ To our knowledge, this is the first study that advocates for hospitals to be viewed as learning organisations in the South African context.
⇒ The study design ensures representation of multiple cadres of health professionals, which enhances generalisability and reliability of the study findings.
⇒ The study findings will not only enhance hospitals' potential as a learning environment but an adaptation of such an outlook will indirectly improve the quality of care rendered.
⇒ Cross-sectional studies rely on surveys and questionnaires, which might not result in accurate reporting as there is no way to verify the information presented by participants.
⇒ The study findings may not be generalised to all the hospitals in South Africa.

BACKGROUND

In today's highly competitive environment, where changes happen at a rapid pace, organisations that stand a chance to survive are those that are proactive and easily adapt to change.[1] However, most organisations are reactive, they continue using the old tactics and only awaken when something happens and realise that new strategies of doing things are needed.[2] The problem with this approach is that organisations often respond to a particular problem instead of devising long-term systematic comprehensive and sustainable solutions.[3] At times, solutions lack rigour and as such miss great opportunities of solving the problem conclusively. The result is strategies that are not synchronised with the overall strategy of the organisation leading to waste of scarce resources.

Incremental and continuous improvement as a business strategy is essential for organisations that want to stay relevant.[2] Continuous improvement is only possible through continuous learning by members of the organisation. To continue improving, organisations need collective pieces of knowledge and skills from all their members. This calls for an environment that fosters the learning of its members. When an organisation has learning

programmes sprouting in all corners of the organisation, it slowly transforms itself into what is known today as a learning organisation (LO).

An LO refers to an organisation where 'people continuously deploy their capabilities, fulfil their true targets, in which new ways of thinking are supported and new common hopes are delivered, an organisation in which people are learning how to learn together'.[4] Succinctly defined, an LO is an organisation that has developed the continuous aptitude to adapt and change.[2] While LOs exhibit distinctive characteristics depending on the contextual setting of the organisation, there are extrinsic organisational practices that are common threads shared by all LOs.[4] These practices include knowledge sharing, willingness to learn, concern for all stakeholders, acceptance and learning from errors, open communication, learning as a core value of the organisation and openness to experimentation.[4]

The Institute of Medicine describes the health sector as a learning healthcare system because it collects data from daily activities and facilitates the use of scientific evidence to improve healthcare, in a continuous way.[5] In addition, hospitals are also known to be a knowledge-intensive environment, such knowledge can be used to strengthen the health system if used strategically.[6] Admittedly, most low-income and middle-income countries have fragile health systems that lack the capacity to put knowledge into practice.[5] Consequently, hospitals that do not learn suffer from what is referred to as the 'knowing-doing gap'.[5] Knowing-doing gap refers to how smart companies turn knowledge into action.[7] It is a gap between knowing that something is important and actually doing it.[7] Most companies suffer from the 'knowing-doing gap'.[7] Attempts to address the knowing-doing gap in the health sector have been made. Advanced solutions such as total quality improvement and organisational change solutions like the application of science have all been used in the health sector to improve decision making and address the knowing-doing gap. Conversely, the knowing-doing gap persists.[8] Previous studies demonstrate that there is a link between an LO and its performance.[9 10] Hospital performance refers to the achievement of specified targets, either clinical or administrative.[11] Ultimately, the goal of hospital care is to provide better health, but there are many intermediate measures of both process and outcome.[12] This indicates the need for hospitals to be adaptive to learning practices to become LOs and be aligned with the changes in the health system. Also, addressing health professional knowledge gaps to improve quality of care outcomes, and patient safety is needed. Several hospitals and various health organisations have adopted the LO model to address the problem of the knowing-doing gap.[13]

Hospitals today are faced with various challenges including scrutiny from healthcare analysts, funders and policy makers to provide cost-effective and best care.[10] Consequently, hospital administrators need to encourage and support the transfer of new knowledge that produces innovative interventions, which culminate into cost-effective and best practices and outcomes.[14] An LO provides administrators in healthcare with a framework that connects various hospital units, learning from each other and providing quality care. Studies show that hospitals that implement core LO characteristics improve healthcare.[4] The LO assists hospitals move away from a 'culture of blame' by using change management principles that are supported by the concept of an LO. Currently, the prevailing culture of blame in the health sector is one of the factors that lead to repetitive medical errors instead of using adverse events as learning opportunities by the team members and treating errors as a breakdown in the system and not as an individual's fault.[15] As such, in 2015, the guidelines for adverse events reporting were drafted based on the belief that a mistake can be used as a source of learning for the future.[16] Most medical errors have a common source.[17] Thus, if those errors were aggregated, it would be easy to explicate the common course and devise solutions. Implementing an LO may assist in this regard. This study aims to examine learning practices or strategies used by hospitals in the Eastern Cape province, South Africa to achieve the principle of an LO. This will help provide a description of the current state of play in the settings by examining the learning practices or strategies used by health professionals to achieve the principle of an LO.

Objectives

1. To assess the understanding of an LO in the hospital context by health professionals.
2. To determine how health professionals, take charge of their professional development.
3. To determine the availability of systems that encourage sharing of knowledge and theories espoused by health professionals within the hospital.
4. To determine strategies employed by leaders to encourage collaboration and team learning among health professionals.
5. To investigate ways collective vision is achieved for the improvement of the health system within the hospital.
6. To determine systems frameworks used by health leaders and health professionals to address complex health challenges.

METHODS AND ANALYSIS

Research design

The study will employ a quantitative approach with a cross-sectional survey design. A cross-sectional design will be useful for the investigation of various variables at the same time. Through this method, researchers seek to understand relationships between the variables, providing a snapshot of attitudes and views of health professionals regarding their learning habits.

Study setting

This study takes place in five district municipalities (Alfred Ndzo municipality, Amathole municipality, Buffalo City municipality, Chris Hani municipality and OR Tambo

municipality) of the Eastern Cape province, South Africa. The Eastern Cape has the third largest population (6 996 976) in the country. In 2022, the province was reported by Statistic South Africa to have the highest unemployment rate (52.6%) than any other province and as the poorest province in South Africa.[18] Public health institutions provide healthcare to the vast majority of people.

With a lower crude birth rate and a higher crude death rate than the national average, the province's demographics demonstrate a relatively low standard of living as well as economic underdevelopment. The province lacks private-sector-run infrastructure, and there is little demand for private healthcare services because the number of beds in public hospitals has been virtually constant since 2011. In addition, it is believed that the two most urgent issues facing the Eastern Cape health system are the severe staff shortages and the poor quality of primary care.[19]

Sampling and sample size calculation

The study population comprises of all public hospitals in the Eastern Cape province. There are 117 public hospitals in the Eastern Cape province, district hospitals (65), national central hospital (1), provincial tertiary hospitals (3), regional hospital (5), satellite hospitals (25) and specialised hospitals (18). Stratified random sampling will be used to select both hospitals and participants in three phases and the total sample for the study is 1174.

Phase 1 involves the random sampling of nine hospitals. First, the one central hospital and the three tertiary hospitals will be pooled to sample two hospitals. Second, all regional hospitals will be pooled together to randomly sample two regional hospitals. Third, district hospitals will be pooled together to randomly sample five hospitals. Table 1 shows the sampled hospitals and summarises the samples per facility.

Phase 2 involves the calculation of the total combined sample size for all nine hospitals. This will be calculated using the equation, $n = \frac{p(100-p)z^2}{d^2}$ for a one-sided 95% CI and a 5% significance level (z=1.96). Because the proportion (p) of knowledge of learning practices among health professionals is not known, this (p) will be set at 50% and the desired precision (d) will be set at 3%. This yields a total minimum sample size of 1067. To factor in data entry errors, a further 10% (107) will be added to yield the desired sample size of 1174 participants for all nine sites. Individual hospital sample sizes will be proportionally weighted based on the number of staff in each health facility.

Phase 3 involves the random sampling of health professionals from each of the health facilities and stratified by profession, as shown in table 1.

Data collection instruments

The study will use a structured self-administered questionnaire (online supplemental appendix A), designed to investigate learning strategies used by hospitals in the Eastern Cape Province to achieve the principle of an LO in the selected hospitals. The health professionals will be presented with two options in which to receive the questionnaire. Data will be collected between 1 June 2022 and 31 December 2022.

The first option the study target is 1174 health professionals in the selected hospitals in Eastern Cape. The research team will physically distribute hard copies of the questionnaires to the health professionals to complete. If data collection is not completed at first attempt, the research team will return to the health facility until data collection is completed. Participants who indicate that they have already participated in the study will be excluded during the follow-up data collection. The research team will liaise with relevant frontline workers through the office of the hospital CEO to ensure that the prospective participants (health professionals) are informed about the research prior commencement of data collection.

The second option will be sending the questionnaire link which has been created on google forms. The

Table 1 Strata specific samples for study sites

Nursing staff	Frere	CMH	MRH	FH	MKH	DMMH	ASH	BuH	BH
Professional nurse	109	92	52	61	35	31	18	18	22
Enrolled nurse	23	19	11	13	7	6	4	4	5
Enrolled nursing assistant	66	55	32	37	22	18	11	11	13
Medical									
Medical officers and registrars	72	61	35	40	23	20	11	11	14
Dentists	3	3	1	2	1	1	0	0	1
Pharmacists	6	5	3	3	2	2	1	1	1
Allied health professionals	14	12	7	8	4	4	2	2	3
Total	293	247	141	164	94	82	47	47	59

ASH, All Saints Hospital; BH, Bhisho Hospital; BuH, Butterworth Hospital; CMH, Cecilia Makiwane Memorial Hospital; DMMH, Dr. Malizo Mpehle Memorial Hospital; FH, Frontier Hospital; Frere, Frere Hospital; MKH, Madzikane KaZulu Memorial Hospital; MRH, Mthatha Regional Hospital.

Table 2 The LO disciplines with their antecedents, outcomes and moderators in the hospital environment

Senge's five discipline	Antecedents	Outcomes	Moderators
Personal mastery	► Personal values ► Motivation Individual learning ► Development and training	► Self-confidence and self-efficacy	► HRM policies ► Sector of operation ► Human capital relevance
Mental models	► Organisational commitment ► Leadership ► Organisational culture	► Higher levels of knowledge ► Creation and sharing	► Communication systems and learning environment
Team learning	► Team commitment ► Leadership ► Goal setting ► Development and training ► Organisational culture	► Improved team performance and knowledge sharing	► Communication systems and learning environment
Shared vision	► Personal vision ► Personal values ► Leadership ► Organisational culture ► organisational values ► Organisational vision	► Organisational sustainability and growth ► Personal growth as well	► Organisational size ► Communication systems
System thinking	► Individual competence ► Leadership ► Organisational culture	► Strategic planning	► Personal and professional development

HRM, Human Resource Management; LO, learning organisation.

research team will liaise with the Heads of departments in the study sites to distribute the online questionnaire link on platforms like WhatsApp, Email, etc.

The survey was derived from the Senge's framework of five disciplines of an LO: personal mastery, mental models, team learning, shared vision and system thinking.[20] Table 2 summarises this framework.

Statistical analysis

STATA statistical software V.17 will be used to analyse the quantitative data. Descriptive statistics (mean, median, percentages, frequency, etc) will then be used to describe the raw data and allow the discovery of patterns. Inferential statistics will also be used to make inferences and predictions about the learning habits of health professionals in the selected hospitals. Inferential statistics will also assist with determining any differences between the selected hospitals and between the various groups of health professionals.

Biases, validity and reliability

To ensure validity, researchers will take careful consideration in designing a questionnaire that will only measure what it intends to measure.

The data collection instrument will be standardised and validated to ensure reliability. The questionnaire was developed by the research team and reviewed for content validation by the principal investigator (PI) who is an expert in the field.

The questionnaire will be piloted in a hospital with similar characteristics as the ones under study within the Eastern Cape Province. All those who will be involved in the collection of data will undergo similar training to ensure standardisation. The reliability of data will be enhanced by deployment of experienced researchers to work under the supervision of the PI.

Patients and public involvement

The study does not involve patients, only health professionals are considered for participation in this study. They were, therefore, not involved in the design of the study. Research findings will be communicated through several dissemination mechanisms including workshops or seminars to engage with the stakeholders, policy briefs, technical reports and publication in peer-reviewed journals.

Ethical and consent to participate

The approval to access the research sites with reference number: EC_202108_011 has been granted by the Provincial Health Research Committees of the Eastern Cape Department. Ethical clearance with Protocol Ref no: M211004 will be sought at the Human Research Ethics Committee of the Faculty of Health Sciences at the University of Witwatersrand. The study will be conducted in accordance with the International Conference on Harmonisation guidelines for good clinical practice in the conduct of research in human participants in South Africa and abide by the four ethical principles of autonomy, beneficence, non-maleficence and justice. Written informed consent will be obtained from participants.

Participation in the study will be free and voluntary. Any participant can withdraw from the study at any stage

without giving any reason for the decision to do so, and this withdrawal will have no consequences whatsoever.

There are no risks involved in participation. There is no direct benefit to the participant, but the results of the study will benefit the health system of South Africa. All participant records will be identified using a unique study number. All records will be stored securely in locked filing cabinets with access limited to staff only. All listings which link participant identification numbers to other identifying information will be stored in a separate locked file that has limited access. All electronic information will also be securely stored on a network system with password-restricted access, which is limited to the PI and other designated staff.

Findings will be disseminated widely to all relevant stakeholders, including participants. Results will be presented at annual partner meetings, national and international conferences. Results will also be published in open-access peer-reviewed journals to facilitate broad access to findings.

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