

Improving Knowledge Management Practices in the South African Healthcare System

Kgabo H. Badimo, Sheryl Buckley

I. INTRODUCTION

Abstract—Knowledge is increasingly recognised in this, the knowledge era, as a strategic resource, by public sector organisations, in view of the public sector reform initiatives. People and knowledge play a vital role in attaining improved organisational performance and high service quality. Many government departments in the public sector have started to realise the importance of knowledge management in streamlining their operations and processes. This study focused on knowledge management in the public healthcare service organisations, where the concept of service provider competitiveness pales to insignificance, considering the huge challenges emanating from the healthcare and public sector reforms. Many government departments are faced with challenges of improving organisational performance and service delivery, improving accountability, making informed decisions, capturing the knowledge of the aging workforce, and enhancing partnerships with stakeholders.

The purpose of this paper is to examine the knowledge management practices of the Gauteng Department of Health in South Africa, in order to understand how knowledge management practices influence improvement in organisational performance and healthcare service delivery. This issue is explored through a review of literature on dominant views on knowledge management and healthcare service delivery, as well as results of interviews with, and questionnaire responses from, the general staff of the Gauteng Department of Health. Web-based questionnaires, face-to-face interviews and organisational documents were used to collect data. The data were analysed using both the quantitative and qualitative methods. The central question investigated was: To what extent can the conditions required for successful knowledge management be observed, in order to improve organisational performance and healthcare service delivery in the Gauteng Department of Health.

The findings showed that the elements of knowledge management capabilities investigated in this study, namely knowledge creation, knowledge sharing and knowledge application, have a positive, significant relationship with all measures of organisational performance and healthcare service delivery. These findings thus indicate that by employing knowledge management principles, the Gauteng Department of Health could improve its ability to achieve its operational goals and objectives, and solve organisational and healthcare challenges, thereby improving organisational performance and enhancing healthcare service delivery in Gauteng.

Keywords—Knowledge Management, Healthcare Service Delivery, Public Healthcare, Public Sector.

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KNOWLEDGE management (KM) is nothing new; rather, it is the latest component in the government's efforts to integrate processes into operations to improve organisational performance and service delivery, and to make government departments more accountable [21], [26], [36], [40], [52], [57]. Governments are facing the unprecedented challenges brought about by the emerging knowledge economy and the knowledge society [58], and are starting to adopt new management practices [30], such as KM, for their organisations [13]. Knowledge in modern public sector organisations is an essential and strategic resource, and its use has become a global practice to reform the way governments serve their citizens [5]. Government departments in South Africa are facing challenges as administrative, executive and judicial bodies continue to evolve through the implementation of public sector reforms into knowledge-based work environments.

Service delivery has been the major focus for public sector reforms or organisational transformation in government. In these transformed service delivery processes, knowledge has been an essential resource of the government, and assumes special importance in every step of the process of business of government [5], [13]. Reference [13] and [31] contend that most important of all, effective functioning of government rests on effective sharing and use of knowledge by public sector employees at various levels, central or local. The concept of KM has been defined by many researchers, with a view to reflecting its key focus. The key common factors that come to the fore in most of these definitions, as depicted in Fig. 1, are knowledge acquisition, storage, sharing, retention and application [59], [68]. Knowledge acquisition refers to identifying the critical knowledge that should be captured and created. This captured knowledge is then stored in knowledge repositories to be shared between individuals and departments. Subsequently, the knowledge is applied in business situations, and introduces other ideas and frames of reference to ultimately create new knowledge. As new knowledge is created, it needs to be captured and stored, shared and applied, and the cycle continues [13].

KM practices are applied to help the organisation strengthen its competitive advantage, and assist knowledge workers to leverage their skills and their ability to offer business value [9], [51]. Therefore, KM is the process through which an organisation uses its collective intelligence to accomplish its strategic objectives [5].

These key KM practices appropriately demonstrate that KM is more of a business strategy, as it captures the key essence of

the organisation in the form of organisational design, processes, structures, applications and technologies [47], [58]. These processes reflect the practices of competence development, as well as organisational practices of identification by the organisation of its intellectual capital, its integration with the knowledge that is readily available in the organisation, and sharing it in various forms to enable employees to create value – thus enabling organisational focus, collective action [59] and the use of available intellectual capital, to its advantage.

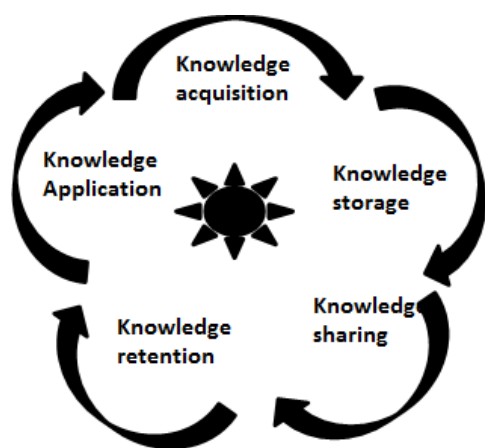


Fig. 1 The conceptual framework: KM process

II. PUBLIC HEALTHCARE IN SOUTH AFRICA

The public sector in South Africa operates in a new knowledge-based environment that is characterised by various public sector reform initiatives. South Africa's health system consists of a large public sector and a smaller, but fast-growing, private sector [60]. Healthcare in South Africa varies from the most basic primary healthcare, offered free by the state, to highly specialised, hi-tech health services available in both the public and private sector [8].

While the state contributes about 40% of all expenditure on health, the public health sector is under pressure to deliver healthcare services to about 80% of the population [2], [60]. This effectively means that the national health system of South Africa consists of a large public sector which is overused and under-resourced, and a smaller private sector which is underused and over-resourced [60]. Not only is this two-tiered system inequitable to a large portion of South Africans, but institutions in public sector healthcare have suffered poor management, underfunding and deteriorating infrastructure [2]. Reference [8] confirms that “while access has improved, the quality of healthcare has fallen”. Public sector healthcare in South Africa is extensive, complex and fragmented [19], [60]. It is poorly managed at the strategic level and, all too often, at the point of service delivery as well.

The effects of mismanagement are particularly clear in financial and human resources. According to the National Treasury, in 2010 the public health sector consumed 4% of GDP and 14% of annual government expenditure [43]. The source of this funding is taxation, a substantial portion of which is progressive income tax [43], through which the

better-off, who, by and large, do not use public sector health facilities, significantly subsidise those who do use them.

Bearing these things in mind, it will be a huge task to transform and turn public sector healthcare around by addressing the widely acknowledged problems of healthcare service delivery, organisational performance, staff morale, productivity and attitudes to service. This is mainly because the healthcare services and activities are highly knowledge-intensive [58]. Specialised expert knowledge and problem-solving know-how are the real products of knowledge-intensive services [45]. A lot of research and many studies are conducted every year that capture the importance of KM efforts in knowledge-intensive organisations [17], [58].

The public healthcare system is, indeed, a knowledge-intensive environment. The employees in this environment are knowledge workers who are involved in a high-tech industry and high-level work, involving the creation, sharing, transfer and application of knowledge, the very nature of which implies the knowledge-intensive nature of the employees' work. Information and communication technologies have advanced significantly in recent decades and in parallel with this, the concepts of KM have evolved and advanced a variety of practices and processes aimed at the creation, sharing, transfer and application of knowledge.

Research across organisations found that the use of KM had improved, among others, the productivity of the knowledge workers, organisational performance and healthcare service delivery [1], [25], which shows that KM should be firmly anchored in theory and practice as regards the transformation of the Gauteng Department of Health (GDH) [48] for improved healthcare service delivery.

KM practices in a public healthcare system are actions aimed at supporting the use of information through knowledge acquisition, knowledge sharing and knowledge application for improvement in healthcare service delivery [1], [25], [38]. From the definition given, it is suggested that the KM process should start by recognising and identifying the knowledge to be captured, shared and applied [37], to enable the organisation and its workforce to achieve a sustainable and competitive advantage, and recognising knowledge as an organisational asset and an intellectual capital to be managed through enabling tools aligned with organisational policies [58], [61], to achieve high quality healthcare service delivery.

III. HEALTHCARE SERVICE DELIVERY

The ultimate goal of public healthcare is better health for all [18]. Healthcare can be defined as the prevention, treatment and management of illness and the preservation of mental and physical well-being [63]. The key elements of achieving quality healthcare service delivery are reducing exclusion and social disparities in health, and organising healthcare services in accordance with people's needs and expectations (*service delivery*). This also involves the integration of healthcare into all sectors of the public (*public sector reforms*), pursuing collaborative models of policy dialogue (*leadership reforms*) and increasing stakeholder participation (*knowledge management*) [63].

Reference [20] and [24] highlighted the existing concerns with the current levels of healthcare services, in that they do not respond to what people want. People will not accept poor-quality services uncritically, just because they are there. In public sector healthcare, people face unmotivated and poorly trained staff, long patient waiting times, inconvenient clinic hours, inadequate supplies and drugs, and a lack of any confidentiality or privacy [24], [63].

The fundamental issue that is having a negative impact on healthcare service delivery is that scarce resources are used inefficiently, public funds are being spent on inappropriate and cost-ineffective healthcare services, and money does not get to where it is needed [12], [41], [42]. In the last quarter century, many countries have focused their attention on the improvement of public service delivery [24].

The reasons for the need to improve service delivery are varied, from public sector reform to political and economic transformation [26], [41], [44]. Even when it is not explicit, improving service delivery is an implicit motivation behind most of these transformation and public sector reform initiatives. Reference [37] and [55] also pointed out that without public sector reform or organisational or structural transformation, it is likely that existing organisational structures and healthcare management systems will continue to fail to deal adequately with the problem of healthcare service delivery [12], [41], [42].

Reference [69] has identified that healthcare service delivery, which is the responsibility of the state, is systematically failing poor people. Governments and their various public sector healthcare institutions are falling short of their responsibility to ensure adequate healthcare service delivery to their people [49]. Public spending on healthcare has no significant association with improvement in healthcare service delivery [41]; neither did the health sector reforms, driven by wider macroeconomic policies, public sector reform and the implementation of structural adjustment programmes [20], [24].

References [31] and [41] have demonstrated that organisations need to achieve the goal of providing ready access to, and regular use of, codified knowledge to solve challenges in healthcare service delivery [41]. Delivery of a healthcare service is a collective effort of knowledge workers and experienced health specialists who, together, contribute to improved healthcare service delivery and patient care through the use of knowledge [19], [41], [64]-[66]. This, therefore, recognises that KM has a profound effect on the ability to create, share, transfer and apply knowledge for improved healthcare service delivery.

IV. STATEMENT OF THE PROBLEM

The quality of healthcare service delivery is key to the development of any nation in the world, mainly because it contributes significantly to the productivity of a nation and the life span of its citizens [63]. The constitution of the Republic of South Africa, Act 108 of 1996, contains the Bill of Rights – which provides for not only basic human rights, but also social and economic rights. Sections 27 and 28 of the Constitution

provide for the right of access to health; therefore, healthcare services should be available and accessible to all who need them, regardless of their socio-economic and geographical location.

In South Africa, with healthcare challenges such as HIV/AIDS and TB, it is imperative to ensure quality healthcare service delivery across all healthcare entities. Because of poverty levels in South Africa [29], many people do not have medical aid plans and health insurance [14], and therefore cannot access the sophisticated and often expensive private healthcare systems [23], [35]. As a result, they rely on public health facilities to access health services.

According to [34], [45] and [49], 97% of the people of Gauteng have access to a health facility within a five-kilometre radius. However, the pressing challenges that remain are the quality of healthcare services delivered at district healthcare centres, regional healthcare centres and central hospitals [34], [44], significant challenges of healthcare management capacity, and management of financial resources [34], [54], [62], [67]. Nevertheless, with the use of KM practices and tools, innovative leadership and management, these challenges can be overcome [39], [48].

The research problem is further addressed by looking at the research questions and possible sources of data. In the process of investigating the problems related to healthcare service delivery, KM practices that are relevant to the entire organisation are revealed.

V. RESEARCH QUESTION

The primary research question that guided this study is: *How can the Gauteng Department of Health improve knowledge management practices for healthcare service delivery improvement?*

Thus, this study aims to illustrate that the improvement in healthcare service delivery could be a consequence of the improvement and use of KM practices to address issues of healthcare management capacity and management of financial resources. Specific questions that informed this research are as follows:

- What is the level of understanding of KM within the GDH
- What are the KM practices currently used within the GDH?

VI. RESEARCH METHODOLOGY

The research uses a case study of the GDH in the provincial government of Gauteng, in South Africa. The methodology that was used in this study is the mixed methods approach that integrates qualitative and quantitative research into one study, and the use of both methods to collect and obtain data. These data were collected from primary sources using survey questionnaires and semi-structured interviews, and documentation was triangulated to ensure the validity and reliability of findings [15], [22], [53]. The design was aimed at discovering ways of improving KM practices in the South African healthcare system, for the improvement in healthcare service delivery.

In determining the appropriate sample size for the study, the research used sample tables developed by Bartlett, Kotrlik,

and Higgins [6], [28], [32] the appropriate criteria for this namely the level of precision at 5% acceptable margin of error [32] and the confidence level of 95% [7]. For this study, an alpha level that was found to be acceptable is .05 [30] and the result was a sample of 120 individuals. This represent 12% of the GDH head office, Region A employee community. On the other hand, stratified random sampling with the process of data reduction, data display and conclusion drawing approaches, and institutional documents for the analysis of the qualitative data, were employed [7], [10], [11], [27]. These also involved using themes generated from the interviews, to draw conclusions.

The questionnaire was adapted and designed from [33], and was organised according to the two themes raised by the research questions of the study:

- Part A: Demographics: personal and organisational information, and has 8 measuring statements.
- Part B: KM practices: to measure the understanding of KM, creation, sharing and application, and has 45 measuring statements.

The standard Statistical Package for Social Sciences (SPSS version 22.0) software was used to analyse the data collected, and the presentation of its results were mainly descriptive, represented through counts, tables, graphs, frequencies, bar charts and percentages. The results, as reported in this section, emanated from the Gauteng Department of Health head office. They reflect the findings of the questionnaires, interviews and document reviews. A total of 100 questionnaires out of 120 were completed, which represented 83% of the sample. This, to a large extent, confirmed what was alluded to by [50], that the response rate of the web-based survey tool was much higher than other types of survey as reported in the literature.

The respondents were asked to rate their understanding of knowledge management and its use within the GDH, measured on a five-point Likert-type scale ranging from 5 (strongly agree) to 1 (strongly disagree), or 5 (very good) to 1 (very poor), 5 (very effective) to 1 (not effective), or 5 (never) to 1 (always), and 5 (very often) to 1 (never).

VII. RESULTS AND DISCUSSION

To explore the improvement of knowledge management practices in the South African healthcare system, and identify the best predictor of improvement in healthcare service delivery, the results were discussed according to sample classification. The results are reported in a sequence that answers the research questions, rather than the order in which the responses were given.

The questionnaire respondents who took part in the study were skewed to males (Fig. 2). There was a representation of all age groups, with a skew to 25-34 year olds (Fig. 5). Just over half of the respondents who took part in the study were from the Provincial Department (Fig. 3). Some were from the healthcare centres and hospitals, with 24% and 20%, respectively. Most respondents (57%) have been with the GDH for 4 to 6 years (Fig. 4). It was also interesting to notice that there are some who have been with the department for

more than ten years. Thus, the data reflects a wide range of experience at the GDH.

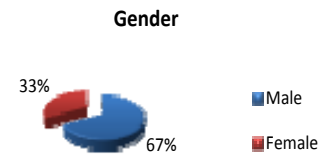


Fig. 2 Employees gender

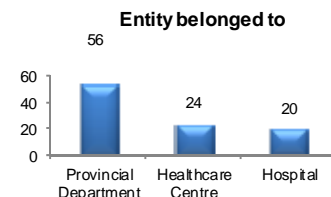


Fig. 3 Department/Division employed



Fig. 4 Number of years employed at GDH

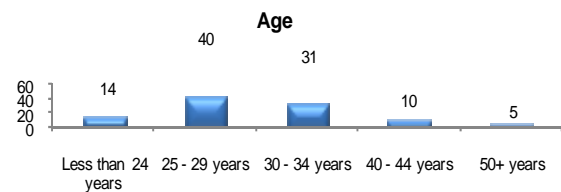


Fig. 5 Age of respondent

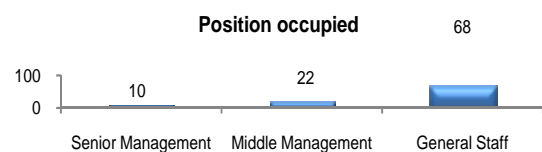


Fig. 6 Respondents' position in the department

The study was completed by a variety of respondents, who occupied different positions in their organisations (Fig. 6). The bulk of these interviews were, however, completed by the general staff members (68%). Over half of the respondents indicated that they had been in their current positions for more than five years (Fig. 7), who were therefore assumed to have solid experience and a thorough knowledge of the way GDH and related healthcare entities function.

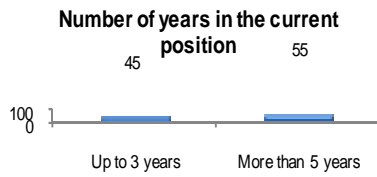


Fig. 7 Respondents' number of years in current position

A. GDH Employees' Understanding of Knowledge Management

Table I shows respondents' opinions towards the difference between knowledge and information; 85% of the respondents believed that knowledge and information mean the same thing, or that knowledge depends on information, and the other 15% opted not to give an opinion. Of all the respondents, 66% strongly agreed that knowledge and information mean the same thing, while only 34% opted not to give an opinion. Another 30% respondents strongly agreed that knowledge depends on information, and 70% agreed; 40% of the respondents agreed that knowledge management is the same as information management, and 20% agreed, while the other 40% opted not to give an opinion. As to whether the use of information can lead to knowledge creation, 81% of the respondents strongly agreed and 19% agreed.

TABLE I
THE RELATIONSHIP BETWEEN KNOWLEDGE AND INFORMATION

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Knowledge and information mean the same thing	66	0	34	0	0
Knowledge depend on information	30	70	0	0	0
Knowledge management is the same as information management	40	20	40	0	0
Knowledge management includes information	27	73	0	0	0
Information use can lead to knowledge creation	81	19	0	0	0

The questionnaire responses revealed that 'knowledge' and 'information' are used interchangeably, although there was an understanding that the more information one has the more knowledgeable one becomes.

Organisational documents, interviews and 50% of respondents in Fig. 8 revealed that KM is supported more at executive, 20% at middle management, and 5% at senior management levels of the organisation, while 25% did not express an opinion. This is a good starting point, when the organisational leadership has (1) the willingness to use KM principles to support and drive business processes, and (2) the potential for understanding how KM principles can improve performance and healthcare service delivery at the GDH.

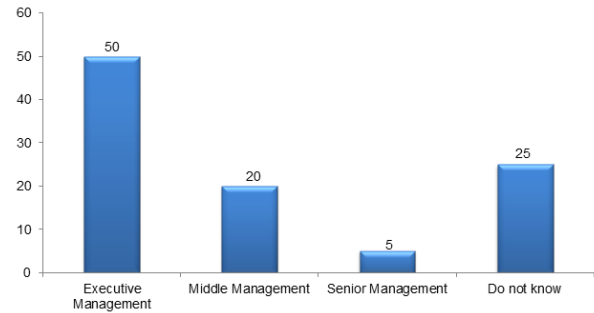


Fig. 8 The level in the organisation that promotes KM

Reference [3] and [4] argue that if organisational leadership has the capacity and potential to use KM practices as a basis for activities, they are likely to support and allocate resources for its implementation. Further, [3] found that leaders have tremendous control over the knowledge-processing environment, and that competent leadership, combined with the support from top management, would lead to budgetary support for KM initiatives.

B. Knowledge Management Practices at the GDH

Creation and sustenance of competitive advantage continues to be the central agenda in knowledge management practice. Public sector organisations strive to improve service delivery, and to succeed in the face of the public sector reform initiatives, by pursuing strategies that enable them to perform better. Reference [59] suggests that in organisations, knowledge management is the source of sustainable competitive advantage, and has a positive impact on performance and service delivery [16].

A synthesis of the literature is used to develop the knowledge management architecture [45] to account for the Create, Share, Transfer and Application that comprises knowledge management practice. These KM practices can lead to effective and efficient decision making, high standards of organisational performance, and improved healthcare service delivery.

The knowledge management practices that were investigated include knowledge creation, knowledge sharing and transfer, and knowledge application. What emerged from the interviews is that it is important to have a KM policy and strategy that is well communicated and understood by employees. Having a well-defined KM policy and strategy was suggested as a possible solution to help the GDH to create and use new knowledge for better organisational performance and improved healthcare service delivery.

1) Knowledge Creation

The development of sustainable competitive advantage is a vital management function and an important requirement in the nurturing of a knowledge creation practice. Reference [56] further confirms that without constant creation of knowledge, a business is condemned to poor performance. In the current knowledge era, knowledge has been acknowledged as a valuable asset [64], [65] and, for that reason, organisations are

searching for ways of creating, managing and possessing this knowledge.

Knowledge creation therefore refers to the development of new knowledge from data, information or prior knowledge. Therefore, organisational knowledge creation is the process of making available and amplifying knowledge created by individuals, as well as crystallising and connecting it to an organisation's knowledge system [46].

The majority of the respondents, 60%, were not aware of deliberate knowledge creation (Table II) while 40% are aware of instances of knowledge creation. There was a concern, however, raised by the respondents, of whom 79% believed that there were some KM activities which were started, before being abandoned (Table III); 45% of the respondents stated that the KM practice was enhanced by Electronic Resource Planning (ERP) software, internet and email were mentioned by 40%, while document management system was mentioned by 15% (Table IV).

TABLE II
 KNOWLEDGE CREATION

	Frequency	Percent
Yes	40	40.00%
No	25	25.00%
Don't know	35	35.00%

From all the questionnaire responses, although employees were not aware of deliberate efforts in knowledge creation, they were aware that KM initiatives were started and later abandoned. They then resorted to the use of modern technologies (ERP, document management and internet) for knowledge creation.

TABLE III
 KM INITIATIVES ABANDONED

	Frequency	Percent
Yes	79	79.00%
No	21	21.00%

TABLE IV
 MODERN TECHNOLOGIES

	Frequency	Percent
ERP	45	45.00%
Document Management System	15	15.00%
Internet, Email	40	40.00%

2) Knowledge Sharing and Transfer

According to [36], organisations have recognised the strategic importance of KM, and are increasingly focusing efforts on practices to foster the sharing and transfer of knowledge. In fact, plans to modernise government processes and practices are leading to a reconsideration of how to share and transfer the vast range of knowledge resources that are found within the public sector [31], [68]. In order to have an idea of the extent of knowledge sharing and transfer at the GDH, questions were directed at finding out if an environment for knowledge sharing and transfer existed, and what impact employees felt it had on their departmental performance.

Seventy-four percent (74%) of respondents indicated that information was shared within the department through meetings, emails, internal memos and notice boards (Table V). Most of the respondents (57%) didn't believe that the department did not make periodic contributions to the shared repository, while 80% believed that there was a free flow of information in the organisation, although there were a few others (20%) who disagreed with this notion.

TABLE V
 SHARED KNOWLEDGE

	Frequency	Percent
Newsletter	26	26.00%
Meetings, Emails Internal Memo Notice Boards	74	74.00%

There was general agreement among the respondents that knowledge acquired during the present job belonged to the individual; 75% of the respondents (Fig. 9) agreed that it was also dependent on the effort put in by the person.

Seventy two percent (72%) of the respondents (Fig. 10) agreed that there was an environment prevailing at the GDH for information sharing, while 28% disagreed with this notion.

According to the responses in Figs. 11 and 12, a lack of knowledge, trust and open-mindedness among the employees, in addition to unawareness of other people's knowledge needs and lack of a proper IT platform, are highlighted as the main hindrances to information sharing in the department.

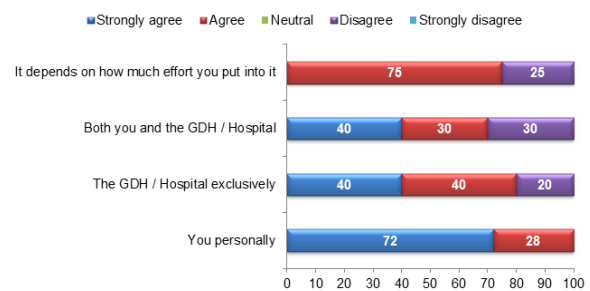


Fig. 9 Who does knowledge that you acquire in your present job belongs to?

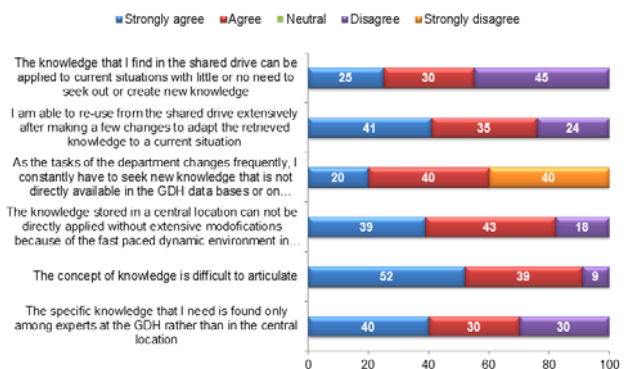


Fig. 10 Perception of the environment for sharing of knowledge at the GDH in general including its related healthcare centres

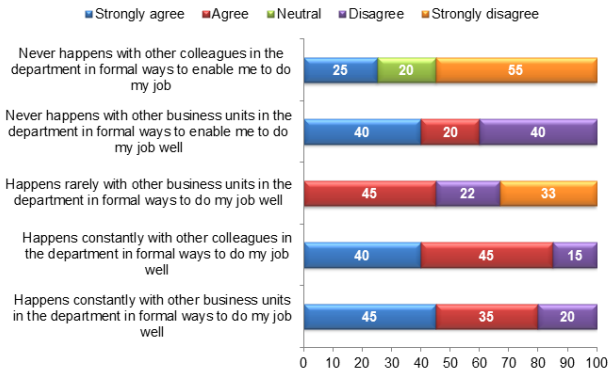


Fig. 11 Sharing information

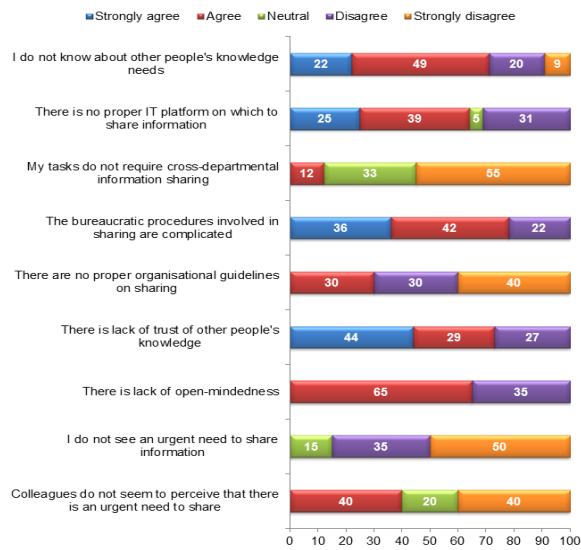


Fig. 12 The challenges you face in sharing information with the people from other business units within the GDH

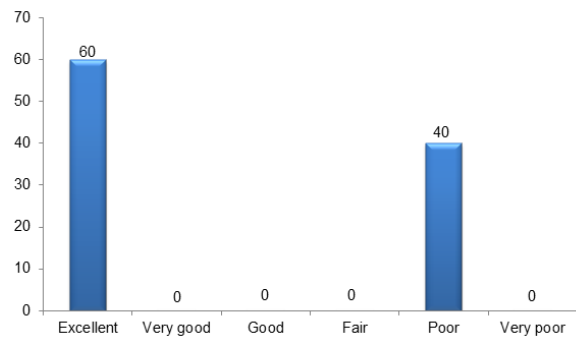


Fig. 13 How do you rate knowledge transfer activity in your department?

Sixty percent (60%) of the respondents rated the knowledge transfer activities as being excellent (Fig. 13), with all of them saying that coaching and organisational and job orientation exist in the department (Fig. 14). Coaching was stated as being the most effective transfer tool, followed by discussion forums (Fig. 15); 55% indicated that senior managers have shared information with them, in order to help them perform their

duties (Fig. 16), while 65% attested to sharing information with new entrants into the department.

According to the majority of the respondents (85%), discussion forums have been the most recognised knowledge transfer tool (Fig. 17).

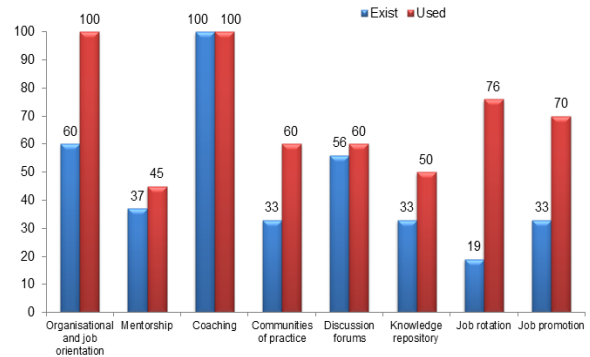


Fig. 14 Which of the following knowledge transfer activities exist in your department and which ones have you used?

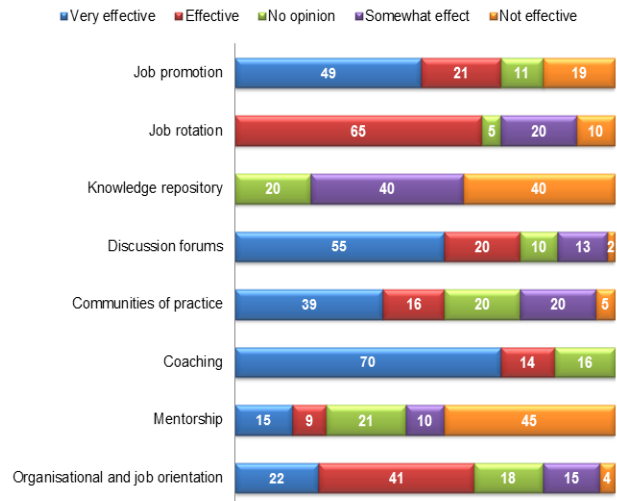


Fig. 15 How effective do you think each of the following knowledge transfer activities are?

3) Knowledge Application

The viability and success of any organisation is largely a function of how its resources can be leveraged. Effective knowledge application provides many benefits. Some are short term, and most often influence performance directly. According to [39], for organisations to create value, they need to apply knowledge to their services by various means, such as repackaging available knowledge, training employees to think creatively, and utilising employees' understanding of the company's processes.

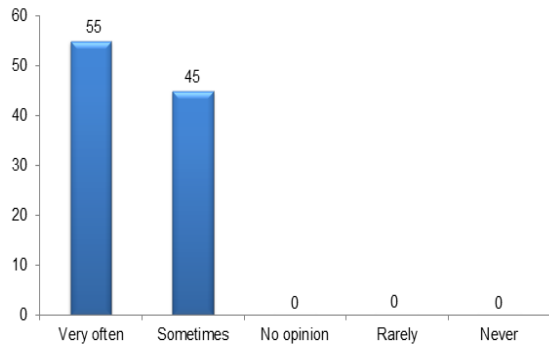


Fig. 16 How often do you think senior managers have shared their knowledge?

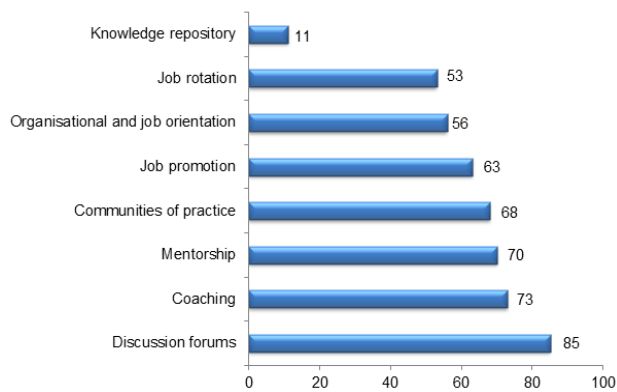


Fig. 17 Which of the following knowledge transfer tools have been formally recognised?

In order to have an idea of the extent of how much knowledge is applied at the GDH; questions were directed at finding out to what extent organisational performance and healthcare service delivery have improved as a result of effective utilisation of knowledge.

At the GDH, there was no central place where one could access knowledge. In Table VI, 73% of the respondents strongly disagreed with the view that there is a KM department at GDH, with more 90% saying that they didn't even have the right to visit and access KM services. Most of the respondents did not seem to see the value of KM services, as they saw them as not bringing any improvement to their performance. All of the respondents did not even participate in activities to improve the KM services. All the respondents did not use KM services to solve work-related issues and 60% rated it as poor (Table VII).

Knowledge becomes usable if it is made available. For knowledge to impact organisational performance it has to be used to be available to support the organisation's processes; hence it is through knowledge utilisation that acquired knowledge can be transformed from being a potential capability into a usable and dynamic capability that impacts organisational performance [39].

TABLE VI
 KNOWLEDGE APPLICATION

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The GDH has a KM department?	0	12	15	0	73
Do you have the right to visit and access KM services?	0	10	0	65	25
The KM services help you to improve your performance?	0	10	20	30	40
Do you participate in improving KM services?	0	0	0	74	26
If you have any problems regarding work, do you solve them using KM services?	0	0	2	68	30

TABLE VII
 KM SERVICES RATING

	Frequency	Percent
Poor	60	60.00%
Average	35	35.00%
Good	5	5.00%

VIII. SUMMARY AND CONCLUSION

The intent of this paper is to extend understanding of the improvement of Knowledge Management practices in the South African healthcare system, for healthcare service delivery in the GDH. Analysing survey and interview data from 120 employees yielded important findings.

The field of KM was fairly new at the GDH. This explains why KM did not appear to feature in policies and practices of the department. While KM literature has often pointed out the strategic value of KM for organisations to sustain their productivity and competitive advantages, the link between improved KM practices and healthcare service delivery has remained inconsistent. The employees at executive, managerial and general staff levels were not sure, or did not know, the difference in meaning between knowledge and information. Knowledge creation, knowledge sharing, knowledge transfer and knowledge application were not prevalent. The study established that –

Firstly, from the questionnaire responses and interviews, employees were not aware of deliberate efforts for knowledge creation in the department, but they were aware that KM initiatives were started and later abandoned. They then resorted to the use of business applications (ERP, document management and internet) with the understanding that this was knowledge creation.

Secondly, many respondents in the study expressed the view that although there was an environment prevailing at the GDH for information sharing through meetings, emails, internet, internal memos and notice boards, the general agreement among the respondents was that knowledge acquired during the present job belonged to the individual, depending on the effort put in by the person to acquire it.

Thirdly, the lack of trust and open-mindedness among the employees, in addition to unawareness to other peoples' knowledge needs, and the lack of a proper IT platform, were highlighted, by respondents, as the main hindrances to knowledge sharing and transfer in the department. However, the respondents stated that senior managers, through coaching, have shared knowledge with them, in order to help them perform their duties.

Fourthly, many of the respondents in the study expressed the view that the absence of a central information repository where employees could access knowledge, could be inhibiting to knowledge creation, knowledge sharing, knowledge transfer and knowledge application. The respondents indicated that a central knowledge repository is an important tool where knowledge practices could effectively take place, because it is a platform to which all employees have access.

While it is acknowledged that knowledge creation, sharing, transfer and application plays a vital role in enabling effective knowledge management, it was also apparent that positive attitudes to knowledge sharing can become self-reinforcing as GDH employees derive individual benefit. As one interviewee comments: "I have received on many occasions valuable information from my colleagues to resolve critical and difficult situations as a result I don't hesitate to give priority to a message requesting information".

Nonetheless, this study has empirically substantiated that a lack of knowledge acquisition, sharing, transfer and application, is an impediment to improvements in healthcare service delivery. The findings give additional grounding for healthcare service delivery literature, by elucidating the positive effects of the use of KM practices in the South African healthcare system to improve healthcare service delivery. Recent studies have linked KM practices to healthcare services delivery and the value of leveraging KM practices to the improvement of healthcare services. Thus, the study shows that the improvement of knowledge creation, knowledge sharing, knowledge transfer and knowledge application appear to be key mechanisms through which healthcare service delivery is improved. Finally, these findings are important for the GDH and the GDH can use the results to identify and implement KM practices with a reasonable expectation, based on empirical evidence, that these initiatives will be aligned with and supportive of their objective to improve healthcare service delivery.

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