

(RESEARCH ARTICLE)



Assessing the facilitators and challenges to knowledge sharing in a hospital pharmacy environment: A case study

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Abstract

Background: Any hindrance to knowledge management negatively impacts workflow efficiency and the quality of pharmaceutical care, which relies heavily on knowledge sharing. Failure to provide quality pharmaceutical services, which resultantly breeds patient dissatisfaction, can harm the reputation of the pharmacy staff or even the entire hospital. Understanding barriers to knowledge-sharing, and therefore how to tackle them, is critical to improving the quality of pharmaceutical care.

Methods: A structured questionnaire was administered to 26 participants, including pharmacists, pharmacist interns, and pharmacist assistants, to extract enablers and barriers to knowledge-sharing in a hospital pharmacy environment.

Results: The study revealed knowledge-sharing facilitators and barriers at Oshakati Hospital pharmacy, most of which are in the literature, and some unique to this setting. The facilitators and barriers can be classified as organizational, individual, or technological.

Conclusion: Revealing knowledge-sharing enablers and barriers is important to enhance the knowledge-sharing process, which in turn impacts decision-making and pharmaceutical care standards. Therefore, tackling hindrances to knowledge-sharing is beneficial to patient care and well-being.

Keywords: Knowledge management; Knowledge sharing; Healthcare; Pharmacy; Namibia; technology; Pharmaceutical care

1. Introduction

The importance of pharmaceutical care in the outcome and health of patients cannot be overemphasized. Advancement of healthcare technologies triggers changes in how the main components of the system interact leading to adaptation of the structure and strategy [1]. The practice of pharmacy relies heavily on Knowledge-Sharing (KS), part of Knowledge Management (KM) and therefore it is of paramount importance to ensure the smoothness of this process. Kosklin et al. [2] assert that the numerous available KM techniques should give an explanation and description of the chronology of the evolution of knowledge quality and how it influences organizational performance. This performance which includes reducing medical errors and improving the standard of pharmaceutical care, is impacted by keeping abreast of new knowledge and technological advances [3].

A study by Bowden [1] focused on the challenges bedeviling KM approaches in healthcare concerning ever-changing technological issues and how this affects the standard of care and health-related costs. The authors recommend formalizing the KM role by delegating its functions to competent, autonomous individuals and structures to track

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feedback by those utilizing new technologies. This becomes even more important as Phan et al [4] note that healthcare data has a variety of origins including institutional, national, and privately controlled databases which presents difficulties for knowledge management as the data may become infinitesimally too huge to manage. These challenges are further compounded by the intricacy of the technology, and issues of user-friendliness, conformity, the attitude of the users towards it, and its potential benefits [5].

While technological challenges have a huge bearing on KM implementation, other hurdles related to the organization's structure have emerged from the literature. Kosklin et al. [2] point out that organizational structure is linked to institutionalization and that centralized management negatively impacts productivity in organizations. Kothari et al. [6] indicate that institutional culture, the way the institution is configured, the dearth of critical thinking, distrust among employees, and aversion to knowledge dissemination are a direct hindrance to KS initiatives. Roohi et al. [7] further highlight that poor managerial backing, leadership traits, and lack of motivation can limit an organization's capacity to manage knowledge. In addition, [5] reveals that financial constraints, weak strategies, lack of innovative solutions, and poor efforts in knowledge generation and acquisition are challenges in KM adoption.

Change in various forms (proprietorship, staff, management) and information overload are challenges that individuals face and therefore curtail KS efforts [5, 6]. In a study in Nigeria, Adeyemi and Adeyemi [8] assessed the challenges to, and the methods by which knowledge is disseminated among healthcare professionals, including pharmacists. Their study revealed that successful knowledge-sharing practices are hampered by unwillingness to allocate time for KM, profound respect for hierarchical authority, and perceived loss of intellectual assets through knowledge-sharing.

Indifference by individual health professionals towards knowledge dissemination is considered a challenge affecting KS as it offers a relationship between them and the healthcare institution [9]. Knowledge dissemination is greatly influenced by personal attributes, demographic characteristics, and the quality of human interactions [3]. This implies that poor interpersonal skills could hamper knowledge-sharing, a major component of knowledge management.

This study investigates the facilitators and challenges to knowledge-sharing within a hospital pharmacy environment in Namibia. Healthcare organizations, including hospital pharmacies heavily rely on knowledge to make clinical decisions and provide quality pharmaceutical care. The benefits of KS can be reflected through the dissemination of knowledge, which ensures that the latest knowledge required by pharmacists, is available [2]. Prior studies in Namibian hospital pharmacies [10,11 12,13] bemoaned the poor quality of pharmaceutical care practiced in Namibian hospitals leading to patient dissatisfaction. Dongo [14] highlighted knowledge management gaps in a Namibian hospital pharmacy and the need to enhance collaboration among pharmacy professionals to improve the quality of pharmaceutical care.

Given the foregoing, challenges to knowledge-sharing are a threat to patient safety. Shortcomings in KS practices lead to poor medicines reconciliation, medication errors, neglecting patient concerns, privacy violations, adverse drug reactions, poor resource utilization, and increased healthcare costs [15, 16]. Obstacles to knowledge-sharing negatively impact workflow efficiency and the quality of services provided by pharmacists [14]. Failure to provide quality pharmaceutical services, which consequently leads to patient disgruntlement, can harm the reputation of the pharmacy staff or even the entire hospital.

Understanding barriers to knowledge-sharing, and therefore how to address them, is critical to improving the quality of pharmaceutical care. Practical use of KM initiatives (including KS) in developing countries and understanding the underlying elements leading to and the drive for its successful implementation have been low [15]. Knowledge management is anchored on employees, workflow, and technology, and understanding how to strike a balance between these three pillars is essential for efficient KS strategies [9].

This study aims to identify and offer insights into the knowledge-sharing barriers and enablers affecting Oshakati Hospital Pharmacy, Namibia. This will lead to the development of tailor-made strategies to enhance interprofessional collaboration, knowledge dissemination, and decision-making. The findings of this research could enhance the standard of pharmaceutical services, efficiency in resource management, treatment outcomes, and patient satisfaction.

Objectives

- To identify barriers to KS faced by the Oshakati Hospital pharmacy staff.
- To identify facilitators of KS at Oshakati Hospital pharmacy.
- To understand how these barriers or facilitators impact knowledge sharing.

2. Material and Methods

2.1. Study Design

The study consisted of a cross-sectional survey of the Oshakati pharmacy hospital staff comprising pharmacists, pharmacist interns, and pharmacist assistants. The study captured quantitative data on the barriers to knowledge sharing at the hospital.

2.2. Participants

All the pharmacy staff members, consisting of 13 pharmacists, 5 pharmacist interns, and 8 pharmacist assistants took part in the survey.

2.3. Data Collection

Quantitative data were collected from the respondents through the questionnaire which included demographic information and KS challenges data.

2.4. Data Analysis

The collected responses were entered into the PSPP data analysis software yielding descriptive statistics and inferential statistics.

3. Result

There were 26 respondents, 13 pharmacists, 5 pharmacist interns, and 8 pharmacist assistants. All the pharmacy staff members participated yielding a response rate of 100%.

3.1. Knowledge Management Importance and Effectiveness

Most (57.7%) of the respondents believe KM is very important while 42.3% view it as extremely important. The majority of the respondents (42.3%) believe that the current knowledge management practices are effective while 30.8% are non-committal. Five respondents (19.2%) think that the KM practices are very effective and only 2 (7.7%) opine that they are ineffective.

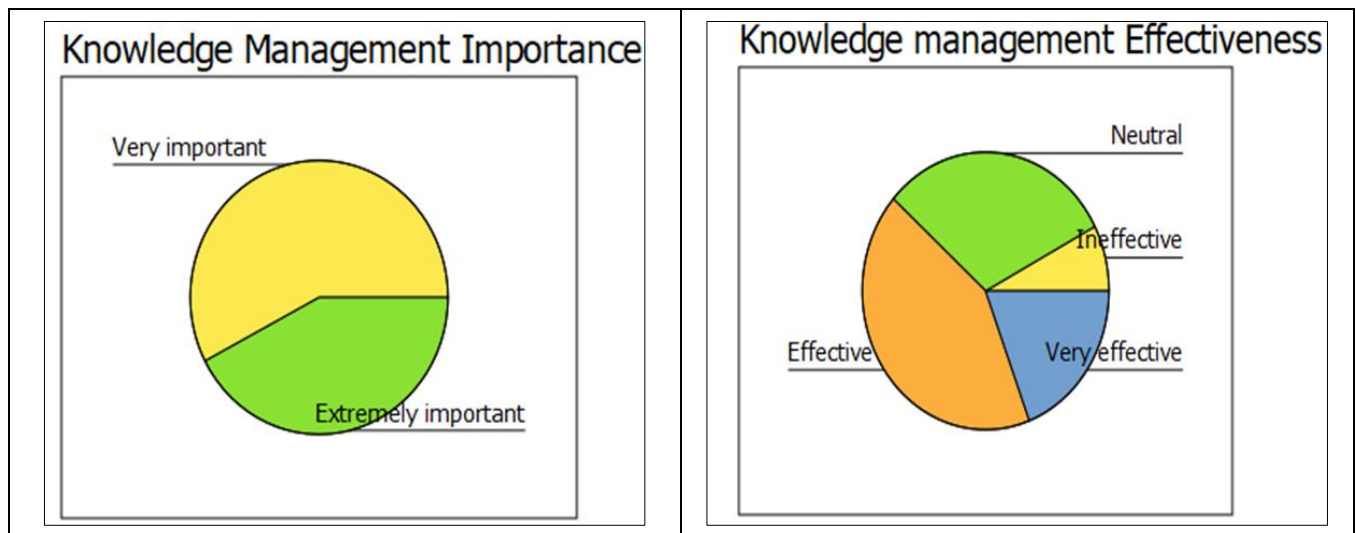


Figure 1 Knowledge Management Importance and Effectiveness Responses

3.2. Knowledge Management Facilitators

The majority of the respondents (42.3%) neither vouch for nor reject technology as a facilitator of knowledge management. Only 19.2% strongly agree that technological tools aid knowledge management while 26.9% agree and 11.5% disagree. Specifically for WhatsApp as a knowledge management enabler, 15.4% strongly agree. A supportive organizational culture was touted as a facilitator of KS with a mean score of 3.73 and a sum of 97. Active participation

in KM activities had a mean score of 3.54 and a sum of 92. The table below shows the descriptive statistics. There is a significant correlation between technology as a facilitator and training opportunities. A very high correlation exists between technology and the use of WhatsApp social media for KS facilitation. A supportive organizational culture is positively related to the use of technology. There is also a strong relationship between training opportunities and active participation in KM activities. A notable association can also be seen between Organizational culture, use of WhatsApp, and active participation. The correlation table is shown in Table 2.

Table 1 KS facilitators' descriptive statistics

Descriptive Statistics							
	N	Mean	Std Dev	Range	Minimum	Maximum	Sum
Technological tools as facilitator of KM	26	3.54	.95	3.00	Disagree	Strongly agree	92.00
Supportive organizational culture as KM facilitator	26	3.73	.87	3.00	Disagree	Strongly agree	97.00
Training Opportunities as a facilitator for KM	26	3.65	1.02	3.00	Disagree	Strongly disagree	95.00
Active participation in knowledge activities as a facilitator	26	3.54	1.10	4.00	Strongly disagree	Strongly agree	92.00
Whatsapp social media as a facilitator of KM	26	3.46	.90	3.00	Disagree	Strongly agree	90.00
Valid N (listwise)	26						
Missing N (listwise)	0						

Table 2 Correlation between KS facilitators.

Correlations						
		Technological tools as facilitator of KM	Training Opportunities as a facilitator for KM	Active participation in knowledge activities as a facilitator	Whatsapp social media as a facilitator of KM	Supportive organizational culture as KM facilitator
Technological tools as facilitator of KM	Pearson Correlation	1.000	.408 _a	.171	.911 _a	.471 _a
	Sig. (2-tailed)		.038	.405	.000	.015
	N	26	26	26	26	26
Training Opportunities as a facilitator for KM	Pearson Correlation	.408 _a	1.000	.814 _a	.311	.565 _a
	Sig. (2-tailed)	.038		.000	.122	.003
	N	26	26	26	26	26
Active participation in knowledge activities as a facilitator	Pearson Correlation	.171	.814 _a	1.000	.062	.446 _a
	Sig. (2-tailed)	.405	.000		.765	.022
	N	26	26	26	26	26
Whatsapp social media as a facilitator of KM	Pearson Correlation	.911 _a	.311	.062	1.000	.467 _a
	Sig. (2-tailed)	.000	.122	.765		.016
	N	26	26	26	26	26
Supportive organizational culture as KM facilitator	Pearson Correlation	.471 _a	.565 _a	.446 _a	.467 _a	1.000
	Sig. (2-tailed)	.015	.003	.022	.016	
	N	26	26	26	26	26

a. Significant at .05 level

3.3. Knowledge Sharing Barriers

The descriptives in Table 3 show the various KS barriers with the mean ranging from 2.81 to 3.54 and the sum from 73 to 92.

Table 3 Descriptive statistics for KS barriers.

Descriptive Statistics							
	N	Mean	Std Dev	Range	Minimum	Maximum	Sum
Lack of time for KS as a barrier	26	3.12	1.14	4.00	Strongly disagree	Strongly agree	81.00
Staff resistance to Knowledge sharing	26	3.04	1.04	4.00	Strongly disagree	Strongly agree	79.00
Unwillingness to learn as a KM barrier	26	3.00	1.06	4.00	Strongly disagree	Strongly agree	78.00
Poor communication among staff as a barrier	26	2.96	.96	4.00	Strongly disagree	Strongly agree	77.00
Lack of reference books as a barrier to KM	26	3.42	.95	3.00	Disagrees	Strongly agrees	89.00
Personal attributes as a barrier	26	2.81	1.55	4.00	Strongly disagree	Strongly agrees	73.00
Staff shortage as barrier	26	2.96	1.11	4.00	Strongly disagree	Strongly agree	77.00
Lack of timely rotation among different pharmacy units-Barrier	26	2.88	.95	3.00	Strongly disagree	Agree	75.00
Lack of understanding the concept of KM	26	3.54	.99	3.00	Disagree	Strongly agree	92.00
Lack of a local database for KS	26	3.42	.95	3.00	Disagree	Strongly agree	89.00
Poor internet connection as a barrier	26	3.08	.93	4.00	Strongly disagree	Strongly agree	80.00
Inadequate Technology infrastructure as a barrier to KM	26	3.12	.99	4.00	Strongly disagree	Strongly agree	81.00
Valid N (listwise)	26						
Missing N (listwise)	0						

Table 4 Correlations between barriers to knowledge sharing

		Correlations						
		Lack of time for KS as a barrier	Inadequate Technology infrastructure as a barrier to KM	Staff resistance to Knowledge sharing	Unwillingness to learn as a KM barrier	Poor communication among staff as a barrier	Personal attributes as a barrier	Staff shortage as barrier
Lack of time for KS as a barrier	Pearson Correlation	1.000	.516 _a	.030	.066	.004	-.032	.035
	Sig. (2-tailed)		.007	.885	.748	.984	.876	.865
	N	26	26	26	26	26	26	26
Inadequate Technology infrastructure as a barrier to KM	Pearson Correlation	.516 _a	1.000	-.082	-.114	-.079	-.115	.004
	Sig. (2-tailed)	.007		.690	.579	.701	.576	.984
	N	26	26	26	26	26	26	26
Staff resistance to Knowledge sharing	Pearson Correlation	.030	-.082	1.000	.983 _a	.725 _a	-.194	.936 _a
	Sig. (2-tailed)	.885	.690		.000	.000	.342	.000
	N	26	26	26	26	26	26	26
Unwillingness to learn as a KM barrier	Pearson Correlation	.066	-.114	.983 _a	1.000	.749 _a	-.146	.917 _a
	Sig. (2-tailed)	.748	.579	.000		.000	.476	.000
	N	26	26	26	26	26	26	26
Poor communication among staff as a barrier	Pearson Correlation	.004	-.079	.725 _a	.749 _a	1.000	.076	.674 _a
	Sig. (2-tailed)	.984	.701	.000	.000		.714	.000
	N	26	26	26	26	26	26	26
Personal attributes as a barrier	Pearson Correlation	-.032	-.115	-.194	-.146	.076	1.000	-.097
	Sig. (2-tailed)	.876	.576	.342	.476	.714		.637
	N	26	26	26	26	26	26	26
Staff shortage as barrier	Pearson Correlation	.035	.004	.936 _a	.917 _a	.674 _a	-.097	1.000
	Sig. (2-tailed)	.865	.984	.000	.000	.000	.637	
	N	26	26	26	26	26	26	26
Lack of understanding the concept of KM	Pearson Correlation	.332	.138	-.099	-.115	-.019	.462 _a	.020
	Sig. (2-tailed)	.097	.502	.631	.577	.925	.018	.924
	N	26	26	26	26	26	26	26

Significant correlations can be observed between staff resistance to knowledge-sharing and three other variables: (1) unwillingness to learn, (2) staff shortage, and (3) poor communication.

3.4. Reliability

Reliability or internal consistency was measured through Cronbach's alpha as shown in table 5.

Table 5 Internal consistency of the questionnaire

Case Processing Summary		
Cases	N	Percent
Valid	26	100.0%
Excluded	0	.0%
Total	26	100.0%

Reliability Statistics	
Cronbach's Alpha	N of Items
.80	19

4. Discussion

This research delved into knowledge-sharing facilitators and barriers in a hospital setting. The reasons for knowledge sharing in organizations are varied and include assisting in reducing the likelihood of knowledge loss (e.g. through employee retirement or resignation), competitive edge, business re-orientation, as a response to adverse audit outcomes, and continuous learning [6]. As such barriers and facilitators to knowledge-sharing either hinder or promote the realization of these activities. Rego et al. [17] categorized barriers and facilitators of KS into human, institutional, or technological.

The majority of the respondents agree that the facilitators of KS are organizational culture, training opportunities, active participation, and technology, including WhatsApp social media. Almeida et al. [18] recognize that the implementation of KS is dependent on workers' dedication and motivation. This implies that the Oshakati Hospital's working environment should establish a culture that inspires employees, extracts their motivation, and encourages full participation in knowledge management activities.

The work of Kothari et al. [6] emphasizes that an institutional culture that discourages many hierarchical tiers, and attaches importance to human resources, while enabling collaboration, fosters KS. Effectively, as part of a robust culture, workers can learn from daily work-related tasks and the institution also learns as a single entity [19]. This study found a positive relationship between a supportive organizational culture and training opportunities and also between a supportive organizational culture and active employee participation.

With a mean score of 3.54, technology is touted as a facilitator of knowledge-sharing. The use of technology, tailor-made to suit the requirements of various actors within the hospital pharmacy, promotes KS. Anwar et al. [20] advocate for the use of digital discussion platforms to disseminate pertinent information to various stakeholders. The use of WhatsApp platform for departmental knowledge-sharing can therefore be viewed as a step in the right direction. Rego et al. [17] advocate for a corporate culture that promotes technology use, the establishment of knowledge databases, innovative tools, organization-specific technology, and communication applications that foster the pooling of new ideas.

These technological advancements, however, require a very strong buy-in from not only the hospital management but also the parent ministry responsible for health, which can then implement them as part of a wider health information system. The hospital needs to be capacitated to be able to use advanced technology in its operations. According to [6], technological advancement enhances the quality of decisions made in healthcare. Technology use encourages team collaboration through improved communication, which requires equipment that promotes networking. Networking and communication can improve active participation by team members, leading to knowledge sharing.

Although most barriers extracted by this research are common in published works, there are some that the author perceives as specific to the research setting, for example, lack of rotation of the pharmacy staff to the different units, staff shortage, lack of reference books, and poor understanding of the knowledge management concept. Lack of time to carry out or to be involved in knowledge-sharing activities is coupled with shortages of skilled staff, which negatively

impacts KS. Some studies [7, 19] indicate that managers, who should be spearheading knowledge management activities, often spend time in meetings, at the same time with many other tasks to perform, some with deadlines.

Constantly rotating staff among the different units of the pharmacy department could be worthwhile to promote KS. The work of Lu and Yang [21] concluded that staff rotation is an important implement to disseminate knowledge in three distinct phases: identification of KS beneficiaries, the sharing process, and an assessment of the sharing outcome. Inadequate knowledge of KM and KS concepts is an important barrier that must be addressed. Kothari et al. [6] and Yeboah [22] point out that having a poor understanding of the KS process and its advantages can hinder the effectiveness of KM. Research by Mazorodze and Buckley [23] exposed all public institutions across Namibia as having little or no understanding of the KM concept. The pharmacy management needs to be well-versed with all aspects of KS, as part of KM, and must be able to equip other workers with this important concept, to improve the pharmaceutical care.

It is interesting to note that technology can be both a facilitator and a barrier to KS, depending on the aspects examined. Inadequate technological infrastructure, coupled with poor internet connections emerged as a hindrance to KS in this research. Technology can be considered an integral part of the knowledge-sharing process. Yeboah [22] highlights that technology promotes collaboration by reducing limitations, improving the breadth and speed of knowledge dissemination, and enhancing the ability to perform tasks. Improving the technological infrastructure, and offering comprehensive training on how to use it will go a long way in promoting effective KS.

Poor communication among pharmacy employees, which is strongly associated with resistance to share knowledge are individual barriers that need to be tackled. Alves et al. [24] posit that since KS involves social interactions, removing communication barriers plays a significant part in promoting knowledge exchange. Luthra [25] asserts that effective communication is key to knowledge exchange and managers who lack this important skill collaborate poorly with other employees and fail to share information timely. In this regard, it is imperative to design and implement an elaborate communication plan that will culminate in a streamlined KS process to improve the standards of pharmaceutical care.

With a Cronbach alpha of 0.8, the reliability or internal consistency of the questionnaire can be considered good. Taber [26] explains that reliability refers to the degree to which all the questions in a particular test quantify the same concept and is concerned with how interrelated those items are. Tavakol and Dennick [27] recommend a range of between 0.7 and 0.9 as the acceptable value, with higher values indicating the redundancy of some items.

5. Conclusion

Recognizing that healthcare institutions and indeed hospital pharmacies depend on knowledge-sharing to make sound clinical decisions, this study focused on facilitators and barriers to knowledge exchange in a hospital setting. Previous research in Namibian hospital pharmacies highlighted the poor quality of pharmaceutical care practiced, leading to patient dissatisfaction. One study specifically revealed knowledge management gaps in a Namibian hospital pharmacy and the call to improve teamwork among pharmacy professionals to enhance the standards of pharmaceutical care.

This study revealed some enablers and hindrances to knowledge-sharing in a hospital pharmacy setting, as perceived by the pharmacy personnel. The facilitators and challenges can be grouped into institution-related, technology-related, and individual-related. While most of the challenges also exist in the literature, some of them are believed to be unique to this setting, for instance, lack of rotation of the pharmacy staff to the different units, shortage of personnel, inadequate reference material, and lack of understanding of knowledge management principles.

Recommendations

Further research is needed to examine the extent to which each barrier or facilitator influences the KS process. This will allow the department to channel more resources to important facilitators and reveal which barriers should be addressed first. The same research can also be carried out on a much larger scale, for instance, targeting all hospital pharmacies at the country's referral hospitals.

Limitations

The major drawback of this study was the small sample of the respondents from which data was extracted.

Compliance with ethical standards

Acknowledgments

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Disclosure of conflict of interest

The author declares no conflict of interest.

Statement of ethical approval

The study was conducted following good ethical standards. Approval was obtained from the hospital research ethics committee.

Statement of informed consent

Informed consent was obtained from all the participants. Confidentiality of the collected data was maintained through anonymization.

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