Knowledge Sharing and Its Effect on Innovative Behavior among Nurse Teachers

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Abstract

Background: Knowledge sharing is a fundamental mechanism for making collaborative flows effective, allowing innovators to acquire new information and stimuli for exploring external ideas and exploiting internal knowledge. **Aim of the study:** assessing the effect of knowledge sharing on nurse teachers' innovative behavior. **Design:** A descriptive correlational research design. **Setting:** all secondary Technical Nursing Schools at Elfayoum governorate. **Subjects:** All the available nurse teachers who are working in the designated setting involved in the study**. Tools of data collection:** two data collection tools were used namely: Knowledge sharing readiness questionnaire, and Innovative Behavior Inventory. **Result:** Majority of nurse teachers had low total knowledge sharing level and innovative behavior level. Additionally, there were highly statistically significance correlation between total knowledge sharing score and innovative behavior score among nurse teachers. **Conclusion:** The level of total readiness to share knowledge and innovative behavior was low score among nurse teachers. Also, there was highly statistically significance correlation between total readiness to share knowledge score and total innovative behavior score. **Recommendations**: Universities should be able to support their academic staff in research collaboration and sharing knowledge by allowing them create new theories and establishing new research principles, directors of technical nursing schools should accordingly build an organizational and technological environment that creates the conditions for the exchange of tacit knowledge, a future research must be made to improve Knowledge sharing and Innovative behavior among nurse teachers in other nurses' institutes.

Key words: knowledge Sharing, Nurse Teacher, Innovative behavior.

Introduction

Rapid changes and a knowledge-based economy have forced organizations to stay competitive by maximizing resources, especially those resources that are valuable, rare and inimitable, such as knowledge and expertise. Knowledge sharing is a necessary organizational capability, which is needed to maintain a sustainable competitive advantage ***(Witherspoon et al. 2013).***

Knowledge sharing is a key factor for organizational and is the most important factor in organizations competitiveness, knowledge sharing among individuals is a process in which preserved knowledge by individuals convert to an understandable, learnable and applicable form to others ***(Fernie et al., 2013).*** Knowledge sharing is defined as an exchange of knowledge between two individuals: one who communicates knowledge and one who assimilates it. In knowledge sharing, the focus is on human capital and the interaction of individuals. Strictly speaking, knowledge can never be shared. Because it exists in a context; the receiver interprets it in the light of his or her own background (***Dan and Kaj, 2014).***

At the individual and group level, knowledge sharing comprises both knowledge 'donation' and knowledge 'collection' ***(Van den Hooff et al. 2012).*** Sharing knowledge is an intentional process that not only bolsters an individual's understanding, but helps create or enhance an archive of accessible knowledge for others ***(Jones and Price, 2014).*** Knowledge sharing is the act of exchanging information or understanding between individuals, teams, communities or organizations. Knowledge may be explicit (procedures and documents) or tacit (intuitive and experience-based). Sharing knowledge is an intentional process that not only bolsters an individual's understanding, but helps create or enhance an archive of accessible knowledge for others ***(Hendricks, 2018).***

Knowledge sharing is major individual behavior, knowledge sharing is a voluntary, proactive, behavioral awareness, knowledge sharing is controlled by environmental systems or procedures, such as legal, ethical standards and code of conduct, habits, and the result of knowledge sharing knowledge is to be jointly occupied by two or more parties ***(Zheng, 2017).*** The concept of knowledge sharing is important because it helps individuals and businesses to be more agile and adaptable in the face of change, and helps ensure continued growth and survival ***(Hendricks, 2018).***

Knowledge sharing is further divided into two sub categories namely knowledge donating and knowledge collecting ***(Kim et al., 2013).*** Knowledge donating and collecting are linked with organizational learning because learning from others can help generate ideas and enhance organizational performance ***(Seba et al., 2012).*** There are a wide range of factors that influence KS practices. These factors could be summarized as: technological factors, organizational or environmental factors, and individual or personal factors ***(Derej et al., 2016).***

Knowledge is found to be the main building block for the innovational process. However, literature supports the link between knowledge sharing and innovation ***(Alhady et al., 2011)***. Accordingly**,** innovative behavior (IB) is defined as the intentional behavior of an individual to introduce

and/or apply new ideas, products, processes, and procedures to his or her work role, unit, or organization ***(Essays, 2018).*** Also, innovative behavior is defined as the configuration of an activity set consisting of knowledge acquisition, idea generation, and solution implementation ***(Kessel et al., 2012).***

Innovative behavior is defined as all employee behavior directed at the generation, introduction, and/or application (within a role, group or organization) of ideas, processes, products, or procedures, new to the relevant unit of adoption that supposedly significantly benefit the relevant unit of adoption ***(De Spiegelaere et al. 2014).*** Furthermore, it can be proposed that knowledge donating and knowledge collecting positively impacts innovative behavior of the individuals in organization. Hence, this study hypothesized that knowledge is vital for innovation and therefore, knowledge sharing plays a positive role in generating innovative work behavior in organizational employees ***(Akram et al., 2018).***

Also ***Jaberi, (2016)*** show that knowledge sharing has a positive and meaningful effect on innovative behavior. According to ***Alhady et al., (2011)*** the organization that support its employees for contributing knowledge (within groups and organizations) is expected to create new and better ideas and encourage new business opportunities, hence enabling organizational innovation activities. Finally ***Anwahi, (2012)*** found that there was a positive strong and significant correlation between knowledge sharing and employee innovation.

Nurse teacher's qualification varies in different countries, but for most of them, nurse teachers must at least complete a university degree (**Jackson, 2011).** Nurse teachers need to display a commitment of lifelong learning, exercise leadership and be concerned with the scholarly development of the discipline. They should have strong, knowledge based theories of teaching, learning and evaluation with ability to design curricula and programs that reflects sound educational principles and ability to assess learner needs together with being innovative and enjoy teaching **(Harries, 2010).**

Significance of study: Knowledge is a source of power for organizations. To increase knowledge within the organization, a knowledge sharing practice has to be involved. Knowledge sharing and organization innovation are the critical ways to maintain competitive advantages. Top management always searches for effective policies which persuade employee to exchange and share knowledge with their colleagues in the organization. Sharing continues and valuable knowledge between employees is a primary aspect of knowledge sharing practice. In addition, knowledge sharing practice is a key success for organization innovation.

Aim of the study

This study aims at assessing the effect of knowledge sharing on nurse teachers' innovative behavior.

Research question:

Is there a relationship between knowledge sharing level and innovative behavior level among on nurse teachers?

Subjects and Methods

Research design:

A descriptive correlational study design will be used to carry out this study.

a. Setting:

The study was conducted at all Secondary Technical Nursing Schools at Elfayoum governorate, which affiliated to general administration for technical nursing schools and institutes at the Ministry of Health. Their total number of nursing schools (7).

b. Subjects:

The study subjects included all the available nurse teachers who are working in the designated setting, their total number (60) nurse teachers.

c. Tools of data collection:

Data for this study were collected using two tools namely: Knowledge sharing readiness questionnaire, and Innovative Behavior Inventory.

(2) Knowledge sharing readiness questionnaire: To assess nurse teachers' readiness to share knowledge. This tool adopted from ***(Ridder and deVries, 2006)*** It wills include two parts:

Part 1: it was include data pertaining to demographic characteristics of the study subjects (such as age, gender, educational level, years of experience, attending training related to knowledge sharing.

Part 2: Knowledge sharing readiness questionnaire: it consisted of 16 items. Donating (8items) and Collecting (8items).

Scoring system: Nurse teachers' responses were measured on a 5-point Likert scale ranging from "1= strongly disagree, 2= Disagree, 3= uncertain, 4= Agree, and 5= Strongly agree". The scores of items were summed-up and the total divided by number of the items. These scores were converted into a percent score. The calculation of the mean and standard deviation was done. Knowledge sharing readiness was considered low if the total percent score was less than 60% and high if the total score was 60% or more ***(Ridder and deVries, 2006).***

(3) Innovative Behavior Inventory: To assess innovative behavior among nurse teachers. It developed by (Martin Llukes & Ute Stephan, 2017). It consisted of 22 items. The tool categorized under7main dimensions, these are Idea generation (3items), Idea search (3items), Idea communication (4 items) Implementation starting activities (3items), Involving others (3items), Overcoming obstacles (3items), and Innovation outputs (3items).

Scoring system: Nurse teachers' responses were measured on a 5-point Likert scale ranging from1= never, 2= rarely, 3=sometimes, 4= often, and 5= always". The scores of items were summed-up and the total divided by number of the items. These scores were converted into a percent score. In addition, the calculation of the mean and standard deviation was done. Innovative Behavior was considered low if the total percent score was less than 60% and high if the total score was 60% or more.

II. Operational design

The operational design includes the preparatory phase, pilot study, and the field work.

a. Preparatory phase

It included the reviewing related literature of various aspects of the study using text books, articles, internet, periodicals and journals. Based on this review the investigator prepared the study tools, translate the knowledge sharing readiness questionnaire, and innovative behavior inventory into Arabic and back retranslated to ensure proper wording.

Validity of study tools and program content was done by jury group. Who consists of five experts, two of them were professors of Nursing Administration at Faculty of Nursing, Cairo University, two were Assistant Professor of Psychiatric Nursing at Ain Shams University and one was Assistant Professor of Nursing Administration at Zagazig University. They were asked to express their opinions regarding the proposed tools. Based on their recommendation corrections, addition and / or omission of some items were done.

Tools reliability: The reliability test was done to assess the internal consistency of the tools by using Cronbache's alpha coefficient. These tools proved to be high reliable as indicated in the following.

Table (1): Internal reliability coefficients (Cronbach's Alpha coefficients) score for the study tools.

Test variables	No. of Items	Cronbach's Alpha
Knowledge sharing readiness questionnaire.	16	0.915
Innovative Behavior Inventory	22	0.938

Pilot study

The pilot study was carried out on 10% of the study sample (6 nurse teachers).These six teachers were included in the main study sample. Data obtained from the pilot study was analyzed, and no modifications were done. The time consumed for fulfilling the study tools was 35 minutes.

Field work:

The actual field work of the study lasted for two months from the beginning of January2019 to the end of February 2019. The investigator visited department of training and schools in the health directorate to explain the purpose, nature of the study and obtained their permission to carry out the study. Then the investigator met with the nurse teachers, oriented them about the study aim and invited them to participate. The researcher met the respondents either individually or groups during all shifts to distribute the questionnaire during these meetings. The study tools were distributed. The filled forms were handed back to the researcher to check each one to ensure its completeness.

III. Administrative Design: An official letter requesting permission to conduct the study was submitted from the Faculty of Nursing Ain Shams University to the general director of nursing schools at Elfayoum governorate. The letter included the aim of the study and photocopy from data collection tools in order to get the permission and help for collecting data. Then the general director sent letter for each nursing school director to facilitate the investigator mission.

Ethical consideration: The research approval was obtained from a scientific research ethics committee of the faculty of the nursing Ain Shams University. The aim and purpose of the study were explained to schools administrators as well as the nurse teachers who were included in the study. Also, it assured maintaining anonymity and confidentiality of the subject data. Nurse teachers were informed that they were allowed to choose to participate or not in the study and that they had the right to withdraw from the study at any time.

IV. Statistical Design: Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means ± standard deviations for quantitative variables. Qualitative variables were compared using chi-square test. T-test was used for comparisons between two-independent quantitative variables. Pearson correlation co-efficient (r) was used for assessment of the inter-relationship among quantitative variables. The confidence level chosen for the study was 95%. Statistical significance was considered at p value <0.05.

Results

Table (1), shows that, slightly more than half (51.7%) of nurse teachers had age more than 35 years old with mean age of 35.37±5.52. Moreover, majority (83.3%) of them was female and married. Also, more than three quarters (81.7%) of nurse teachers had bachelor degree in nursing, and slightly more than half (51.7%) of them had experience more than 10 years in the current

school with mean 8.33±3.5. Meanwhile, all (100.0%) of nurse teachers didn't attend training programs.

Table (2), reveals that, the total share knowledge collecting dimension got the highest mean score (18.70±4.53) among nurse teachers. While, total share knowledge donating had the lowest (17.97±3.74) mean score.

Fig (1), shows that, majority (86.7%) of nurse teachers had low level of total readiness to share knowledge.

Table (3), reveals that, the total idea communication dimension got the highest mean score (10.13±2.53) among nurse teachers. While, total innovation outputs had the lowest (6.52±2.28) mean score

Fig (2), shows that, majority (88.3%) of nurse teachers had low level of total innovative behavior.

Table (4), shows that, there was highly statistically significance correlation between total readiness to share knowledge score and total innovative behavior score among nurse teachers.

Table (1): Description of personal characteristic of the nurse teachers (n= 60)

Demographic characteristics	Nurse' teachers (60)	
	Frequency	Percent
Age (in Years)		
< 30	12	20.0
30-35	17	28.3
> 35	31	51.7
Mean ± SD	**35.37±5.52**	
Range	**27-45**	
Gender		
Male	10	16.7
female	50	83.3
Marital status		
single	5	8.3
Married	50	83.3
Divorced	5	8.3
Level of education		
Nursing diploma +specialty in teaching methods	11	18.3
Bachelor degree in nursing	49	81.7
Years of experience in the current school		
< 5 years	12	20.0
5- 10years	17	28.3
> 10 years	31	51.7
Mean ± SD	**8.33±3.5**	
Training programs		
Yes	0	0.0
No	60	100

Table (2): Nurse teachers' total readiness to share knowledge scores (n= 60).

Readiness to share knowledge dimensions	Nurse teachers Mean ± SD
Total share knowledge donating	17.97±3.74
Total share knowledge collecting	18.70±4.53
Total readiness to share knowledge	36.68±8.27

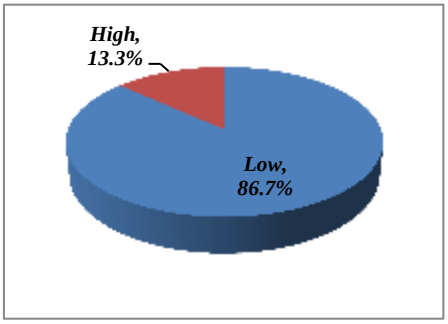

Fig (1): Percentage distribution of total readiness to share knowledge among nurse teachers

Table (3): Nurse teachers' total innovative behavior scores (n= 60).

Innovative behavior dimensions	*Nurse teachers* Mean ± SD
Total idea generation	6.62±2.22
Total idea search	7.58±2.22
Total idea communication	10.13±2.53
Total implementation starting activities	7.43±1.90
Total involving others	7.35±1.72
Total overcoming obstacles	6.55±2.20
Total innovation outputs	6.52±2.28
Total readiness to share knowledge	56.19±15.08

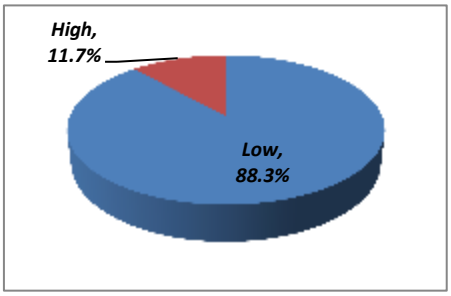

Fig (1): Percentage distribution of total innovative behavior among nurse teachers

Table (4): Correlations between total readiness to share knowledge score and total innovative behavior score among nurse teachers

Parameter	Total readiness to share knowledge score	
	r	P–value
Total innovative behavior score	**0.690**	<0.000**

Discussion

The present study represented that, total readiness to knowledge donating, knowledge collecting mean scores of nurse teachers was low. This finding may be due to lack of communication and trust in the honesty, responsibility and trust of colleagues when sharing knowledge. Many nurse teachers desire to acquire knowledge but they only feel fear if their colleagues are not honest and not trustworthy when sharing knowledge.

This study finding is relevant and consistence with ***Al-Qadhi et al., (2015); Binsawad et al., (2017)*** who reported that, trust is positively correlated with knowledge donation and collection. This result is supported by ***Wickramasinghe and Widyaratne, (2012); Rusly et al., (2014)*** they concluded that, trust will not be exploited, trust in the honesty,

responsibility and trust of colleagues when sharing knowledge will help telecommunication enterprises employees actively communicate and acquire knowledge.

The results of present study revealed that, majority of nurse teachers had low total readiness to share knowledge. This finding may be due to the despite the importance of knowledge production and sharing socio-economic development and in promoting the business and competitive advantage of organizations most nursing school especially in developing countries lack the requisite infrastructures for knowledge management. Nursing school did not have knowledge sharing strategies to improve academic competence as they lacked important policy frameworks, infrastructures and skills to leverage knowledge assets.

In the same context ***Mutula and Jacobs (2012)*** who mentioned that, in the context of higher education in South Africa identified lack of integration of information and knowledge management systems as part of the challenges hampering knowledge sharing in the institutions. This finding consistent with study by ***Masoti and Masheka (2010)*** in a KMP management consultancy report released in Nairobi Kenya noted that, public sector organizations in the region do not maximize the use of knowledge assets because culture, leadership and strategy for knowledge sharing are ignored.

Furthermore, the results of present study revealed that, nurse teachers' innovative behavior regarding idea communication had the highest mean score, but in same time it was conceder low score. This finding may be due to lack nurse teachers' communication skills with colleagues, school leaders, and teamwork which are interpersonal skills in nature. This is in line with ***Messmann et al., (2011)*** who suggested that, positive communication with others affected innovative behavior. This is supported by ***Kessel et al., (2012)*** who argued that, if employees do not share knowledge quite often, their social ties get weaker and communication becomes less open, making it hard to gain social support for ideas.

The present study finding showed that, nurse teachers' innovative behavior regarding innovation outputs was lowest score. This may be due to lack organizational support. This includes resources available for the implementation of new ideas and the encouragement of innovation including top management support and use of rewards. In agreements with the study finding ***Hunter et al., (2007)*** who concluded that, from the employees' perspective, the perception that such organizational support for innovation available is important and encourages them to engage in innovative behavior.

In addition, the present study finding showed that, majority of nurse teachers had low total innovative behavior level. this finding may be due to nurse teacher face the standardized procedures and school requirements that create barriers in promoting creativity and originality, one of these standardized procedures is being standardization of teaching and learning, with a focus on individual testing of students and predetermined outcomes which leads to decreased collaboration between teachers and creates less autonomy and tolerance for making mistakes or wrong-doing, which are vital for the process of innovation.

According to ***Sahlberg, (2009)*** teachers face two main obstacles in promoting creativity and novelty in the classroom. Firstly, their perception of themselves as non-creative persons, and secondly, even if they could engage in more innovative teaching activities, it is the standardized procedures and school requirements that create barriers in promoting creativity and originality.

The results of present study revealed that, there was highly statistically significance correlation between total readiness to share knowledge score and total innovative behavior score among nurse teachers. This may be due to knowledge sharing enhances nurse teachers' idea generating capacity by forcing them

to explain, integrate and translate knowledge to required understandable and relevant information for the receivers, evaluating reflections and input of the receivers of the shared knowledge.

This finding is supported by ***Jaberi, (2016)*** showed that, employees who share their knowledge are more likely to engage in Innovative behavior. Also, this finding is consistent with ***Qammach, (2016)*** who concluded that, Knowledge sharing is an important factor affecting the company's innovation. Also, ***Mura et al., (2013)*** who mentioned that, Knowledge sharing is capable of promoting the creation and implementation of ideas of knowledge recipients.

Finally, the results of present study revealed that, there was a positive effect of knowledge sharing on nurse teachers' innovative behavior. This finding supported the research question of the study. In agreements with study finding ***Wang and Noe (2010)*** emphasized that, individuals involved in knowledge sharing have the expectation that their ideas will be approved in the future by colleagues in the form of promoting or implementing new ideas. In the same line with the study finding ***Akram et al. (2018)*** have confirmed that, donating and collecting knowledge having an impact of on innovative work behavior.

Conclusion

According to the study findings, it can be concluded that, readiness to knowledge donating, knowledge collecting mean scores, as well as the total readiness to share knowledge was low among nurse teachers. Moreover, nurse teachers' innovative behavior dimensions as well as total innovative behavior were low. Also, there was highly statistically significance correlation between total readiness to share knowledge score and total innovative behavior score.

Recommendations:

Based on the main study findings, the following recommendations were deducted:

- Universities should be able to support their academic staff in research collaboration and sharing knowledge by allowing them create new theories and establishing new research principles
- Directors of technical nursing schools should accordingly build an organizational and technological environment that creates the conditions for the exchange of tacit knowledge.
- Directors of technical nursing schools can increase knowledge sharing by creating a less centralized structure that supports communication among employees.

- Providing opportunities for training, developing skills to enhancing the levels of innovation that will help the nurse teachers to be innovative individuals.
- Innovation and creativity can be developed through enabling knowledge and new ideas to be shared.
- A future research must be made to improve Knowledge sharing and Innovative behavior among nurse teachers in other nurses' institutes.

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