

Knowledge Management in Clinical Placement: A Conceptual Model of Knowledge Transfer

Rabiah Abdul Wahab, Nurol' Ain Mustapha, and Nor Azairiah Fatimah Othman

Abstract—Clinical placement requires Nursing Student (NS) to continually seek knowledge from Clinical Instructor (CI) in responding to patient care and performing daily nursing routine. As learning at clinical site evolves when knowledge is transferred from CI to NS, the reliance on effective CI-NS knowledge transfer for successful clinical placement is well-founded. The study examines knowledge transfer (KT) of specific pair of individuals that significant to clinical placement; Clinical Instructor and Nursing Students. Specifically, the study highlights KT from NS viewpoint, in relation to knowledge acquisition of NS. The study propose a model considering factors affecting knowledge acquired by NS from CI and suggesting that knowledge acquired by NS is predicted to influence NS clinical competence. Drawing from Knowledge Management, knowledge transfer, nursing, psychology and learning literatures, the study adapts prior research primarily done in non-nursing to nursing context and incorporate new clinical placement-related constructs to make certain that the model are relevant to the clinical placement perspective. The study hypothesizes that knowledge acquired by NS from CI is influenced by knowledge-related, people-related and transfer context-related factors.

Index Terms—Clinical placement, Knowledge transfer, Nursing, Clinical competence.

I. INTRODUCTION

With the signifnification contribution to GDP of the economy, healthcare services are among the prospective growth engine for the country. Healthcare services have always be required to satisfy both “demands and complexity of the society that they serve” [1]. More than ever, healthcare industry is “increasingly becoming a knowledge-based community through the application of Knowledge Management to progress the quality of services” [2]. Practitioners of healthcare industry are requires to continually improve their services output in support the ever changing of society demands, technology advancement and patient problem. Accordingly, nursing students too are required “to have adequate knowledge and skills and to be able to transform competencies into effective performance” [3]. This expectation has in turn highlighted clinical education as the proposed solution to the successful grounding of registered nurses [4]–[7]. Clinical placement is expected to provide nursing practitioners with the experience of “learning-by-doing” [8] in hospital settings. In this country, Malaysian Nursing Board regulates that all nursing students (subsequently abbreviated as NS) must attend clinical

practice at certain semester to improve their clinical competency. During clinical placement, NS is supervised by CI (subsequently abbreviated as CI) for learning. It is expected that knowledge exchange between CI and NS during clinical placement will equip NS with the essential knowledge for their practice that make possible “the development of professional skills” [9].

However, possession of potentially valuable knowledge of CI does not necessarily mean that NS for sure benefits from that knowledge unless effective knowledge transfer (subsequently abbreviated as KT) takes place. Since KT plays important roles on learning within clinical placement, a study examining factors affecting knowledge acquired by NS from their CI within clinical placement is worth investigation. The finding of the study is expected to explain KT influence on observed heterogeneity of clinical competence among NS in order to understand why some of them are still incompetence as professional nursing practitioners despite successfully proven clinical placement intervention.

II. KNOWLEDGE MANAGEMENT IN CLINICAL EDUCATION

A. Knowledge Management in Academic Setting

Knowledge Management (KM) is an evolving practice, cut across numbers of disciplines; strategic management, marketing, human resource, production, banking and many more. Due to learning institutions’ dynamic association with knowledge-related business, KM-based strategies are not strange to education discipline. At present KM practise seem to engross in academic setting [10]. However relatively little empirical work has examined knowledge transfer in the context of clinical placement. An examination pertinent to knowledge transfer on such setting is worth investigating.

III. KNOWLEDGE TRANSFER WITHIN CLINICAL PLACEMENT

A. Importance of KT within Clinical Placement

The primary advantage that CI brings to clinical placement is their possession of clinical specific knowledge. NS are rarely equipped with adequate knowledge for their clinical placement that they rely on CI to teach essential knowledge. Clinical supervision advances the quality of nursing practice [11]. As the knowledge base of young or new NS is little and limited, CI become important sources of knowledge that NS can use to “increased professional identity, a sense of security and confirmation, sharing thoughts and experiences, and moral responsibility” [12]. If knowledge can be effectively transferred from CI to NS within clinical placement, NS can keep hold of existing knowledge of CI to move much faster

on the learning curve. For instance, with the assistance of CI's knowledge, NS can avoid similar mistakes and reduce the need to rework that time and effort saving.

B. Difficulty of Knowledge Transfer in Clinical Placement

Despite beneficial offering, KT gain is only achievable once the transfer gets on successfully. However, KT does not necessarily take place efficiently or effectively [13], [14]. There are many factors that are widely recognized as destructive to successful KT, for instance [15], [16] assert that the "tacitness", "complexity" or "causal ambiguity" of knowledge is among the widely acknowledged obstacles to its transfer. According to [15], [16], the difficulty of transferring knowledge depends "on the tacitness of knowledge being transferred". Subsequently, transfer of knowledge for practice professions like nursing in the context of clinical placement is further problematic due to the nature of the setting that is knowledge intensive. Knowledge of clinical placement is often tacit and embedded in daily nursing practices and routines.

Additionally, the working condition within clinical setting that is environmentally hectic and under continuous pressure would also affect KT between CI and NS. Constantly nurses are busy with their duties [17] in providing better and faster services for sicker patients. Clinical placement requires CI to take time away from patient care for supervisory practice. Transferring knowledge to NS and simultaneously performing everyday work routine is burdensome. Clinical supervision triggers additional cost of effort and time. It is not an undertaking that people would go for at please or great at without very good reason and endurance. Therefore even when CI is resource rich but when CI is busy with duty, his or her knowledge is tight from readily accessible by NS that eventually obstruct learning from taking place.

Further, knowledge depth of NS at clinical site is asymmetric. Some possesses strong clinical knowledge base and others are thin. Clinical placement demands NS to learn fast, in order to cope with clinical placement surrounding that are environmentally hectic, intense with long standing pressure. Not every NS is capable to acquire knowledge at instance from CI while they go about their daily practice for good nursing delivery of patient care. Some might need private time and extra effort to acquired knowledge due to poor learning capacity. NS with poor learning capacity would face difficulty to acquire CI knowledge in real time, especially to get hold of massive amount of up-to-date nursing knowledge. Therefore, though it is critical for NS to acquire knowledge from CI in order to equip themselves with the essential knowledge for learning, yet she or he may not be able to commit due to own limitation that somehow hold back NS from fully participating in KT.

As described above, there is complicatedness in KT within clinical placement; in sense to sent knowledge, receive and apply knowledge gained. To the extent that scenario described above are problematic for transfer, yet NS must embrace KT in getting hold on essential knowledge for their learning, the issue of knowledge transferability within clinical placement is therefore of critical importance and worth investigation.

IV. THEORETICAL FOUNDATIONS OF KNOWLEDGE TRANSFER

A. Prior Studies on KT

Most KT studies have focused on the source, recipient, context and knowledge nature. The studies of [18]-[21] acknowledge KT requires transferor capacity and willingness to transfer knowledge and recipient capacity and intent to learn the knowledge contributed by the transferor. [22] identified that the characteristics of the relationship, the knowledge transferred and the transfer process influence KT. [23] describes KT is affected by the factors of technology usage, culture, support structure, knowledge recipient characteristic and type of knowledge. [24] assert that the factors of communication, motivation and knowledge important for the transfer of knowledge. Yet, since the study considers KT from recipient viewpoint, only construct that found to be pertinent to recipient is considered.

B. Knowledge Flow within Clinical Placement

The flows of knowledge within clinical placement occur along multiple directions from various sources. For such practice, knowledge can be learned, acquired and transferred among others: Clinical Instructor (CI), Ward Staff (WS), Peers (PS), other Healthcare Provider (HP) and Ward Patient (WP). Therefore knowledge may flow from CI-NS, WS-NS, HP-NS, WP-NS, NS-NS and vice versa. However since CI continues to serve as main source of knowledge during clinical placement, thus the study shall focus on KT from CI to NS only.

V. RESEARCH QUESTION AND MODEL

A. Research Questions

The research questions that arise are:

- 1) What are the factors affecting knowledge acquired by the NS from their CI within clinical placement?
- 2) What is the impact of knowledge acquired within clinical placement on NS clinical competence?

B. Conceptual Framework

The study adopted a "source and recipient" generic model as shown in Fig. 1.

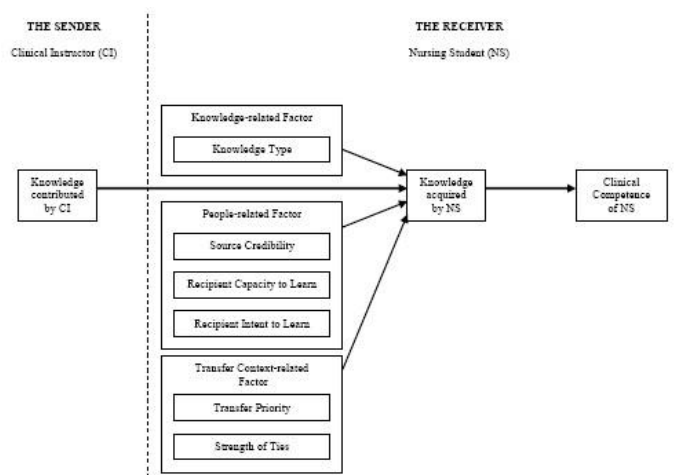


Fig. 1. Model of Knowledge Transfer from CI to NS within clinical placement.

The model focuses on the recipient's acquisition of knowledge, proposing the factors of knowledge-, people- and transfer context-related determine knowledge acquired by the NS. The model too suggests that knowledge acquired by NS, in return influences NS clinical competence.

VI. VARIABLES AND HYPOTHESES

A. Dependent Variables

The key dependent variable of the model is knowledge acquired and the second key dependent variable under consideration is clinical competence.

B. Independent Variables

Factors affecting the knowledge acquisition of NS are divided into 1). knowledge-related, 2). people-related and 3). transfer context-related factors.

1) Knowledge-related factor

The knowledge-related factor is examined from the aspect of knowledge tacitness. The study posits that knowledge tacitness is predicted to affect knowledge acquired by NS within clinical placement. According to [25], there are two types of knowledge, which are the procedural knowledge and declarative knowledge. The first is the knowledge of "knowing how" and the latter covers "knowing what". Procedural knowledge type focuses on acquiring the know-how and application of the knowledge, meanwhile declarative knowledge focuses on acquiring facts and information. Accordingly, each knowledge type has varied tacitness. Procedural knowledge of a clinical placement is often tacit, typically embedded in clinical member's judgements, values, and belief and practice routines. According to [15], [16], [26], tacit knowledge is "hard to be articulated and difficult to specify" that the transfer of "non-codifiable, complex or ambiguous knowledge". Meanwhile declarative knowledge is much explicit and can be done at ease [27]. It is likely that the transfer of procedural knowledge to others is tough, in contradictory to the transfer of declarative knowledge that is easily achieved. Consistent with [28] study that KT difficulty is dependent on the tacitness of knowledge being transferred, the study argues that the degree of knowledge tacitness affects how much knowledge is acquired by NS.

H₁: The greater the tacitness of knowledge being transferred, the slighter the knowledge acquired by NS from CI.

2) People-related factor

Three explanatory variables of source credibility, recipient capacity to learn & recipient intent to learn are predicted to affect knowledge acquired by NS. KT has been found to be influenced by the credibility of the source. Source credibility is defined as the "extent to which a recipient perceives a source to be trustworthy and an expert" [29]. According to [30], when source credibility is perceived as reliable, "the knowledge contributed by the source is perceived to be useful, thereby facilitating the transfer of knowledge". Consistently, the study posits that for knowledge to be acquired by NS, the credibility of the CI is important because it affects how NS

perceived the value of the knowledge.

H₂: The more credible CI in the eyes of NS, the greater knowledge is acquired by NS from CI.

Recipient's capacity to learn and intent to learn affect the transfer of knowledge. Recipient capacity to learn is primarily determined by the quality of its knowledge base or prior knowledge and absorptive capacity. Within clinical placement, not all NS are equally adept at KT. NS capacity to learn is affected by his/hers possession of prior knowledge central to clinical practice. In reality, NS are heterogeneous in the possession of prior knowledge that some own stock of clinical knowledge from previous clinical practice or exposure from other resources (school or family), and some what not. NS with existing knowledge stock or rich knowledge base will possess more valuable knowledge available for transfer. According to [31] students with prior knowledge were "more eager to learn and take every possible opportunity to obtain experience". It is likely that NS without prior knowledge has weaker knowledge base that affects the ability to effectively acquire knowledge from CI. Consistent with other KT study, prior knowledge is of importance because it will affect NS capability to acquire knowledge.

H₃: The greater prior knowledge/knowledge base possesses by NS, the more knowledge is acquired by NS from CI.

Capacity to learn is also affected by the recipient of the knowledge absorptive capacity. [32] defined absorptive capacity as "the ability to recognize the value of new information, assimilate it and apply it to commercial ends". [13], [33] consider the absorptive capacity of the recipient to be the major influence on KT. Research of [14], [19] found that absorptive capacity is related to knowledge transfer. Such finding signals the necessity for the receiver of the knowledge to possess capacity for effective transfer of knowledge. It is likely that NS who lacked absorptive capacity might typically experienced difficulties assimilating and applying the transferred knowledge. But as when the recipient absorptive capacity is high, the recipient can get hold of the knowledge at ease. Consistent with prior study, this study argues that NS absorptive capacity is significant for NS knowledge acquisition from CI. It is likely that the absorptive capacity of NS to acquired knowledge will affect the amount of knowledge acquired and how well they assimilate the knowledge.

H₄: The greater the absorptive capacity of NS, the greater the knowledge acquired by NS from CI.

The presence of a clear learning intent has been found to facilitate learning. Intent to learn in this study is defined as the predisposition to gain knowledge from the knowledge source for the purpose of learning. Learners with conscious plan or intent to learn have been found to acquire knowledge more effectively from their knowledge contributor. [13], [14] found that more effective knowledge transfer takes place when knowledge recipients have the motivational disposition to accept knowledge. [19] found a positive relationship between learning intent and knowledge transfer. For transmission of best practice between CI and NS within clinical placement to take place, it is crucial that a strong intent to learn be present. NS with strong learning intent are likely to acquired knowledge more than those who not.

H₅: The greater the learning intent of NS, the more knowledge acquired NS willing to undertake from CI.

3) Transfer context-related factor

The transfer context-related factors are examined from two aspects: transfer priority and strength of ties. The transfer priority is predicted to affect knowledge acquired by NS. As when the knowledge lacked importance in the eyes of the recipient, they will perceive the knowledge to be less influential and will discount that knowledge. Recipient is likely to acquire more knowledge deemed to be strategically important. Consistently, the study posits that for knowledge to be acquired by NS, the functionality of knowledge being transferred is central because it affects how NS perceived the importance of the knowledge for their learning.

H₆: The greater NS perceived on the importance of the knowledge for their learning, the greater the knowledge acquired by NS from their CI.

Strength of ties is predicted to affect knowledge acquired by NS. According to [34], KT depends to "the strength of pre-existing social ties between source and recipient". Study of [22] suggested that the relationship between source and recipient as one important factor affecting the transfer of knowledge. [14] identified an arduous relationship between source and recipient influence KT. Thus, it is expected that a strong relationship between a CI and NS is likely to influence NS to acquire more knowledge from CI.

H₇: The greater strength of ties between CI and NS, the greater the knowledge acquired by NS from CI.

C. Relationship: Knowledge Acquired and Clinical Competence

A fundamental principle of the knowledge-based view is that by possessing greater knowledge, the greater potential to improved performance. [20] study recognized "knowledge acquisition from foreign parents to positively correlate with IJVs' performance". A study of [35] asserts that "the greater knowledge acquisition by subsidiaries will lead to improved subsidiary performance or improved reliability of performance". This relationship is particularly alike in clinical placement context, where knowledge transferred from CI is significant for NS to improve their clinical competence. It is likely that greater knowledge acquisition by NS will lead to improve NS clinical competence. The study argues that the greater the knowledge acquired by a NA from its CI, the better his/her clinical competence.

H₈: The greater the knowledge acquired by NS from CI, the better his/her clinical competence.

VII. CONCLUSION ON MANAGERIAL AND RESEARCH IMPLICATION

KT in the context of this model implies implementation of Knowledge Management (KM) within clinical placement. The approach taken to address this study involves the integration of the KM, psychology, learning and nursing literature with findings regarding knowledge transfer within clinical placement. The finding of the study should be of particular interest to academic and decision maker of nursing regulatory authorities for better improvements in clinical

education and student learning that eventually enhance clinical competence. Further the study should contribute in filling the missing link of none integrative framework for clinical placement knowledge transfer between CI and NS and presenting the outcomes of knowledge transfer within clinical placement, in sense of clinical competence.

REFERENCES

- [1] S. Winch, A. Henderson, and D. Creedy, "Read, think, do! a method for fitting research evidence into practice," *Journal of Advanced Nursing*, vol. 50, no. 1, pp. 20–26, 2005.
- [2] T. L. Hsia, L. M. Lin, J. H. Wu, and H. T. Tsai, "A Framework For Designing Nursing Knowledge Management Systems," *Interdisciplinary J. Inf. Knowledge Management*, pp. 113–22, 2006.
- [3] Z. X. Zhang, W. Luk, D. Arthur, and T. Wong, "Nursing competencies: personal characteristics contributing to effective nursing performance," *Journal of Advanced Nursing*, vol. 33, no. 4, pp. 467–474, 2001.
- [4] P. Ajiboye, "Learning partners," *Nursing Standard*, vol. 14, no. 52, pp. 34, 2000.
- [5] J. Conway and M. A. McMillan, "Maximising learning opportunities and preparing for professional practice," in J. Daly *et al.*, *Contexts of Nursing: An Introduction*, Sydney: MacLennan and Petty, 2000.
- [6] G. Tolhurst and A. Bonner, "Development of clinical assessment criteria for postgraduate nursing students," *Collegian*, vol. 7, no. 2, pp. 20–25, 2000.
- [7] A. Williams, S. J. Wellard, and E. Bethune, "Assessing Australian undergraduate clinical learning," *Collegian*, vol. 8, no. 4, pp. 9–13, 2001.
- [8] D. Reilly and M. Oermann, "Clinical teaching in nursing education, 2nd edn. New York," *National League for Nursing*, 1992.
- [9] T. Butterworth and J. Faugier, *Clinical Supervision and Mentorship in Nursing*, London: Chapman & Hall, 1992.
- [10] J. Rowley, "Is higher education ready for knowledge management?" *The International Journal of Educational Management*, pp. 325–333, 2000.
- [11] K. Hyrkäs and M. Paunonen-Ilmonen, "The effects of clinical Supervision on the quality of care: examining the results of team Supervision," *Journal of Advanced Nursing*, vol. 33, pp. 492–502, 2001.
- [12] I. Lantz and E. Severinsson, "The influence of focus group-oriented supervision on intensive care nurses' reflections on family members needs," *Intensive and Critical Care Nursing*, vol. 17, no. 3, pp. 28–137, 2001.
- [13] A. K. Gupta and V. Govindarajan, "Knowledge flows within multinational corporations," *Strategic Management Journal*, vol. 21, pp. 473–496, 2000.
- [14] G. Szulanski, "Exploring internal stickiness: impediments to the transfer of best practice within the firm," *Strategic Management Journal*, vol. 17, pp. 27–43, 1996.
- [15] B. Kogut and U. Zander, "Knowledge of the firm and the evolutionary theory of the multinational corporation," *Journal of International Business Studies*, vol. 24, pp. 625–645, 1993.
- [16] B. L. Simonin, "The importance of collaborative know-how: An empirical test of the learning organization," *Academy of Management Journal*, vol. 40, pp. 1150–1174, 1999.
- [17] F. Sharif and S. Masoumi, "A qualitative study of nursing student experiences of clinical practice," *BMC Nursing*, vol. 4, pp. 6, 2005.
- [18] A. C. Inkpen, *The management of international joint ventures: An organizational learning perspective*, London: Routledge, 1995.
- [19] G. Hamel, "Competition for competence and inter-partner learning within international strategic alliances," *Strategic Management Journal*, vol. 12, pp. 83–103, 1991.
- [20] M. A. Lyles and J. E. Salk, "Knowledge acquisition from foreign parents in international joint ventures: An empirical examination in the Hungarian context," *Journal of International Business Studies*, vol. 27, pp. 877–903, 1996.
- [21] K. H. Steensma and M. A. Lyles, "Explaining IJV survival in a transitional economy through social exchange and knowledge-based perspectives," *Strategic Management Journal*, vol. 21, pp. 831–851, 2000.
- [22] L. Argote, *Organizational Learning: Creating, Retaining and Transferring Knowledge*, Boston: Kluwer Academic Publishers, 1999.
- [23] S. C. Goh, "Managing effective knowledge transfer: An integrative framework and some practical implication," *Journal of Knowledge Management*, vol. 6, no. 1, pp. 23–30, 2002.

- [24] D. G. Ko, L. J. Kirsch, and W. R. King, "Antecedents of Knowledge Transfer from Consultants to Clients in Enterprise System Implementations," *Mis Quarterly*, vol. 29, no. 1, pp. 59-85, 2005.
- [25] H. M. Corsini, "Concise Encyclopedia of Psychology," New York: Wiley, 1987.
- [26] I. Nonaka, "A dynamic theory of organizational knowledge," *Organization Science*, vol. 5, pp. 14-37, 1994.
- [27] J.-A. Johannessen, J. Olaisen, and B. Olsen, "Mismanagement of tacit knowledge: the importance of tacit knowledge, the danger of information technology, and what to do about it," *International Journal of Information Management*, vol. 21, pp. 3-20, 2001.
- [28] B. L. Simonin, "The importance of collaborative know-how: An empirical test of the learning organization," *Academy of Management Journal*, vol. 40, pp. 1150-1174, 1999.
- [29] D. Grewal, J. Gotlieb, and H. Marmorstein, "The Moderating Effects of Message Framing and Source Credibility on the Price-Perceived Risk Relationship," *Journal of Consumer Research*, vol. 21, pp. 145-153, 1994.
- [30] R. Mizerski, L. Golden, and J. Kernan, "The Attributional Process in Consumer Decision Making," *Journal of Consumer Research*, vol. 6, pp. 123-140, 1979.
- [31] M.-T. Tsai and L.-L. TSAI, "The critical success factors and impact of prior knowledge to nursing students when transferring nursing knowledge during nursing clinical practise," *Journal of Nursing Management*, vol. 13, pp. 459-466, 2005.
- [32] W. M. Cohen and D. A. Levinthal, "Absorptive capacity: a new of learning and innovation," *Administrative Science Quarterly*, vol. 35, pp. 128-152, 1990.
- [33] Y. Aharoni, "Education and technology transfer: Recipient point of view," in *Technology Transfer in International Business*, T. Agmon and M. A. V. Glinow, Eds., New York: Oxford University Press, 1991, pp. 79-102.
- [34] M. Hansen, "The Search-Transfer Problem: The Role of Weak Ties in Sharing Knowledge Across Organization Subunits," *Administrative Science Quarterly*, vol. 44, pp. 82-111, 1999.
- [35] J. G March, "Exploration and exploitation in organizational learning," in *The Pursuit of Organizational Intelligence*, J. G. March, Ed., Malden, Mass: Blackwell Publishers, 1999, pp. 114-136.



Rabiah Abdul Wahab received her Ph.D. in Human Resources Management from the University of Salford in 2001. She joined the Faculty of Business Management in 1987 and has been with Universiti Teknologi MARA (UiTM) for twenty six years. She held her professorial position in 2001. Associate Professor Dr. Abdul Wahab teaches courses in human resource management and change management. Associate Professor Abdul Wahab also is the supervisor for PhD, Master and Degree students. Her primary research areas of interest include human resource management, strategic management, knowledge management and change management.



Nor Azairiah Fatimah Othman currently conducts research on knowledge management for her doctorate study. This author received her Master in Knowledge Management from the University of Multimedia, Malaysia. Following to joining Faculty of Business Management, Universiti Teknologi MARA (UiTM), she teaches management, organizational behavior and human resource management subject. Mrs. Othman research interests are in the areas of organizational learning, learning organization and knowledge management.