

A Study of Social Networking in Nursing Discipline, Gender and Age Differences: Structural Equation Modeling

ELNOUR MUBARAK M. A. OMAR

Arn Institute for Training, Kingdom of Saudi Arabia, Madinah

ELHADI NASR ELHADI MUSTAFA

Arab Open University, Kingdom of Saudi Arabia, Riyadh

Abstract

The main purpose of the study was to test a model that predicts the relationship between social networking and nursing discipline. It specifically examined relationship between social networking dimensions (Entertainment, social interactions and academic purposes) and nurses' usage. Data were collected from 131 participants from public hospitals in Sudan- Khartoum city. The present study was employed e- questionnaire. Structural Equation Modelling (SEM) 16 Version and SPSS 11.5 Version were used. A hypothesized model was tested for model fit. The result demonstrated that two exogenous variables social interactions and academic purposes were positively related to nurses' usage social networking. Conversely, entertainment was an exogenous variable and it was not represented in the final model because it did not satisfy requirements of Structural Equation Modelling (SEM) analysis. Thus, the model crossed age and gender factors.

Key words: Social networking, nursing discipline, demographic factors.

1. INTRODUCTION

In fact, social networking refers to online interaction that used by nurses in a field of medicine in order to share connect, communicate with others academic, consulting, entertainment, socialization ...etc

purposes. No doubt that, social networking as a communication medium rises extremely fast and escalating via applications through mobile devices nowadays. So, social networking become familiar among young adults with sharing their everyday life and advanced experiences in keeping in touch with friends, managers, colleagues, and family talking about their interests (Gupta & Bashir 2018). It has been observed that in the past few years explosion of usage of different social networking applications for instance Twitter, Facebook, Whatsapp, MySpace, Youtube, LinkedIn, Instagram ...etc. This may increase dramatically numbers of applicants who are interested in using these applications. There are different definitions of social networking for instance use online technology tools that allow users to connect simply, fast and share information text, audio, you tube, video, images, podcasts and multimedia communications. It has described interactions and communication activities between individuals, groups, communities, organizations in a variety of ways and contexts. Pertaining to social networking in nursing discipline have been used widely and it has many benefited for nurses for instance they can share health information, interact with debate health practice issues, communicate with the public and promote the primary health care behaviors. It provides opportunities for healthcare practitioners to keep pace with the latest healthcare developments even they were separated by a long distance. Nurses can stream the surgical procedures and ask questions via the Internet simultaneously. Nurses have a golden opportunity to participate in online forums through social networking. (Mohamed. S, 2018). Also it has many advantages such as benefit health care in terms of fostering professional connections, promoting timely communication with patients and family members, educating and informing consumers in health care. (Spector & Kappal, 2012). Thus, nursing discipline is explored as 'preferable in the marketing' and as 'social networking in action'.

Actor - Network Theory explores the role of interaction among human and non-human within nursing discipline processes. ANT consists of human and non-human actors and there is no difference between them (Law 1992). In fact, ANT was developed by Bruno Latour, Michel Callon and John Law in order to realize how science and technology are created. It developed in the mid late 1970th. The

theory assumes that the roles of humans and non- humans in the constructing of network, between people, their ideas and technology for purpose of creating new knowledge (low 2007, Latour 2005, Callon 1986). So, actors in ANT include human and non-human actors, then there is no difference between human and objects (law,1992). Actors have been defined as entities that are able to associate texts, humans, non-humans and money (Callon, 1991). Therefore, the core idea of ANT is that there is symmetry between object and people, moreover this notion has been explained thoroughly by Mclean & Hassard (2004) to realize complex social situations deeply, include human and non-human, technical and social traits shall not be distinguish in analysis. ANT advocates that all phenomena are the effects or products of heterogeneous networks (Law, 1992). Translation is a crucial element that defined as process by which claims about society, nature and technology are transformed into facts and artifacts. So, one actor or a few actors become a speaker to others by defining their identities. Therefore, there are four phrases to constructing a network, first phrase is problematization which serves as the solution to this problem. In this new situation several other actors should fulfill a new role in order to make the solution work. Second phrase is that intersement which is defined as means creating relations with other actors that are relevant. Moreover, weakening the links between these entities and other actors, since these latter relations also influence the identity of someone/something. Third phrase is enrolment which refers to the negotiations that are necessary to make other entities accept, the definitions and roles that are ascribed to them. If these negotiations are successful this means that the actors are interested in accepting their new roles. Last phrase is the mobilization, thus addresses the representativeness of the actors that function as the spokespersons for others) (Walsham and Sahay 1999). The present study adopts ANT to examine how facts or objects are held together by different elements. ANT explains social networking in nursing discipline in two ways, consistent with Dubois, A & Perron, A (2016) suggestions regarding streams of nursing studies that use the theory.

1.1 Statement of the problem

Nurses often use social networking in order to promote health care in different ways, including connections with patients, family members and informing consumers. Within the nurses field this means that people are posting things relating to their own health, reviews on certain medical treatments, and raising awareness of relevant health conditions. Nurses might become hesitant and uncertain of concerning the use of social networking in their own discipline. In fact, many studies have conducted in social networking in discipline of nursing. Although social networking have reflected many advantages in nursing discipline such as confidentiality of patients and interaction with patients ...etc, but some previous studies have documented in both negative and positive manners. It seems that differences in terms of age and gender have not been highlighted enough in nursing discipline is exited.

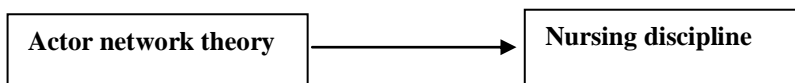


Figure 1: Theoretical Framework adapted from Gupta & Bashir (2018)

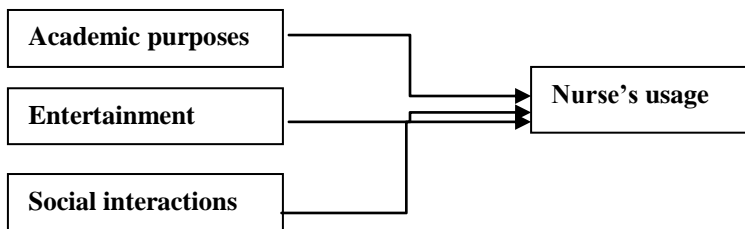


Figure 2: Conceptual model

1.2 Objectives of the study

The present study attempts to test:

- 1- Social networking nurses' use for academic purposes.
- 2--Social networking nurses' use for entertainment.
- 3- Social networking nurses' use for social interactions.
- 4- Difference of nurses' gender in using social networking.
- 5- Difference of nurses' age in using social networking.

1.3 Questions of the study

The present study will answer the following questions:

- 1-What social networking do nurses use in an academic discipline?
- 2-What social networking do nurses use in entertainment?
- 3-What social networking do nurses use for social interactions?
- 4-What are the difference of gender in using social networking?
- 5- What are the difference of age in using social networking?

1.4 Hypotheses of the study

Based on the previous research studies, the present study hypothesizes that:

H1: There is a significant relationship between academic purposes and nurses' usage .

H2: There is a significant relationship between social interactions and nurses' usage.

H3: There is a significant relationship between entertainment and nurses' usage.

H4: There is a significant relationship between age difference and nurses' use social networking.

H5: There is a significant relationship between gender difference and nurses' use social networking.

1.5 Significance of the study

1-The present study would meet certain expectations in nursing discipline.

2-Finding would be benefited to nursing and public at large.

3-The study will help to explore age differences.

4-The study will help to explore gender differences.

5-Interactive social networking enhances nurses to broaden their capacities of knowledge.

2. LITERATURE REVIEW

Past research studies have been conducted on the relationship between types of networking sites, social interactions and nurses perceptions. They verified that social interactions are related where some are not Lahti, M. Kahala, H. and Salminen (2017). WhatsApp is the most utilized social media, in addition to Twitter and Snapchat. Therefore, previous studies supported **H1**: for instance Spector, N. (2011). Nurses communicate on their patients, their employers, their

profession, and among themselves. Jennifer Jackson, Robert Fraser (2014) state that social media use for nurses can develop healthcare. Wilma K. Schroeder (2017) says that nurses can use social media to promote family health, reduce illness make relationships with families outside of clinic Chang C.et.al (2011) social media effect on patient safety and provide information. Mohammed .S(2018) nurses can enhance their nursing competence by obtaining information in real time interaction and Casella, E Mills, J & Usher, K. (2014). Nurses use social media into assessing, diagnosing, planning, implementing and evaluating care. **H1:** There is significant relationship between academic social interactions and nurses use social networking. **H2:** There is significant relationship between academic purpose and nurses use social networking. There are some studies supported this hypothesis H2. So, Hao & Gao (2017) , (Sinclair et. al 2015), (Rose,J 2012), Casella .et.al (2014), assessing, diagnosing, planning, implementing and evaluating care. Ross, J (2012). Nurses use to their jobs and clinical information, Mohammed .S(2018) enables registered nurses to enhance their nursing competence by obtaining evidence-based information in real time. Kakushi, L. E. & Evora,Y.D (2016) indicate that audios, videos, quizzes, animations, forums, guidance, support, discussions and research group. Ronal, P. et.al (2013) provide forums to share ideas and information and send questions and connect with others. Thus, previous studies have supported hypothesis of present study. **H3:** There is significant relationship between social networking and nurses gender difference. Therefore, the result was supported by Hafekamp, et.al. (2012), men and women have different motives regarding their SNS usage as well. However, the hypothesis of the present study is contradicted with result of Alsaqri, & Alkwiese .(2016). Gender is not statistically significant with the use of Social Networking Sites. Therefore, research studies have supported **H4:** There is significant relationship between social networking and nurses age difference (Thlwall, M, 2008). Gender has explained significant acceptance for technology. Hafekamp, N. Elimler, S. Papadkis, M. & Kruck, J . (2012). Women tend to use group names while men choose full-body shots. Finally, some previous studies have supported **H5:** There is a significant relationship between entertainment and nurses use social networking. This hypothesis is

the gap of this study because there is no previous research study supported it.

3. METHODOLOGY OF THE STUDY

3.1 Research Design

The data were collected by e-questionnaire. The respondents of the present study were selected by utilizing stratified technique random sampling. The Structural Equation Modelling (SEM) was employed to address the objectives of the present study. The quantitative descriptive research method involves the data in order to measure the attitudes, opinions towards a specific social event, and investigate the relationships numerically Sekaran & Bougie (2016).

3.2 Participants' Characteristics and Data Collection

3.2.1 The instrumentation

In order to test the research hypotheses and questions e-questionnaire which was translated to Arabic language and included the 5-point Likert scale with 1 = Strongly Disagree and 5 = Strongly Agree was developed. The e-questionnaire comprised 42 items which measured three major constructs namely: Entertainment, social interaction and social networking. The e-questionnaire was modified from Gupta & Bashir (2018). A pilot study was conducted with a group of nurses professional from different Sudanese public hospitals on 4th Dec 2019 – 21st April 2020 in order to find out the reliability of the e-questionnaire and the Cronbach Alpha index obtained as $\alpha = 0.968$ overall, with entertainment $\alpha = .888$, social interactions $\alpha = .828$ and social networking respectively. The e-questionnaire was attached to the respondents at 131 respondents who completed the e-questionnaire and demography factors are shown in table (1) below.

Table 1: Demographic Information of the Participants (N=131)

Variable	Scale	Frequencies (%)
Gender	Male	43.8
	Female	56.2
Age	19 -23years	15.7
	24- 28 years	32.0
	29 -33years	29.0
	34- 38 years	11.2
	Over 40years	12.1

3.2.2 Data Analysis

The data of this study were treated via Principal Component Analyses (PCA) with Varimax rotation and most of the loading of the items between 0.80 to 0.70 and items less than 0.40 loading were deleted and retain appropriate items. Structural Equation Modeling (SEM) was used in order to estimate the hypotheses. Version 16.0 of AMOS was employed; two ways were conducted: Firstly, test measurement model via Confirmatory Factor Analysis (CFA) to obtain reliability and validity of the items; in other words, to test the relationship between observed variables and latent variables. Secondly, a structural model was employed to test the relationship among latent variables.

3.2.3 Model Fit

The present study used the Analysis of Moment Structure (AMOS) Version 16 in order to estimate model fit by using Maximum Likelihood (ML). Davy & Savla (2010), Byrne (2010), Hair, et. al (2010) measure model fit indices through three types of models incremental model which includes these fit indices TLI > .90 close to 1, CFI and NFI > .90 AGFI close to zero, while absolute model measures separately and fit indices chi square value < 3, GFI zero to 1.0 and great value is accepted, RMSEA < 0.05 to 1.0 is acceptable fit . A poor fit of the model which encouraged the researcher to revise the model until figure out the fit model Kline (2010), Byrne (2010). In addition, related to parsimonious model the fit indices are Normed Chi square/degree of freedom and based on previous fit indices. The present study result showed a good model fit which is presented in Table (2) below.

Table 2: The Model Fit Indices.

Model fit indices	Values	Fit indices criteria
CMIN/DF	2.397	<3
CFI	0.942	>.90
GFI	0.954	>.90
TLI	0.919	>.90
RMSEA	0.065	<0.08

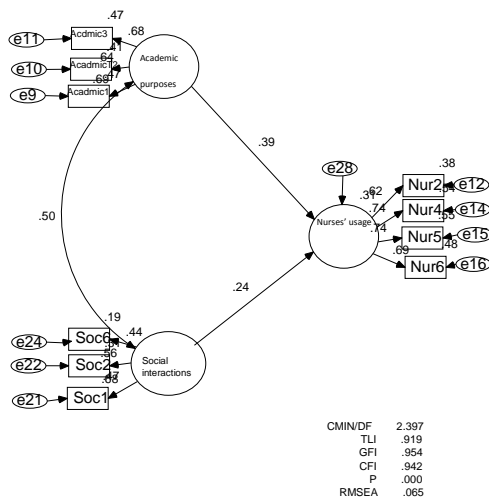


Figure 3: Full Fledge Model

4. DISCUSSION

The present study attempted to participate in the body of knowledge in terms of conceptualized model and there are three exogenous variables namely: Academic purposes, social interactions and entertainment and one endogenous variable which is nurses' usage. Mainly, the present study tested relationship between social networking in nursing discipline after measuring and revising the model one variable has been deleted because did satisfy statistical requirements this variable was entertainment. This study found out that hypothesis **H1**: There is significant relationship between academic social interactions and nurses' usage. This result indicates that whenever nurses interact they will be able to be benefitted within any academic related to nursing discipline such as terms and course so forth. Furthermore, this finding of the present study is

supported by previous research studies such as Hao & Gao (2017) , Sinclair et. al .(2015), Rose, J (2012) and Casella .et.al (2014). The result showed that usage of social networking for academic purposes in terms of nursing might lead nurses to be effective and interactive with the nurses and their colleagues or managers. This result might attract nurses interact academically via social networking and alleviate and continue in pursuing their academic disciplines by studying a new term assessing contact with a short course.

H2: There is significant relationship between academic purpose and nurses' perceptions. This result has been supported by previous research studies for instance Ronal, P et al (2013), Hao & Gao (2017) , (Sinclair et. al 2015), (Rose, J 2012), Casella et al (2014). Whereas, in the present there were variables measured indirect which age and gender. So the result showed that there was a relationship between nurses perceptions who use social networking gender and age this result supported by previous research studies, the result meant that nurses between 19 - 28 years old specifically like to use social networking for social interaction and for academic purposes. While gender variable has been tested in this study and found out that there was relationship between gender and nurses perceptions for using social networking and this result has been supported by previous studies for example, Kakushi & Evora (2016), Thlwall,M(2008), (Hafekamp et.al 2012), Precott,J,wilson,s & Becket,G. (2013). Thus, the study showed that male like to use networking in nursing discipline.

5. LIMITATIONS AND RECOMMENDATIONS

The present study was conducted among nurses in the public hospitals in Sudan on 4th December 2019- 21st April 2020, the limitations of the study were: The respondents who were responded to e-questionnaire in the public hospitals in Khartoum city. In addition, the present study tested only two factors of the model (academic purposes and social interactions) whereby the third variable which was entertainment display in the final analysis because it showed low statistical fit. Therefore, the findings might not be generalized for nursing discipline because they were restricted in the public hospitals and marginalized private sector hospitals, low

responses from the females and even over all responses were 131 nurse. Further research studies should test in the future social networking in different disciplines such pure science , business management and engineering discipline. Researchers should be concerned with positive feedback throughout their delivered and accessed to social networking, and also take into account that nurses should invigorate their colleagues during working hours use social networking for further enquiries.

6. CONCLUSION

Social networking is widely used in nursing discipline, particularly academic purposes, entertainment and social interactions variables. Social networking and nurses usage were carried out from quantitative research approach. The present study tested the relationship between social networking and nursing discipline. The present study showed two exogenous variables namely: Academic purposes and social interactions, while endogenous variable was not tested. However, age and gender were tested within the original conceptual model of the present study, which was adapted from study of Gupta & Basir (2018). The result showed that academic purposes and social interactions were positively and significantly related to nurses usage social networking within nursing discipline, specifically nurses who work in public hospitals in Sudan – Khartoum city.

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