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The relationship between effective communication and interprofessional collaboration for patient safety culture in hospitals of Maldives

Aishath Selna

Postgraduate Centre, Management and Science University, 40100 Shah Alam, Selangor

Dr. Zulhabri Othman

Postgraduate Centre, Management and Science University, 40100 Shah Alam, Selangor

Dr. Jacqueline Tham

Postgraduate Centre, Management and Science University, 40100 Shah Alam, Selangor

Dr. Adam Khaleel Yoosuf

ADK Hospital, Department of Pathology, Sosun Magu, Male', Republic of Maldives.

Abstract---Introduction: Interprofessional collaboration (IPC) has become vital components of well-functioning healthcare organizations and building collaborative work among health care professionals (HCPs) has shown an improvement in patient care and safety outcomes. Nurses have been described as the bridge between HCPs for patient safety by building interactive relationships, through the process of effective communication and understanding. The general aim of this study is to assess nurses' perceptions regarding effective communication for interprofessional collaboration, and how it affects patient safety culture (PSC) in hospitals Maldives. Methodology: A cross sectional institutions-based study was conducted among nurses working in different departments of two hospitals in Central Male 'area, in Maldives. A Simple random sampling technique was used with 292 participants. Results: 292 questionnaires (84.3%) out of 363 were turned in. The findings from the multiple regression shows that the resultant values were statistically significant for the dimensions: Communication and Interprofessional Collaboration, $R^2 = 0.039$, $F(2, 303) = 6.108$, ($p < 0.015$) for Patient Safety Culture. Conclusion:

Effective communication collaborating within multidisciplinary teams can enhance patient safety but the concepts regarding interprofessional collaboration and Patient Safety Culture may be new to nurses and further understanding of it would be required and with the help of the findings from the study it may pave the way to achieve it. Implications: The study will help to formulate strategies in continuing, sustaining and monitoring of how effective communication in a collaborative environment is carried out for promoting a patient safety culture.

Keywords---effective communication, interprofessional collaboration, patient safety culture, nurses, Maldives.

Introduction

Interprofessional collaboration (IPC) and effective communication has become vital components of well-functioning healthcare organizations and also in public health, where collaboration has been studied in terms of understanding the relationships within the multidisciplinary teams in the organization (Karam, Brault, Durme, & Macq, 2018; Kroning & Annunziato, 2020). Karam et al., (2018) further explains that in health and social literature there is no certain definition for IPC, however it can be regarded as: *“two or more healthcare professionals who have specific roles, perform interdependent tasks, and share a common goal; a negotiated agreement which values expertise and contribution that each individual brings to patient care”*. Nurses have been described as being the bridge for interaction and building relationship with the environment to attain health and wellbeing for patients; and nurses should be aware of how to interact with people including healthcare professionals (HCPs), through the process of communication and understanding (Adib-Hajbaghery & Tahmouresi, 2018).

It is understood that medical errors are inevitable and during patient care delivery HCPs come across insignificant errors which arise due to organizational system failures such as staff challenges or equipment failures and all these can be resolved if there is a culture where the HCPs engage in effective communication collaborating with multidisciplinary teams (Linda & Nancy, 2019). According to Robinson (2020), in healthcare setting the leading cause of errors are due to failure of IPC and effective communication as ineffective communication among the care giving team has led to treatment delays, omission of care preventable medical errors as well as readmission of patients.

Communication is required not only between different professionals but is also necessary between staff members and patients or relatives, which forms a significant part of clinical routines each day and if predominantly medical terminology is being used when communicating with them, then important information may be lost resulting in reduced patient safety (PS) (Ledema, et al., 2019). Another researcher highlighted the importance of communication in collaboration as open communication between HCPs to resolve unclear issues which may arise to due to poor communication such as *“If something bothered you in the team, or in the care, or in the physician-nurse teamwork, you could tell*

about it, if something for example annoys you.” (Kangas, Jaatinen, Metso, & Tuula-Maria, 2020). Various errors of and barriers, to effective communication have been identified within clinical areas. Errors, including the omission of important information depict suboptimal communication behaviors, and barriers are those that obstruct engagement in effective communication behaviors which include organizational and interpersonal factors, such as rapidly changing healthcare teams, work overload, lack of mutual respect, and absence of feeling as part of the team, lack of self-confidence, and lack of training (Ledema, et al., 2019).

According to a research done, there are lots of benefits in collaborating in healthcare and shows evidences that support that building collaborative work among HCPs has shown an improvement in patient care and safety outcomes, helps to improve skills and knowledge of professionals, reinforces good and effective communication, leading to continuous development in decision making which leads to better and more cost-effective healthcare systems which are beneficial for patients (Kwen, Signe, MacPella, Mbibeh, & Cockburn, 2018). Researches done by several authors have discovered that studies done in various contexts to find out the impact on PS has identified reductions in the rates of medical errors when IPC is strong and teams are trained to work efficiently, cooperatively and safely (Brandis, 2017; Busan, Moll, & Duits, 2017; Zúñiga, 2019).

IPC is becoming one of the most important cultures of healthcare and also for effective collaborative interactions from clinicians’ trust, teamwork, respect, common goals, shared power, leadership, and governance are important factors (Fields, 2019). Another researcher has also stated that IPC is becoming the new culture of healthcare. Patients benefit from a diverse, multidisciplinary approach that encompasses specialized expertise to suit patient needs. Successful collaborative efforts from clinicians should involve core concepts including trust, teamwork, respect, common goals, shared power, leadership, and governance (Didier, et al., 2017). Even though IPC is recognized as a complex process the goal of IPC is to enable optimal outcomes, therefore coordination and cooperation among HCPs, especially between physicians and nurses are the key to ensuring patient safety and quality care which is defined as preventing harm due to healthcare related procedures (Didier, et al., 2017).

A joint venture of health care Interprofessional Education (IPE) has been an ongoing process for the past 60 years in United Kingdom, Canada, and more recently in the United States and has inspired international health care and educational leadership agencies as well as professional medicine and nursing leaders because IPE plays an important role in delivery of quality patient care with positive patient safety outcomes and enhancing a culture of safety (Cerese, 2018). In the year 1986, the International Nuclear Safety Advisory Group recognized the importance of having a safety culture at work place after the Chernobyl nuclear accident and the investigation brought it to light that a poor safety culture was the main root cause of the incidence but in the 2000s recognition to the importance of safety culture was brought to notice by the organizations (Danielsson , 2018). Studies done on IPC within the healthcare setting often lacks conceptual and theoretical backing, and so, finding out how

professionals contribute to IPC requires more research to be done for empirical evidence (Schot, Tummers, & Noordegraaf, 2019).

Interprofessional teams with effective collaboration and communication is the key to sustainable quality and safe care delivery to patients, lack of these may lead to potential adverse events and patient harm. There is also limited evidence of published similar research within the Maldives. Therefore, the general aim of this research is to assess the relationship between effective communication (EC) and interprofessional collaboration (IPC) satisfaction, for patient safety culture (PSC) in hospitals of Maldives. This research paper will try to address the critical knowledge gap regarding the relationship of IPC and effective communication, and to find out how these factors contribute to promoting a PSC.

Methodology

This is a cross sectional institutions-based study conducted among nurses working in different departments of two hospitals in Central Male 'area, in Maldives, providing tertiary care services to the residents of Maldives and simple random sampling method was used for this study. From the above-mentioned hospitals, 363 nurses were invited to participate in this study, however, after data cleaning, only 292 data sets were used in this survey with a response rate of 80.4%. The instrument used for this study is a combination of Hospital Survey on Patient Safety Culture (HSOPSC) which is a hospital-based survey questionnaire sponsored by the Agency for Healthcare Research and Quality (AHRQ). This questionnaire was used for the variables, communication, and patient safety culture in this research and for the variable, interprofessional collaboration was measured based on conceptualization of interdisciplinary collaboration among different healthcare professionals by D'Amour cited by Hamlan 2015, and both questionnaires were adapted for this research.

The Hypothesis for this study to be proven are whether there is a relationship between Communication (effective communication) and PSC (H1), and whether there is a relationship between IPC and PSC (H2). The National Health Research Council (NHRC/2020/007) of Ministry of Health, Maldives approved the study prior to the research conduction. In addition to this approval was obtained from the Research Management Centre, Management and Science University, Malaysia (MSU-RMC-02/FR01/12/L1/001). Statistical Package for Social Sciences (SPSS version 25) program was used for data analysis. Descriptive analysis was done for the demographic characteristics of the participants. Data were analyzed for frequencies, and percentage. The reliability was checked for all the variables and in addition, Pearson Correlation and Multiple regression analysis was done to test the hypothesis. Internal Consistency was checked for each variable using Cronbach's alpha, it ranged from 0.70 to 0.919 and the overall Cronbach's alpha was 0.849, indicating that variables did meet the internal consistency (see Table:II)

Results

In this study nurses participated from two tertiary care hospitals of Maldives. Table 1 shows the demographic characteristics of the participants. From the total

292 nurses 248 (84.9%) were female. The age group of 26 to 35 years old with 179 nurses (61.3%) had the highest percentage among the age group. Majority of the nurses had a bachelor's degree (58.2%) and were employed as Registered nurses (77.1%).

Table I
Demographic data of the participants

Survey response rate		
Total Participants invited		n= 363
Total eligible response received	n(samples) 306	Percent 84.3%
Total eligible data for analysis	292	80.4%
	Frequency	Percent
Gender		
Female	248	84.9
Male	44	15.1
Total	292	100.0
Age		
Under 25 years	28	9.6
26 - 35 years	179	61.3
36 - 45 years	69	23.6
46 - 55 years	16	5.5
Total	292	100.0
Education		
Advance Certificate	2	0.7
Diploma level	96	32.9
Bachelor's Degree level	170	58.2
Post Graduate Diploma level	9	3.1
Masters level	15	5.1
Total	292	100.0
Designation		
Enrolled nurse	10	3.4
Registered nurse	225	77.1
Clinical nurse	19	6.5
Clinical head nurse	22	7.5
Other	16	5.5
Total	292	100.0

Table II
Reliability test for the variables

Variable	Cronbach's Alpha	Items
Effective Communication (IV)	0.71	8
Interprofessional Collaboration (IV)	0.92	9

Patient Safety Culture (DV)	0.70	7
Overall	0.85	24

The results for the reliability analysis are presented above in Table :2
The reliability results are within the acceptable range (Cronbach's alpha > 0.7).

Data Analysis using Multiple linear regression (Model Fit Summary)

Table III
Communication and IPC in relation to PSC

Multiple linear regression analysis was carried out to find the statistical significance among the variables for the study.

Model Selection					Unstandardized Coefficients	Std. Error	Standardized Coefficients	Sig.
Model	R	R ²	F	df	B		Beta	
1	0.175 ^a	0.031	4.548	2	Constant	2.849		0.000
					Unit	0.095	0.211	0.004
					Communication	0.274	-0.151	0.015
					Interprofessional Communication	-0.181		

Dependent Variable: PSC

Multiple linear regression analysis was carried out to calculate and predict the impact of Communication and Interprofessional Collaboration on Patient Safety Culture. The Model- 1, shows that the derived values were statistically significant for the independent variables, Communication and Interprofessional Collaboration, $R^2 = 0.031$, $F(2, 289) = 4.548$, ($p < 0.015$). The statistical hypothesis test for the p-value is:

- H_{0a} : There is no relationship between effective Communication and Patient Safety Culture
- H_{1a} : There is a relationship between effective Communication and Patient Safety Culture
- H_{0b} : There is no relationship between IPC and PSC
- H_{1b} : There is a relationship between IPC and PSC

The P value from the coefficients table shows that the both the independent variables have significant effect on the IPC ($p < .05$), but the beta values is very low, indicating that both the independent variables have an extremely limited explanatory power on the change in PSC.

Discussion

This research study is the first comprehensive study done in Maldives to assess the perceptions of effective communication and IPC and how these factors contribute to PSC among nurses in hospitals of Maldives. Nurses play a vital role in advocating for patient safety, which is about minimizing preventable adverse events and an effective patient safety culture is vital to achieve this phenomenon (Karademirler & Manav, 2020). Therefore, this study was based on finding whether there is a relationship between effective communication and IPC to promote a PSC from nurses' perspective. The results from the study showed a positive effect on communication for patient safety and even though the effect of contribution was low. The results from this study expresses that IPC for PSC was a negative effect and the contribution was low thus, expressing that IPC is negatively impacting PSC in the hospitals of Maldives.

The demographic factors which were included in this study were not evaluated on whether the factors such as gender, age, education level and designation, had any impact on patient safety culture. And so this may need to be assessed as a future research area. The results of the first Hypothesis (H1), there is a relationship between communication and PSC was accepted ($p < 0.05$) This result was consistent with earlier similar studies, and therefore even though the impact is low in our healthcare context, which is mostly likely due to the setup of current healthcare facilities and services within our community still effective communication plays an important role in promoting a PSC.

Literature has shown that communication is vital for patient safety culture, and it should not be restricted to only information sharing but should be about communicating effectively with respect, empathy, honesty, and collaboration among the HCPs (Ledema, et al., 2019). Another researcher enlightens those studies have shown up to about 80% of all preventable adverse events, occur due to poor communication within clinical settings where, such events that affect patient safety, are caused by unsafe healthcare processes, rather than by the medical condition of the patient (Lippke, et al., 2019). El-Sherbiny, Ibrahim and Abdel-Wahed (2020) states that from all the dimensions for the patient safety culture the lowest results were for communication. This proves that effective communication is one of the main factors for a patient safety culture. Effective communication is an important factor which HCPs need to embrace for the positive outcomes in patient care (Bailey, 2019). Another researcher supports the finding from this study by stating that even informal communication channels established by professionals to collaborate for common care for a patient has improved the quality of care (Schot, Tummers, & Noordegraaf, 2019).

The second Hypothesis (H2) is finding about the relationship between IPC and PSC. The result in this study supports the alternate hypothesis. In most of the studies done Interprofessional collaboration in health care setting in taken as Nurse -physician association, according to Dinius, et al., 2020 and the collaboration among them had no impact on patient safety outcomes. Another researcher enlightens on this point stating that to the best of the authors knowledge the majority of the previous studies were also based on the relationship of IPC between physicians and nurses thus, stating that IPC

evaluation among other professionals were neglected (Maghsoudi, Carson-Pereira, & Lara, 2020) Positive patient safety outcomes is the main concept of a PSC and to achieve this health care professionals are encouraged to professionally collaborate as teams for achieving this goal (Smilski & Parrott, *Interprofessional Competency Frameworks in Education*, 2019).

HCPs work in a familiar environment to achieve a common goal, even then there were certain boundaries which prevented information sharing among them and before the interprofessional collaboration care emerged, the HCPs were working in a “culture of silos” which lead to poor patient outcomes (Bachynsky, 2020). We not only see siloed thinking at hierarchy level but in micro levels, as it is embedded in the organizational culture in health care organizations (Girard, 2019). This silos-based policy was not only harmful to patients but also to HCPs because this will lead to a blame culture (Bachynsky, 2020). Furthermore, to advocate a patient safety culture most of the health care organizations has introduced policies where patient safety trainings and interprofessional education should be encouraged among HCPs (Bottcher, et al., 2019; Bachynsky, 2020).

In healthcare organizations multi- disciplines such as medicine, nursing, allied health professionals and other health care professionals rely on effective collaboration to act on safe care plans for patients (Bailey, 2019). Bailey (2019) further explained that in healthcare organizations minimal IPC exists and disciplines work in their scope of practice. Pomare (2020), explains that, although some of the studies also show that while IPC improves various factors of patient safety, the possible contradictions in findings may be due to variation in contexts, ultimately suggesting that using qualitative and mixed methods of study on IPC will be help clear any contradictions.

According to a study done in Canada in 2019 it has been highlighted that a major factor which contribute to patient safety and safe care of patients are communication and that communication during collaboration in health care systems does have a great impact on patient safety and safe care outcomes (Fatahi, 2019). Even in this study the effect of effective communication even though significant the impact is very low and IPC is expressed as a negative component for PSC. Researchers have notified that main cause (Fields, 2019) for adverse events in the healthcare is mostly due to insufficient communication among the multiple disciplines of health care professionals, because working in a health care setting where interprofessional collaboration is vital requires a team work and willingness to share roles and responsibilities and work together to achieve the same goal (Bond-Banard & Fletcher, 2018; Fatahi, 2019).

As this study was based on finding about the communication process within the multi-professional teams and how HCPs can engage together for a common care goal for safer care for patients, which is the basic rule of a culture of safety. It is highly recommended to do further in-depth understanding on what are the other factors which may hinder in sustaining a patient safety culture in health care organizations of Maldives. Future research is needed to be done in the healthcare organizations to close this gap. This research study did have limitations such as including only nurses in the study, as interprofessional collaboration should be

practiced among all health care providers. As this is a cross sectional study (data taken at one point) at the time of data collection according to how the respondents perceive the knowledge can be included. Future research needs to be done as a longitudinal study on the factors affecting patient safety culture which may help in getting more knowledge about the existing culture of safety in the healthcare organizations.

Conclusion

Nurses perceive that communication is important for a PSC and also that effective communication among nurses as well as through IPC would contribute to a PSC. But nurses' perception on communication among nurses within their practice is that existing communication pathways seems to be ineffective among themselves, thus in IPC, good communication pathways need to be established within multidisciplinary teams. Subsequently, they believe that existing communication pathways does not contribute much to PSC and therefore it needs to be improved. Nurses believe that they are doing well in collaborating among different disciplines, but they do still feel their mistakes are often held against them, and so they adopt to a "culture of silence". To achieve the goal of sustaining a PSC, there needs to be patient safety training and IPE. Furthermore, error reporting needs to be encouraged and finding the root cause needs to be strengthened. Nurses should be encouraged to speak up for what is right for the patient care and so there is a need to empower nurses for the safety of patients.

Recommendations

To establish PSC within healthcare facilities, it is important to encourage HCPs to learn about interprofessional education and importance of patient safety. Assessing the level of existing culture of safety at least once a year within organizations would help find additional gaps which may need addressing. To minimize adverse events, it is important to encourage error reporting and learning from errors and for that a transparent error reporting system needs to be in place in all health care organizations. Nurses need to voice out the concerns regarding patient safety issues, to find solutions with effective communication, and in collaboration with other HCPs. This study assesses nursing perspectives within two hospitals and therefore does not include the perceptions of other HCPs such as physicians or other hospitals, and therefore further research accommodating other HCPs as well as other hospitals would greatly add to the available knowledge. Future research could also be done to include additional factors that can contribute to communication gaps, such as HCP burnouts, patient-nurse ratios, job satisfaction, leadership, and management support.

Implications for the study

Implications to healthcare organizations- This paper have explained the importance of establishing a patient safety culture, enhancing effective communication as well as interprofessional collaboration in health care organizations. Thus, this study will help to establish policies and guidelines for continuing, sustaining and monitoring of effective communication as well as how an interprofessional collaborative environment can create a culture of safety.

Implications for future research- Future research could also be done to include additional factors that can contribute to communication and collaboration gaps, such as HCP burnouts, patient-nurse ratios, job satisfaction, leadership while also whether IPE is a contributing factor as well as management support.

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