

# Assessing the Impact of Demographic Factors on Interprofessional Collaboration for Patient Safety Culture among Nurses in Hospitals of Maldives

Aishath Selna<sup>1</sup>, Dr. Zulhabri-Othman<sup>2</sup>, Dr. Jacqueline Tham<sup>3</sup>, Dr. Byju K.P.M<sup>4</sup>, Dr Adam Khaleel Yoosuf<sup>5</sup>

<sup>1</sup>Postgraduate Centre, Management and Science University, 40100 Shah Alam, Selangor

<sup>2</sup>Postgraduate Centre, Management and Science University, 40100 Shah Alam, Selangor

<sup>3</sup>Postgraduate Centre, Management and Science University, 40100 Shah Alam, Selangor

<sup>4</sup>Villa College, Male, Republic of Maldives

<sup>5</sup>ADK Hospital, Male, Republic of Maldives

Corresponding Author: Aishath Selna & Mail Id: [ashelna2525@gmail.com](mailto:ashelna2525@gmail.com)

## ABSTRACT

**Introduction:** The aimed to assess the impact of demographic factors on interprofessional collaboration (IPC) for patient safety culture (PSC) in hospitals of Maldives.

**Materials and Methods:** A cross sectional institutions-based study was conducted from April to May 2020 among nurses working in hospitals of Central Male area, in Maldives. Simple random sampling method was used with 306 participants. The survey instrument used for this study is an adapted version of Hospital Survey on Patient Safety Culture (HSOPSC) and conceptualization of interdisciplinary collaboration among different healthcare professionals.

**Results:** The findings from the study shows that from the nine Demographic Factor dimensions, the derived values were statistically significant for the dimensions Unit Duration and Professional Duration for PSC. The results show that the derived values were statistically significant for the dimensions Work area, Workhours/ week, and Gender for IPC and the derived values were statistically significant for IPC, for PSC.

**Conclusion:** This study paves way to encourage staff retention which in time will empower the nurses to effectively collaborate with other HCPs and train subordinates to reduce clinical rotations especially in critical areas which will ultimately improve patient care.

**Keywords:** Patient Safety Culture, Interprofessional Collaboration, Demographic Factors, Nurses, and Maldives.

## INTRODUCTION

Adverse events are inevitable and patient safety, which is defined as prevention of harm which may occur due to preventable adverse events is a grave public health issue which involves health care professionals providing care to patients [15]. Nurses play an important role in providing sustainable safe and quality care for patients, to achieve this a patient safety culture is vital [10].) However, even though there has been implementation of several strategies, the core strategy to improve patient safety was establishing a patient safety culture (PSC) [3].

Safety culture is described in literature as attitudes, shared values behaviors and skills that contribute to quality and safe care delivery for patients and to learn from the incidences for taking corrective actions timely [19]. Establishing a patient safety culture is the first

step to minimize adverse events and promote patient safety with quality care [3]. Thus, safety culture analysis can be the starting point for the action taken to bring out a change in minimizing incidence occurrence which in every healthcare institution is poorly envisioned [19]. Patient safety experts states that promoting a culture of safety and avoiding a “blame and shame” culture that punishes HCPs for their mistakes should be [11].

Patient safety culture requires strong leadership, prioritizing safety above financial and operational goals, which encourages proper identification, communication and resolution of safety issues and provides appropriate resources, structure, and accountability to maintain effective safety systems [9]. Hence, implementation of a strong PSC is to ensure effective strategies that are applied reliably to all staff

and patients which should be aligned to the local culture [22].

To counter the problem, in literature it was agreed that working with multidisciplinary teams (interprofessional collaboration) involves handover processes with eventful communication failures due to working conditions with multiple interruptions and time constrains which is difficult to control and may lead to adverse events [3]. Thus, many approaches have been made to improve patient safety such as developing National Patient Safety Goals [11]. Other strategies involve encouraging open communication among the HCPs, Transparency and error reporting, education, and training on safety practices [23].

Similarly, a study done in Iran in the year 2018 also showed that no significant relationship was found between error reporting and PSC, but a significant result was shown between age, gender, job category and the type of health care facility for PSC [18]. Nurses position, specialty and work area are also considered as factors which may contribute to PSC [6]. There are several factors which contribute to the establishing of a PSC, one important factor is timely reporting of incidences which can be taken as a learning experience to overcome the possibilities and find solutions to minimize or mitigate these causes [24]. For instance, hours work per week was a significant contributor to PSC [15]. Prolonged working hours will tend to relate to tiredness and may result in less attention been given to the patient, this may be an indirect cause for increase in incidences, therefore better distribution of HCPs in areas where there is need and proper working hours may help to minimize incidences with may occur within the health care facilities [16].

According to Okuyama et al., (2019) the professional length of experience in the field of work can positively impact the results of incidences reported, as well as proper communication can be the key for understanding why such incidences occur and how to mitigate it and increase the level of quality care given to the patients. Openly communicating without fear of blame and that the staff will be listened and treat with understanding regarding the occurrence of an error of commission or error of omission was supported by Farokhzadian et al. (2018) and Okuyama et al., (2019) emphasizing on the aspect that communication is causally related to the level of quality of care provided to the patients in healthcare institutes. Establishing a culture of effective communication among HCPs will encourage them to lean on the organizational support and act promptly to resolve

the problems and will feel confident to try to overcome the fear of blame and report incidences and take corrective measure to overcome it [6].

However, in literature it has been seen that there are lots of factors which helps in contributing to promote patient safety culture such as error reporting and feedback, effective communication, the demographic characteristics like experience, work area, age, and educational background [16]. A survey done in a healthcare institute in Maldives, only 32% of HCPs believe that effective communication is present and 68% believe that there is a blame culture [17]). Hence in this respect nurses experience and their leadership skills can guide the health care institutes to develop strategies to maintain a successful safety culture for patients [7,16]. Another research supports by stating that despite of other influential factors like communication, teamwork, error reporting, interprofessional collaboration, job position and education levels are significant dimensions for patient safety culture [5,12].

A study done in China explains that demographic factors had significance differences for patient safety culture, thus applying this in other developing countries may find it useful to close the gap of finding out the impact of demographic characteristics on patient safety culture and provides an area for further investigation [12]. Another researcher highlights that nurses with different gender, age, professional duration and designation may have different perspectives regarding IPC and PSC, hence it will be helpful to further explore how nurses with different demographic factors may effect PSC [4].

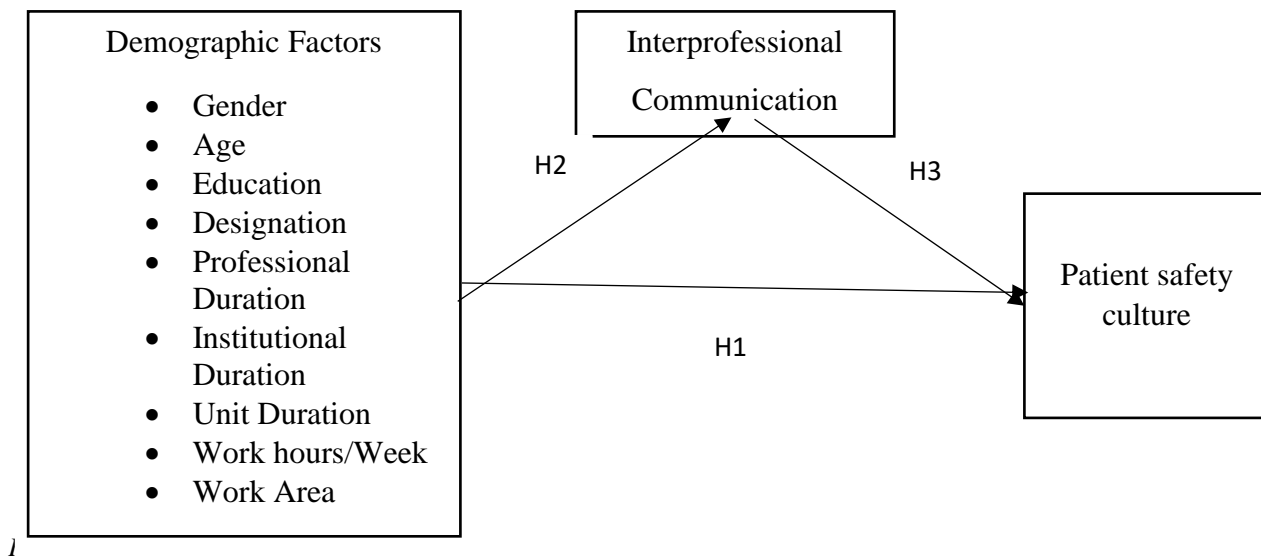
The lack of studies which explores factors affecting patient safety such as organizational factors affecting patient safety culture emphasizes research to be conducted in these areas [14]. This study would like to find out whether demographic characteristics has any relation in providing a patient safety culture in the healthcare institutions. Hence, to enlighten more into the issue this research is aimed to assess the impact of demographic factors on interprofessional collaboration for patient safety culture.

The conceptual framework used for this research is based on finding out whether IPC plays any role between demographic factors and PSC among nurses in the hospitals of Maldives.

Independent Variables

Mediating Variable

Dependent variable



The Hypothesis for this study to be proven are whether there is a relationship between the determinants of the Demographic Factors and PSC (H1), whether there is a relationship between Demographic Factors and IPC (H2) and whether there is a relationship between IPC and PSC (H3)

**MATERIALS AND METHOD**

A cross sectional institutions-based study was conducted from April 2020 to May 2020, among nurses working in different departments of two hospitals in Central Male ‘area, in Maldives, namely ADK Hospital and Indira Gandhi Memorial Hospital. The two hospitals, which are known to be the two largest and the oldest serving hospitals in Maldives providing tertiary care services to the residents of Maldives and simple random sampling method was used for this study.

**Study instrument**

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). The demographic factors and PSC were assessed using AHRQ questionnaire tool which was adapted to this study. Interprofessional Collaboration was measured based on a conceptualization of interdisciplinary collaboration among different healthcare professionals by D’Amour [8].

This scale measures healthcare professionals’ perceptions about inter-professional collaboration. The two items in the survey questionnaire are measured using Likert scales. The Likert scale consists of a number of statements which expresses either favorable or unfavorable attitude towards the given purpose which the participant is asked to respond for the Likert scale of 1-5 which is 1) Strongly disagree, (2) Disagree, (3) Neither agree nor disagree (4) Agree, (5) Strongly agree.

**Data Collection and ethical consideration**

After obtaining ethics from National Health Research Council (NHRC/2020/007) of Ministry of Health, Maldives. Approval was obtained from the National Health Academy (B(NHA)/MISC/2019/136) of IGMH and from ADK Hospital (ADK/ADM/MISC/19/269). Additionally, approval was obtained from the Research Management Centre, Management and Science University, Malaysia (MSU-RMC-02/FR01/12/L1/001). Participation was voluntary and an anonymous self-reported google form questionnaire was sent through viber, Telegram, WhatsApp, and email. Participants were informed about the purpose of the study and all of the data were placed in a locked cabinet to ensure that data confidentiality was maintained.

**Data Analysis**

The variables for this research are Demographic Factors, IPC, and PSC. Statistical Package for Social Sciences

(SPSS) program was used for data analysis. Multiple linear regression was used to determine the statistical significance among the variables Demographic Factors and Patient Safety Culture and Post Hoc analysis using One-way ANOVA, Tukey’s test was done to understand how different groups differ with the chosen variable. The level of significance was set at 0.05.

**RESULTS**

**Characteristics of participants**

Total 363 nurses were invited to participate in this study, however, only 306 were able to participate in this survey with a response rate of 84.3% and after data cleaning only 292 data was used for this study with a response rate of 80.4%.

The demographic data for this study shows majority of females 84.9% (n =248) of the participants those between the age 26-35 years with 61.3% (n=179). Regarding Education level, 58.2% (n=170) had a bachelor’s degree in nursing and 77.1 (n=228)) are Registered nurses working in the hospitals. Profession duration 30.1% (n=88) with 6-10 years of experience and 28.4% (n=83) with 1-5 years of experience. Working hours per week as 40-59 hours 85.3%(n=249).

**Data Analysis using Multiple linear regression (Model Fit Summary)**

*Table1: Demographic Factors in relation to Patient Safety Culture*

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

**Model Selection**

Model	R	R <sup>2</sup>	F	df	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	Sig.
1	0.151 <sup>a</sup>	0.023	7.075	1	Constant 22.043	0.628		0.000
Residual =304					Unit Duration 0.639	0.240	0.151	0.008
2	0.197 <sup>b</sup>	0.039	6.108		Constant 22.784	0.706		0.000
Residual =303				2	Unit Duration 1.140	0.327	0.158	0.001
					Professional Duration -0.623	0.277	0.151	0.025

Dependent Variable: PSC

- a. Predictors: (Constant), Unit Duration
- b. Predictors: (Constant), Unit Duration, Professional Duration

*Excluded predictors are Gender, Age, Designation, Education, Professional Duration, Work hours/ Week and Work area.*

Multiple linear regression analysis was carried out to calculate and predict the impact of Demographic Factors on Patient Safety Culture. Using The model of Demographic Factors, to predict patient safety culture (Model 1), shows that the derived values were statistically significant for the dimension Unit Duration, R<sup>2</sup> = 0.023, F (1, 304) = 7.075, (p < 0.0001).

(Model 2), shows that the derived values were statistically significant for the dimensions Unit Duration and Professional Duration, R<sup>2</sup> = 0.039, F (2, 303) = 6.108, (p < 0.0001).

The statistical hypothesis test for the p-value is:

- H<sub>0a</sub>: There is no relationship between Unit Duration and Patient Safety Culture
- H<sub>1a</sub>: There is a relationship between Unit Duration and Patient Safety Culture

H<sub>0b</sub>: There is no relationship between Professional Duration and Patient Safety Culture  
 H<sub>1b</sub>: There is a relationship between Professional Duration and Patient Safety Culture

This shows that both the independent variables have an extremely limited explanatory power on the change in 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 low.

Model 2 with the demographic factors (Unit Duration and Professional Duration) explained 19.7 %, of the variance in the Patient Safety Culture as the main variable.

**Data Analysis using Multiple linear regression (Model Fit Summary)**

*Table 2: Demographic Factors in relation to Interprofessional Collaboration*

Model Selection								
					Unstandardized Coefficients	Standardized Coefficients		
Model	R	R <sup>2</sup>	F	df1	B	Std. Error	Beta	Sig.
1	0.186 <sup>a</sup>	0.034	10.845	1	Constant 35.213.043	0.823		0.000
Residual =304					Work area -0.511	0.155	-0.186	0.001
2	0.234 <sup>b</sup>	0.055	8.776		Constant 28.984	2.574		0.000
Residual =303					Work area -0.492	0.154	-0.179	0.002
					Work hours/week 2.088	0.818	0.143	0.011
3	0.266 <sup>b</sup>	0.071	7.650		Constant 26.491	2.782		0.000
Residual =302					Work area -0.478	0.153	-0.174	0.002
					Work hours/week 1.927	0.816	0.132	0.019
					Gender 2.541	1.119	0.127	0.024

Dependent Variable: IPC

- a. Predictors: (Constant), Work Area
- b. Predictors: (Constant), Work Area, Work hours/ week
- c. Predictors: (Constant), Work Area, Work hours/ week, Gender

*Excluded predictors are Age, Designation, Education, Professional Duration, Institutional Duration and, Unit Duration*

Factors on Patient Safety Culture. Using The model of Demographic Factors, to predict patient safety culture (Model 1), shows that the derived values were statistically significant for the dimension Work area, R<sup>2</sup> = 0.034, F (1, 304) = 10.075, (p < 0.0001).

Multiple linear regression analysis was carried out to calculate and predict the impact of Demographic

(Model 2), shows that the derived values were statistically significant for the dimensions Work area and Workhours/ week,  $R^2 = 0.055$ ,  $F (2, 303) = 8.776$ , ( $p < 0.0001$ ).

(Model 3), shows that the derived values were statistically significant for the dimensions Work area, Workhours/ week, and Gender,  $R^2 = 0.071$ ,  $F (3, 302) = 7.650$ , ( $p < 0.0001$ ).

The statistical hypothesis test for the p-value is:

$H_{0c}$ : There is no relationship between Work area and Interprofessional Collaboration

$H_{2a}$ : There is a relationship between Work area and Interprofessional Collaboration

$H_{0d}$ : There is no relationship between Work hours/ week and Interprofessional Collaboration  $H_{2b}$ : There

is a relationship between Work hours/ week and Interprofessional Collaboration

$H_{0e}$ : There is no relationship between Gender and Interprofessional Collaboration

$H_{2c}$ : There is a relationship between Gender and Interprofessional Collaboration

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 low.

This shows that both the independent variables have an extremely limited explanatory power on the change in IPC.

Model 3 with the demographic factors (Gender, Work hours/ week and work area) explained 26.6%, of the variance in the Interprofessional Collaboration.

**Data Analysis using Linear regression**

*Table 3: Patient Safety Culture in relation to Interprofessional Collaboration*

Model Selection					Unstandardized Coefficients	Standardized Coefficients	Sig.
Model	R	R <sup>2</sup>	F	df	B	Std. Error	Beta
1	0.055 <sup>a</sup>	0.023	17.697	1	Constant 2.931	0.140	
					IPC 0.158	0.038	0.235
							0.000

Dependent Variable: PSC

a. Predictors: (Constant), IPC

Linear regression analysis was carried out to calculate and predict the impact of Interprofessional Collaboration (IPC) on Patient Safety Culture (PSC). Using The model of IPC, to predict PSC (Model 1), shows that the derived values were statistically significant for the IPC,  $R^2 = 0.055$ ,  $F (1, 304) = 17.697$ , ( $p < 0.0001$ ).

The statistical hypothesis test for the p-value is:

$H_{0a}$ : There is no relationship between Interprofessional Collaboration and Patient Safety Culture

$H_{3a}$ : There is a relationship between Interprofessional Collaboration and Patient Safety Culture

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 low.

This shows that both the independent variables have an extremely limited explanatory power on the change in PSC.

Interprofessional Collaboration explained 5.5% of the variance in the Patient Safety Culture as the dependent variable.

**Data Analysis using One- way ANOVA and Post Hoc Test**

To understand the impact of demographic dimensions or sub- groups on two of the dependent variables (IPC and PSC) one-way ANOVA was carried out. For the

significant outcomes further understanding on the impact was gathered through the post hoc analysis

**Patient Safety Culture**

One -way ANOVA test was carried out for Demographic factors with IPC and PSC to check the differences between groups and for the factors which was significant with the two variables IPC and PSC a Post hoc test was carried out to compare the mean differences and those dimensions which were not significant was excluded from the analysis.

For the variable Patient Safety Culture, the following dimensions of the variable demographic factors was not significant. Gender (F= 1.280, P =.259), Education (F= 2.382, P =.052), Designation (F= 0.851, P =.515), Professional Duration (F= 2.233, P =.051), Institutional Duration (F= 0.596, P =.703), Unit Duration (F= 0.851,

P =.515), Work hours/ week (F= 2.347, P =.055) and work area (F= 1,416, P =.198). All Demographic factors were not significant for PSC in one -way ANOVA test

**Interprofessional Collaboration**

For the variable Interprofessional Collaboration (IPC), the following dimensions of the variable demographic factors was not significant. Age (F= 2.577, P =.054), Age (F= 1.867, P =.135), Education (F= 1.849, P =.119), Designation (F= 1.442, P =.209), Professional Duration (F= 1.063, P =.381), Institutional Duration (F= 1.659, P =.144) and Unit Duration (F= 1.588, P =.163), Gender ( F= 6.574, P=0.011) was a significant factor for PSC but was unable to process post hoc test because there were fewer than 3 groups. Work hours/ week (F= 2.347, P =.055) and work area (F= 1,416, P =.198) was significant for IPC.

Table 4: Difference in Patient Safety Culture by Work hours/ week

Work hours/ week	N	Mean	F	df	sig
Less than 20 hours/week	3	32.667	3.397	301	.027
20 to 39 hours/week	30	29.067			
40 to 59 hours/week	259	33.210			
60 to 79 hours/week	12	33.333			
100 hours/week or more	2	39.000			

One-way ANOVA was employed to examine if there is a significant difference in PSC based on Work hours/week. Working hours were classified into five categories based on the hours of Work / week: (i) Less than 20 hours/week, (ii) 20 to 39 hours/week (iii) 40 to 59 hours/week (iv) 60 to 79 hours/week and (v) 100 hours/week or more

The results of the analysis conducted accordingly are shown in Table 4. According to the results, there is a significant difference in Nurses perception regarding PSC

among the five groups of working hours in the organizations:  $F(301) = 3.397, p = .027$ . Despite the significant result, the difference in mean scores between the groups is moderate. Following this result, post-hoc procedure using Tukey HSD test was conducted to find out where exactly the difference lies. The investigation revealed that the difference lies between the lowest and highest Working hours in the institute’s groups (that is between 20 to 39 hours/week (M=29.067) and 100 hours/week or more (M=39.000)).

Table 5: Difference in Patient Safety Culture by Work area

Work area	N	Mean	F	df	sig
Medicine (non - surgical)	9	29.111	4.838	298	.000
Surgery	47	31.511			

Intensive care unit (any type)	55	31.636
Obstetrics	48	33.542
Emergency Department	27	35.074
Many different hospital units	61	35.820
Pediatrics	3	41.333
Others	56	30.357

One-way ANOVA was employed to examine if there is a significant difference in PSC based on Work area. Working area were classified into eight categories based on the nurses designated work s in nursing units, (i) Medicine (non - surgical), (ii) Surgery, (iii) Intensive care unit (any type), (iv) Obstetrics, (v) Emergency Department, (vi) Many different hospital units, (vii) Pediatrics, and (viii) Others.

The results of the analysis conducted accordingly are shown in Table 4. According to the results, there is a significant difference in Nurses perception regarding PSC among the five groups of working hours in the organizations:  $F(298) = 4.838$ ,  $p = .000$ . Despite the significant result, the difference in mean scores between the groups is moderate. Following this result, post-hoc procedure using Tukey HSD test was conducted to find out where exactly the difference lies. The investigation revealed that the difference lies between the lowest and highest service area groups (that is between Medicine - non - surgical ( $M=29.111$ ) and Pediatrics ( $M=41.333$ )).

## DISCUSSION

The findings from the linear regression done for this study shows only a few Demographic factors have an impact on IPC and PSC. Unit Duration and Professional Duration shows a relationship with PSC. In one of the studies done by Chi, Huang, Lee, Wu and Wu (2020) Institutional duration had a negative impact and the nurses perceived that the less experienced staff had more satisfaction with the patient safety culture in the organization. According to Khoshakhlagh, (2019) there was no significant difference between PSC and the Gender, age, work experience and unit of service, but this study showed that there is a relationship between Unit duration and Professional Duration for PSC even though the strength of the relationship is low. This may be a new finding in this research area, as very limited research is available exploring the relationship between Demographic Factors and PSC [4].

To compare the mean differences one- way ANOVA, post host test was carried out and the results showed that the dimensions of demographic factor had no significant

relationship with PSC. This may be due to the various factors such as the context the study was carried out or the knowledge attitude of participants towards PSC, a study done in 12 hospitals of Iran shows that among the 12 hospitals, four hospitals showed a significant relationship between professional Duration and PSC [14]. Another research supports this study as the results showed that there was no significant association between Age ( $p = 0.964$ ), Education ( $P=0.154$ ) and Work Experience ( $P=0.888$ ) for PSC [2].

Multiple linear regression analysis was carried to find the demographic factor dimensions significant for IPC. Gender, Work area and Work hours/ week were the significant dimensions for IPC in this study. It has been revealed that nursing workstations/ work areas are the most influential place where multidisciplinary collaborations take place, and it supports the findings for this study [1]. Another researcher stated that gender and professional duration of nurses has a positive impact on IPC, the result for this study supports the above findings [13].

To assess the impact of IPC on PSC a linear regression analysis was carried out and the result is significant which indicated that IPC is an important component for PSC [14].

One-way ANOVA analysis was carried out and the findings showed that Gender, Work hours/week and Work area were the significant Demographic dimensions for PSC. Further to study whether a mean difference was there among the study groups of each dimensions a Post Hoc Tukey test was carried out and the results showed that gender as there were fewer groups test was unable to be carried out. The Work hours/ week showed that there was a difference between 20 to 39 hours/week and 100 hours/week or more and also for work area there was a significance difference between the areas of work Medicine (non - surgical) and Pediatrics unit in this study. This may be due to the interventions needed according to the category of patients who may need multidisciplinary team members to be involved is patient care. IPC takes place within multidisciplinary teams when they work



together for a common goal for patient care and collaborating, especially in pediatrics is essential [21].

One of the prominent findings in research shows that there was no mean difference in age, gender, education and professional duration and he further explains that this may not always be the case as evidence of literature has shown that demographic factors effect collaboration among nursing staff [20]. Most of the research focused on specific demographic dimension like gender, age, education, designation, and positions but this research included unit duration, professional duration and work hours / week which makes this research more comprehensive.

This study has several limitations. Due to time constrains and the situation of the Covid 19 pandemic the nurses had difficulty attending to the questionnaire. Furthermore, only nurses were included in this study, the study could have been more comprehensive if other HCPs were included as well as a qualitative phase could have been included. Therefore, further research is needed in this area including other HCPs and also using qualitative methods to get more in-depth knowledge regarding how demographic factors contribute to IPS and PSC.

## CONCLUSION

There are limited studies done on assessing the perceptions regarding the impact of Demographic Factors for Interprofessional Collaboration and Patient safety culture done in Maldives. The concepts regarding IPC and PSC may be new to nurses and further understanding of it would be required.

The durations, unit duration and professional duration, has a positive impact on PSC. More specifically working particular a for a certain duration, patient safety enhanced, and harm is minimizing errors. Other factors such age, gender did not have much effect on patient safety and gender, working hours and working area has an impact on IPC but other factors which were included in this study did not contribute.

This study paves way to encourage staff retention which in time will empower the nurses to effectively collaborate with other HCPs and sufficiently train subordinates during clinical rotations especially in critical areas which will ultimately improve patient care.

For future academics, studies can be done to find out how short-term clinical rotations of juniors can be best utilized to IPC and PSC, while including other HCPs perceptions.

## IMPLICATIONS FOR CLINICAL PRACTICE

The patient safety concepts described in this study will also have implications for nursing care given at patient bedside, including changes or improvements to current

practices to accommodate patient safety outcomes such as:

- Enhancing effective communication between patient and nurses at the bedside, in listening and addressing the patient's primary concerns.
- Establishing productive teamwork between nurses at bedside during assistance, procedures, shift changes and other clinical work.
- Importance of using EMR technology even at bedside to record and retrieve thorough patient's clinical information.
- Effectiveness of Collaborating with diverse HCPs in addressing the different systemic concerns of the patient during ward rounds and referrals.

## RECOMMENDATIONS

Promoting patient safety in an essential component for PSC. It is important to encourage staff for delivering a quality service embracing a collaborative culture. The success of an organization does rely on the staff and retaining staff is one aspect of quality care delivery. Policies should be implemented for staff retention and staff development through education, training and rewarding them for their service. As staff turnover is one challenge faced by the healthcare organizations today. Apart from the demographic dimensions assessed in this study , additional dimensions for Demographic Factors could be included in further studies to obtain a broader spectrum of information regarding the effects of demographic factors on IPC and PSC, such as Health facility locality/location, staff' country of origin and also including other HCPs apart from nurses; as these additional demographic dimensions may directly or indirectly influence certain aspects of patient care such as access to facilities, availability of resources, communication barriers or job satisfaction.

## REFERENCES

- [1] Aghamohammadi, D., Dadkhah, B., & Aghamohammadi, M. (2019). Nurse–Physician Collaboration and the Professional Autonomy of Intensive Care Units Nurses. *Indian Journal of critical Care Medicine* , 23(4), 171-181.
- [2] Alimohammadzadeh, K., Joladi, S., Olya, M., Ghaiyoomi, A., & Arani, H. (2017). A Comparative Study on Effective Factors in Patient Safety Culture from the Nursing Staff Points of View. *Journal of Health Management and Informations*, 4(2), 1-5.
- [3] Alshyyab, M. A., Fitzgerald, G., Dingle , K., Ting , J., Bowman, P., Kinneer, F. B., & Barkoles, E.

- (2019). Developing a conceptual framework for patient safety culture in emergency department: A review of the literature. *Int J Health Plann Mgmt*, 34, 42-55.
- [4] Chi, C.-Y., Huang, C.-H., Lee, Y.-C., Wu, C.-F., & Wu, H.-H. (2020). Understanding critical demographic variables affecting patient safety culture from nurses' viewpoints. *The TQM Journal*, 32(3), 429-440.
- [5] Dinius, J., Philipp, R., Ernstmann, N., Heier, L., Goritz, A. S., Pfisterer-Heise, S., . . . Korner, M. (2020). Inter-professional teamwork and its association with patient safety in German hospitals—A cross-sectional study. *PLoS ONE*, 15(5), 1-15.
- [6] El-Sherbiny, A., Ibrahim, E., & Abdel-Wahed, W. (2020). Assessment of patient safety culture among paramedical personnel at general and district hospitals, Fayoum Governorate, Egypt. *Journal of the Egyptian Public Health Association*, 95(4), 1-8.
- [7] Farokhzadian, J., Nayeri, N. D., & Borhani, F. (2018). The long way ahead to achieve an effective patient safety culture: challenges perceived by nurses. *BMC Health Services Research*, 18(654).
- [8] Hamlan, N. M. (2015). The Relationship Between Inter-Professional Collaboration, Job Satisfaction, and Patient Safety Climate for Nurses in a Tertiary- Level Acute Care Hospital. *Electronic Thesis and Dissertation Respository*, 1-97.
- [9] Hao, H., Gao, H., Li, T., & Zhang, D. (2020). Assessment and Comparison of Patient Safety Culture Among Health- Care Providers in Shenzhen Hospitals. *Risk Management and Healthcare Policy*, 13, 1543-1552.
- [10] Jafarpanah, M., & Rezaei, B. (2020). Association between organizational citizenship behavior and patient safety culture from nurses' perspectives: a descriptive correlational study. *BMC Nursing*, 2-8.
- [11] Jefferson. (2019). *Recognizing the importance of patient safety goals for health professionals*. Retrieved from Jefferson online: <https://online.jefferson.edu/health-services/patient-safety-goals/>
- [12] Jiang, K., Tian, L., Yan, C., Li, Y., Fang, H., Pei, S., . . . Liu, M. (2019). A cross-sectional survey on patient safety culture in secondary hospitals of North east China. *PLoS ONE*, 14(3), 1-11.
- [13] Kebe, N., Chicchio, F., Bamvita, J., & Fleury, M. (2020). Variables associated with interprofessional collaboration: a comparison between primary healthcare and specialized health teams. *BMC Family Practice*, 21(4), 1-11.
- [14] Khoshakhlagh, A. H., Khatooni, E., Akbarzadeh, I., Yazdanirad, S., & Shaidaei, A. (2019). Analysis of affecting factors on patient safety culture in public and private hospitals in Iran. *BMC Health Services Research*, 19(1009), 1-14.
- [15] Kumbi, M., Hussien, A., Lette, A., & Nuriye, S. (2019). Patient Safety Culture and Associated Factors Among Health Care Providers in Bale Zone Hospitals, Southeast Ethiopia: An Institutional Based
- [16] Okuyama, J., Galvo, T. F., Crozatti, M., & Silver, M. (2019). Health professionals' perception of patient safety culture in a university hospital in São Paulo: A cross-sectional study applying the Hospital
- [17] Saeed, F. (2018). *Building a safety culture, assessment of the culture of safety at ADK Hospital*. Male', Maldives: Patient safety team, ADK Hospital.
- [18] Shahabinejad, M., Khoshab, H., Najafi, K., & Haghshenas, A. (2020). The Relationship between Patient Safety Climate and Medical Error Reporting Rate among Iranian Hospitals Using a Structural Equation Modeling. *Ethiop J Health Sci*, 1-10.
- [19] Souza, C., Tomachewski-Barlem, J., Rocha, L., Barlem, E., Silva, T., & Nuetzhng, B. (2019). Patient safety culture in intensive care units: perspective of health professionals. *J Nurs UFPE*, 40, 1-8
- [20] Spitulnik, J. (2019). Physician Collaboration and Improving Health Care Team patient Safety Culture: A Quantitative Approach. *Doctor of Philosophy : Walden University*, 1-144.
- [21] Straub, C., Heinzmann, A., Krueger, M., & Bode, S. (2020). Nursing staff's and physicians' acquisition of competences and attitudes to

interprofessional education and interprofessional collaboration in pediatrics. *BMC Medical Education*, 20, 1-8.

- [22] Tan, K. H., Pang, N. L., Siau, C., Foo, Z., & Fung, K. Y. (2019). Building an organizational culture of patient safety. *Journal of Patient Safety and Risk Management*, 24(6), 253-261.
- [23] Tolentino, J. C., Martins, N., Sweeney, J., Marchionni, C., Valenza, P., McGinely, T. C., . . . Stawicki, S. P. (2018). Introductory Chapter: Developing Patient Safety Champions. In M. S. Stawicki, *Vignettes in Patient safety* (Vol. 2). IntechOpen. Retrieved from <https://www.intechopen.com/books/vignettes-in-patient-safety-volume-2/introductory-chapter-developing-patient-safety-champions>
- [24] Zúñiga, F. (2019). Resident safety and quality of care in nursing. *University of Basel : Department of public Health* , 1-11.