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NURSE–PHYSICIAN COLLABORATION AND PERCEPTIONS AT MMC MARDAN: A CROSS-SECTIONAL STUDY

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Abstract

Background: This cross-sectional study explores the perceptions of nurses and physicians regarding nurse–physician collaboration at Mardan Medical Complex, KPK, Pakistan, and how demographic factors (age, gender, education, experience, and department) influence these perceptions. Effective collaboration is essential for improving healthcare outcomes, and understanding these perceptions can help hospital administrators develop targeted interventions to enhance interdisciplinary teamwork. Objectives: a) To assess nurses' and physicians' perceptions of their collaboration. b) To examine the impact of demographic factors on these perceptions. Method: Using convenience sampling, 154 participants (74 nurses and 80 physicians) were surveyed via a structured questionnaire. The sample size was determined using Raosoft software. Data were analyzed to identify the influence of demographic factors on perceptions of collaboration. Results: Participants were mostly aged 20–30 (61.7%), with 58.4% male and 40.9% female. Educationally, 51.9% held MBBS degrees, 34.4% had BSN/Post RN, and 13.6% held nursing diplomas. Most (64.3%) had 1–5 years of experience, and 61.7% worked in general wards. Perception scores showed moderate variation (mean: 61.34), with 50.6% reporting negative and 49.4% positive views. BSN/Post RN holders had more positive perceptions than those with diplomas or MBBS, indicating education may influence collaborative attitudes. Conclusion: Interdisciplinary collaboration is crucial for efficient healthcare delivery. Positive perceptions among healthcare workers (HCWs) enhance staff satisfaction and patient outcomes. The study highlights the need for ongoing training to foster stronger nurse–physician collaboration in hospital settings.

INTRODUCTION

BACKGROUND

Nurse-physician collaboration means the nurses and physicians working together, sharing responsibilities for solving problems and making decisions to formulate and carry out plans for patient care to increase patient satisfaction and overall health needs. [1]

Nurses-physician collaboration is a major key for patients' safety and improving patient's outcomes. All health care providers specifically nurses and physicians work together to maintain and enhance patient's safety as a first priority in clinical practice. However, the collaboration between all health care providers is challenging in every healthcare center, whether primary, secondary or tertiary. [2][3].

Collaboration is difficult when it comes to information sharing and responsibility. Nonetheless, all healthcare professionals need to be proficient in teamwork. As a consequence of poor collaboration, poor patient outcomes are the major signs which comes as a result. [4][5]. Research has documented many obstacles that prevent nurse-physician collaboration from reaching its maximum potential. Nurses are more conscious than physicians of the value and effects of nurse-physician collaboration. Also, there were misconceptions regarding the roles of nurses and physicians as a result of doctors' misunderstandings about nurses' responsibilities in patient care. [6][7]

Nurse and physician work in cooperation, share responsibilities, help each other in resolving difficulties and taking to frame and perform plan for patient care. [1]. Nurse subservience and physician supremacy were the hallmarks of nurse-physician interactions in the past, which led to physician domination. Due to this dominant submissive environment, nurses adhere to the paternal and directive role depicted by physicians. [28]. Apart from the unfavorable reputation of nursing, hospitals' professional boundaries also create an almost unequal relationship between physicians and nurses, particularly in disciplinary activities. This results in a lack of full professional jurisdiction and autonomy for nurses. [27]

With a little emphasis on the role of nurses in assisting and supporting this progressive curative treatment, several historical textual and geographical bases view physicians as extremely progressive professionals in ancient Egypt. [29].

Previous research has shown that a nurse's lack of autonomy is evident to the medical team and that the discrimination they experienced from regular staff during their internship program affected their professional autonomy and may have contributed to their feeling of inferiority. [30]. Additionally, studies demonstrate that a nurse is not fully exercising their autonomy when working with a physician which reveals physicians' full governing role at every stage of patient care. As a result, nurses are less involved in the provision of healthcare. The Nursing Committee in Egypt mandates that graduates of bachelor's degree programs undergo a one-year clinical internship. During the internship period, novice nurses can acquire the necessary skills and experiences to become registered nurses. They can also gain diverse experiences from interactions with hospital staff, particularly physicians and nurses. This can lead to frustration and dissatisfaction, and in some cases, the decision to work outside of a clinical nursing setting. This causes the lack of nurses in the field and their dissatisfaction with their professional relationships with physicians. [31][32].

The interaction between a physician and a nurse is demanding. In order to meet the challenges of today's health care delivery system, which include providing patient-centered, efficient, effective, safe, timely, and easily accessible care, everyone must priorities quality and safety. This show that maximizing nurse-physician collaboration holds promise for enhancing patient care and fostering fulfilling work roles. In fact, we now know that we need to maximize everything that occurs within a multidisciplinary health care team. [8][9]

The nursing profession has grown increasingly sophisticated, with a focus on patient outcomes and skill levels. A significant number of professionals work in healthcare organizations, where teamwork is the norm and communication between nurses, doctors, and internship nurses is crucial. Studies show that an intern nurse is a graduate professional nurse enrolled in a nursing internship program under the supervision of a preceptor, who acts as a role model, supporter, and guide in clinical practice. The intern nurse is responsible for providing daily services involving basic care for patients as well as care of critically ill patients. Improved patient outcomes and higher-quality healthcare services may be achieved via collaboration between doctors, nurses, and other healthcare professionals. The foundation of patient therapy is collaborative partnerships. [26]

When doctors and nurses disagree on a patient's treatment plan, it can cause issues due to perceived or actual power and status inequalities between the healthcare providers. The medical field has historically placed a greater emphasis on knowledge, independence, and accountability than on discussion, debate, or collaboration. Nursing, on the other hand, has traditionally placed a strong focus on bureaucracy and hierarchy, however this emphasis has recently waned along with respect for doctors. [10].

Nurses have learnt to modify their methods with physicians in order to achieve their patient care goals,

even if in the past they were accustomed to receiving instructions rather than issuing them. In addition to being beneficial to patients, teamwork is also essential for the happiness of all participating healthcare professionals. When there is shared accountability for patients' health and well-being, there is a benefit to the partnership between doctors and nurses. [11].

Studies showed that ICU nurses had low levels of satisfaction with care decisions and nursephysician collaboration. However, there are relatively few studies in the area of importance of collaboration among nurses and physicians. [13]. Collaboration between nurses and physicians is highly correlated with the quality of patient treatment. According to a study, hospitals that have received Magnet recognition, good nurse-physician teamwork is directly associated with the best possible results for patients. Additionally, a favorable association was shown between the standard of patient care outcomes and nurse-physician teamwork. Additionally, a number of studies evaluating attitudes towards nurse-physician collaboration were discovered in the literature. [14][15].

A research that studied the attitudes of nurses and physicians towards nurse-physician collaboration in the general medicine and surgical sections of a hospital. According to the study, nurses are more optimistic than doctors about working together as a team. Professionals that work together collaboratively while maintaining their individuality and sharing responsibility are said to exhibit collaboration. [16].

Collaboration is the process of independent parties coming to choices together, sharing ownership of those decisions, and taking collective accountability for the results. [21]. It is a procedure when two or more individuals get together to talk about a shared issue. Every member exhibits self-assurance in imparting knowledge and information in an equitable manner, while also showing respect for other viewpoints. The focus stays on the requirements of the patient, and talks culminate in a plan of treatment. [22][23]. In order for doctors to collaborate and work together, as well as to communicate information, suitable treatment plans must be developed. In addition, physician-nurse collaboration and favorable relationships have been identified as key factors contributing to improved patient outcomes and quality care. [24][25].

The role of nurses is essential for working together is a complicated process that calls both purposeful information exchange and shared accountability for patient care. It can occasionally happen in the long-term partnerships between medical specialists. The developmental collaboration changes over time when team members join or depart the group or when organizational structures alter. [18][19]. For each health care profession to function effectively, the others must process certain information. Effective teamwork is crucial for safe patient care, as neither profession can function in isolation. [20]

In order to maximize outcomes, the health care team must prioritize the patient.

Unless doctors and nurses build collaborative connections, the disparate priorities that doctors and nurses have on patient care may cause strained relationships between them, which might jeopardizes the patient. [17]

In the high-stress settings of Mardan Medical Complex (MMC), a tertiary care hospital in the Mardan area, doctors and nurses collaborate closely to manage patients with acute and frequently life-threatening diseases. In addition to giving constant bedside care, giving treatments, and keeping track of patients' progress, nurses are essential to patient management. On the other hand, doctors concentrate on making treatment decisions, identifying ailments, and managing patient care as a whole. It is essential that these two jobs work together seamlessly to guarantee that care is provided in a timely and appropriate manner. Although the significance of nurse-physician teamwork, problems frequently occur as a result of role disparities, communication breakdowns, and hierarchical dynamics in the healthcare system. These difficulties may make it more difficult to function as a team, lower job satisfaction, and ultimately lower patient care standards. The purpose of this study is to investigate how medical professionals and nurses at Mardan Medical Complex see nurse-physician teamwork. The research will provide insights into how cooperation may be enhanced to improve patient care, optimize healthcare delivery, and raise professional satisfaction among healthcare practitioners by identifying critical elements that impact their working relationships.

1.2 RATIONALE

The main rationale behind this topic is that the literature review revealed a significant research gap regarding nurses-physicians collaboration in Pakistan, so our research will have a great impact on making new policies that can be helpful for both health care workers and patients in the future.

1.3 RESEARCH PROBLEM

To assess the perceptions of nurses and physicians regarding the collaborative work of nurses and physicians.

1.4 SIGNIFICANCE

The significance of this study is to evaluate the perceptions of nurses and physicians which in turn can give us idea about making new policies to improve their collaboration in working environment so as to have a better impact on patients' quality care.

1.5 OBJECTIVES

The main objectives of this study are

a)To evaluate the perceptions of nurses and physicians regarding nurse-physician collaboration.
b)To examine the impact of demographic factors on nurse-physician perception.

1.6 RESEARCH QUESTIONS

A) What are the perceptions of nurses and physicians regarding their collaborative work?
B) How does the demographic factors(age, gender, educational level, area of work and Working experience) effect nurse-physician perception?

1.7 HYPOTHESIS

- Ho: Demographic variables have no significant impact on the perceptions of nurses and physicians regarding nurse-physician collaboration in MMC, Mardan, Pakistan.
- Ha: Demographic factors have a significant impact on the perceptions of nurses and physicians regarding nurse-physician collaboration in MMC, Mardan, Pakistan.

1.8 OPERATIONAL DEFINITIONS

Perceptions: The opinions and subjective attitudes held by nurses and physicians regarding their collaboration. It can be measured using Likert scale; never (1), rarely (2), sometimes (3), often (4) and always (5).

Positive perceptions: The responses i.e. often (4) and always (5) indicate positive perceptions. i-e; if total score of a participant is 60 or greater than 60.

Negative perceptions: The responses i.e. never (1), rarely (2) and sometimes (3) indicate negative perceptions. i-e; if total score of a participant is less than 60.

Collaboration: The process of working together, sharing information and coordinating efforts between nurses and physicians to achieve patient care goals.

Nurses: The currently employed health care personnel having a nursing diploma or BSN/postRN degree will be considered nurses.

Physicians: The currently employed health care personnel having MBBS, FCPS or Ph.D. degrees will be considered physicians.

Demographic factors: Age, gender, level of education, area of work and working experience are considered as the important demographic factors in our study.

LITERATURE REVIEW

Collaborative work between nurses and physicians is very important for better health outcomes of patients. Every member of the health care team i.e. nurses and physicians has their own idea of how to plan care for a patient and how to implement that plan. [35]. The most unique as well as crucial characteristic of nurses and physicians working in a standard hospital is to work in a manner of collaboration. Despite of the fact that the professional trends of nurses and physicians are disparate, they have to work conjointly in order to achieve the goal of providing the best possible care to the patients. [36]
Nurses and physicians have to work in alliance in order to provide holistic, panoramic, cautious, timid, and prudent care to the patient. Generally research

study has revealed that nurses have lower ratio of collaboration as compared to the physicians. Although research has confessed the need for better association and team work behaviors, yet, the organizational leaders are liable for improving these practices and coordinating them at lower level. [37]. A study conducted in European countries show that there was a huge avoidability in admission of chronically ill patients consisting of diabetes mellitus, CHF, COPD and Asthma. This avoidability in admissions are used to address the access to quality care at primary level. [38][39]. In order to provide that care it is necessary to strengthen the hospital care and primary level care. [43].

It was supposed that to assign care to the ageing population and decrease unnecessary hospital visits by the group practice and collaboration in team work can encourages and provide basic care at primary level. [42]. Work in collaboration is mandatory in health care systems and it is became more complex in providing these facilities for health care practitioners to fulfill all the basic needs of health.[40][41]. A history from Korea revealed that the relation between nurse and physician is very necessary to work cooperatively in collaboration with each other. Nurse physician collaboration is known for the work which and skills they practice in coordination and to provide quality care and treatment in health care facilities. [44].

Work in collaboration not only increase the satisfaction of job but also can release the stress related to job and work overload, increase the positive outcomes of health care and treatment. [45][46]. Another study revealed that in decision making process collaboration is very crucial that require mutual understanding. It is very difficult to resolve the problems related to ethical issues in the health care team system. Therefore it is important to collaborate and communicate with health care members to appreciate various ethical morals and cultures. While facing the problems related to ethical perspectives, nurses act as physician assistance face the difficulties in communication with the physician , role conflicts and lack of self-esteem.[47][48].

Furthermore, it is seen as a cooperative attitude that aids in the recovery of the sick. Thus, the patient's ability to recovery is compromised in the absence of partnership. To get a high degree of satisfaction, nurse-physician cooperation has to be well-practiced in order to improve and facilitate the interaction among the health care team. On the other hand, lack of collaboration can affect how nurses and physicians communicate, which can affect patient safety. Furthermore, a poorly designed workplace may contribute to the efficacy of treatment, therefore endangering patients. [13]

Another study conducted in ran revealed that there was no significant relation among nurse physician that is accounts for 13.4% of nurses were satisfied from nurse physician collaboration. [49]. New study has evolved the significance of nurse physician collaboration and is widely documented in the literature now. These documentations are aim to find out the positive as well as negative impacts of nurse physician collaboration. [50][51]. The study conducted show a positive relation among nurses working in collaboration with physicians and were able to provide quality care in health care systems and achieve high satisfaction regarding job increase in work collaboration among nurses and physician also increase the impact of positive atmosphere.[52][53].

The roles and responsibilities of nurses has increased over the past few years in general patients as well as critical patients. In order to confront future obstacles. Nurses and physicians should have a high quality interdisciplinary collaboration [54]. The intention of facing such intricacies of developing current health care to a much advance one, it's necessary for each of the medical professionals and institutions to reevaluate and intensify the nurse-physician partnership. [55].

In order to assess the quality of care and its association with nurse-physicians collaboration, evaluation of patients' record only are not enough. Certain researchers give idea that observation can affect the way participants answer to certain questions. [56]. The basic ideas of collaborative teams were that while team members had distinct skill sets, their philosophical objectives for patient care were the same. Integrating abilities and clearly defining duties made it possible to provide a patient group with full care. Every location and practice setting is a collaborative team environment and an area of expertise. The members of the team determine how the group operates based on the requirements of the population they are providing care for. Poor patient outcomes have been

attributed to a lack of cooperation and communication. [5]

Effective healthcare delivery requires teamwork between nurses and physicians, especially in tertiary care facilities where patients frequently come with acute and severe diseases. In order to guarantee better results, patient safety, and high-quality treatment, cooperation between nurses and doctors is crucial. Improved cooperation and communication can lower medical mistakes, increase patient satisfaction, and make the healthcare system run more smoothly. For many years, doctors and nurses have collaborated to manage patients. In many healthcare institutions, particularly hospitals, measures to improve doctor-nurse teamwork in the delivery of healthcare have become standard during the past ten years. Healthcare providers encounter significant obstacles in their collaboration since their professional objectives i.e; clinical care delivery, patient care, and advocacy differ. [33].

According to nurses, physicians are unlikely to follow their recommendations when it comes to a patient's condition, while nurses are unlikely to discuss a patient's condition with doctors since they believe it is not required. When nurses insist on participating in clinical decisionmaking, they may offend or denigrate the physician. Furthermore, newcomer nurses said they don't often learn from older nurses. [34]

METHODOLOGY

3.1 STUDY DESIGN

This study employed a cross-sectional design to explore the perceptions of nurses and physicians regarding nurse-physician collaboration and associated demographic factors at Mardan Medical Complex (MMC).

3.2 STUDY SETTING

This study was conducted at different wards in Mardan Medical Complex (MMC), Mardan, Pakistan.

3.3 STUDY POPULATION

Our study consisted of a calculated sample from nurses and physicians working at various wards in tertiary care hospital of KPK, Pakistan i-e; Mardan Medical Complex (MMC).

3.4 SAMPLING TECHNIQUE

A convenient sampling technique was used to select participants i-e; all available nurses and physicians working at MMC during the data collection period having work experience of more than six months in a tertiary care hospital.

3.5 SAMPLE SIZE

A total of 154 participants (74 nurses and 80 physicians) were included in the study and the sample size was calculated online by RAOSOFT calculator.

3.6 DATA COLLECTION TOOL

An adopted questionnaire from a published research article was used to collect data. The questionnaire consisted of three sections;

1. Informed consent with clear confidentiality and procedures clarified.
2. Demographic information (age, gender, educational status, length of service and department of work)
3. Closed ended questions with Likert scale (rarely, sometimes, often, always)

3.7 INCLUSION CRITERIA

Registered nurses and physicians currently employed and available at MMC with minimum work experience of six months in tertiary care hospital.

3.8 EXCLUSION CRITERIA

Participants in administrative or non-clinical roles who do not engage in direct patient care
or in direct patient care or interdisciplinary collaboration.

3.9 DATA COLLECTION

This data was collected using an adopted questionnaire of 20 questions in total from nurses and physicians separately. Sociodemographic section with 5 questions in total was also added to the beginning of the questionnaire. Data was collected over a period of four weeks. The questionnaire was distributed physically to participants in MMC during their duty hours and were requested to return the completely filled questionnaire within 24 hours.

3.10 DATA ANALYSIS

The collected data was coded and SPSS version 27 software was used for the analysis using descriptive statistics (frequencies, means and standard deviations) and illustrated using bar charts, frequency tables and pie chart for Sociodemographic variables. The perceptions of nurses and physicians holding either degree or diploma was analyzed using LIKERT scale scoring from 1-5 i-e; 1 for never and 5 for always with a maximum score of 100 in which positive and negative perceptions were identified as those scoring below 60 were considered negative and those scoring 60 and above were considered positive. T-test and ANOVA is applied to illustrate the impact of demographic factors on perceptions of nurses and physicians regarding their collaboration in healthcare setting.

3.11 ETHICAL CONSIDERATION

Data was collected by permission from hospital administration and our college. Informed consent was taken from participants and they were guided with being aware of the procedures, confidentiality and risks or benefits of this study. All data was handled confidentially without any participant being known by the other. Ethical approval was obtained from Institutional Review Committee assigned by our institution.

RESULTS

DEMOGRAPHICS

The table 1 shows participant demographics reveal a diverse sample across various characteristics. Most participants are aged 20-30 years (61.7%, n = 95), followed by those aged 30-40 years (32.5%, n = 50), with a smaller group in the 40-50 years range (5.8%, n = 9). In terms of gender, the majority are male (58.4%, n = 90), while 40.9% (n = 63) are female, and a small portion (0.6%, n = 1) chose not to disclose their gender. Professionally, the sample is nearly equally split between nurses (48.1%, n = 74) and physicians/doctors (51.9%, n = 80). Regarding educational status, the largest group holds an MBBS degree (51.9%, n = 80), followed by those with a BSN/Post RN degree (34.4%, n = 53), and a smaller proportion with a diploma (13.6%, n = 21). Most participants have 1-5 years of service (64.3%, n = 99), with 25.3% (n = 39) having 5-10 years, 9.7% (n = 15) having 10-15 years, and a small number (0.6%, n = 1) with other service duration. Furthermore, the majority work in general wards (61.7%, n = 95), followed by those in surgical wards (19.5%, n = 30) and critical wards (17.5%, n = 27), with a small proportion (1.3%, n = 2) in other departments. Overall, the sample is predominantly younger, male, and composed of healthcare professionals with relatively shorter work experience, contributing to a balanced representation of various roles, education levels, and work environments.

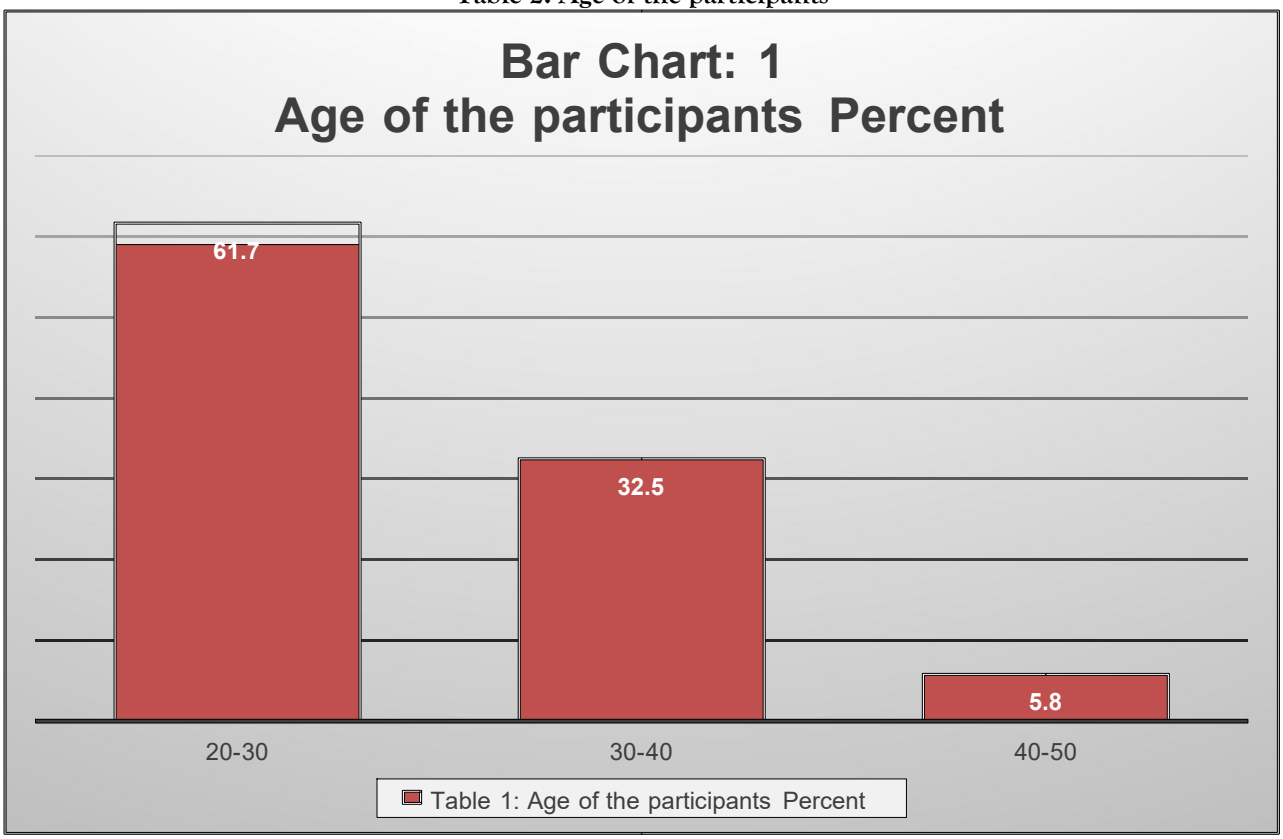
Table 1 Participants Demographics

Category	Sub-category	Frequency	Percent (%)
Age of the participants	20-30	95	61.7
	30-40	50	32.5
	40-50	9	5.8
Gender of the participants	Male	90	58.4
	Female	63	40.9
	Prefer not to mention	1	0.6
Profession of the participants	Nurse	74	48.1
	Physician/Doctor	80	51.9
Educational status of the participants	BSN/Post RN	53	34.4
	Diploma	21	13.6
	MBBS	80	51.9
Length of service of the participants	1-5 years	99	64.3
	5-10 years	39	25.3
	10-15 years	15	9.7

	Other	1	0.6
Department of work of the participants	General wards	95	61.7
	Critical wards	27	17.5
	Surgical wards	30	19.5
	Other	2	1.3

The Bar Chart 1 shows age distribution of the participants is as follows: The majority (61.7%, n = 95) are aged 20-30 years, followed by 32.5% (n = 50) in the 30-40 years' age group. The remaining 5.8% (n = 9) are in the 40-50 years' age group. This indicates that the study population is predominantly composed of younger individuals, with a smaller representation of participants in the older age bracket.

Table 2: Age of the participants



Furthermore, Table 2 reveals the gender distribution of the participants shows that the majority are male, accounting for 58.4% (n = 90) of the sample, while female participants represent 40.9% (n = 63). Additionally, a small proportion, 0.6% (n = 1), opted not to disclose their gender. Overall, the sample is predominantly male, with a significant representation of females and minimal non-disclosure.

Table 3 Gender of the Participants

	Frequency	Percent
Male	90	58.4
Female	63	40.9
Prefer not to mention	1	.6
Total	154	100.0

Moreover, the professional distribution of the participants indicates that 51.9% (n = 80) are physicians/doctors, while 48.1% (n = 74) are nurses as shown in Bar chart 2. This shows a relatively balanced representation of both professions, with a slight predominance of physicians/doctors in the sample.

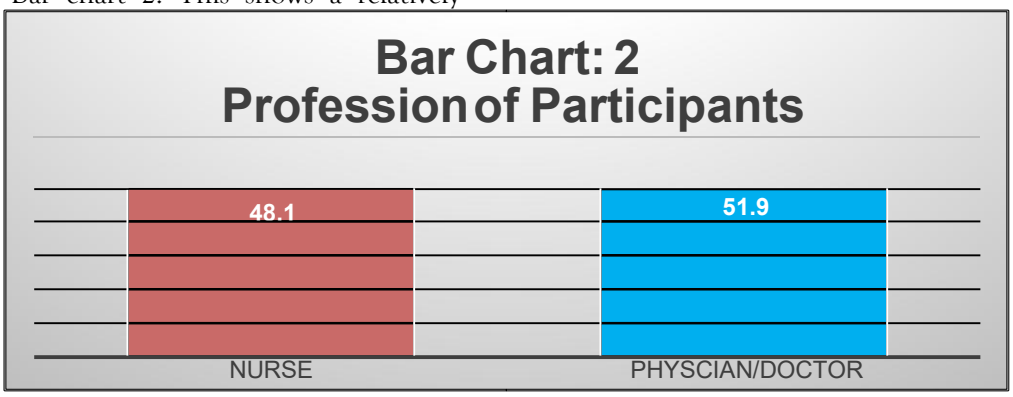


Figure 2 profession of the participants

The educational status of the participants is as follows: The largest group holds an MBBS degree (51.9%, n = 80), followed by those with a BSN/Post RN qualification (34.4%, n = 53). A smaller proportion holds a Diploma (13.6%, n = 21) as shown in Pie chart 1. This indicates that the sample is predominantly composed of individuals with medical and nursing degrees, with a smaller representation of diploma holders.

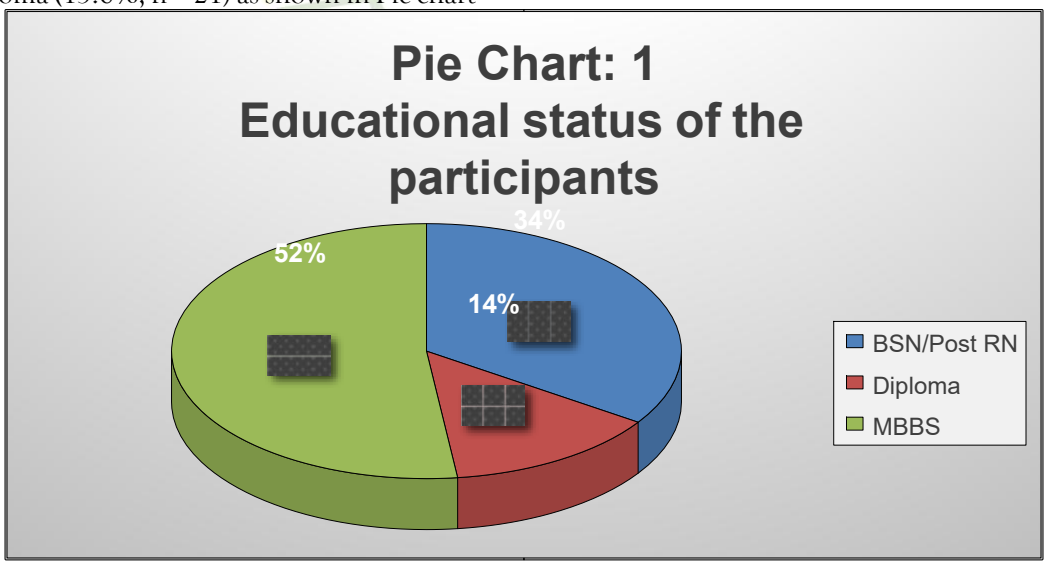
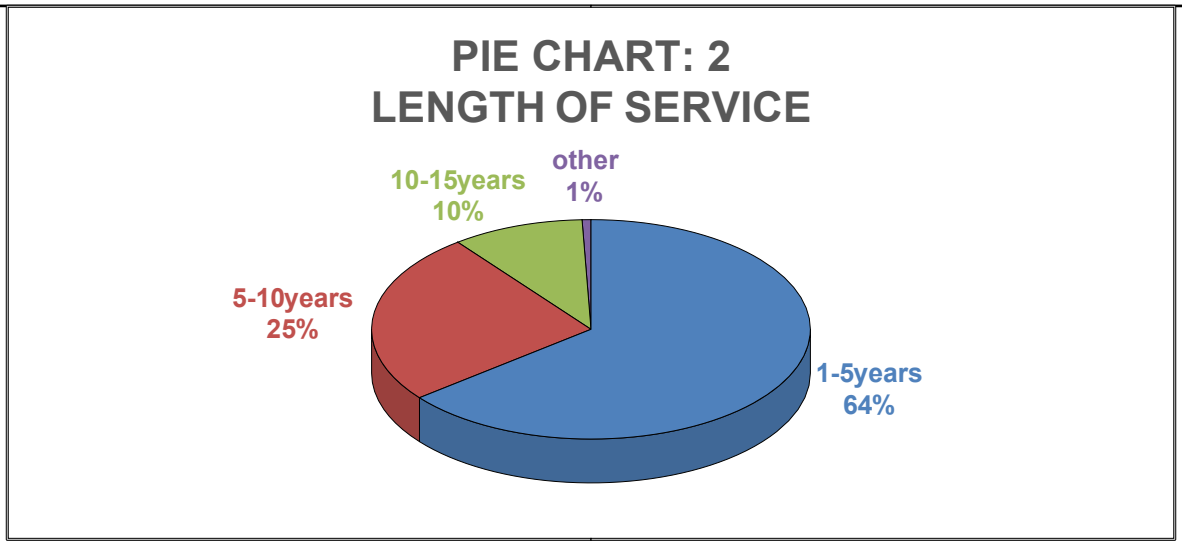


Figure 3 Education of the Participants

In addition, the length of service of the participants reveals majority have 1-5 years of service (64.3%, n = 99), followed by those with 5-10 years of service (25.3%, n = 39). A smaller proportion has 10-15 years of service (9.7%, n = 15), and a minimal number (0.6%, n = 1) have an "other" duration of service as shown in Pie chart 2. This indicates that most participants are relatively early in their careers, with a smaller representation having more extensive work experience.

Figure 4 Length of service



As further point, Pie chart 3 illustrates department of work for the participants is distributed as follows: The majority work in general wards (61.7%, n = 95), followed by those in surgical wards (19.5%, n = 30) and critical wards (17.5%, n = 27). A small number of participants work in other departments (1.3%, n = 2). This suggests that most participants are involved in general ward care, with fewer working in specialized areas like surgical or critical care units.

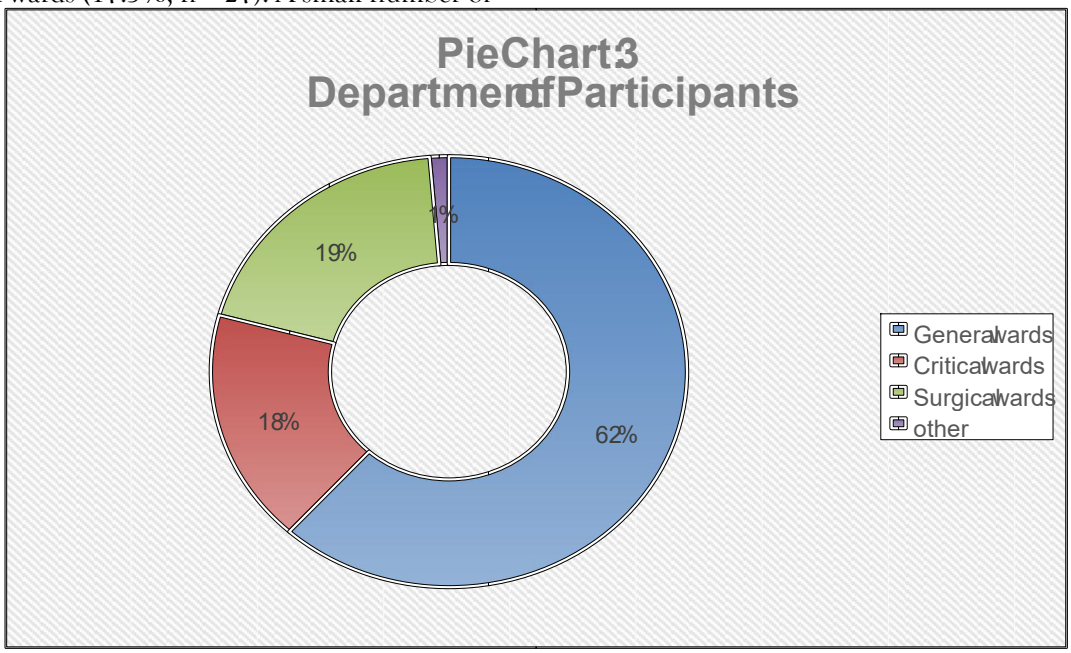


Figure 5 Department of the participants

Moreover, Table 3 reveal two categories of collaboration between nurses and physicians. In the **higher collaboration** category, with mean scores of 3 and above, there is strong communication and teamwork in areas such as mutual support, sharing information about patient conditions and treatment, verifying treatment effects, and discussing medical accidents and side effects. Statements like "The nurses and the physicians help each other" (mean = 3.63) and "The nurses and the physicians greet each other every day" (mean = 3.47) reflect this positive dynamic. On the other hand, the **areas for improvement**, with mean scores of 2 and below, indicate that there is room for enhancing collaboration in resolving patient

care problems, interpreting signs and symptoms, and discussing treatment plans and patient independence. Statements such as "The nurses and the physicians exchange opinions to resolve problems related to patient cure/care" (mean = 2.87) and "The nurses and the physicians share information about a patient's level of independence in regard to activities of daily living" (mean = 2.75) suggest that while there is communication, greater efforts are needed to improve joint decision-making, scheduling, and addressing disagreements or difficult situations.

Table 6 Descriptive Statistics

Statement	Me an	Std.Deviati on
The nurses and physicians exchange opinions to resolve problems related to patient cure/care	2.87	1.24
The nurses and physicians seek agreement on the interpretation of signs and symptoms that a patient has	2.84	1.13
The nurses and physicians all know what has been explained to a patient about his/her condition or treatment	3.62	1.16
When confronted by a difficult patient, the nurses and the physicians discuss how to handle the situation	3.21	1.28
The nurses and the physicians help each other	3.63	1.23
The nurses and the physicians together consider their proposals about the future direction of patient care	2.97	1.23
The nurses and the physicians share information about a patient's level of independence in regard to activities of daily living	2.75	1.14
The nurses and the physicians take into account each other's schedule when making plans to treat a patient together	2.82	1.22
In the event of a disagreement about the future direction of a patient's care, the nurses and the physicians hold discussions to resolve differences of opinion	2.67	1.1
The nurses and the physicians share information to verify the effects of treatment	3.23	1.28
The nurses and the physicians greet each other every day	3.47	1.35
The nurses and the physicians discuss whether to continue a certain treatment when that treatment is not having the expected effect	2.86	1.24
The nurses and the physicians discuss how to prevent medical care accidents	3.09	1.25
When a patient is to be discharged from the hospital, the nurses and the physicians discuss where the patient will continue to be treated and the lifestyle regimen the patient needs to follow	2.82	1.36
In the event of a change in treatment plan, the nurses and the physicians have a mutual understanding of the reasons for the change	2.94	1.17
The nurses and the physicians can freely exchange information or opinions about matters related to work	3.18	1.25
The nurses and the physicians check with each other concerning whether a patient has any signs of side effects or complications	3.09	1.3
The nurses and the physicians can easily talk about topics other than topics related to work	2.77	1.18
In the event a patient develops unexpected side effects or complications, the nurses and the physicians discuss countermeasures	3.06	1.3
The future direction of a patient's care is based on a mutual exchange of opinions between the nurses and the physicians	3.44	1.29

The Bar Chart 3 suggests that while there are slightly more nurses with a positive perception (54.1%) compared to negative (45.9%), the physicians have a higher proportion of negative perceptions (55%) compared to positive ones (45%). However, overall, the split between negative and positive perceptions appears quite balanced across both professions. This might suggest that both nurses and physicians hold relatively similar views on the topic, although physicians lean slightly more toward a negative perception.

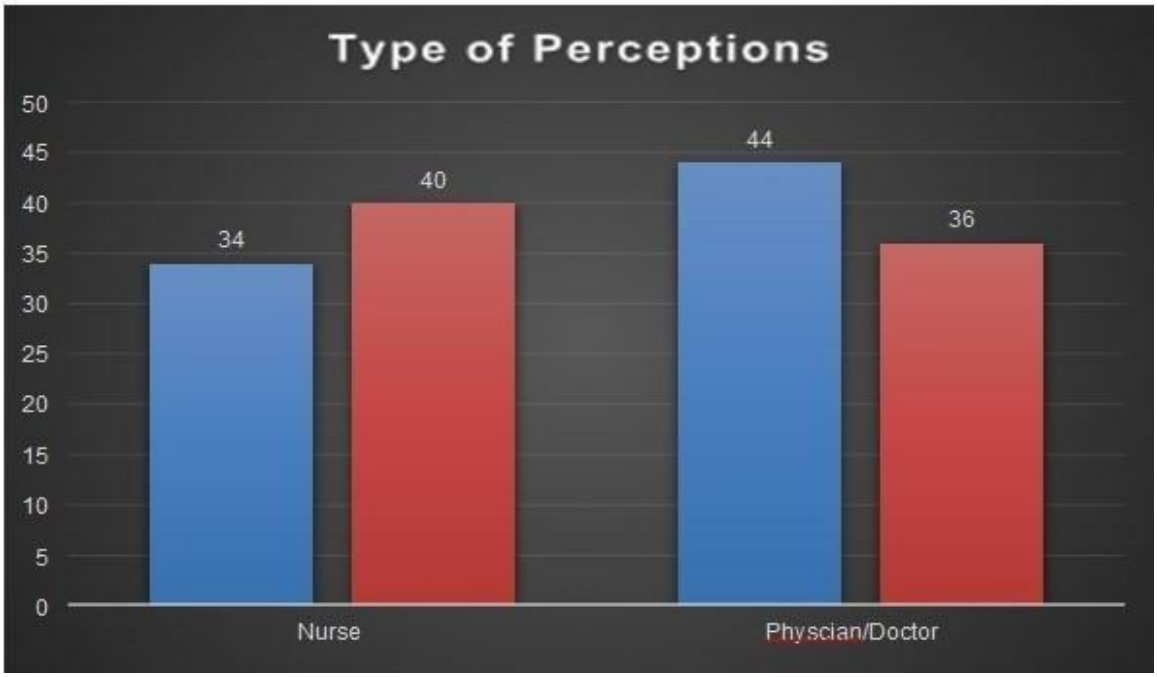


Figure 6: Type of participants

T-test of Independence:

Finding of t-independence test is that there is a significant difference between the perception scores of nurses and physicians. The t-test results show a p-value of 0.0296 (which is less than 0.05), indicating a statistically significant difference. Nurses have higher perception scores (mean = 64.01) compared to physicians (mean = 58.88), with a mean difference of 5.14. Therefore, we can conclude that nurses perceive the collaboration or situation more positively than physicians.

Table 4 Independent T test

Independent Samples Test						
	t-test for Equality of Means					
		t	df	Sig. (2-tailed)	Mean Difference	Std.Error Difference
Total Score of Perception	Equal variances assumed	2.195906	152	0.029614	5.138514	2.340043
	Equal variances not assumed	2.197857	151.5274	0.029477	5.138514	2.337965

Analysis of Variance (ANOVA)

The ANOVA results assessed the relationship between various demographic factors (age, gender, profession, educational status, length of service, and department of work) and participants' total perception scores. The analysis revealed no

significant differences across any of the demographic factors. Specifically, age (F = 0.022, p = 0.882), gender (F = 1.678, p = 0.197), profession (F = 1.255, p = 0.264), educational status (F = 2.725, p = 0.101), length of service (F = 0.324, p = 0.570), and department of work (F = 2.421, p = 0.122) all yielded p-values greater than the significance threshold of 0.05. Therefore, it can be concluded that these demographic factors do not significantly influence participants' perception of collaboration or related variables in this study.

Table 5: Anova

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Age of the participants	Between Groups	0.008102	1	0.008102	0.022003	0.882275
	Within Groups	55.96592	152	0.368197		
	Total	55.97403	153			
Gender of the participants	Between Groups	0.432007	1	0.432007	1.677999	0.197154
	Within Groups	39.13293	152	0.257453		
	Total	39.56494	153			
Professionofthe participants	Between Groups	1.258811	1	1.258811	1.254623	0.264438
	Within Groups	152.5074	152	1.003338		
	Total	153.7662	153			
Educationalstatusofthe participants	Between Groups	2.258811	1	2.258811	2.724755	0.100868
	Within Groups	126.0074	152	0.828996		
	Total	128.2662	153			
Length of service of the participants	Between Groups	0.158175	1	0.158175	0.324114	0.569986
	Within Groups	74.17949	152	0.488023		
	Total	74.33766	153			
Department of work of the participants	Between Groups	1.706083	1	1.706083	2.420618	0.121827
	Within Groups	107.1316	152	0.704813		
	Total	108.8377	153			

Summary of the chapter

This chapter provides a comprehensive analysis of participant demographics and their perceptions of nurse-physician collaboration. The majority of participants are young, with 61.7% aged 20-30 years, and 58.4% are male. Professionally, the sample is nearly balanced between nurses (48.1%) and physicians (51.9%), with most holding an MBBS degree (51.9%) and having 1-5 years of service (64.3%). Most participants work in general wards (61.7%). In terms of collaboration, positive perceptions are seen in communication and teamwork, particularly in areas like mutual support and shared information about treatment. However, there is room for improvement in areas like resolving patient care issues and discussing treatment plans. A T-test showed a significant difference between nurses and physicians, with nurses having higher perception scores (mean = 64.01) than physicians (mean = 58.88, p = 0.0296). ANOVA analysis revealed no significant influence of demographic factors such as age, gender, profession, educational status, length of service, or department of work on collaboration perceptions, with all p-values exceeding the 0.05 threshold. In conclusion, while differences in perception exist between nurses and physicians, demographic factors do not significantly impact their views on collaboration, pointing to areas of strength as well as potential for improvement in nurse-physician collaboration.

DISCUSSION

sample of 154 participants was selected from a single tertiary care public sector hospital to find out the perceptions of Nurses and other health care providers regarding Perceptions of Nurses and Physicians Regarding Nurse-Physician Collaboration and Associated Demographic Factors. The study consisted of 58.4% of male participants and only 40.9% of the female participants. A study conducted in Jonardian public hospitals on the same topic also consisted of 62.9% of male participants which is comparable with the population of our study. [57].

Majority of the participants 66.7% in our study were from the age group of 20 years to 30 years and the mean age of our study participants was 25.5±3 years. Similar to the results of our study, a study on same theme conducted in Palestine has taken highest number of participants from the age group < 35 years. [58]. In the study majority 61.7% of the participants have their clinical duties in general wards while minimum part 17.5 % of the participants were performing their duties in critical units. A study in United States of America has supported this finding of our study. [59].

The study found that perception toward collaboration between physicians and nurses is significantly different among health care professionals, as nurses showed more percentage in positive perception towards Nurse-Physician Collaboration as compared to doctors. A study conducted in the united states has inline results with the findings of this study. [60]. The cross tabulation of the education level of the study participants with the perception of the participants towards nurse-physician collaboration has found that BSN/POST RN nurses have the highest percentage in the positive perception as compared to MBBS and diploma nurses. A study in Iraq has also found that nurses especially degree level nurses have more positive attitude towards nurse-physician collaboration as compared to MBBS doctors and diploma nurses. [61].

CONCLUSION

The collaboration among nurses and other health care workers (HCW) is very much important for the smooth activities in the health care center. The more positive the perception of the HCWs, the better the outcome in terms pf staff satisfaction and patient recovery. The study highlighted that nurses are more affiliated towards positive perception towards nursephysician collaboration, but the response from other HCWs needs to be improved to have better care of the patients. The study identified that there is need of continuous training to the HCWs to meet the required need.

RECOMMENDATION

More studies are recommended to find out the factors influencing the Nurses-Physician collaboration in health care settings. Training and educational sessions must be adopted at every level to enhance the knowledge, perception and practices of Nurses-Physician collaboration in health care settings. Consequently, studies are recommended to find out the correlation between demographic and other possible factors and Nurses-Physician collaboration.

LIMITATIONS

The study design was cross-sectional design and the sampling technique was convenient sampling. The design and the sampling technique could be replaced for better results. Majority of the study participants were from the age group 20 years to 30 years. The participants were taken from only one public sector hospital. The study might have shown different results with different age group of the participants and multiple centers.

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DEDICATION

This work is cordially dedicated to our dear parents for their unlimited love and for all of their commitment throughout our lives, our siblings and friends for their endless prayers and inspiration. We dedicate this Effort to our teachers, whose blessings, guidance and encouragement helped us succeed in our goals

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