

Perception on Interdisciplinary Team Work among Nurses

Sangita Shrestha,¹ Kopila Karki,² Rajina Shakya,³ Urmila Shakya¹

¹National Academy of Health sciences, Bir Hospital Nursing Campus, Kathmandu, ²Manmohan Memorial Institute of Health Sciences, Kathmandu, Nepal, ³Nepal Health Research Council, Kathmandu, Nepal.

ABSTRACT

Background: The evolving population demographics, healthcare system, and epidemiological transition have highlighted the need for interdisciplinary teamwork to deliver cost-effective and quality care. Despite its importance, research shows it is not consistently practiced in healthcare settings. This study aims to determine nurses' perceptions of interdisciplinary teamwork in clinical settings.

Methods: A descriptive cross-sectional study was conducted in selected tertiary hospitals, Kathmandu. Sample size was calculated using Cochrane formula and convenient sampling was used to enroll 216 nurses. Data were collected using a self-administered modified version of the Nurse Practitioner Primary Care Organizational Climate Questionnaire (NP-PCOCQ). Frequency, percentage and mean were calculated as well as chi-square test was done for analysis.

Results: Among 216 nurses, 56.9% had negative perception of teamwork. The overall item mean score and standard deviation for NP-PCOCQ was 2.66 and 0.383, respectively. Perception regarding nurse-physician relations have the highest mean score and nurse-administrative relations have lowest. The majority of nurses in emergency and medical care had positive perception while those in surgical and critical care had negative perceptions of teamwork. The overall moderate perceptions of teamwork were reflected in the NP-PCOCQ score, highlighting the influence of clinical work environment on nurses' collaborative experiences.

Conclusions: Majority of nurses have negative perception of teamwork with nurse-administrative relations scoring the lowest among subscales. Organizations should create a supportive work environment through strategic planning, effective communication, and regular collaboration to ensure teamwork.

Keywords: Interdisciplinary teamwork; nurse practitioner; perception.

INTRODUCTION

An interdisciplinary team is a group of health professionals from diverse specialties collaborating to provide comprehensive, holistic and patient-centered care.¹ This strengthen collaboration, coordination and better relationships among care providers, promoting effective leadership and improved healthcare services.^{2,3}

A well-functioning interdisciplinary team is essential to improve patient outcomes, satisfaction, and quality of life⁴⁻⁶ while poor collaboration among care providers lead to fragmented care and increased chances of errors.⁷ Positive and effective leadership, supportive structures, role clarity, mutual respect, professional visibility and effective communication are the building blocks of successful teamwork.⁸⁻¹² However, difference in

perception as well as dominance of specific professions are challenges for effective teamwork.¹³⁻¹⁵

Nurses as core team, collaborate with various professionals for patient care, and their perception of teamwork matters. While limited research exists on perception of teamwork globally, no studies have been conducted in Nepal. Thus, this study explores nurses' perceptions of interdisciplinary teamwork in their clinical setting.

METHODS

A descriptive cross-sectional study design was used to assess the perception of interdisciplinary teamwork among Nurses in the National Academy of Medical Sciences (Bir Hospital) and the National Trauma Centre. Data was collected from 03/23/2021 to 05/03/2021. Sample size

Correspondence: Ms Rajina Shakya, Nepal Health Research Council, Kathmandu, Nepal. Email: rajishakya47@gmail.com, Phone: +9779843647539.

was calculated using the Cochran formula¹⁶ (z^2pq/d^2) where z was considered 1.96 for 95 % confidence interval, p prevalence was considered 0.5, q was $1-p$, and d the margin of error considered 5%. With a 10% non-response rate, the total calculated sample size was 216 for the finite population. The nurses were enrolled in study using a convenient sampling technique. Nurses with less than 2 years of experience in the institute and in-charge of the wards were excluded. Ethical approval was obtained from the Ethical Review Board (ERB) of the Nepal Health Research Council as well as the Institutional Review Board (IRB) of the National Academy of Medical Sciences (NAMS). Written informed consent was obtained from each participant, and measures were taken to protect participants' rights.

The self-administered tool was used for data collection, which included socio-demographic information and Nurse Practitioner Primary Care Organizational Climate Questionnaire (NP-PCOCQ) developed by Pogoyosyan et al.^{10,17} NP-PCOCQ is a validated tool designed to assess nurse's perception of organizational climate in primary care settings. NP-PCOCQ domains include components directly related to interdisciplinary collaboration and teamwork, such as communication, mutual respect, role clarity and shared decision making. The permission was obtained from original author to use this tool: NP-PCOCQ. This section included 29 statements rated on a 4-point Likert scale (1 = Strongly Agree, 2 = Agree, 3 = Disagree, 4 = Strongly Disagree). The NP-PCOCQ measures nurses' perceptions of interdisciplinary teamwork and organizational climate, with total scores ranging from 29 to 116. Higher scores reflect a more favorable perception of interdisciplinary teamwork and organizational climate, whereas lower scores indicate potential areas for improvement. An item mean score of 2.6 or higher was categorized as a positive perception, while an item mean score of less than 2.6 was classified as a negative perception of interdisciplinary teamwork.

As the tool was not used previously in the Nepalese context, face and content validity were assessed through expert review by six experts in the field. Some modifications were made based on their recommendations to maintain cultural and contextual relevance. The high content validity index (CVI) of 0.90 indicates strong expert agreement. The tool was pretested with 10% of the sample size to measure reliability, and modifications were made as needed based on participants' feedback. The tool demonstrated strong internal consistency with Cronbach's alpha values ranging from 0.87 to 0.95 among all the four subscales.

Authors US and KK distributed the questionnaire one

participant at a time in ward to prevent contamination after explaining its purpose and obtaining written consent. Completed questionnaires were collected, cleaned, coded, and manually entered into SPSS version 25. Data were described using descriptive statistics (frequency, percentage and mean), and then the chi-square test was used to assess association with perception of interdisciplinary teamwork and selected variables. The significance level of p -value for chi-square test was considered 0.05.

RESULTS

Table 1 shows the background characteristics of participants. All participants were female with an average age of 31 years, and more than half (62%) belonged to upper caste groups. Nearly two-thirds of participants (65.7%) had a bachelor's degree, and 27.8% had certificate-level education. Of the 216 participants, 66.2% were from the National Academy of Medical Sciences (Bir Hospital) and 33.8% were from the National Trauma Center. Almost four out of ten participants primarily worked in critical care units (39.8%), followed by medical care (32.9%) and surgical care (27.3%). On average, participants had 8 years of work experience; however, over half (54.6%) had less than 5 years of experience. [Table 1].

Table 1. Background characteristics of nurses. $n = 216$

Characteristics	Number	Percent (%)
Age		
<30-yrs	139	64.4
>30-yrs	77	35.6
Mean \pm SD	31 \pm 7.9	
Ethnicity		
Brahmin/ Chhetri	134	62.0
Janajati	68	31.5
Dalit	14	6.5
Education		
Certificate level	60	27.8
Bachelor	142	65.7
Masters	14	6.5
Clinical area of work		
Medical Wards	71	32.9
Surgical wards	59	27.3
Critical care*	86	39.8
Work Experiences (in years)		
<5	118	54.6
5-15	70	32.4
>15	28	13.0
Mean \pm SD	8 \pm 7.6	

*Critical care includes the Intensive Care Unit,

emergency and the operating theatre

The results of the NP-PCOCQ revealed varying perceptions of interdisciplinary teamwork among nurses. The interpretation of these subscales is based on the principle that higher scores indicate more positive perceptions. Among the four subscales, Independent Support and Practices and Nurse-Physician Relations showed relatively higher item mean scores of 2.8 and 2.9, respectively, suggesting that nurses had positive perceptions in these areas. The professional visibility subscale had an item mean score of 2.7, suggesting nurses perceived their roles as fairly visible and recognized in the organization. However, the lower item mean score of 2.3 in the subscale Nurse-Administration relations indicates a negative perception of support from the administration. The total NP-PCOCQ score was 68.5 ± 11.1 , with an average item mean score of 2.6, indicating moderate perceptions of interdisciplinary teamwork [Table 2].

Table 2. Respondent’s scores on subscales of NP-PCOCQ. n=216

Sub-scales of NP-PCOCQ	Possible range	Items	Mean score \pm SD	Item Mean score
Professional Visibility	4-16	4	9.4 \pm 1.8	2.7
Nurse-administration relations	9-36	9	24.5 \pm 5.0	2.3
Nurse-physician relations	7-28	7	14.8 \pm 3.0	2.9
Independent support and practices	9-36	9	19.7 \pm 3.8	2.8
Total NP-PCOCQ score	29- 116	29	68.5\pm 11.1	2.6

Out of 216 respondents, the findings revealed that 56.9% of nurses had a negative perception of interdisciplinary teamwork (item mean score <2.5), while 43.1% had a positive perception (item mean score \geq 2.5) [Table 3].

Table 3. Respondents’ level of perception of Interdisciplinary Teamwork. n= 216

Level of perception	Number (%)
Positive (item mean score \geq 2.6)	93(43.1)
Negative (item mean score <2.6)	123(56.9)

Perception of interdisciplinary teamwork was found to be significantly associated with clinical area of practice ($p = 0.044$). Meanwhile, other variables such as age, ethnicity, education, and work experience were not significantly related to perceptions of teamwork, as indicated by p-values greater than 0.05. Most respondents in medical care and emergency care have a positive perception of teamwork [Table 4].

Table 4. Association between level of Perception of Interdisciplinary Teamwork and selected variables. n= 216

Variables	Perception of Interdisciplinary teamwork		p-value
	Negative Number (%)	Positive Number (%)	
Age			
<30-years	77(55.4)	62(44.6)	0.537
>30-years	46(59.7)	31(40.3)	
Ethnicity			
Upper caste	76(56.7)	58(43.3)	0.931
Dalit/ Janajatis/ Religious minorities	47(57.3)	35(42.7)	
Education			

Table 4. Association between level of Perception of Interdisciplinary Teamwork and selected variables.
n= 216

Variables	Perception of Interdisciplinary teamwork		p-value
	Negative Number (%)	Positive Number (%)	
Certificate level	35(58.3)	25(41.7)	0.798
Bachelor and above	88 (56.4)	68 (43.6)	
Clinical area of practice			
Medical care	34(47.9)	37(52.1)	0.044*
Surgical care	40(67.8)	19 (32.2)	
Critical care	34 (64.2)	19 (35.8)	
Emergency care	15 (45.5)	18 (54.5)	
Work Experiences			
<5 years	64(54.2)	54(45.8)	0.378
>5years	59(60.2)	39(39.8)	

**p-value <0.05 statistically significant*

DISCUSSION

This study found that overall NP-PCOCQ score was 68.5, indicating a moderately positive perception of interdisciplinary teamwork among nurses. However, when analyzed by item mean score, more than half of the nurses (56.9%) had a negative perception of interdisciplinary teamwork in their workplace. In contrast, studies conducted in Iran and Korea reported moderate to highly positive perception of teamwork among nurses, which was linked to improved patient care outcome.^{18,19} Similarly, a study in Poland reported that majority of nursing and paramedic students has highest scores in attitudes toward interdisciplinary teamwork.²⁰ The observed differences may be attributed to variations assessment tools, study population and health care systems in different countries. Moreover, previous studies have indicated that sudden changes in work environments such as pandemics can affect the perception of teamwork among health workers due to disrupted communication and increased workloads.^{21,22} This current study was conducted following COVID pandemic, which might have affected the perception of teamwork among nurses. However, due to lack of baseline data, direct comparison could not be made.

The study found that the clinical practice area was associated with perceptions of interdisciplinary teamwork. Majority of nurses in Medical and emergency care reported positive perceptions compared to those in surgical and critical care units. In line with this

Khadka et al, reported association of working unit with perception of practice environment.²³ Milton et al. (2022) also highlighted that workplace dynamics and management support significantly influence teamwork among healthcare professionals.¹³ However, Matusov et al. (2022) concluded that ICU nurses had favorable views of teamwork.²⁴ This difference may be explained by the fact that that high-stress environments like critical care units include multiple team with various professionals where communication barriers, superiority complex, power dynamics and role conflicts regarding profession are likely to happen which impacts teamwork.^{14,25} This suggests that workplace dynamics and clinical environments may play a larger role than individual characteristics in shaping perceptions of teamwork.

NP-PCOCQ subscale scores revealed that nurse-physician relations, professional visibility, and independent support and practice were rated positively, suggesting good collaboration between nurses and physicians, support for independent decision-making, and recognition of the nursing profession in clinical settings. Similar to this finding, a study conducted in Nepal reported majority of nurses had good teamwork with physician in their practice area.²³ This may be due to the fact that physician and nurses are responsible for direct patient care and have to collaborate for continuity of patient care.

In this study relationship between nurses and administration was rated poorly which was similar to the study conducted in the Massachusetts.¹⁷ The

lack of studies on nurses' perceptions of teamwork in Nepal makes direct comparisons challenging. However, findings from other contexts emphasize the critical role of leadership and organizational structures in fostering effective teamwork. Studies from university hospitals have highlighted the significant influence of administrative relationships on teamwork dynamics.^{10,13,17} Poor nurse-administration relationships in this study align with these findings, suggesting that low administrative support and communication may contribute to unfavorable perceptions of teamwork. Strengthening these relationships could improve collaboration, organizational climate, and patient outcomes. Interventions such as team training, interdisciplinary rounds, and enhanced administrative support could address these challenges.^{8,11,20,21}

Most studies from developed countries, where interprofessional training and multidisciplinary courses are common, showed favorable perception of teamwork.^{20,21} However, in Nepal, the lack of such programs and barriers like poor communication, weak interpersonal skills, and feelings of dominance among professionals may explain the negative perceptions found in this study²⁶. Poor teamwork can affect patient outcomes and staff morale. Thus, it is essential to create environments that support teamwork through training, incentives, and fostering a collaborative culture.⁸ Interprofessional simulations and training focusing on improving communication skills and interpersonal skills could be implemented to enhance teamwork perceptions among healthcare professionals in Nepal.²⁰ Further research is recommended to explore factors influencing interdisciplinary teamwork in different clinical settings across Nepal. This study involved nurses in tertiary hospitals, which may limit the generalizability of the findings to the broader population.

This study is the first of its kind conducted in Nepal and lack of literature in the local context limited the ability to compare and contextualize the findings with similar studies.

CONCLUSIONS

In conclusion, the study found that most of nurses have negative perceptions of interdisciplinary teamwork, and the overall perception score of interdisciplinary teamwork was moderately positive. Nurses in Emergency and medical unit have positive perception of interdisciplinary teamwork compared to other units. Among the domains, nurse-administration relations have lowest score and independent practice and support have highest which highlights that there is lack of supportive administration in the clinical setting. It is essential to improve perception of teamwork among nurses through proper communication and collaborative environment to promote quality patient outcomes.

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