



Interpersonal Communication Skills of Nursing Students: A Cross-Sectional Study During the COVID-19 Pandemic

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Abstract

Background: Assessing the interpersonal communication skills of nursing students during the COVID-19 pandemic enables us to understand their communication challenges and needs in crises and devise appropriate solutions to address them effectively.

Objectives: This study aimed to determine the interpersonal communication skills of nursing students at Islamic Azad University, Karaj Branch, amidst the COVID-19 pandemic.

Methods: This descriptive cross-sectional study was conducted on 167 nursing students in the seventh and 8th semesters of the School of Nursing and Midwifery at Islamic Azad University, Karaj Branch, during the academic year 2020 - 2021. Sampling was performed using a purposeful sampling method. Data were collected through a demographic information form and the Interpersonal Communication Skills Test, which was completed via self-report. Data were analyzed using SPSS software version 26, employing descriptive statistics (mean, standard deviation, frequency, percentage) and inferential tests such as the Pearson correlation coefficient and *t*-test.

Results: The majority (53.3%) of nursing students exhibited moderate interpersonal communication skills. The lowest mean score was related to assertiveness (13.72 ± 3.24), while the highest mean score was associated with the ability to receive and send messages (28.53 ± 4.62). A weak, significant inverse correlation was observed between the total score of interpersonal communication skills and age ($r = -0.182$, $P = 0.019$).

Conclusions: The results indicate that most nursing students during the COVID-19 pandemic possessed moderate interpersonal communication skills. The area of greatest weakness was assertiveness. These findings underscore the necessity of attention and training to enhance assertiveness skills among nursing students. Additionally, teaching nursing students interpersonal communication skills, particularly in critical conditions, is essential.

Keywords: Nursing Students, Interpersonal Communication Skills, COVID-19, Cross-Sectional Study

1. Background

For nursing students, interpersonal communication skills are considered vital tools to fulfill diverse roles in areas such as prevention, treatment, rehabilitation, health education, and health promotion (1). Interpersonal communication, encompassing both verbal and non-verbal messages, serves as a fundamental social skill for sharing information, thoughts, and feelings with others (2,3).

These skills form the foundation of quality nursing care (3). Nursing students with strong interpersonal communication skills can establish effective and friendly relationships with patients, leading to improved therapeutic outcomes, better patient

information gathering, enhanced understanding of psychological-social support, and increased patient satisfaction (3, 4). Additionally, effective communication enables nursing students to establish supportive relationships with patients' family members, allowing them to better understand their needs and expectations (4).

In the healthcare environment, nursing students must collaborate with other team members. Interpersonal communication skills enhance the quality of collaboration and coordination within the healthcare team, facilitating accurate and precise information transfer (3), improved safety, and reduced medical errors (5, 6). These skills also enable nursing students to interact

effectively as valuable team members in the workplace (1).

Personal factors, including personality traits, self-confidence, adaptability, critical thinking ability, stress tolerance, and resilience, significantly influence the effectiveness of interpersonal communication skills in nursing students (2, 3, 7-9). Interpersonal communication skills are not innate; rather, they are acquired and can be enhanced through training, repetition, and practice during clinical nursing education (10, 11). Hands-on experience in interacting with patients and collaborating with the healthcare team plays a crucial role in fostering the development of nursing students' interpersonal communication skills. Educational and internship opportunities across various hospital departments and healthcare centers expose students to the practical aspects of nursing, thereby refining their interpersonal communication skills in real-life scenarios (10).

The organization of the clinical environment, provision of spaces for interaction with the healthcare team, patients, and their families, and promotion of a patient-centered and team-oriented organizational culture are pivotal in enhancing interpersonal communication skills among nursing students. Empowering students in social interactions involves understanding others' emotions and needs, cultivating empathetic communication skills, honing problem-solving abilities, facilitating collaborative decision-making, and establishing support networks, thereby fostering better interpersonal relationships among nursing students (12, 13).

Acquiring interpersonal communication skills is a fundamental clinical competency in nursing education (14). However, the COVID-19 pandemic has posed challenges, as limitations in clinical training time and reduced presence in healthcare settings have impacted nursing students' acquisition of these skills (15, 16). Various evidence indicates that the use of personal protective equipment as a physical barrier during the pandemic has affected verbal and non-verbal interactions, empathy, and interactions among nursing personnel (17, 18). Even prior to the pandemic, interpersonal communication skills were not satisfactory among nursing undergraduate students (2).

The final two terms of nursing education represent the last opportunity for nursing students to refine their interpersonal communication skills through interactions with colleagues, patients, and the healthcare team. However, students in the seventh and eighth terms encountered various limitations during the COVID-19 pandemic, including quarantine measures, reduced social interactions, limited exposure to clinical cases, and decreased clinical hours. Adherence to protective

measures, such as wearing masks to prevent COVID-19 transmission, may have impacted their ability to develop interpersonal communication skills.

2. Objectives

To assess the status of nursing students' interpersonal communication skills during the pandemic, a study was designed to determine the proficiency of these skills among nursing students at Islamic Azad University, Karaj Branch. Evaluating the interpersonal communication skills of nursing students during crises like the pandemic allows us to identify their communication challenges and needs, enabling us to devise effective solutions to address them.

3. Methods

To address the research question, "How are the interpersonal communication skills of nursing students during the COVID-19 pandemic," a cross-sectional descriptive study was conducted in 2020-2021. The study population comprised all undergraduate nursing students enrolled in the 7th and 8th semesters at the Faculty of Nursing and Midwifery, Islamic Azad University, Karaj Branch, Iran (n = 175).

Sampling was conducted using a purposeful sampling method. All students in the seventh and eighth semesters who expressed interest in participating in the study were included over three consecutive academic semesters. Incomplete questionnaires were excluded from the data analysis.

Data collection involved the use of a demographic information form and the Interpersonal Communication Skills questionnaire, developed by Queendom in 2004. This questionnaire consisted of 34 items assessing five domains of interpersonal communication skills: Listening skills, ability to send and receive messages, understanding of the communication process, emotional control, and assertive communication. Participants rated their responses on a five-point Likert scale ranging from 1 (never) to 5 (always). Questions 2, 4, and 6 were reverse-scored. The total score range for the questionnaire was 34 to 170. Scores between 34 and 68 indicated poor interpersonal communication skills, scores between 69 and 102 indicated moderate skills and scores above 102 indicated high skills. The internal consistency of the questionnaire was reported to be 0.71 in the study conducted by Hosseinchari and Fadakar (19). Furthermore, the validity and reliability of the questionnaire were confirmed in the study by Peyman et al. (20).

To assess the questionnaire's reliability, the test-retest method was employed. Ten nursing students completed the questionnaire at two different time points, with a 10-day interval between tests. The correlation between the scores obtained from the two tests was calculated and found to be 0.76, indicating a moderate to high level of consistency and reliability in measuring interpersonal communication skills using this questionnaire.

The questionnaire was individually administered (face-to-face) by a researcher to all nursing students. Before administering the questionnaire, the researcher provided instructions on how to complete it, and each student received the questionnaire along with a written consent form. Students completed the questionnaire in a self-report format, sharing their responses based on their own experiences and perceptions. The collected questionnaires were retrieved from each participant after one to two days, using the same method for all samples to ensure consistency in data collection.

Ethical considerations in this study were based on the criteria of the Helsinki Convention. Permission to conduct the research was obtained from university officials before commencing the study. The research was assigned an ethical code number "IR.IAU.K.REC.139401" to ensure compliance with ethical standards. Prior to administering the questionnaire, the researcher introduced themselves to the participants and explained the study objectives. Written consent was obtained from each participant, ensuring they were fully informed about the research and voluntarily agreed to participate. Participation in the research was entirely voluntary for nursing students, who were free to decide whether or not to take part without facing any pressure or consequences for their decision. By adhering to these ethical considerations, the study ensured the protection of participants' rights, privacy, and confidentiality while conducting valuable research on nursing students' interpersonal communication skills during the COVID-19 pandemic.

The data were analyzed using SPSS software version 26. Initially, the Kolmogorov-Smirnov test was conducted to assess the normality of the total score of interpersonal communication skills. The results indicated that the score of interpersonal communication skills followed a normal distribution ($P = 0.200$). Descriptive statistics, including frequency distribution tables, mean, and standard deviation, were utilized to present the characteristics of the data. To investigate the relationship between demographic variables and the total score of interpersonal communication skills, the *t*-test for independent groups and the Pearson correlation coefficient were used. The strength of the correlation was defined as follows: A coefficient between zero and 0.3 was considered weak,

between 0.3 and 0.6 was considered moderate, and a coefficient above 0.6 was considered strong. The significance level for all statistical tests was set at < 0.05 .

4. Results

The demographic characteristics of the participants are presented in Table 1. The study included a majority of female students (82%), and most of them were single (74.3%). In terms of academic progression, the highest percentage of students (69.5%) were in their 7th semester. Additionally, the majority of participants had no prior student work experience (61.1%) (Table 1).

Table 1. Demographic Characteristics of Nursing Students ($n = 167$)^a

Characteristics and Categories	Male	Female	Total (167)
Marital status			
Single	27 (16.2)	97 (58.1)	124 (74.3)
Married	3 (1.8)	40 (24)	43 (25.7)
Academic progression			
7th Semester	22 (13.2)	94 (56.3)	116 (69.5)
8th Semester	8 (4.8)	43 (25.7)	51 (30.5)
Student work experience			
No	15 (9)	87 (52.1)	102 (61.1)
Yes	15 (9)	50 (29.9)	65 (38.9)

^a Values are expressed as No. (%).

The mean age of the students was 22.18 years, with a standard deviation of 0.96, and their ages ranged from 21 to 24 years. The participants' mean grade point average (GPA) was 16.86, with a standard deviation of 1.16, and the scores ranged from 14 to 19.96. Regarding student work duration, the mean duration was 5 months, with a standard deviation of 8.1, and it ranged from zero to 36 months.

The mean total score of students' interpersonal communication skills was 100.27 ± 14.18 (Table 2). Out of the 167 students surveyed, 2.4% exhibited poor interpersonal communication skills, 53.3% had moderate interpersonal communication skills, and 44.3% demonstrated high interpersonal communication skills. The weakest interpersonal communication skills were related to assertiveness.

The Pearson correlation coefficient test revealed a weak, inverse, and significant correlation between the total score of interpersonal communication skills and the ability to receive and send messages with age ($P < 0.05$). However, there was no statistically significant correlation between the total score of interpersonal communication

Table 2. Mean and Standard Deviation of Interpersonal Communication Skills in Nursing Students^a

Variable and Subscales	Mean ± SD	Minimum Score	Maximum Score
Interpersonal communication skills			
Listening skills	16.92 ± 3.36	9	27
Ability to receive and send messages	28.53 ± 4.62	17	38
Insights into the communication process	15.82 ± 2.64	9	23
Emotional control	25.27 ± 4.69	13	40
Communication with assertiveness	13.72 ± 3.24	5	22
Total score	100.27 ± 14.18	61	136

^a Values are expressed as mean ± SD.

skills and subscales with grade point average, semester, and duration of student work ($P > 0.05$) (Table 3).

Independent sample *t*-tests did not indicate a statistically significant difference in the mean score of interpersonal communication skills subscales based on gender, marital status, and student work ($P > 0.05$) (Table 4).

5. Discussion

The present study revealed that more than half of the nursing students had moderate interpersonal communication skills. These findings are consistent with the study conducted by Baradaran Binazir and Heidari, which reported moderate interpersonal communication skills among medical students (21). Another study by Diaz-Agea et al. demonstrated that verbal communication among nurses was maintained and slightly strengthened during the COVID-19 pandemic, while non-verbal interactions were affected by the use of personal protective equipment. The greatest communication challenge for nurses was wearing masks and difficulties in lip-reading for individuals with hearing impairments (17). A study by Green et al. also showed that personal protective equipment hindered both verbal and non-verbal communication for nurses due to difficulties in vocal tone, leading to hindered expression of empathy and clear speech (18).

Prior to the COVID-19 pandemic, interpersonal communication skills among nursing students were reported to be mostly moderate (22) and weak (4, 23). Differences in the findings could be attributed to variations in the study population, data collection instruments, and the specific contexts of the studies. Despite communication skills workshops being a mandatory part of the nursing undergraduate curriculum and the assessment of communication skills being an important criterion for clinical education evaluation,

nursing students in the seventh and eighth semesters rated their interpersonal communication skills as moderate. The reduction in direct interactions with instructors, patients, and healthcare staff, limited clinical presence, and concerns about COVID-19 exposure with the need to maintain social distancing and wear masks and gloves may have effectively hindered the utilization of interpersonal communication skills among students, leading to reduced self-assessment. Therefore, providing training on interpersonal communication skills to nursing students under crisis conditions is deemed essential.

The study found that nursing students had low levels of assertiveness in interpersonal communication skills. These findings are consistent with previous research, where only 21% of nursing personnel demonstrated assertive behavior (24). Additionally, another study showed that the majority of nursing students had moderate levels of assertiveness (25). Being assertive in communication is vital for nurses to handle conflicts and manage their workload effectively (26). Hindrances to developing assertiveness among nursing students include the lack of assessment in clinical settings, misconceptions about its importance in nursing, and insufficient training (27). It seems that the low levels of assertiveness among nursing students could be influenced by inadequate training and possibly cultural factors. Assertiveness in interpersonal communication is a complex skill that requires practice and experience. Therefore, it is essential to provide training and exercises specifically focusing on assertive communication, especially in critical situations. By addressing these factors, nursing students can develop their assertiveness skills, leading to more effective communication and better handling of challenging situations in their profession.

The results of the present study demonstrated that the highest interpersonal communication skill among nursing students was the ability to receive and

Table 3. The Pearson Correlation between Interpersonal Communication Skills and Demographic Characteristics in Nursing Students

Variables	Interpersonal Communication Skills					Total Score
	Listening Skills	Ability to Receive and Send Messages	Insights into the Communication Process	Emotional Control	Communication with Assertiveness	
Age	r = -0.112; P = 0.149	r = -0.169; P = 0.029	r = -0.133; P = 0.087	r = -0.132; P = 0.089	r = -0.139; P = 0.073	r = -0.182; P = 0.019
Grade point average	r = -0.102; P = 0.189	r = -0.090; P = 0.247	r = -0.070; P = 0.371	r = -0.077; P = 0.322	r = -0.084; P = 0.279	r = -0.111; P = 0.152
Average duration of student work	r = 0.032; P = 0.679	r = 0.009; P = 0.905	r = -0.033; P = 0.668	r = 0.029; P = 0.715	r = 0.076; P = 0.329	r = 0.025; P = 0.746

Table 4. Difference in the Mean Scores of Interpersonal Communication Skills and Its Subscales Based on Demographic Characteristics in Nursing Students^a

Variables	Interpersonal Communication Skills					Total Score
	Listening Skills	Ability to Receive and Send Messages	Insights into the Communication Process	Emotional Control	Communication with Assertiveness	
Gender						
Male	16.93 ± 3.38	26.53 ± 4.50	15.56 ± 2.92	25.36 ± 4.18	14.06 ± 3.45	98.46 ± 13.25
Female	16.91 ± 3.37	28.97 ± 4.55	15.87 ± 2.59	25.25 ± 4.81	13.64 ± 3.20	100.67 ± 14.39
t-test	0.984	0.009	0.564	0.907	0.526	0.442
Marital status						
Single	17.03 ± 3.36	28.48 ± 4.80	15.85 ± 2.82	25.40 ± 4.73	13.98 ± 3.29	100.75 ± 14.74
Married	16.60 ± 3.40	28.67 ± 4.11	15.72 ± 2.06	24.90 ± 4.60	12.97 ± 3.02	98.88 ± 12.49
t-test	0.475	0.817	0.776	0.552	0.80	0.457
Semester						
Seven	16.98 ± 3.58	28.41 ± 4.74	15.90 ± 2.83	25.33 ± 5.07	13.62 ± 3.18	15.01 ± 1.39
Eight	16.78 ± 2.85	28.80 ± 4.39	15.62 ± 2.17	25.13 ± 3.73	13.94 ± 3.40	12.21 ± 1.71
t-test	0.727	0.617	0.534	0.778	0.569	0.991
Student work experience						
No	16.64 ± 3.33	28.45 ± 4.90	15.86 ± 2.59	24.83 ± 4.86	13.38 ± 3.29	102 ± 13.16
Yes	17.35 ± 3.40	28.66 ± 4.18	15.75 ± 2.74	25.96 ± 4.35	14.26 ± 3.12	99.17 ± 14.75
t-test	0.187	0.775	0.796	0.128	0.088	0.211

^a Values are expressed as mean ± SD.

send messages. This finding indicates that nursing students are generally capable of understanding and interpreting messages and can effectively convey their own messages clearly and accurately. This ability is crucial for establishing effective communication with patients, colleagues, and other team members. These findings are consistent with the study by Diaz-Agea et al., which showed that verbal communication was maintained and slightly enhanced during the COVID-19 pandemic (17). Based on this finding, it appears that nursing students possess an acceptable level of skill in receiving and sending messages. However, further improvement and enhancement of these abilities through additional training and practice

could lead to a better quality of their communication. By focusing on strengthening these abilities, nursing students can enhance their communication skills and foster better relationships with patients and healthcare team members.

The current study demonstrated that nursing students have a moderate ability to control their emotions in interpersonal communication. This skill is crucial for stress management and improving communication with patients and the healthcare team. The study by Canas-Lerma et al. indicated that despite high levels of stress and anxiety, nurses were able to maintain their empathetic skills during the COVID-19 pandemic (28).

However, the findings of a systematic review showed that establishing empathetic connections among nurses was not adequate (29). Additionally, the study by Diaz-Agea et al. revealed that the use of masks and changes in voice tone and non-verbal cues posed challenges for empathetic communication during the COVID-19 pandemic (17). Discrepancies in the findings may be attributed to differences in population and data collection tools. It seems that wearing masks posed challenges in expressing non-verbal cues and understanding patients' emotions. Training on expressing empathy, especially in critical situations, can enhance their abilities and positively impact communication and performance in clinical settings.

The present study revealed that nursing students had a moderate level of ability to listen to the needs, emotions, and communications of their patients and colleagues. Listening and providing feedback constitute more than 75% of the communication process. This skill is crucial for establishing effective and trust-building relationships with patients, better understanding their needs and concerns, and demonstrating an empathetic presence in the treatment process (29). The results of a systematic review indicated that listening to patients was not adequate among nurses (30). It is likely that the necessity of adhering to social distancing guidelines, using personal protective equipment, and facing stress while dealing with COVID-19 patients were among the reasons for the reduced focus on listening skills in nursing students during the pandemic.

The current study revealed that nursing students with higher age exhibited lower levels of interpersonal communication skills. Interestingly, this finding contradicted the results of previous studies by Nikjou et al. and Shakerinia, which indicated an improvement in interpersonal communication skills with increasing age (22, 31). It is plausible that older nursing students might have experienced greater concerns regarding their own and their family's susceptibility to COVID-19 due to their interactions with patients, families, and healthcare teams. Additionally, their heightened sense of responsibility could have led to more serious adherence to social distancing guidelines and the use of personal protective equipment, potentially resulting in less utilization of their interpersonal communication skills.

5.1. Limitations

The present study faced several limitations. The conditions of the COVID-19 pandemic, the necessity of maintaining social distancing, concerns about infection, and the use of protective equipment had significant impacts on interpersonal interactions. The instruments

used in this study were not specifically designed for pandemic conditions. The data collection tool relied on self-report questionnaires, which might have been better replaced with observational methods to record the behaviors and interactions of nursing students in clinical settings with patients and healthcare teams. Additionally, the study was conducted in a single nursing school and utilized non-random sampling, which may affect the generalizability of the findings. To strengthen the research, the checklist of observational studies in epidemiology (STROBE) was used in planning, implementing, and reporting the findings.

5.2. Conclusions

Based on the results during the COVID-19 pandemic, the majority of nursing students demonstrated average interpersonal communication skills. The highest weakness was observed in assertiveness, while the highest capability was in the ability to receive and send messages. These findings highlight the need for attention and training to improve assertiveness skills among nursing students. Considering the study's findings, it is essential to prioritize the education of interpersonal communication skills for nursing students in crisis situations. These efforts can contribute to enhancing the quality of nursing services, increasing patient satisfaction, and improving treatment outcomes. It is suggested that a qualitative study be conducted to explore the experiences of nursing students regarding communication challenges during the COVID-19 pandemic.

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Footnotes

Authors' Contribution: Study conceptualization and design: S.Z.M, B. M, and S.M.H; analysis and interpretation of data: S.Z.M, B. M and S.M.H; drafting of the manuscript: S.Z.M, B. M, and S.M.H; critical revision of the manuscript, S.Z.M.

Conflict of Interests: No conflicts of interest were declared by the authors.

Data Availability: The dataset presented in the study is available on request from the corresponding author during submission or after its publication.

Ethical Approval: The present study was extracted from the research at the Islamic Azad University, Karaj Branch, with the code of ethics IR.IAU.K.REC.139401. Permission to conduct the study was obtained in 2020. Participants had the right to choose and freedom to participate in the research, and the questionnaires were designed anonymously.

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