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Original Article

A Pilot Study to Evaluate the Effect of Communication Skill Training on Nursing Students' Skills and Self-Efficacy in Caring for Patients with Cancer: Part II

Viji Prasad[1]   Poonam Naik[2]   Alphonsa Ancheril[3]

[1] Department of Psychiatric Nursing, Yenepoya Nursing College, Yenepoya (deemed to be University), Mangaluru, Karnataka, India
[2] Department of Community Medicine, Yenepoya Medical College, Yenepoya (Deemed to be University), Mangaluru, Karnataka, India
[3] Department of Psychiatric Nursing, Athena College of Nursing, Mangaluru, Karnataka, India

Address for correspondence Poonam Naik, MBBS, MD, Department of Community Medicine, Yenepoya Medical College, Yenepoya (deemed to be University), Deralakatte, Mangaluru 575018, Karnataka, India (e-mail: drpoonamnaik@gmail.com).

Abstract

Background   Health care professionals working in the field of oncology have reported difficulty communicating with patients and their families throughout diagnostic and therapeutic procedures. As it comes to the care and treatment of the patient as well as their feelings of uncertainty about the future, nurses on the treatment team are crucial in offering patients and their families both practical and emotional support. By offering specialized training in communication skills, health care providers—including undergraduate health care students and interns—can strengthen their relationship with patients.

Objectives   The main objectives of the study were to assess the effect of communication skill training on the skills and self-efficacy of undergraduate nursing students in providing care to patients with cancer.

Materials and Methods   A quasi-experimental research design was adopted to evaluate the effect of skill training on the skills and self-efficacy of students. A total of 32 students from selected nursing colleges were chosen using a purposive sampling technique, and the lottery method was employed to assign students to the intervention and control groups. A baseline pro forma, basic communication skills checklist, and self-efficacy questionnaire (SE-12) were the instruments used for data collection. Using SPSS version 26, descriptive and inferential statistics were employed to analyze the data.

Results   The majority of the students in both the intervention group (81.25%) and the control group (75%) were between the ages of 20 and 21. Scores on communication skills pretest, posttest 1, and posttest 2 within and between groups all showed highly significant differences ($p = 0.000$). The self-efficacy scores of the intervention group students significantly improved ($p = 0.000$).

Conclusion   The skill training program has enhanced the students' competency to communicate and their sense of self-efficacy in offering care for cancer patients. Health care professionals will help patients and their families take an informed and involved role in their own cancer care if they devote the resources to training, particularly prospective students, in this basic clinical competence.

Keywords
► communication skill training
► effect
► nursing students
► patients with cancer
► self-efficacy and skill

Introduction

Patient-centered communication stands out as a vital therapeutic skill to maximize outcomes.[1] Before being certified, the majority of health care professionals must fulfill a communication proficiency criterion. Effective communication is the cornerstone of the doctor–patient relationship.[2] Active listening, the ability to convey information using both verbal and nonverbal cues, the ability to understand the clients' feelings and worries, and the ability to build rapport with clients and their families are all aided by good communication skills.[3] Effective communication has been linked to improved understanding, better patient health outcomes, lower patient anxiety, more adherence to therapy, and higher patient satisfaction.[2]

Patients with cancer reported unmet communication needs for facts on their diagnosis, prospects, treatments, and adverse effects.[4] This is consistent with earlier research that showed communication problems in 84 to 94% of treatment visits. Studies have shown that many patients do not understand their diagnosis, prognosis, the need for further diagnostic tests, or the therapeutic objectives of their treatment.[5–7]

Professional judgment, life experience, and formal education are necessary for cancer care providers to be "good" communicators. Oncology doctors' and nurses' blocking behaviors and communication styles may occasionally restrict patients' ability to express concerns and initiate interactions. Many studies suggest that postqualification communication skills training can help health care professionals improve their communication skills.[8] According to George Engel (1995), effective patient–physician communication is a key component of working effectively with patients. Although the fundamentals of effective communication are the same no matter the circumstance, consultations with cancer provide several problems.[9]

Research suggests that training in communication skills can help health care professionals interact with patients more effectively.[10–12] A health care professional must first be able to communicate empathy before being able to discern when it is required. Rather than interjecting during the patients' emotional outbursts, the professionals were clearly showing empathy through nonverbal cues like nodding, smiling, and touching.[13]

Many training programs call for communication skills training because experience alone rarely results in improvements in these skills.[14] As a result, considerable effort and resources have been devoted to it. The design of the currently available communication skill training (CST) programs varies in terms of duration, target audiences, learning goals, or instructional methods.[15] It is possible to see an increase in health care professionals' sense of self-efficacy by considering most positive communication behaviors as being constant. People are more likely to start a behavior and remain with it through challenges if they strongly believe they can do it successfully, according to Bandura. This notion was used in earlier research on communication in oncology.[16] The perception of their skills and competencies facilitates a thorough assessment of changes in performance and behavior, which

can improve by interventions.[17] As it is believed to have a direct impact on personal performance in particular situations, considering the changes that can occur in behavior, self-efficacy has been a widely used concept for self-assessment of the results of communication skills.[18]

By using an interviewing approach that is more focused on the needs of the patient, health care practitioners may gain a broader understanding of how the condition and its treatment affect individuals. Uninterrupted listening improves understanding and fosters a more fruitful therapeutic interaction.[8,19] Effective teaching methods include lectures, small-group discussions, case vignettes, peer role plays, and role plays with fictitious patients.[11] Actors, educators, nurses, or physicians can act as simulated patients; they have been trained for acting consistently and according to predetermined scenarios.[20] Effective communication between patients and health care professionals requires both patient-centeredness and communication skills.[21] In light of this, the researcher developed a training program in communication skills to help nursing students communicate better while caring for those with cancer.

Materials and Methods

A quasi-experimental pretest and posttest with a control group design was adopted for this study. A nonprobability purposive sampling technique was used to select 32 pupils (16 in the intervention group and 16 in the control group) from two selected colleges in Mangaluru, Karnataka, India. The study included Bachelor of Science (BSc) nursing students in their third year of study who were gaining clinical experience at a designated medical college hospital. The study did not include any students who took part in any program that offered training in communication skills. The researcher selected two nursing colleges as study settings for this study and assigned students from one college as the intervention group and those from the other college as the control group to prevent contamination in the present research. The data from the study participants was gathered using a baseline pro forma, basic communication skills checklist, and self-efficacy questionnaire (SE-12), a standardized scale developed by Axboe et al.[18] The permission was acquired from the author of the SE-12 questionnaire. The researcher modified the baseline pro forma, communication skill checklist, and CST module, in response to the recommendations of the subject experts, who validated the data collection tools and training materials. The baseline pro forma comprises age, gender, any family members affected by cancer, and the relationship with the individual with cancer. The researcher developed the basic communication skills checklist, and it comprises domains such as active listening and establishing rapport. SE-12 comprises 12 clinical communication skills-related statements. The reliability of the self-efficacy questionnaire was calculated by Cronbach's α, and the r value attained was 0.76, whereas the rater–interrater reliability test was used to assess the reliability of the basic communication skills checklist, and the r value attained was 0.82.

The researcher trained the study subjects using a skill training module to improve their communication skills in providing high-quality care to cancer patients. Six hours of training in communication skills—basics like establishing a rapport and active listening—were given to the intervention group. The intervention group received 4 hours of training in communication skills and 2 hours of theory. Role-playing, video-based learning, small group discussions, and lectures were all employed to train study participants. A simulated patient was used to evaluate students' skill to communicate with those with cancer. Using a simulation script, video clips, and CST module, the researcher trained the simulated patient to become competent in the performance. The data was collected exactly as planned for the study, which was conducted at two nursing colleges in Mangaluru that were chosen because they had clinical experience in a particular medical college hospital.

Formal administrative permissions were obtained from the heads of the institutions. The students' written informed consent were acquired before they agreed to take part in the study. On a predetermined date, the questionnaires were given to the participants. Pretest communication skill and self-efficacy assessments were conducted using the baseline pro forma, basic communication skill checklist, and SE-12. During the data collection period, the control group did not receive any interventions, whereas the intervention group underwent 6 hours of training in communication skills. The researcher conducted the training sessions and used designated class rooms for the training sessions. The theoretical aspects were taught via PowerPoint presentations. The researcher gave access to the skill training module for the students in the intervention group and they trained via small-group role plays and video clips. Students took turns playing the parts of the patient and nurse throughout the practice sessions. Following the practice sessions, quick briefings were held as well. Each research participant underwent an individual evaluation during the skill assessment in a private room where the researcher could assure their privacy and anonymity. A trained simulated patient was adopted for the skill assessment. The researcher trained the assessor using a training module, simulation scripts, and video clips. The communication skills of the research participants were evaluated using a blind approach, and baseline and posttest evaluations were performed individually for each study subject. The researcher employed the same instruments to evaluate the impact of training in communication skills on the skills and self-efficacy of research participants. Following 1 and 2 weeks of training sessions, the intervention group and the control group were given posttests (posttests 1 and 2).

Statistical Analysis

Descriptive and inferential statistics were used to analyze the data using SPSS version 26. Frequency and percentage were used to depict the baseline data. Two-factor repeated measures (analysis of variance [ANOVA]) and Bonferroni post hoc tests were adopted to assess the differences within and between

pre- and posttest communication skills and self-efficacy scores at repeated intervals. The Karl Pearson correlation coefficient was used to determine the relationship between students' baseline self-efficacy scores and their communication skills scores. The level of significance was set at $p < 0.05$.

Results

Baseline Characteristics of Students

Most students in both the intervention group (13, 81.25%) and the control group (12, 75%) were between the ages of 20 and 21. All students were female in both groups. In the intervention group, 5 (31.25%) of the students had relatives who had cancer, compared with 8 (50%) of the students in the control group who had substantially cancer-affected family members. The majority of the students in the intervention group (11, 68.80%) did not have any significant ones affected by cancer.

The data presented in ►**Table 1** shows the mean and standard deviation (SD) of the communication skill scores in the intervention and control groups before and after the intervention. At the $p < 0.05$ level of significance, two-factor repeated measures ANOVA revealed differences in communication skills scores within the intervention group (overall score: $F = 174.76$, $p = 0.000$) as well as between groups (overall score: $F = 30.72$, $p = 0.000$).

The data presented in ►**Table 2** demonstrates how the post hoc (Bonferroni) test assessed the significant differences between the intervention and control groups' pretest, posttest 1, and posttest 2 skill scores. The results showed that there was a tiny difference in the mean posttest 1 and posttest 2 skill scores of the intervention group (within group, mean difference [MD] = 1.69; $p = 0.041$), but found a highly significant difference in the skill scores of the pretests, posttest 1, and posttest 2 within and between groups ($p < 0.000$). As an outcome, the training in communication skills was very effective in enhancing the skills of nursing students.

The data provided in ►**Table 3** illustrates the pre- and postintervention changes in the mean and SD of the self-efficacy scores in the intervention and control groups. In the intervention group, there were differences in communication skills scores ($F = 219.07$, $p = 0.000$), as well as differences between groups ($F = 99.17$, $p = 0.000$), which were both highly significant at $p < 0.05$.

►**Table 4** displays the MD and SD of the differences between the intervention and control groups. Significant difference in pretest, posttest 1, and posttest 2 self-efficacy scores was observed between the intervention and control groups assessed using a Bonferroni post hoc test. Pretest, posttest 1, and posttest 2 scores within and between groups differed highly statistically ($p = 0.000$) at $p < 0.05$, according to the results. The means of posttests 1 and 2 differed slightly in the intervention group. Thus, the training in communication skills significantly improved the pupils' skills and confidence.

►**Table 5** shows the correlation between communication skills and self-efficacy scores. The results showed that there was no correlation between the pretest communication skill domain scores and the self-efficacy scores.

Table 1 Communication skill scores of students in intervention and control groups, $n = 16 + 16$

Communication skills domains	Time	Intervention group Mean ± SD	Control group	Within group F	p	Partial eta squared	Between group F	p	Partial eta squared
Active listening	Pretest	6.25 ± 2.08	8.13 ± 2.13	140.64	0.000[c]	0.82	37.92	0.000[c]	0.56
	Post1	16.50 ± 2.31	8.25 ± 2.27						
	Post2	15.63 ± 2.55	9.00 ± 2.45						
Establishing rapport	Pretest	8.25 ± 3.09	10.31 ± 2.15	120.99	0.000[c]	0.80	22.28	0.000[c]	0.43
	Post1	18.31 ± 3.22	10.69 ± 2.73						
	Post2	17.50 ± 3.27	10.56 ± 1.90						
Overall	Pretest	14.50 ± 4.94	18.44 ± 3.93	174.76	0.000[c]	0.85	30.72	0.000[c]	0.51
	Post1	34.81 ± 5.37	18.94 ± 4.52						
	Post2	33.13 ± 5.63	19.56 ± 4.15						

Abbreviation: SD, standard deviation.

Note: Maximum possible score: 44. Test used: Two-factor repeated measures analysis of variance (ANOVA) (F).

[a] $p < 0.05$ significant.
[b] $p < 0.01$ highly significant.
[c] $p < 0.001$ very highly significant.

Discussion

The goal of the current study was to evaluate the impact of CST on the skills and self-efficacy of nursing students in providing support to cancer patients. The findings of the study revealed that skill training program was effective in improving communication skills and self-efficacy of the students.

In the present study, most, 13 (81.25%), of the students in the intervention and control groups, 12 (75%), belonged to the age group of 20 to 21 years. All students were female in both groups. Third year BSc nursing students were the study participants in the present study. In contrast to these findings, another research study by Cannity et al that assessed the effectiveness of communication skills training for nursing students to foster empathy and discussing complex situations found the sample was in their fourth year of a bachelor's program, had an average age of 23.7 (SD = 3.70), and comprised 87% female and 13% male study subjects.[22]

The findings of the present study revealed that a highly significant difference was found in skill scores of pretests, posttest 1, and posttest 2 within and between groups ($p < 0.000$), whereas only a slight difference was found in the mean of posttest 1 and posttest 2 skill scores of the intervention group (within group, MD = 1.69, $p < 0.01$). Another study conducted by Wilkinson et al supported the findings of the above study to assess the effectiveness of a 3-day communication skills course in changing nurses' communication with cancer patients. The study results revealed that the communication skills score for the intervention group increased by 3.4 points postcourse but decreased in the control group by 0.05 points (between-group difference in change: 3.41, 95% confidence interval [CI]: 2.16–4.66, $p < 0.001$).[23] Another study conducted by Taghizadeh et al revealed that the mean and SD for communication skills scores were 33.98 ± 4.21 before the training session, while this changed to 42 ± 2.79 after the training, which shows a highly significant difference between pretest and posttest scores ($t = -16.67$, $p < 0.001$).[24]

The findings of the present study revealed a highly significant difference in the self-efficacy scores of the pretests, posttest 1, and posttest 2 within and between groups ($p < 0.001$). The results found also a slight difference in the mean of posttest 1 and posttest 2 in the intervention group. Consistent with the present study, Ardakani et al conducted a meta-analysis, and the results showed that training was effective in improving self-efficacy. The effect of communication skills training was moderate (Hedges' $g = 0.51$, 95% CI: 0.31–0.70, $p < 0.001$).[25]

The results revealed that there was no correlation between the self-efficacy scores and the pretest communication skill domain scores. In contrast to these results, a different study by Park et al that examined the associations between self-efficacy, job satisfaction, and communication competence in nurses discovered that self-efficacy and communication competence were positively correlated ($r = 0.477$, $p < 0.001$). Therefore, to enhance the self-efficacy of nurses working in emergency medical centers, the program to develop communication skills is essential.[26]

Table 2 Post hoc comparison of communication skill scores within and between the groups, $n = 16 + 16$

Communication skills domains	Time	Group	Mean difference	SE	Bonferroni post hoc test	
					Within the group (p-value)	Between the group (p-value)
Active listening	Pretest - Posttest 1	Int	10.25	2.27	0.000[c]	0.000[c]
		Con	0.13	2.03	1.000	
	Pretest - Posttest 2	Int	9.38	2.34	0.000[c]	0.000[c]
		Con	0.88	1.59	0.087	
	Posttest 1 - Posttest 2	Int	0.88	1.31	0.035[a]	0.024[a]
		Con	0.75	2.30	0.422	
Establishing rapport	Pretest - Posttest 1	Int	10.06	2.77	0.000[c]	0.000[a]
		Con	0.38	1.78	0.827	
	Pretest - Posttest 2	Int	9.25	2.60	0.000[c]	0.000[c]
		Con	0.25	1.39	0.966	
	Posttest 1 - Posttest 2	Int	0.81	1.80	0.181	0.321
		Con	0.13	1.93	1.000	
Overall	Pretest - Posttest 1	Int	20.31	4.53	0.000[c]	0.000[c]
		Con	0.50	3.12	1.000	
	Pretest - Posttest 2	Int	18.63	4.60	0.000[c]	0.000[c]
		Con	1.13	2.39	0.159	
	Posttest 1 - Posttest 2	Int	1.69	2.60	0.041[a]	0.046[a]
		Con	0.63	3.40	0.948	

Con, control group; Int, intervention group; SE, standard error of difference.
Note: Maximum possible score: 44. Test used: Bonferroni post hoc test.
[a]$p < 0.05$ significant.
[b]$p < 0.01$ highly significant.
[c]$p < 0.001$ very highly significant.

Table 3 Comparison of self-efficacy scores within and between the groups, $n = 16 + 16$

Parameter	Time	Intervention group	Control group	Within group F	p	Partial eta squared	Between group F	p	Partial eta squared
		Mean ± SD							
Self-efficacy	Pretest	55.81 ± 7.20	51.50 ± 6.20	219.07	0.000[c]	0.880	99.17	0.000[c]	0.768
	Posttest 1	87.56 ± 8.70	52.19 ± 6.78						
	Posttest 2	85.44 ± 8.75	56.50 ± 4.47						

Abbreviation: SD, standard deviation.
Note: Maximum possible score: 120. Test used (F): Two-factor repeated measures analysis of variance (ANOVA).
[a]$p < 0.05$ significant.
[b]$p < 0.01$ highly significant.
[c]$p < 0.001$ very highly significant.

Limitation and Recommendation of the Study

The nonprobability purposive sampling technique adopted for this study, which limits the generalization of the study findings. A similar study can be conducted with a larger sample size and among staff nurses working in oncology settings. It is possible to evaluate the impact of the CST curriculum on the clinical competency of staff nurses and student nurses.

Conclusion

In oncology practice, CST enables health care professionals to better understand how to perceive the suffering of cancer patients, especially nurses. Nursing professionals include

Table 4 Post hoc comparison of self-efficacy scores within and between the groups, $n = 16 + 16$

Parameter	Time	Group	Mean difference	SD	Bonferroni post hoc test	
					Within the group (p-value)	Between the group (p-value)
Self-efficacy	Pretest - Posttest 1	Int	31.75	6.15	0.000[c]	0.000[c]
		Con	0.69	2.87	0.706	
	Pretest - Posttest2	Int	29.63	6.36	0.000[c]	0.000[c]
		Con	5.00	6.48	0.015[a]	
	Posttest 1 - Posttest 2	Int	2.13	1.41	0.000[c]	0.000[c]
		Con	4.31	5.86	0.020[a]	

Abbreviations: Con, control group; Int, intervention group; SD, standard deviation of difference.
Note: Test used: Bonferroni post hoc test.
[a]$p < 0.05$ significant.
[b]$p < 0.01$ highly significant.
[c]$p < 0.001$ very highly significant.

Table 5 Correlation between pretest communication skills and self-efficacy of scores

Parameter		Intervention group (n = 16)		Control group (n = 16)	
Communication skill domains	Self-efficacy	r	p	r	p
Active listening		−0.28	0.291	−0.42	0.116
Establishing rapport		0.02	0.949	−0.04	0.894
Overall		−0.11	0.691	−0.25	0.365

Note: r, Karl Pearson correlation coefficient.
[a]$p < 0.05$ significant.

"communication skills" in their curricula so that aspiring nurses can have the required work experience prior to entering the profession. This training program helps nursing students develop their skills and sense of self-efficacy in building rapport and actively listening to patients to understand their distress, as well as empowering them to support cancer patients and deliver quality care.

Ethical Considerations

The Institutional Ethics Committee (Protocol No. YEC-1/2019/060) and the Scientific Review Board both gave their approval before the data was collected. The researcher introduced herself to the participants and established rapport. The researcher explained the purpose of the research study to the participants and also clarified their doubts regarding the data collection and training sessions. The study subjects received assurance from the researcher about privacy and confidentiality.

Statement by all Authors

All authors have read the manuscript and accepted that the requirements for the authorship have been met and believe that the manuscript represents honest work.

Authors' Contributions

Each researcher agreed to be accountable for every part of this work and contributed to its idea and design, data collection, analysis, interpretation, and writing.

1. V.P.: Contributed to the conception, design, collection, analysis, and interpretation of data as well as the writing and manuscript revision. All researchers received a draft of the manuscript for comments and revisions. Suggestions have been added to the modified manuscript.
2. P.N.: Contributed to research design (methodology), data analysis, data interpretation, as well as for manuscript revision.
3. A.A.: Contributed to design (methodology), data analysis, interpretation of data, and revising of research manuscript.

Statement of Institutional Review Board Approval and/or Statement of Conforming to the Declaration of Helsinki

The Scientific Review Board of Yenepoya Nursing College and Institutional Ethics Committee, Yenepoya (Deemed to be University) gave their approval for conducting this study.

Conflict of Interest
None declared.

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