Original Articles

Outcome of Training on "Doctor-Patient Communication Skill" for the Pre-intern Physicians

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Abstract:

Background: Communication is the way how a physician interacts with the patient; it should have non-verbal, verbal and para-verbal components. This study was designed for communication skill training on newly graduated medical and dental physicians and to compare the outcomes of training in terms of pre-test and post-test results among experimental group and control groups.

Materials & methods: It was a randomized, prospective, interventional study performed on newly graduated medical and dental physicians, recruited from four participating centres: Chittagong Medical College, Chattagram Maa-O-Shishu Hospital Medical College, Southern Medical College & Hospital and Chattagram International Dental College. Duration of study was from 1st January 2017 to 30th August 2017. After selecting 60 participants (experimental group: 50; control group: 10) by lottery method, informed consent was taken and all the participants of both groups appeared at a pre-test. Only experimental group attended the training program and both the groups appeared at post-test.

Results: When pre-test and post-test values of experimental group was compared by t-test, the p values for proper introduction, verbal, non-verbal, para-verbal and total scores were 0.00, 0.00, 0.00, 0.00 and 0.00 respectively. During comparison post-test scores in experimental and control groups by ANCOVA, the p values for proper introduction, verbal, non-verbal, para-verbal and total scores were 0.00, 0.00, 0.00, 0.00 and 0.00 respectively.

Conclusions: There was significant improvement in communication skill of physicians after receiving the training with no possibility of occurring those changes by chance. If appropriate, the results can be utilized to approach for formal introduction of communication skills training for pre-intern physicians.

Key words: Doctor-patient communication, verbal, non-verbal, para-verbal, pre-intern physician.

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Introduction:

Communication is the way how a physician interacts with the patient. Proper patient-physician communication produces therapeutic benefit on the patient.[1-2] A doctor's communication and interpersonal skills encompass the ability to gather information in order to facilitate accurate diagnosis, counsel appropriately, give therapeutic instructions, and establish caring relationships with patients. The arts and tips of communication skill can change the feelings of a patient forever.[3,4] Unfortunately, the communication skills of busy physician often remain poorly developed due to isolated academic settings in early professional years. Communication skill should have non-verbal (Attentive gesture, correct posture, eye contact, active listening, encouraging the patient to talk), verbal (the art of talking) and para-verbal (tone, pitch, pacing) components. Serious miscommunication is a potential pitfall, especially in terms of patents' understanding, expectation and involvement in

treatment.[5,6] Today, patients understand that they are not passive recipients, but are members of expert authority that takes part in decision making.[7-9] Though doctor-patient communication is an integral component of high quality health-care, there are always lots of dissatisfactions about the attitude of physicians towards patients and this scenario is very common in our country.

This study applied communication skill training on newly graduated physicians and compared the outcome in terms of pre-test and post-test result. The training module included formal lecture, video demonstration, small group teaching and assessment.

Materials & methods:

Study design: Randomized, prospective, interventional study

Study Population: Newly graduated medical and dental physicians

Case definition: Pre-intern is defined as those who passed MBBS & BDS final professional exam, got the temporary BMDC registration as physician and yet to join the internship.

Inclusion criteria:

1. Newly passed MBBS/ BDS physician
2. Physicians willingly giving consent to be included in the study

Exclusion criteria:

1. Attended any formal communication skill training after graduation
2. Do not give consent to be included in study

Sample size: 60 (experimental group: 50; control group: 10)

Sampling technique: Stratified random sampling by lottery method.

Place of study:

•   Chittagong Medical College
•   Chattagram Ma-O-Shishu Hospital Medical College
•   Southern Medical College and Hospital
•   Chattagram International Dental College

Research instrument: Face-to-face interview using a structured checklist

Duration of study: 01.01.17 to 30.08.17

Procedure:

Ethical clearance was taken from all four participating centres before starting the study. Immediately after publication of results of final professional MBBS & BDS examinations, the new graduates were invited to attend a program through Dean, Faculty of Medicine, University of Chittagong. In this program, the details of study was explained. The information sheet and consent form was provided and interested participants were called for selection process. Random sampling was done by lottery to get 60 participants (50 case

and 10 control). Informed written consent was obtained from all participants and they were invited to attend the training on the scheduled date. A pre-training assessment for communication skill was done by face-to face interview. In pre-training assessment, each participant interacted with a patient/ surrogate according to a randomly selected scenario over 10 minutes and was observed by two observers who gave independent score to the participants on the basis of four variables. Each observer evaluated the participant by marking the score on a pre-formed checklist.

The variables (skills):

I   (Proper introduction)
V   (Verbal component)
P   (Para-verbal component)
N   (Non-verbal component)

For each candidate,

Total score from observer 1 (S1) = I+V+P+N

Total score from observer 2 (S2) = I+V+P+N

Final Score of pre-training assessment (Se) = $\dfrac{S1+S2}{2}$

On completion of pre-training assessment, the experimental group went through all the steps of training module that included interactive lecture, video demonstration, group discussion, role play and reflection of experience from real patient/ surrogate.

After completion of training, both the experimental and control group appeared at post-training assessment to assess the skill acquired throughout the training, using the same instrument previously used for pre-training assessment.

The total score of post-test for each participant from each observer was the longitudinal sum of score of each skill. The average of total scores from each observer gave the final score of each participant in post-training assessment.

For each candidate,

Total post-training assessment score from observer 1 (S3) = I+V+P+N

Total post-training assessment score from observer 2 (S4)= I+V+P+N

Final Score of post-training assessment (St) = $\dfrac{S3+S4}{2}$

The test-scores were entered in case report form. The pre-training assessment scores of candidates **(Se)** were compared statistically with post-training assessment scores **(St).** Statistical Analysis was done by SPSS version 22.

Results:

This study was performed on two groups of 60 pre-intern physicians, 50 in experiential group and 10 in control group (Table I), randomly selected from 4 medical colleges under the University of Chittagong. Since the skill-wise total score varies for different components (proper introduction, verbal, non-verbal, para-verbal and total), all the scores are expressed in percentages (out of 100) for all variables.

Table II gives the descriptive statistics of mean pre-test and post-test scores for both experimental and control groups for all four variables. Figure 1, 2, 3 & 4 shows the comparison of pre-test score and post-test scores of experimental and control group for proper introduction, verbal, non-verbal and para-verbal components respectively, showing visible sharp uprise in performance of experimental group after receiving the training. Table III shows the results of paired t test for comparison between pre-test score and post-test scores of experimental and control group, showing the p value of 0.00 in all comparisons of experimental group, which means there has been no chance of those improvements by chance in the experimental group. Table IV shows the results of ANCOVA test, which compared the post-test scores of both groups keeping the pre-test values as co-variate. The result again shows p values 0.00 for all skills, which means though there is some improvements of performance in the post-test scores of control group; the difference of those scores with post-test scores of experimental group cannot be by chance.

Table I: *Distribution of participants according to centre*

Name of institution	Total no of participants	Experimental group	Control group
Chittagong Medical College	30	25	5
Chattagram Maa-O-Shishu Hospital Medical College	12	10	2
Southern Medical College & Hospital	7	6	1
Chattagram International Dental College	11	9	2
Total	60	50	10

Table II: *Descriptive statistics of the pre-test and post-test scores*

		Mean pre-test score	Mean post-test score
Proper introduction	Experimental group	39.5	91.97
	Control group	34.5	42.88
Verbal	Experimental group	42.5	88.16
	Control group	30	37.87
Para-verbal	Experimental group	64.5	92.50
	Control group	47.5	64.60
Non-verbal	Experimental group	69.5	94.14
	Control group	45	60.04

Table III: *Paired t test: Comparison within pre-test scores and post-test scores*

Skill	p value (experimental group)	p value (control group)
Proper introduction	0.00	0.310
Verbal	0.00	0.313
Non-verbal	0.00	0.005
Para-verbal	0.00	0.006
Total	0.00	0.404

Table IV : *ANCOVA test: Comparison between post-test scores of experimental and control group*

Skill	p value	Partial Eta Squared
Proper introduction	0.00	0.635
Verbal	0.00	0.668
Non-verbal	0.00	0.321
Para-verbal	0.00	0.340
Total	0.00	0.708

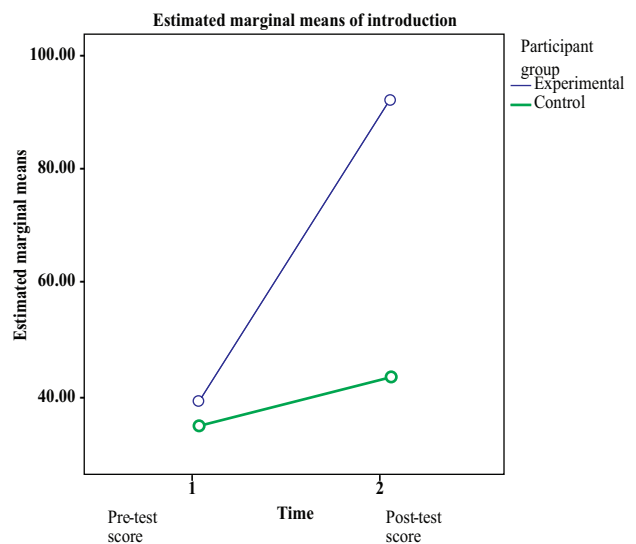**Figure 1:** *Comparison of pre-test & post-test scores of experimental group & control group for proper introduction*
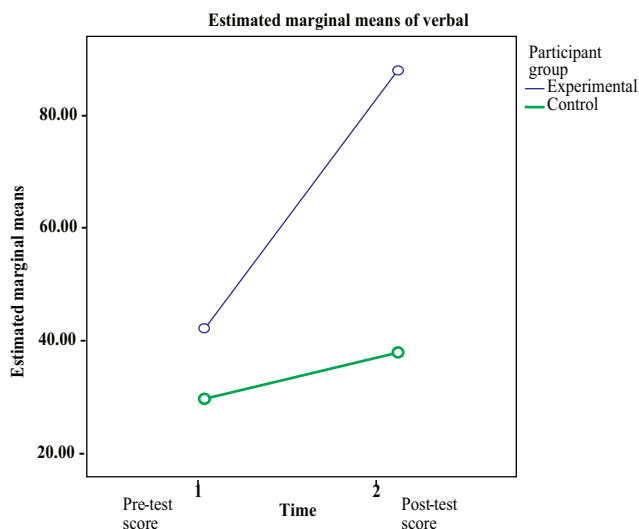
Estimated marginal means of verbal

Figure 2: *Comparison of pre-test & post-test scores of experimental group & control group for verbal component of communication skill*
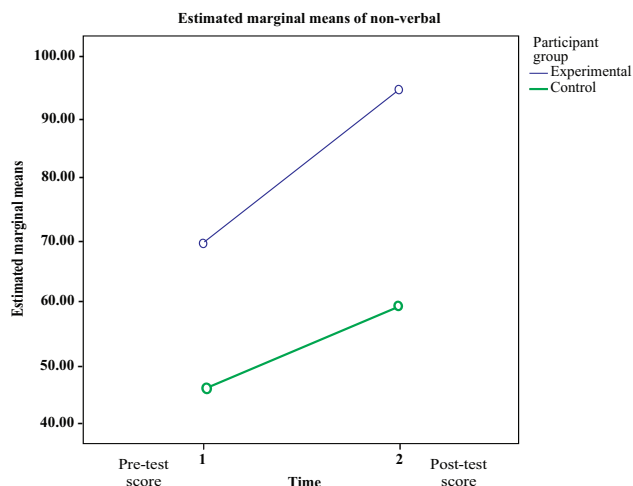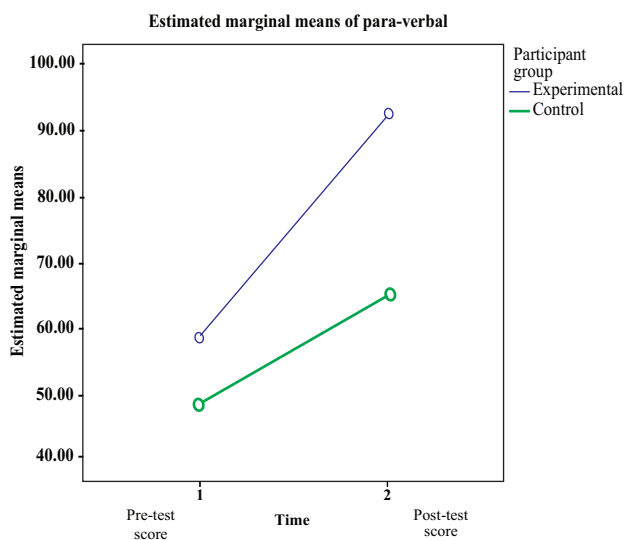
Estimated marginal means of non-verbal

Figure 3: *Comparison of pre-test & post-test scores of experimental group & control group for non-verbal component of communication skill*

Estimated marginal means of para-verbal

Figure 4: *Comparison of pre-test & post-test scores of experimental group & control group for para-verbal component of communication skill*

Discussion:

Communication skill upto a certain level is inherent. However, objective-oriented communication skill needs to be acquired. The results of the current study showed significant improvement in skills of experimental group in terms of proper communication, verbal, non-verbal and para-verbal skills. On the other hand, the visible improvement in the post-test scores of control group can be explained by improvement due to repetition of same task, but since they did not receive any formal training, the improvement was minimum in comparison with experimental group.

Conclusions:

The current study was conducted in four medical colleges of Chittagong city with the aim to assess the outcome of training on communication skill for pre-intern physicians. After enrolling the sample by lottery method, the experimental group attended the training. The training module included interactive lecture, video demonstration, group discussion and role play. Both the the experimental and the control group appeared at pre-test and post-test. When the assessment scores were compared, it showed highly significant improvement in communication skill in terms of proper introduction, verbal, non-verbal and para-verbal scores with no probability of occurring by chance.

The results of this study may be utilized for formal inclusion of communication skill training for the pre-intern physicians.

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