

**EFFECT OF EDUCATIONAL CAMPAIGN ON INTERPERSONAL COMMUNICATION SKILLS AMONG HEALTH CARE PROFESSIONALS: PRE-POST STUDY, JEDDAH, KSA**

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**Abstract:**

**Background:** Communication among healthcare team members is crucial for effective patient care. It helps ensure that everyone involved in the healthcare process is aware of the patient's needs and treatment plan, which increases the likelihood of positive outcomes and reduces the risk of medical errors. Strong communication can help build trust and collaboration among healthcare team members, which can improve job satisfaction and lead to better patient outcomes.

**Aim:** To study and explore the effect of an educational campaign on interpersonal communication skills among healthcare professionals in Jeddah, KSA.

**Methods:** A quasi-experimental pre- and post- study was carried out on a convenient sample of 150 healthcare professionals. A specially prepared self-administered, pre-coded, closed-ended, pilot-tested, reliable questionnaire format was used. Self- assessment communication skills inventory questionnaires were completed initially in the pre-study phase and at the end of a specifically arranged educational campaign as the post-study phase. To control for potential confounding factors, multivariate analyses using a forward stepwise (Wald) method were carried out to determine independent predictors of interpersonal communication skills among the healthcare professionals.

**Results:** There was a significant improvement of the measured responses to the interpersonal communication skill inventory in all its domains, namely: sending a clear message ( $p=0.000$ ),

listening ( $p=0.000$ ), giving and receiving feedback ( $p=0.000$ ) and handling emotional reactions ( $p=0.000$ ). Significant independent predictors of interpersonal communication skills were nationality, mother language, specialty, qualification, daily working hours, number of monthly shifts and perceived satisfaction with the work environment. The mean evaluation of the whole campaign out of 10 was 9.6 (4.85), with a mean percent score for evaluation of 77.6 (22.15).

**Conclusion:** these educational campaigns for the development of interpersonal communication skills have desirable effects on healthcare professionals' communication abilities and capabilities. Healthcare organizations should invest in training programs that develop healthcare professionals' communication skills to improve healthcare quality and patient safety.

**Keywords:** Communication skills; Healthcare professionals; Educational campaign

### Introduction:

In the 21<sup>st</sup> century, complex communication and social skills have become increasingly important. Communication is an approach to interaction where individuals exchange viewpoints, concepts, messages, and emotions. It is a two-way process with verbal and nonverbal components. The greater the concentration on the verbal component, the less effective the communication is [1]. The two-way process of communication has the potential to affect people's conduct, eliciting responses tied to their convictions, cultural background, perception of reality, and personal life experiences.

Communication skills are crucial competencies within the training and practice of healthcare professionals [2]. The interaction between healthcare professionals and patients relies on communication as an essential component to facilitate patients' comprehension of their medical issues and treatment, and to allow the professional handling by the healthcare practitioners of those interactions with their patients [3]. It also allows the establishment of connections between healthcare practitioners and patients and their families regarding diversities in culture, ethnicity, spirituality, emotions, and age, as well as with fellow healthcare team members [4]. Effective listening skills are showcased, and the aptitude to gather and convey information through verbal, nonverbal, written, and technological means is demonstrated. Adaptability in communication strategies is exhibited, with the capacity to adjust them according to the clinical context. Active participation and leadership within the healthcare team are evident. The ability to understand a patient's motivations for seeking medical care is shown, along with skills in negotiation and conflict resolution. Furthermore, utilizing feedback provided by others is an aspect of communication expertise that is effectively demonstrated [1].

Moreover, both interprofessional and interpersonal communication are essential and changing aspects of healthcare delivery. Both are critical for safe, high-quality, and patient-centered care, and when poorly managed, may lead to misunderstandings, delays in treatment, medication errors, and even patient harm. Therefore, it is necessary to identify relevant barriers and helpful strategies to improve interprofessional and interpersonal communication [5].

Little work has been done on translating knowledge of communication skills into practice to achieve patient-centred communication. Extensive research has shown that no matter how knowledgeable the healthcare professional might be, if he or she is not able to open good communication channels with the patient, he or she may be of no help to the latter. Despite this known fact, effective communication with the patient has been found to be sadly lacking [6].

Up until now, limited research has been conducted on interpersonal communication skills among healthcare professionals in the context of the Kingdom of Saudi Arabia (KSA), with the majority of existing studies focusing on Western countries. The objectives of this research work were to assess the effect of educational campaigns on interpersonal communication skills among healthcare professionals and to explore the effect of educational campaigns on interpersonal communication skills among them.

## Methods

### Study Design:

A quasi-experimental pre- and post- study was carried out from May to July 2023.

### Study Setting:

The study comprised three phases: planning, implementation, and evaluation. An educational campaign on communication skills using different interactive instructional methods was planned, then implemented within the selected hospitals in Jeddah city, and the last stage was the evaluation of these campaign activities from the participants' points of view.

### Sample Size and Sampling Technique:

The total number of healthcare professionals to be selected was estimated using the following formula:  
(7)

$$n_0 = Z^2 pq / e^2$$

where: Z = the critical value of the desired confidence interval (1.96 at 95%, 1.645 at 90%, 2.33 at 98%, and 2.575% at 99%), e = margin of error; 0.05, p = the estimated proportion of attributes that are present in the population; 0.50, q = 1-p; 0.50.

and using the multistage sampling technique. In stage one, a random selection of two private hospitals in Jeddah City was conducted after a review of all official records. In stage two, based on the calculation assumptions, a convenient sample of 150 healthcare professionals was calculated and then obtained from the two selected hospitals (75 from each hospital). The participating healthcare professionals were physicians, nurses, and technicians who worked in these hospitals.

### Study instruments:

- A Self-Administered Communication Skills Inventory questionnaire (8), in a pre-coded, closed-ended, pilot-tested, valid, and reliable questionnaire format in English, was used. Its reliability was confirmed (Cronbach's alpha = 0.862). It included data about sociodemographic characteristics such as gender, age, marital status, mother tongue, and highest educational qualification. It also included the number of working hours, night shifts, and perceived satisfaction with the work environment. It was formed of four sections on communication skills: sending clear messages, listening, giving and receiving feedback, and handling emotional reactions. Each section was formed of 10 items using a 3-point Likert scale [8].
- A self-administered evaluation form on the educational campaign about communication skills was used to evaluate its content from the healthcare professionals' points of view using a 5-point Likert scale.

### Timing of measurements:

This Self-Assessment Communication Skills Inventory questionnaire was to be filled out twice: initially at the beginning of the educational campaign during the pre-implementation phase, then after the

conduct of all campaign activities, and at the end of the educational campaign, following the post-study phase.

An educational campaign was organized for healthcare professionals in both hospitals. This was in the form of a short lecture, scenarios, group discussion, pamphlets, and leaflets specifically designed for the study purpose. An immediate evaluation of the educational campaign was carried out using a specially designed, pre-coded questionnaire.

#### **Ethical approval:**

Ethical approval was obtained from the ISNC Research and Ethics Committee (**Ref. No. IRRB- 01-24012023**) in accordance with the Declaration of Helsinki for human studies [9]. Participants were informed about the purpose of the study and were given the right to decline to participate in the study for any reason. Ethical conduct was maintained during data collection and throughout the research process. Participants were given the right to decline to participate in the study for any reason without prejudice. The data were kept confidential, and the survey form was anonymous. Informed consent was obtained from each participant before inclusion in the study.

#### **Statistical analysis:**

The data was collected and coded before being entered into Excel, then analyzed with SPSS version 25.0 and presented as frequencies, means, and standard deviations. A bivariate analysis was conducted to test for significant differences. Chi-square and independent t-tests were used to analyze the variables, and binominal logistic regression was used to assign the predictors of interpersonal communication skills among healthcare workers. To control for potential confounding factors, multivariate analyses using the forward stepwise (Wald) method were carried out to determine the independent predictors of interpersonal communication skills among the healthcare professionals. Variables included in the final model of the multivariate analysis were age plus selected sociodemographic variables such as gender and mother tongue, working hours, number of shifts, and satisfaction with the workplace. For each variable, the interpersonal communication skill level-adjusted prevalence odds ratio (OR) and 95% confidence interval (CI) were presented and computed directly from the logistic regression. Alpha less than 0.05 was considered to be significant.

#### **Scoring system:**

The mean percent scores for the Self-Assessment Communication Skills Inventory questionnaire, with its four sections, were calculated using the following formula:

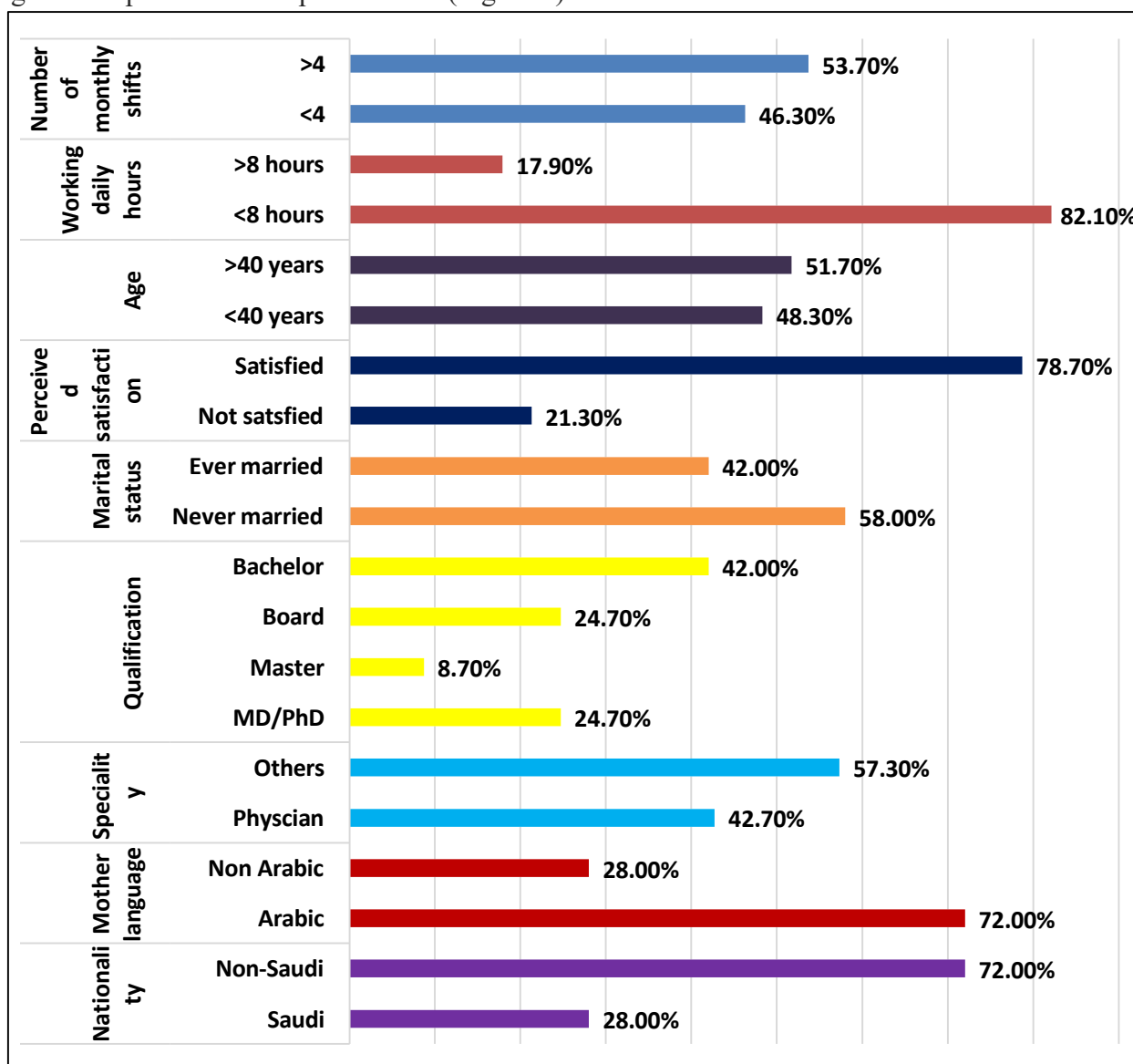
$$\text{Percent score} = \frac{\sum \text{Scores of questions selected}}{\text{maximum possible score for these questions}} \times 100$$

The maximum possible score that could be obtained for those questions was calculated. Using the above formula, the score was calculated. To calculate the percent score, the mean value  $\pm$  SD was multiplied by 100.

#### **Results:**

This study included 150 health care professionals recruited from two private hospitals in Jeddah, KSA. The results were represented according to pre (before the educational campaign) and post response (after the educational campaign) of the health care professionals to interpersonal communication skill inventory questionnaire.

The overall mean age of the studied participants was  $36.9 \pm 11.53$ ; where 51.7% aged more than 40 years. More than half (52.7%) of participants were males, 72.0% were non-Saudi and Arabic speakers. Nearly one fifth (42.7%) were physicians, 24.7% got doctorate degree or board (24.7%) More than half of participants (58.0%) were never married, 78.7% were satisfied by their work environment. The majority of health care professionals (82.1%) worked less than 8 hours daily and 53.7% had more than 4-night shifts per month. As presented in (Figure 1)



**Figure 1: Description of the Health Care Workers Participating in The Study (n=150)**

There is a significant improvement of the response of interpersonal communication skill inventory measurement in all its domains; sending clear message ( $p=0.000$ ), listening ( $p=0.000$ ), giving and taking feedback ( $p=0.000$ ) and handling emotional reactions ( $p=0.000$ ) as illustrated in (Table 1)

**Table 1: Pre and Post Measurement of Interpersonal Communication Skill Inventory (n=150)**

Pre-evaluation	Post-evaluation	P-value*
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	(N=150)	(N=150)	
<b>Sending clear messages Mean (Sd)</b>	27.2 (16.6)	37.8 (12.41)	0.000*
<b>Listening Mean (Sd)</b>	26.6 (15.62)	34.2 (13.07)	0.000*
<b>Giving and taking feedback Mean (Sd)</b>	24.2 (14.94)	33.6 (14.57)	0.000*
<b>Handling emotional reactions Mean (Sd)</b>	27.1 (16.23)	36.0 (11.77)	0.000*
<b>*p-value significant at less than 0.05 level</b>			

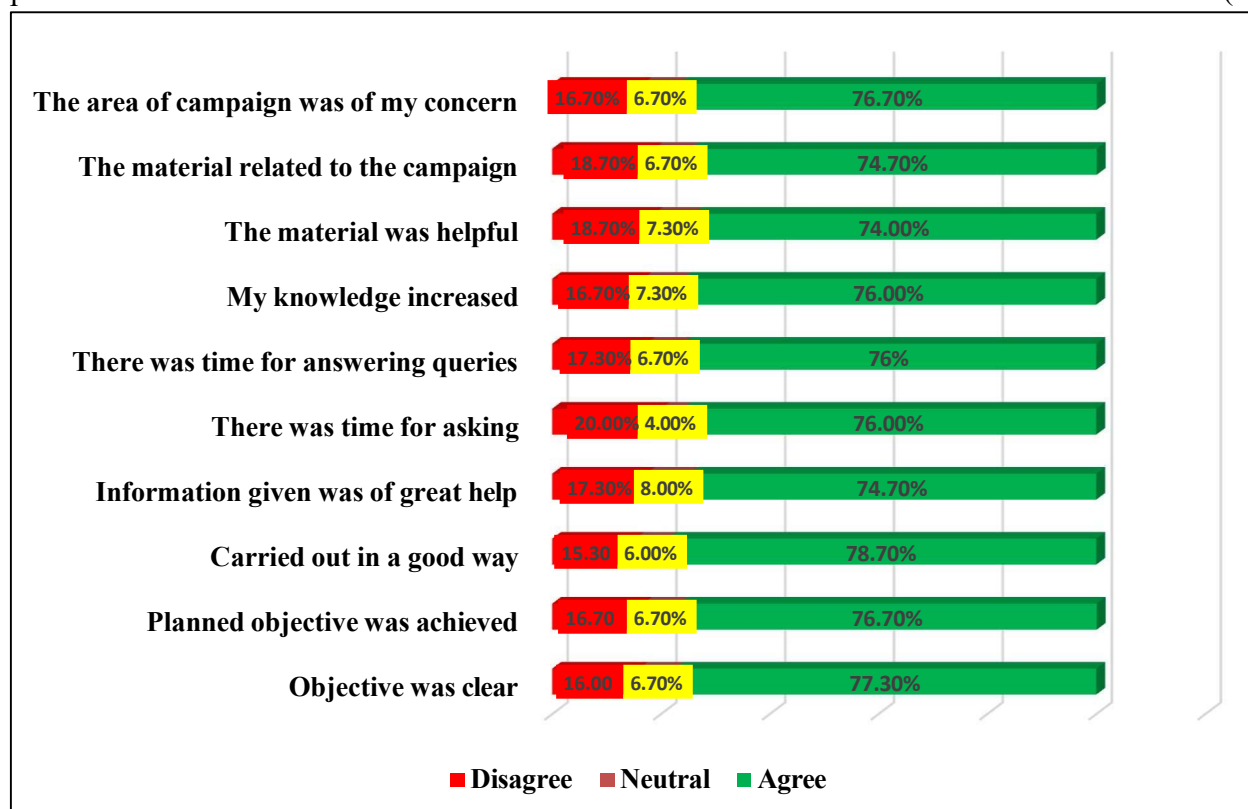
In the logistic regression analysis, after controlling for confounding factors, significant independent predictors of interpersonal communication skills were nationality, mother language, specialty, qualification, daily working hours, number monthly shifts and perceived satisfaction with the work environment. As presented in (Table 2)

**Table 2: Multivariate Analysis for Predictors of Interpersonal Communication Skills among Health Care Workers (n=150)**

Independent variable	OR	95% CI for OR	p-value
<b>Constant</b>	1.3	1.1-1.8	0.001*
<b>Age (Less than 40 years)</b>	0.8	0.4-1.6	0.566
<b>Gender (Male)</b>	0.7	0.3-2.6	0.634
<b>Nationality (Non-Saudi)</b>	2.5	1.3-4.7	0.005*
<b>Mother language (Arabic)</b>	3.3	1.7-3.5	0.002*
<b>Specialty (Physician)</b>	2.9	2.1-4.5	0.001*
<b>Qualification (MD/PhD)</b>	1.8	1.5-2.6	0.032*
<b>Daily working hours (&lt;8 hours)</b>	2.6	2.2-5.7	0.019*
<b>Number of monthly shifts (&lt;4 shifts per month)</b>	3.4	3.1-5.8	0.021*

<b>Marital status (Ever married)</b>	2.1	1.5-2.8	0.049*
<b>Perceived satisfaction with work environment (Satisfied)</b>	3.3	2.5-3.6	0.040*
<b>OR = odds ratio; CI = Confidence interval; *P value is significant if P&lt; 0.05. Dependent variable encoding negative = 0, positive = 1 R2 = 0.784</b>			

Regarding the immediate evaluation of the educational campaign, nearly more than three fourths of the health care professionals were satisfied with all aspects of the ten aspects evaluating the education campaign. (Figure 2) The mean evaluation of the whole campaign out of ten was 9.6 (4.85); with a mean percent score for evaluation of 77.6 (22.15).



**Figure 2: Immediate Evaluation of the Educational Campaign (n=150)**

## Discussion

A quasi-experimental pre- and post- study was carried out involving 150 healthcare professionals working at two private hospitals in Jeddah, KSA. The study aimed to assess the effect of educational campaigns on interpersonal communication skills among healthcare professionals and to explore the effect of educational campaigns on their skills. It was planned to achieve these objectives through the use of an educational campaign about communication skills with both data collection tools (an interpersonal communication skills inventory questionnaire) and a post- campaign evaluation form.

Communication is a vital clinical ability that is used to build a therapeutic relationship,

comprehend patients' viewpoints, explore ideas and feelings, and help them make positive health improvements [10]. In health, the tools of the communicational mix are based on interpersonal communication. Interpersonal (inter-human) communication was the first human spiritual tool of the socialization process [11] and is defined by Floyd [12] as the communication that takes place between two people in the context of their relationship and that, as it evolves, helps to negotiate and define that relationship [11, 12].

This study illustrated that the interpersonal communication skill inventory parameter scores, namely sending clear messages, listening, giving and receiving feedback, and handling emotional reactions, were significantly improved following the educational campaign. In our study, there was a significant improvement in the responses to the interpersonal communication skill inventory in all its domains when measured post-test. It is important to note that the extent of the difference between the pre- and post-educational campaigns may vary depending on factors such as the duration and intensity of the campaign, the level of participation and engagement from the healthcare professionals, and the presence of ongoing support and reinforcement of communication skills.

Effective communication skills in healthcare settings are known to contribute to better patient outcomes, including improved satisfaction, reduced medical errors, and increased compliance with medical regimens. Research has shown that communication errors are among the leading causes of medical errors, and these errors can result in adverse patient outcomes, increased healthcare costs, and legal implications [10]. When healthcare professionals are effective communicators, they can establish rapport, build trust, offer reassurance, provide emotional support, and convey important information accurately and efficiently. Patients who feel heard and understood are more likely to follow their physicians' advice, participate in their care decisions, and achieve better health outcomes [10].

Combining verbal forms (oral and written language), nonverbal forms (gestures, mimics, posture, movement, and appearance), and paraverbal forms (by voice attributes associated with the word, including pronunciation, the inflection of voice, tone, rhythm, and spoken flow) produces interpersonal communication. There are several variables that can affect it: the degree of spatial proximity or closeness; the boundaries and extent of physical contact in these relationships; the friendly or authoritative style of communication; the exchange of glances that constitute visual communication; the volume and pace of the interactions; and the dynamics of reciprocal self-development [12, 13].

Healthcare professionals are in continuous need of being trained for a better grasp of communication techniques and strategies, enabling them to engage in more effective and patient-centred communication. Moreover, in the medical act, communication is an active process that involves the transmission and reception of information. The ability of the physician to listen, explain, and empathize can have a significant impact on the patient's health state and functioning, as well as their satisfaction with the medical system's provision of healthcare [10, 11].

The present work revealed that nationality and mother language were significant predictors of interpersonal communication skills. Healthcare professionals with the same nationality and mother language as the patient have a great capability to communicate, understand, listen, and give feedback to the patient. Also, the professional can then prescribe a treatment plan that will be suitable for the patient's cultural habits and refrain from certain constraints that may be encountered in such a community [12]. The older and more qualified healthcare professionals are, the greater their



interpersonal communication skills, with the development of extensive experience and abilities in diagnosis, treatment, and follow-up plans [13]. These findings from earlier research are consistent with those obtained in the current research work.

This research work illustrated that marital status and perceived satisfaction with work conditions were significant predictors of interpersonal skills among healthcare professionals. Stabilization of one's personal social life, including marital status, has an effect on the pattern of communication with others, and the addition of satisfaction with the work environment allows healthcare professionals to work in a relaxed, comfortable way. Of course, this will be reflected in their communication patterns with their patients, team, and colleagues [14]. The level of satisfaction will be affected not only by the working hours but by the number of shifts as well [15] which in congruence with this study results.

The current research revealed that the specialty of the healthcare professional is one of the significant predictors of interpersonal communication skills. Some healthcare specialties require special and more talented communication skills than others, especially those who are dealing with issues that are sensitive for the patient. Therefore, to be a successful healthcare provider in this field, it is necessary to develop and observe one's interpersonal communication skills in a continuous manner [16]. Nurses are often the first point of contact for patients, and they play an essential role in coordinating and delivering patient care. As such, effective communication skills are necessary for nurses not only to provide high quality care but also to collaborate with other healthcare professionals to ensure seamless delivery of care. For instance, effective communication skills can help a nurse identify a patient's needs, provide necessary interventions, and inform physicians of any changes in the patient's condition [11].

This study demonstrates, from the evaluation of our educational campaign, that it was met with great satisfaction by the healthcare professionals in all its aspects, achieving a high score. Effective communication has double benefits for the physician-patient relationship and for the teamwork and collaboration in healthcare settings [16]. It will eliminate the challenges in communication among healthcare professionals that can lead to misunderstandings, delays, or conflicts [17]. Moreover, there may be a positive impact on teamwork and collaboration, with improved communication skills enabling better information-sharing, coordination, and decision-making among healthcare professionals [16,17].

### **Conclusion:**

This study concludes that educational campaigns for the development of interpersonal communication skills have desirable effects on healthcare professionals' communication abilities and capabilities. Significant predictors of interpersonal communication skills include nationality, marital status, mother tongue, specialty, qualification, working hours, number of shifts, and satisfaction with the work environment. The healthcare professionals were greatly satisfied with the educational campaign in all its aspects. Healthcare organizations should invest in training programs that develop healthcare professionals' communication skills to improve healthcare quality and patient safety.

### **Recommendation:**

The prioritization of strong communication skills is imperative for all healthcare professionals to enhance their capabilities in diagnosis, treatment, effective message transmission, and providing feedback to patients. An evaluation of any educational campaign is essential, with a focus on identifying and addressing any negative aspects and working towards the development of an ideal educational campaign.

**Study Limitation:**

The absence of a comparison with any governmental hospitals in Jeddah City presents challenges in establishing a control group for participants, as, from an educational perspective, everyone should benefit from the educational campaign. Evaluating the impact of the educational campaign on interpersonal communication among healthcare professionals after three months or more would have provided valuable information. However, this was not conducted due to the difficulty in reaching the same participants.

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**Role of authors:**

M.I.H.M. devised the study, supervised the study procedures, contributed to data analysis and interpretation, and with A.A. drafted the first manuscript. A.A., J.T.B., A.M.K.K., L.F.M., and S.M.S.S. designed the audiovisual materials for the educational programs, and the online survey, conducted the educational campaigns in the two hospitals, collected the data, and wrote the first draft of the overall manuscript. A.A., JTB shared in reviewing the literature and the introduction. M.I.H.M. and A.A. made the essential contributions, critically reviewed, and approved the final copy of the manuscript.

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