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Physicians and Nurses Attitude towards Physician-Nurse Collaboration in Saudi Government Hospitals

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Abstract: A growing body of research supports the significance of physician-nurse collaboration for the delivery of a quality patient care and positive outcomes. This study was undertaken to assess the attitudes toward collaboration between practicing physicians and nurses in three tertiary government hospitals in Riyadh, Kingdom of Saudi Arabia (KSA). A quantitative descriptive study was used to compare the difference in attitudes toward Physician-nurse collaboration between physicians and nurses. Attitudes toward collaboration as influenced by their age, gender, nationality, and number of years in practice was also explored. Data were obtained through distribution of survey questionnaire which is an adaptation of the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration (JSATPNC). Results showed a total mean scores on attitudes toward collaboration for physicians (n = 201) was 50.68 ± 8.31 and 53.59 ± 8.20 for nurses group (n=307). Mean scores were consistently higher in the 4 JSATPNC subscales of attitudes for nurses (p=0.007). Further analysis demonstrated that male physicians have statistically higher score than female physicians (p=0.043). Nurses who have more than 10 years hospital practice have higher score compared to those with 10 years and less of practice (p=0.048). Considering that physician-nurse collaboration is important in the promotion of a quality patient care and outcomes, healthcare institutions in KSA should give more focus on improving physician-nurse collaborative relationships.

Keywords: Attitudes, Collaboration, Jefferson Scale, physician, nurse, Physician-nurse collaboration, Saudi Arabia.

INTRODUCTION

Collaboration is a process of joint decision making among independent parties with joint ownership of decisions and collective responsibility outcomes [1]. It is described as working together, sharing communication as well as decision making, and cooperating with each other on the basis of shared power and authority [2-4]. Apart from communication, respect, and trust, other factors affecting physician-nurse collaboration include understanding of professional roles, task prioritizing and equal power [5].

A number of studies affirm the significance of physician-nurse collaboration and positive relationship as major factors which contribute to positive outcomes and quality patient care [6-7]. Inter-professional collaboration and teamwork can reduce cost and enhance team effectiveness thus improving the quality of care [8-9]. It ensures the safety, satisfaction and faster recovery of patients resulting to a lower mortality rates [10,11]. Also, positive relationships had a beneficial effect on the quality of drug use and the improvement of behavioral disturbance among a large number of nursing home residents [12]. In addition, teamwork and collaboration between physicians and nurses are vital for patient care and morale [13]. As members of the team, both the doctor and the nurse has his or her own perspective regarding assessment and

plan of care for patient. Through collaboration and exchange of information, both can come up with appropriate treatment plans for the patient [13].

The relationship between physician-nurse collaboration and patient outcomes exists in different cultures regardless of geographical boundaries [14]. Also, cultural factors and social learning are powerful variables in forming attitudes toward collaborative practice. Countries where physicians and nurses share the power and responsibilities in patient care are considered to have complementary model of professional practice [14]. It was reported that both American and Israeli nurses, who worked in a complementary model of professional roles, expressed more positive attitudes toward collaboration compared to both Italian and Mexican nurses who lean more on a hierarchical model of professional practice [14, 15]. Similarly, in the Middle East cultures, the hierarchical model of professional roles is more prevalent wherein nurses are often perceived as physicians' "handmaidens" [16]. The complementary model put impetus on the significance of education, common experience, shared autonomy, and mutual authority in the development of positive attitude towards inter-professional collaboration [14]. Generally, a more positive attitude towards inter-professional are expected in societies with complementary model and often this is promoted in the formal education of health professionals [14].

Given that in any culture, physician-nurse collaborative relationships benefit the patients and promote better communication and satisfaction within the professions, both physicians and nurses should have parallel perception and attitudes toward collaboration [17, 18]. However, a number of studies show that physicians and nurses have different views and attitudes towards collaboration. Generally, nurses have a significantly more positive attitude towards collaboration than the physicians [14, 19-24]. Countries like USA, Israel, Italy, Istanbul, Ethiopia, Singapore, Indonesia, Palestine and Mexico, nurses have significantly more positive attitude towards collaboration [14, 25-27, 23, 24].

In the Kingdom of Saudi Arabia (KSA), limited if any research was conducted with regards to physician-nurse collaboration. Within the kingdom, healthcare is primarily provided through a national governmental health service with a minor share provided by the private sector [28]. A number of physicians and majority of nurses which are employed in the kingdom are expatriates. The nurses in a multicultural workforce have diverse experiences of patient care, collaborative practice, levels of autonomy and accountability [29] which may imply different views and attitudes toward inter-professional collaboration. It is worth noting that the access to healthcare in KSA has dramatically improved in the past years. The improvement has brought changes to healthcare organizations, their staff, and other stakeholders, highlighting the need to improve the quality of the healthcare [30]. Part of the 9th Development Plan in KSA (2009-2014) in the area of health services is the need to adopt methods to improve quality of patient care. These methods should be applied across all health sectors to ensure that appropriate levels of efficiency and quality are achieved [31]. Efficient delivery of quality healthcare may be done through various ways like putting more efforts in enhancing physician-nurse collaboration and teamwork in hospital practice. Considering the prevalence of hierarchical model of professional role in the Middle East [16] including Saudi Arabia, it is imperative that collaboration and teamwork among health professionals should be given attention. As noted in the preceding paragraphs, an improved physician-nurse collaboration and teamwork may lead to a better quality of patient safety and quality health care.

Acknowledging that physician-nurse collaboration is a two-way interpersonal process, it is significant to comprehend the attitudes of both parties toward collaborative practice. In this study, the attitudes toward collaboration between practicing physicians and nurses of the three tertiary government hospitals in Riyadh, Kingdom of Saudi Arabia were determined. It explored the difference in the attitudes toward physician- nurse collaboration and whether these attitudes differ according to gender, age, nationality, and number of years in practice. Findings of this research may provide insights on how to improve teamwork and collaboration among physicians and nurses.

MATERIALS AND METHODS

Design

This is a quantitative descriptive study which focused on the comparison of the attitudes of physicians and nurses towards physician-nurse collaboration in the hospital setting. Both physicians and nurses were recruited to participate voluntarily in the study.

Setting

This study was conducted in three tertiary government hospitals in Riyadh, Saudi Arabia. King Abdullah Bin Abdulaziz University Hospital (KAAUH), King Khalid University Hospital (KKUH), and King Fahad Medical City (KFMC) in Riyadh, Kingdom of Saudi Arabia.

King Khalid University Hospital is a 800 bed capacity teaching hospital with all general and subspecialty medical services. It contains a special outpatient building, more than 20 operating rooms, and a fully equipped and staffed laboratory, radiology, and pharmacy services in addition to all other supporting services. The hospital provides free primary and

secondary care services for Saudi patients from Northern Riyadh area (www.medicalcity.ksu.edu.sa).

The King Abd Allah University Hospital (KAAUH) is located in the southern area of the Princess Nourah bint Abdulrahman University Campus. It is a teaching hospital with a capacity of 300 beds and has out-patient clinics, hypnosis chambers, and an emergency department. The hospital is distinguished by having three integrated centers with areas of specialization on women's health, adolescent health and child growth and development (www.kaauh.edu.sa).

King Fahad Medical City (KFMC) is strategically located in the heart of Riyadh City, the capital of the Kingdom of Saudi Arabia. It is the largest and most advanced medical complex in the Middle East with a total capacity of 1200 beds. The Main Hospital has 181-bed capacity and with specialty clinics for diagnosing and treating diseases. Rehabilitation Hospital is a 92-bed hospital offering multiple levels of care, including inpatient, day rehabilitation, and outpatients' services, a 224-bed Children Specialized Hospital and a 120-bed Women Specialized Hospital (www.kfmc.med.sa).

Participants

A convenient sampling method was used in the study and the participation was voluntary. There were 508 total participants for the study; 201 were practicing physicians and 307 were practicing nurses in the three tertiary government hospitals; King Abdullah Bin Abdulaziz University Hospital (KAAUH), King Khalid University Hospital (KKUH), and King Fahad Medical City (KFMC) in Riyadh, Kingdom of Saudi Arabia. Both nurse and physician participants were from various specialties and department like family medicine, pediatric, emergency, surgery, intensive care unit, OBGyne, and others. They were employed in a given hospital for at least one year and directly involved with patient care.

Instrument

An adaptation of the *Jefferson Scale of Attitudes toward Physician-Nurse Collaboration* (JSATPNC) was used to determine the attitude of physicians and nurses towards collaboration. The questionnaire was first developed to measure attitudes towards nurses and nursing services [32] which was modified [33] to study the attitudes toward physician-nurse alliance. Further modifications of the scale was made [34] after extensive psychometric analysis in which 15 out of the 20 items of the survey were retained.

The JSATPNC was based on the rationale that inter-professional collaboration is a joint venture, with shared authority and responsibility, open communication, and shared decision making. The education of professionals within a collaborative environment would also affect the attitude of nurses and doctors toward each other [34]. The tool is made of 15 item statements; seven items were identified as "shared education and team work" (questions 1, 3, 6, 9, 12, 14, & 15), three items on "caring as opposed to curing" (questions 2, 4, & 7), three items on "nurse's autonomy" (questions 5, 11, & 13), and two items on "physician's dominance" (questions 8 & 10).

JSATPNC Scale

The tool was answered on a 4-point Likert Scale: 4 = strongly agree; 3 = agree; 2 = disagree; and 1= strongly disagree. Items 8 and 10 are reverse scored items (Strongly Agree =1.... Strongly disagree=4). Other items are directly scored based on their Likert weights (Strongly agree=4... Strongly disagree=1). Total score is the sum of all item scores. The higher the score, the more positive attitudes toward physician-nurse collaboration [34]. A higher factor score on the shared education and teamwork means a greater orientation toward interdisciplinary education and inter-professional collaborations. Higher factor score on the caring as opposed to curing means a more positive view of nurses' contributions to psychosocial and educational aspects of patient care. A higher factor score on the nurses' autonomy means a more agreement with nurses' involvement in decisions on patient care and policies. A higher factor score on physicians' dominance means rejecting a totally dominant role of physicians in aspects of patient care.

Data Collection and Analysis

Permission to collect data from each hospital was obtained prior to the distribution of the questionnaire. Two hundred fifty (250) questionnaires were distributed to practicing physicians and three hundred fifty (350) to registered nurses in three tertiary government hospitals in Riyadh, KSA. The participants were oriented on how to answer the questionnaires and were informed about the voluntary nature of participation in the study. The questionnaires were distributed and collected from each hospital on different dates due to lack of research assistants and time as well schedule constraints. Only 206 (82.40 %) physicians and 311 (88.86%) nurses returned the completed survey questionnaires. Out of the total 517 questionnaires collected, only 508 were considered for data processing and analyses. Questionnaires with less than 12 items answered out of the 15 items were regarded as incomplete and excluded from the data analyses.

The data was analyzed using descriptive statistics which include frequencies, mean, and standard deviation. Difference of means in the total and factor scores on JSATPNC Scale of Attitude were determined for the physician and nurse groups using the *t*-test and $p = < 0.05$ was considered significant. The Statistical Package for Social Sciences (SPSS) version 20 was used for data analysis.

RESULTS

Demographics of the Study Participants

The demographic characteristics of the respondents are summarized in table 1. Most of the physician respondents were male (60.69%) while nurse respondents were predominantly female (77.85 %). Physician participants had the highest age distribution at 30 to 39 age group (41.79%) while nurses were mostly within 20 to 29 years old (52.44 %). Among 201 physician participants, 123 (61.19%) were Saudis and 78 (30.80%) were non-Saudis. The nurse respondents were predominantly non-Saudis. Among the total three hundred seven (307) only 56 (18.24%) were Saudis and 251 (81.75%) were Saudis. It is also worth noting that the Saudi nurse participants were all female. Majority of both physician and nurse participants have been in hospital practice between 5 to 15 years.

Table-1: Demographics of the Physicians (N= 201) and Nurses (N=307)

Demographics	Physicians Number [Percentage]	Nurses Number [Percentage]
Gender		
Male	122 [60.69]	68 [22.14]
Female	79 [39.30]	239 [77.85]
Age		
20-29	31 [15.42]	161 [52.44]
30-39	84 [41.79]	116 [37.78]
40-49	67 [33.33]	28 [9.12]
50- above	19 [9.45]	2 [0.65]
Nationality		
Saudi	123 [61.19]	56 [18.24]
Non-Saudi	78 [38.80]	251 [81.75]
Years in Hospital Practice		
5 years and below	32 [15.92]	55 [17.91]
6-10	51 [25.37]	97 [31.59]
11-15	42 [20.89]	81 [26.38]
16-20	38 [18.90]	38 [12.37]
21-25	25 [12.43]	26 [8.46]
26-above	13 [6.46]	10 [3.25]

Comparison of Physician and Nurses Attitudes toward Physician-Nurses Collaboration

Mean scores of the attitudes toward collaboration between physician group and nurse group in four subscales of the Jefferson scale of attitudes were compared. In all subscales: shared education and teamwork, caring as opposed to curing, nurses autonomy, and physician authority, the nurses' mean scores are significantly higher compared with that of the physicians' mean scores (see table 2). Comparison of the total mean scores of the Jefferson scale of attitudes toward collaboration revealed a total mean score of 50.68 (± SD 8.31) for physician group and 53.59 (± SD 8.20) for nurse group. The nurses' total mean score was shown to be significantly higher as compared with the physicians' total mean score (t =3.14, df=437 and P= < 0.007) which indicated a greater agreement towards collaboration for nurses as compared with the physicians. In general, results of the study showed a positive attitudes toward collaboration between nurses and physicians in Saudi government hospitals.

Attitudes toward Collaboration Based on Demographic Profile

Comparison of the means and standard deviations of the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration across demographic profile is summarized in table 3. For physician group, comparisons across gender show that male physicians have significantly higher score (p=043) compared with their female counterparts. No significant difference was revealed with regards to age, nationality, and years of experience in hospital practice. For nurse group, analyses show a statistically significant difference in attitudes toward collaboration in terms of the number of years in hospital practice. Nurses who have been in practice for 11 years and above have higher score (p=048) compared with those who have 10 years and below experience. There is no significant difference across gender, age, and nationality.

Table-2: Mean values and differences between physician and nurses with regard to the Jefferson Scale of Attitude towards physician-nurse collaboration

Factor Scores on Jefferson Scale of Attitudes Toward P-N Collaboration	Profession	Mean ± SD	SEM	*t*	df	*P* value
Shared Education and Teamwork	Physician Nurse	24.62 ± 1.55 25.70 ± 2.37	0.141 0.150	6.20	505	< 0.001
Caring as opposed to curing	Physician Nurse	10.30 ± 1.48 10.85 ± 1.42	0.137 0.095	4.16	415	< 0.001
Nurses autonomy	Physician Nurse	10.82 ± 1.52 11.17 ± 1.19	0.098 0.079	2.94	380	0.003
Physician authority	Physician Nurse	5.24 ± 1.64 5.83 ± 1.46	0.146 0.097	4.60	411	< 0.001
TOTAL SCORE	Physician Nurse	50.68 ± 8.31 53.59 ± 8.20	0.586 0.488	3.14	437	0.007

Physician (N=201), Nurse (N=307) *P* value = 0.05

Table-3: Mean Scores on Jefferson Attitudes Toward Collaboration Based on Demographic Profile

Demographic Profile	Physician					Nurses				
	N	Mean	SD	t	*p*	N	Mean	SD	t	*p*
Gender										
Male	122	51.03	8.52	2.04	0.043*	68	53.02	7.68	0.971	0.332
Female	79	50.20	8.14			239	54.10	8.20		
Age										
Less than 40	115	50.63	8.41	0.23	0.188	277	52.80	8.75	0.699	0.485
More than 40	86	50.9	8.00			30	53.91	7.43		
Nationality										
Saudi	123	50.04	7.80	1.54	0.125	56	52.24	7.10	1.43	0.154
Non-Saudi	78	51. 83	8.42			251	53.98	8.48		
Years in Practice										
10 years & below	83	49.79	8.12	1.92	0.056	152	52.32	7.22	1.98	0.048*
Above 11 years	118	51.9	7.82			155	53.98	7.45		

Physician (N=201), Nurse (N=307) *P* value = 0.05

DISCUSSION

Findings of this study showed a significant difference in attitudes toward collaboration between physicians and nurses in Saudi government hospitals. Nurses revealed a significantly more positive attitudes toward physician-nurse collaboration. This finding is consistent with the results of the previous studies conducted in which nurses significantly demonstrate a more favorable attitudes toward collaboration than the physicians [14, 19-24, 25-27, 35]. Further analyses showed that nurses significantly scored higher in all subscales of the Jefferson Scale; shared education and teamwork, caring as opposed to curing, nurses autonomy, and physician authority. These findings imply that compared with physicians, nurses in this study have a greater orientation toward interdisciplinary education and inter-professional collaborations as well as a more positive view of nurses' contributions to psychosocial and educational dimensions of patient care. Moreover, nurses also manifest higher degree of agreement with nurses' involvement in decisions on patient care and policies but they are not favorable of a totally dominant role of physicians in aspects of patient care. As cited in previous study [17], possible reason for a dominant physician role might be due to medical training programs that leads to a hierarchical model of professional role in which the nurses have a relatively submissive role. This could be the scenario in Middle East societies including Saudi Arabia in which a hierarchical model of professional role is prevalent [16] and nurses are considered as subordinates of the physicians. It is worth noting that ineffective communication as well as differences in the perception of what should be the role of nursing may result to collaborative problems [25]. In Saudi Arabia, most of the nurses are expatriates coming from different countries of diverse cultures and speak different languages. This could be barriers for effective communication despite the use of English language as the medium of communication in hospital setting. One

study [36] reported a poor communication between physicians and nurses in both government and private hospitals in Riyadh, Saudi Arabia.

Analyses of physicians attitudes toward collaboration across gender show that male physicians have significantly favorable attitudes toward physician-nurse collaboration compared with female physicians. This result is similar with what was reported that male physicians have statistically more positive attitudes toward collaboration as compared to their female counterparts [25]. This result may be explained by the Role Theory which suggests that gender is not as powerful as contributing factor as social learning and cultural factors in prescribing professional roles [37]. Results revealed no significant difference in years of experience in hospital practice. This finding is in contrary with other studies [15, 24, 27, 35] in which physicians attitudes toward collaboration become more positive with an increased years of experience. Possible reason for this development in physicians attitude toward collaboration is their greater knowledge pertaining to nurses' roles [15] as they spent more years in practice. There was no significant difference between physicians' age and positive attitudes towards collaboration which conforms with the finding of other studies [26,35]. Likewise, there was no significant difference between physicians' nationality with their attitudes toward collaboration.

Findings of the study showed that nurses who have been in practice for 11 years and above have significantly higher score compared with those who have 10 years and below experience. Other studies also reported a significant difference in positive attitude across length of service [15, 24, 38]. Results failed to demonstrate significant difference across gender, age, and nationality. It is worth noting that there were few male nurse participants and all of them are Non-Saudis.

Results of this study highlight the need for a continuous efforts toward improving physician-nurse collaboration in the light of improving the quality of healthcare services within the Kingdom of Saudi Arabia. Considering that physician-nurse collaboration can improve the quality of patient care, it is worth examining the various factors that may help augment inter-professional collaboration and teamwork among healthcare providers in KSA. Moreover, education plays vital role to improve physician-nurse collaboration by way of enhancing medical curriculum content related to teamwork and communication because this will help promote collaboration. As previously reported [36], communication between physicians and nurses in Saudi Arabia was poor. It was recommended that this vital concern should be addressed in seminars, conferences, and workshops. New educational strategies that include interdisciplinary courses must also be introduced in both medical and nursing curricula to improve not only in the aspect of communication but also teamwork and collaboration in general.

CONCLUSION

To the best of our knowledge, this is the first study conducted on collaboration between physicians and nurses in the Kingdom of Saudi Arabia. Results of the study revealed that physicians and nurses in Saudi government hospitals have positive attitudes toward physician-nurse collaboration with nurses having significantly more positive attitude than the physicians. Physicians' attitude toward collaboration is correlated with gender in which male physicians showed a more positive attitude toward collaboration. For nurses, positive attitudes toward collaboration is higher among those who have more years of experience in hospital practice. Considering the fact that physician-nurse collaboration is important in the promotion of a quality patient care and outcomes, healthcare institutions in KSA should give more impetus on how to improve physician-nurse collaborative relationships. One way to address this concern starts with the integration of collaborative education in medical and nursing curriculum in countries with hierarchical model of inter-professional relationship like Saudi Arabia. As pointed out in previous study [37], collaborative education for medical and nursing students, particularly in cultures with a hierarchical model of inter-professional relationship is needed to promote positive attitudes toward complementary roles of physicians and nurses. Moreover, faculty preparation for collaboration is imperative in such cultures before implementing collaborative education.

In hospital setting, management plan and strategies may be employed to improve communication and promote collaborative practice among health professionals. In one study [35], the following plans and strategies were recommended to improve physician-nurse collaboration in hospital setting: First, to develop collaborative communication as part of hospital culture. This could be implemented through daily multidisciplinary rounds to discuss about patients and through conducting simulation exercises. Second, to improve communication by conducting communication training, by structuring the Nurses' Station to be more conducive to discussion, and by enhancing a two-way communication. Third, to delineate scope of practice and recognize complementary role model of practice by integration of collaborative interaction in the Quality Improvement Programs of the hospitals. Finally, to increase opportunities for interaction by way of inter-professional meetings, team building exercises, and conflict resolution strategies.

Limitations of the Study

The study use convenient sampling and samples were only drawn from Riyadh City which may limit the generalization of the study findings to a

broader population of physicians and nurses in Saudi Arabia. The lesser number of physician participants as compared with nurses may also undermine the results of the study.

Ethics approval and Consent to Participate

The study was approved by the Institutional Review Board of the three hospitals included in the study. IRB approval number for King Abdullah Bin Abdulaziz University Hospital (KAAUH) and King Fahad Medical City (KFMC) was 17-083E and IRB No. E-17-2343 for King Khalid University Hospital (KKUH). The nature and purpose of the research, as well as the voluntary nature of the respondents' participation were explained to the respondents. A written consent to participate in the study was then obtained from the participants before they were requested to answer the survey questionnaire. The survey questionnaires were assigned codes which are only known to the researchers to protect confidentiality of the participants.

Availability of data and materials

Sharing the data is not possible due to an agreement with the participants on the confidentiality of the data. However, upon request, the datasets analyzed during the current study are available from the first author.

Competing interests

The authors declare that they have no competing interests.

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Author's contributions

All authors (CMA, AR, AS, AE, KZ, NA and AM) have participated in the conception and design of the study. AR and AS contributed in data collection and prepared the first draft of the manuscript. EH and EM and ZAH critically revised and checked closely the proposal. CMA carried out the analysis, interpretation of the data and drafting the manuscript. NA has been involved in revising the manuscript critically. All authors read and approved the final manuscript.

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