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Effect of negotiation on collaboration between nurses and physicians at South valley University Hospital, Egypt

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Abstract: **to explore the effect of negotiation on collaboration between nurses and physicians. Background: negotiation skills applied successfully for conflict specially, among many other problems and to build collaboration between nurses and physicians. Method: the current study was carried out in a descriptive comparative study design. The study subjects 190 nurse and physician conducted in the south valley university hospital, Egypt. Tool of data collection consists of two parts; 1) negotiation style of conflict resolution sheet, and 2) Jefferson scale of attitude toward physician-nurse collaborative relationships. Results: a strong significant positive correlation between negotiation score and overall attitude for both nurses and physicians (.485**, .531**) respectively. A negative correlation between negotiation scores and physician's authority subscale for both nurses and physicians (-.164*-, -.057) respectively. Conclusion: negotiation have a positive effect on collaboration between nurses and physicians, except with high level of physician's authority domination. Managers whenever adopted negotiation skills application in field of work can be a solution for many problems that face health care workers today. Implications for nursing management: a well prepared training programs and workshops for both nurses and physicians about skills of negotiation and its benefits. Also about importance of collaboration for both nurses and physicians.**

Keywords: **conflict, negotiation, collaboration, physician, nurses.**

1. INTRODUCTION

Nurses and physicians represent the largest segment of healthcare professionals who care for patients. They face daily complex problems in patient care and negotiation skills are crucial. Conflict resolution very important and negotiation skills can apply successfully for conflict specially, among many other problems (Lewicki & Hiam, 2007). As possible as can health care team should adopt to use collaborative negotiation; that consider the workable solution that management of resources, provide better alternatives for patient, and keep the relationship between parties (Frankel et al., 2017).

The quality of health care has become more complex, but cooperation between doctor, nurse, group work and cooperation between healthcare personnel should be a way to improve the quality of health care service, improved patient outcomes, the safety of patients and the increased satisfaction of workers; especially in different hospitals where the environments are characterized by continuous interactions among health care employees (Elsous et al., 2017).

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Rahimi & Agha, (2012) argued that negotiation is the best to conflict and is the effective way to control it; because interaction between health care professionals is ongoing and conflict usually occurs; the problem begins when the conflict is not resolved and affects the quality of care provided. Marquez & Houston, (2015) defined conflict as an internal or external conflict that results from differences in ideas, feelings or values between two or more persons.

Schroeder, (2014) identified negotiation of the conflict as a two-way, voluntary stakeholder communication in both the process and the outcome, five principles shall be present in conflict negotiations; the parties concerned, involved interest, the relationship among the parties, interaction during process of negotiation and the outcome achieved (Helpern, 1993).

Zarei et al., (2016) said that negotiation is a tool of communication between two or more people to reach a solution and agreement on common interests or vice versa. When there is no rule or method of negotiation to resolve disputes or when the negotiated parties choose to neglect the known law and regulation, dispute and conflicts by creative solution.

Negotiation and the exchange of ideas are appropriate ways to achieve understanding and agreement between people. Negotiation is the latest communication. Lose of communication skill might be a hindrance to achievement and progresses in different issues (Moghadam, 2010). Negotiation in most creative forms is similar to collaboration in most forms, especially in management, always in approach and competition. To be successful in negotiation, managers have to do things before, during and after negotiation (Novak & Hall, 2014). There are not a limited number of parties that can participate in negotiations. Negotiations involve competition between the parties with a view to reaching an agreement (Nastakis, 2013).

When the manager is not competent in the negotiation, irregularity present in the institution. You must learn the skill and experience to solve different problems that arise in the institution. Given the increased collaboration among organizations, it is essential that manager know the different concepts of negotiation (Zarei et al., 2016).

Communication is an essential part of the flow of information between nurse and doctor in health care system. Studies have shown that unsatisfactory professional relationship between nurse and doctor has contributed in part to the shortage of nurses and their leaving to work (Elsous et al., 2017). At the same time, growing evidence shows that poor or bad communication can create a chronic state of conflict between nurses and doctors, leading to increased medical errors and poor outcomes (Cypress, 2011).

Health professions working defined as effective inter professional collaboration, which work together to improve outcomes, defines effective communication, trust, decision-making, shared responsibility and mutual respect (Petri, 2010). Effective collaboration between physicians and nurses in acute and intensive care is associated with improved quality of health care as well as patient safety, increased physician and nurse satisfaction, patient outcomes, reduced stress, turnover and reduced costs of care (Bowlesa et al., 2016).

Mathur, (2011) greater agreement to wards collaboration between physician and nurse, means collaboration in work, responsibilities are shared for problem solving, and decision making and develops patient care plans.

Zakerimoghadam et al., (2014) Healthcare professionals should work together to provide excellent services to patients, such as developing a range of skills for effective communication, including: building consensus on conflict management through collaboration and negotiation (Flogger & Bush, 2014).

Significance of the study

Healthcare organizations must find ways for developing effective working relationships to create healthy work environment and recent study findings give implications about more intervention study to improve collaboration between nurses and physicians; based on this implications conflict consider most significant cause of poor collaboration between nurses and physicians and negotiation is the most efficient and effective way to control it. So, the aim of this study was to explore effect of negotiation on collaboration between nurses and physicians.

Study hypothesis

- Nurses and physicians collaborate well when negotiation skills activated.

Aim of the study

To explore effect of negotiation on collaboration between nurses and physicians

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2. SUBJECTS AND METHODS

Design

A descriptive comparative study design investigated physicians and nurses, to determine their perception of effect of negotiation on collaboration between nurses and physicians.

Subjects

The participants involved in the study were (190) 46 physician from total number (75) and 144 nurse from total number (164). During time of data collection no one of participants refuse participation in the study. The discrepancy between total numbers and available numbers of study sample about (51) nurse and physician in vacation and sick leaves. Using a convenient sampling method to recruit study subjects.

Study setting

The current study was carried out at South Valley University Hospital which are affiliated to south valley university, the hospital consisted of (5) floors, that include (150) beds to provide cost free service.

Instrument

1- Personal characteristics data as age, gender, qualification, marital status, and years of experience in current workplace.

2- Negotiation style of conflict resolution sheet: it was developed by the researcher to assess knowledge and skills about negotiation of conflict, the initial study to generate items of negotiation based on an extensive literature review, then a pilot study to examine item relevancy and improving clarity through face validity with 5 experts in the nursing administration from Assuit University, Faculty of Nursing. content validity and psychometric analyses done thoroughly. It is consists of three main items, before negotiation (11 items), during negotiation (16 items), and after negotiation (4 items) based on four point scale from4) strongly agree to (1) strongly disagree, range 31- 124, the higher the scores, the more negotiation between health care professional, cronbach's alpha coefficients (0.82 to 0.90)

3- Jefferson scale of attitude toward physician-nurse collaborative relationships, this scale was established at Jefferson University by (Hojat and Hermen, 1985) in the English language and was reviewed by (Hojat et al., 1999). The scale is translated into Arabic by researcher then retranslated to ensure right translation. It consists of (15 questions) under four subscales, namely are shared education and teamwork (7 statements), caring versus curing (3 statements), nurses' autonomy (3 statements), and physicians' authority (2 statements) used for measuring attitudes toward the collaborative relationship between nurse and physician. Shared education and teamwork dimension score indicates a greater orientation toward interdisciplinary education and inter-professional collaboration. Caring versus curing high score indicates more positive view of nurse' contribution to psychosocial and educational aspect of patient care. Nurses' autonomy dimension high scores indicate more agreement with nurse' involvement in decisions on patient care and policy. Physicians' authority high score indicate rejection totally dominant role of physician in patient care. It were based on a four-point scale, where "strongly agree" has a score (4) and "strongly disagree" has a score (1), ranges of total score from 15 to 60, with higher values indicating more positive attitude toward nurse -physician collaborative relationships. The Cronbach's α for the Jefferson Scale ranged from .70 to .93.

Fieldwork

Pilot study is performed on 10% from sample to ensuring the clarity, understandability, and time estimate for tools of the study. Data collected actually were taken about three months started in July 2018 and ended September 2018. The researchers met with all participated nurses and physicians and explained to them the purpose of the study, and they asked for consent to participate then the researchers distributed the questionnaires form to them. The researcher stays with the applicant for any clarification and to take the form promptly after finishing. The time estimated for each form for completeness about forty minutes for each one. In each day the research take the present available number of participants. Morning shift for three days weekly, tools of the study were completed. The pilot study not excluded from the sample, because of no change done from participants.

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Ethical consideration

Approved was taken from Ethical Committee at the Faculty of Nursing Assiut University for conducting the study, there is no hazards for study participants during conducting of the research, the study was following common ethical principle in clinical research, oral agreement was taken from the participants in this study, study participants have the right to refuse or to participate and/or withdraw from the study without any rational at any time, and confidentiality and anonymity was assured.

Statistical analysis

Data entry and statistical analysis were done using SPSS 20.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables. Continuous variables were expressed as mean ±standard deviation. For comparison of categorical variables, the co-efficient test and Pearson Correlation analysis were used for assessment of the interrelationships among quantitative variables P>0.05(Not significance), P<0.05 (Significance).

3. RESULTS

The socio demographics of the participants are summarized in Table 1. About half of the participants were male for nurses (52.8%) and for physicians more than two third (73.9%). The both nurses' respondents (58.3%) and physicians' respondents (45.7%) are within 20 to 25 years old. Most of the physicians (87.0%) and the nurses' participants (75.0%) have been less than 5 years' experience. Generally nurses' participants distributed in medical and surgical department (44.4%, 39.6%) respectively, while physicians' respondents distributed in surgical and intensive care units (ICUs) (37.0%, 32.6%) respectively.

Table 2 explores mean values of main items of negotiation and subscales of the Jefferson scale for both nurses and physicians. As general before and during negotiation is preferable to nurses, while physicians prefer after negotiation. Regarding main items of negotiation, most of the studied nurses 51.70 (80.8%) confirmed that during negotiation is the best one compared to other negotiation items. Most of the studied physicians 13.07(81.7%) confirmed that after negotiation is the best one compared to other negotiation items. Regarding to subscales of the Jefferson scale, nurses mean scores consistently high than physicians in all subscales of attitude of collaboration. Nurses' autonomy subscale 10.33 (86.1%) have the high mean score among nurses, while shared education and team work subscale 22.33(79.8) have the high mean score among physicians, the high mean score was in shared education and team work 22.33(79.8) followed by nurses' autonomy 9.54(79.5%). Also it is observed the lowest mean score of physicians' authority subscale (5.06(63.3%), 4.74(59.3%)) respectively, for both nurses and physicians.

Table 3 shows the relationship between socio-demographic characteristics with negotiation scores and overall attitudes for both nurses and physicians. Regards to nurses; there are statistical significant differences between negotiation and (age, workplace and experience in current workplace) (0.015*, 0.034*, 0.046*) respectively, and between overall attitude and age (0.014*). Regards to physicians; there are statistical significant differences between negotiation with age and experience in current workplace (0.011*, 0.038*) respectively, and between overall attitude and age (0.042*).

Table 4 summarizes correlation co-efficient between Negotiation and Jefferson scale for both nurses and physicians. Data in this table reveals a strong significant positive correlation between negotiation score and overall attitude for both nurses and physicians (.485**, .531**) respectively. It is observed that shared education and team work subscale have the high correlation with negotiation for nurses (.482**) while caring versus curing subscale have the high correlation with negotiation for physicians (.520**). It is important to note a negative correlation between negotiation scores and physician's authority subscale for both nurses and physicians (-.164*-, -.057).

4. DISCUSSION

Our study aims to explore the effect of negotiation on collaboration between nurses and physicians. Our study findings reveal about more than half of study respondents within 20 to 25 years and their experience less than 5 years. A lot of the studied nurses in Shokri et al., (2013) in his study confirmed that the lack of belief in the expert role of nurse in patient care is the most significant hindered factor in collaboration between physician and nurse; nurse' expertise can express their meant clearly and understood and they are more familiar with their communication skill in general and their

problem-solving skill in particular, also they had held more power (Nelson et al. 2008). Also, most of study participants in our study were female and most of nurses were distributed in medical and surgical departments but most physicians were distributed in ICUs. A study performed in Egypt by EL Sayed & Sleem (2011) on nurses working in medical and surgical units showed them had a positive attitude towards collaboration between nurses and physicians.

Our study finding demonstrates light differences in agreement between nurses and physicians regarding to all items of negotiation, most of nurses agree that high mean score during negotiation. On the other side, most of physicians agree that high mean score after negotiation As known nurse is mediator of the nursing in different situations of conflict and she is prepared to face this situations using discussion and negotiation (Baggs et al., 1999) as cited by (Leever et al., 2010). Common belief, that physician is very busy and has limited time to stay with his patients accordingly they hasn't time to spend in negotiation.

Our study findings reveal nurses mean scores consistently high than physicians in all subscales of attitude toward collaboration. This is assured by many previous study findings that show nurse has a positive attitude toward collaboration than the physician (Jones & Fitzpatrick, 2009; Taylor, 2009; Hughes & Fitzpatrick, 2010; Zheng et al., 2016) also, the results of Falana et al., (2016) who found nurse has positive attitude towards nurse-doctor collaboration than doctor. Previously in the studies physicians see collaboration as following instruction and order, while nurse see it seems a more important complementary role than physician. Also, the two greatest persons are authorized for patient care, but they often do not speak to each other properly, and if that happens, exchange and cooperation are often dysfunctional (Elsous et al., 2017).

Most nurses in our study agree that the highest mean score related to nurse's autonomy. This is not surprising because introduction of formal university qualification to nursing make them challenge their professional boundaries and become having more autonomy in providing patient care. In spite of this and contrary to numerous anecdotal reports; the history that had been appeared nursing not afford a wonderful reputation in addition to hospitals that determines professional boundaries by which the relationship among physicians and nurses is almost unequal leading to lack their full professional jurisdiction and autonomy (Salhani & Coulter, 2009). Nurses today possess a superior holistic knowledge from their empathy and effective communication with the patients through a daily interaction with them, which give nurses more power and more autonomy. On the other side, shared education and team work subscale have the high mean score from most physicians this indicates that physicians mostly oriented toward interdisciplinary teaching and inter-organizational collaboration and this is may be back to their education and the jurisdictional power and superior role that they have (Murata et al., 2014).

The lowest mean score noted of physician's authority; about two third of nurses and physicians have had agreed. Physicians' authority low score indicates partially rejected a domination role of physicians in aspects of patient care. In Upper Egypt physicians based on their depth education and training related to different aspects of patient care, and jurisdictional power with him, they are in class one of patient care and nurses just follow their orders. In Hojat et al. (2003) cited in Zakerimoghadam M. et al. (2015) in their stated model about Middle Eastern countries that generalizes hierarchy of communication between physicians and nurses; nurses look like assistant to physicians, and physicians having a higher status than nurses. This findings highlight the importance of nurses to take steps forward to participate in patient care decisions and become side by side to physicians rather than standing behind them. A totally domination of patient care from side of physician is rejected from side of nurses and cause conflict between nurses and physicians; Physician dominance one from many variables like income and gender differences that effect on collaboration between physicians and nurses (Ramezani,novakfalana 2009). (Feggie-Bodole, 2009) identify that this item contributes to the failure of the establishment of effective nurse-physician collaboration.

The findings of our study reveal a strong significant positive correlation between negotiation and collaboration for both nurses and physicians in general; negotiation correlate high with shared education and team work subscale for nurses, this means increase nurses orientation toward interdisciplinary education and inter-professional collaboration when negotiation occur. For physicians negotiation correlate high with caring versus curing meaning increase positive view of physicians' contribution to psychosocial and educational aspect of patient care with negotiation. Collaboration can activate the needs and meet the high quality care of patients, through a balanced relationship between nurses and physicians who will work together to provide good care with mutual respect and trust. This confirmed with Mellman &

Dauer, (2007) they argues that intensive negotiation skills training endeavor to improve engagement and collaboration between nurses and physicians, and it is necessary among health care professionals. Also, negotiation as an alternative dispute resolution method is education and training, providing nurses and physicians with the skills and expertise to deal with conflict in the workplace for safety and more comfortable (Yoder-Wise, 2013). Russell et al. (2005) found that the multidisciplinary team members were able to creatively work together interact and communicate when they were trained and taught.

Findings of our study also demonstrate a negative correlation between negotiation and physician authority for both nurses and physicians; this means negotiation decrease when physician's authority dominates, communication between nurses and physicians is basic for negotiation and it affected when nurses' freedom to contribute of patient care decision are suppressed by physician's authority domination. Research evidence demonstrated that collaboration and open, positive communication between nurse and physician is very necessary causing decrease medical errors, care expenses, and increase quality of care, patient satisfaction, professional satisfaction, in addition to increase nurse's retention (Jerng et al., 2017; Nelson et al., 2008).

5. CONCLUSIONS

based on our study results, we can draw this conclusion: negotiation positively effect on collaboration among nurses and physicians, except with high level of physician's authority domination. Managers whenever adopted negotiation skills application in field of work can be a solution for many problems that face health care workers today. Nurses have positive attitude toward nurses and physicians' collaboration comparing to physicians. Nurses and physicians perceive negotiation items constantly equal to each other**.**

6. RECOMMENDATION

The needs for training programs for both nurses and physicians about skills before, during and after negotiation, and its benefits for prompting conflict resolution at workplace. Also, workshops for physicians and nurses about importance of collaboration between them for healthy and civil work climate, and how it is reflected positively on patient care.

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APPENDIX - A

List of Table:

Table (1) Numbers and percentages of socio demographic characteristic of nurses and physicians

Items	Nurses (n=144)		Physicians (n=46)		Total (n=190)	
	No	%	No	%	No	%
Age						
20-25 years	84	58.3	21	45.7	105	55.3
25-30years	53	36.8	19	41.3	72	37.9
more than 30	7	4.9	6	13.0	13	6.8
Gender						
Male	76	52.8	34	73.9	110	57.9
Female	68	47.2	12	26.1	80	42.1
Workplace						
Intensive care unite	23	16.0	15	32.6	38	20.0
Medical	64	44.4	14	30.4	78	41.1
Surgical	57	39.6	17	37.0	74	38.9
Experience in current workplace						
Less than 5 years	108	75.0	40	87.0	148	77.9
More than 5 years	36	25.0	6	13.0	42	22.1

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Table (2) Mean values of negotiation items and sub scales of the Jefferson scale of attitude toward collaboration between nurses and physicians for both nurses and physicians.

Main items of negotiation	Max score	Study groups	Mean (%)	SD
Before negotiation	44	Nurses	35.05(79.7%)	3.77
		Physicians	35.02(79.6%)	3.71
During negotiation	64	Nurses	**51.70(80.8%)**	**5.02**
		Physicians	51.30(80.2%)	6.17
After negotiation	16	Nurses	12.79(79.9%)	1.81
		Physicians	**13.07(81.7%)**	**1.32**
Subscale of Jefferson scale of attitude				
Shared education and teamwork	28	Nurses	22.73(81.2%)	2.44
		Physicians	**22.33(79.8%)**	2.27
Caring versus curing	12	Nurses	10.26(85.5%)	1.68
		Physicians	9.39(78.3%)	1.31
Nurse's autonomy	12	Nurses	**10.33(86.1%)**	1.40
		Physicians	9.54(79.5%)	1.38
Physician's authority	8	Nurses	**5.06(63.3%)**	1.52
		Physicians	**4.74(59.3%)**	1.29

Table (3) Relationship between socio-demographic characteristics with negotiation scores and overall attitudes for both nurses and physicians

Variable	Negotiation Score		Overall attitude	
	Nurses Mean ±SD	Physicians Mean ±SD	Nurses Mean ±SD	Physicians Mean ±SD
Age				
20-25 years	101.25±8.21	101.33±6.39	49.1±3.35	47.67±2.8
25-30years	97±8.91	94.74±11.63	47.66±4.51	44.53±5.19
more than 30	98.29±4.03	107.33±10.07	45.29±6.18	44.83±2.71
P. value	0.015*	0.011*	0.014*	0.042*
Gender				
Male	100.2±9.52	99.97±7.9	48.75±3.98	46.38±3.52
Female	98.81±7.28	97.75±15.16	47.97±4.14	44.92±5.71
P. value	0.332	0.520	0.252	0.301
Workplace				
Intensive care unit	97.35±8.81	97.73±13.64	47.13±4.89	45±5.14
Medical	98.34±7.3	99.57±5.56	48.11±3.84	46.5±2.95
Surgical	101.77±9.32	100.71±9.85	49.19±3.84	46.47±4.19
P. value	0.034*	0.717	0.093	0.539
Experience in current workplace				
Less than 5 years	100.36±9.16	98.2±9.72	48.56±3.85	46.18±4.36
More than 5 years	97.08±5.72	107.33±10.07	47.86±4.65	44.83±2.71
P. value	0.046*	0.038*	0.376	0.470

Independent T- test* statistically significant correlation at p. value < 0.05

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Table (4) Correlation co-efficient between main items of negotiation and subscale of Jefferson scale of attitude toward collaboration between nurses and physicians for both nurses and physicians

Items		Shared education and teamwork	Caring versus curing	Nurse's autonomy	Physician's authority	Overall attitudes
Before negotiation	Nurses:	.482**	.460**	.331**	-.179-*	.528**
	Physicians:	.431**	.520**	.506**	-.059	.545**
During negotiation	Nurses:	.331**	.312**	.248**	-.108	.373**
	Physicians:	.327*	.472**	.458**	-.043	.463**
After negotiation	Nurses:	.139	.136	.149	-.100	.154
	Physicians:	.296*	.357*	.382**	-.068	.378**
Total negotiation	Nurses:	**.437****	.415**	.324**	-.164-*	**.485****
	Physicians:	.396**	**.524****	.514**	-.057	**.531****

* Statistically significant correlation at p. value < 0.05

** Statistically significant correlation at p. value < 0.01