

# The attitudes of healthcare professionals towards nurse–physician collaboration

Eman Kamel Hossny<sup>1</sup>  | Hanaa Esmail Sabra<sup>2</sup> 

<sup>1</sup>Nursing Administration Department, Faculty of Nursing, Assiut University, Assiut, Egypt

<sup>2</sup>Nursing Administration Department, Faculty of Nursing, South Valley University, Quena, Egypt

## Correspondence

Eman Kamel Hossny, Nursing Administration Department, Faculty of Nursing, Assiut University, Assiut, Egypt.  
Email: kamel@aun.edu.eg

## Abstract

**Aims:** The current study aims to examine the attitudes of healthcare professionals towards nurse–physician collaboration and to explore the level of satisfaction concerning the quality of collaboration among them.

**Design:** A descriptive comparative study design was used to demonstrate attitudes of 338 participants (158 internship nurses, 139 nurses and 41 physicians) working in intensive care units, surgical department and medical department.

**Methods:** Two instruments were used, socio-demographic data sheet and Jefferson scale of attitude towards nurse–physician collaboration (JSANPC), it consisted of 15 items under 4 dimensions.

**Results:** The internship nurses have the high score (38.6%) in poor level of satisfaction regarding quality of collaboration between nurses and physicians comparing to staff nurses and physicians. Physicians are satisfied (61%) with the level of collaboration between them and nurses. Staff nurses have the high positive attitude (48.45 (4.03)) towards collaboration between nurses and physicians comparing to physicians and internship nurses.

**Conclusion:** Internship nurses were not satisfied with the level of collaboration between nurses and physicians.

## KEYWORDS

collaboration, healthcare professionals, internship nurses, nurses, physicians

## 1 | INTRODUCTION

Nursing profession which is based on skills and quality of health care has become more complex. Nurses, physicians and internship nurses constitute a huge number of professionals and collaboration between them are essential for healthcare organizations wherever most actions are performed through team. Intern nurse in this study is a graduate professional nurse who is enrolled on a nursing internship program, intern nurse is responsible for

providing daily services involving basic care for patients as well as care of critically ill patients under the direction a preceptor who serve as a role model as well as support person and guide in clinical practice. Cooperation between physician, nurse and all other healthcare personnel should be a way to improve the quality of healthcare services, enhanced patient outcome as well as increase satisfaction of all healthcare team, especially in healthcare settings that are characterized by continuous interactions among healthcare employees, whenever nurses and physicians

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collaborative relationships are the cornerstone in patient therapy (Aghamohammadi et al., 2019).

## 1.1 | Background

Collaboration between healthcare professionals needs a joint goal and frank dialogue to render great quality care to patients to solve patient's problems (Sharifiyana & Zohari, 2016). Communication is an essential part for flow of information between nurse and physician in healthcare system. Collaboration is one of the essences not only for the benefit of the patients but also for the happiness of all healthcare professionals involved in the collaboration. The cooperation among nurses and physicians has the benefit when the liability for the patients' care and wellness is mutual (Green et al., 2015).

Elsous et al. (2017) define collaboration between nurses and physicians as "nurse and physician perform in cooperation, responsibilities share in resolving difficulties and decisions which are taken to frame and perform plan for patient care." In the past, physician dominance was the main feature of nurse-physician interactions characterized by nurse subservience and physician supremacy. Physicians portrayed a paternal and directive role, whereas nurses follow it (House & Havens, 2017). In addition to nursing that did not have a pleasant reputation as well as professional boundaries of hospitals, make the relationship among physicians and nurses is almost unequal especially in the disciplinary activities (Elham & El-Hanafy, 2018) leading to lack their full professional jurisdiction and autonomy (Amsalu et al., 2014).

Many of historic textual and epigraphically bases consider physicians (medicine) as a highly progressive professionals in ancient Egypt with slight focus on the role of nurses in assist and supportive this progressive curative care (Elhabashy & Abdelgawad, 2019). The past role difference that arose from gender influence gave minor professional position to nurse perceiving nurse as a physician' follower or order implementers. Moreover, according to Migotto et al. (2019) nurses reported that there is decrease collaboration when predominantly male nursing team interacts with female medical team.

Therefore, nurses are in need to have clinical autonomy to build up their competent level (Motamed-Jahromi & Jalali, 2015) that is the basis in nursing career. The professional autonomy of nurses is defined as the ability to have the right and the responsibility for doing their job to decide on the patient's needs and the freedom of action (Georgiou & Papathanassoglou, 2017).

Today, introduction of formal university qualification to nursing and jurisdictional support of nursing associations makes them challenge their qualification limits and come to have further autonomy and power in rendering patient care. As well as, a superior broad knowledge nurses have today through a daily communication and interactions with their patients. Therefore, autonomy is needed to assume these responsibilities (Valizadeh & Zamanzadeh, 2013).

Previous studies revealed that nurse's low autonomy is obvious to healthcare team also professional autonomy of nurses affected by discrimination they faced from regular staff throughout internship program and could give them a sense of proficient lowliness (Jamshid et al., 2016; Sana et al., 2013); moreover, exercises show nurse is not completely exercising her/his autonomy through the work with physician and physicians reveal full governing role in each point of patient care. This diminishes the involvement of nurse to healthcare delivery.

In Egypt, the Nursing committee requires that students graduating from bachelor degree programs complete a 1 year of clinical internship appointment. Internship period permitting novice nurses to gain different skills and experiences they need for a profession to become registered nurses and during this period they exercise diverse experiences from interaction with hospital staff (Jamshid et al., 2016) specifically nurses and physician, the result can be frustration, dissatisfaction and can lead to some choosing to work away from the clinical nursing set-up (Githui & Wambuiw, 2019). This unsatisfactory professional relationship between nurse and physician has added in part to nurses leave the career and the shortage of them (Elsous et al., 2017).

## 1.2 | Significance of the study

Attitudes of internship nurses towards nurse-physician collaboration are not examined before, it is important to know what is in their mind around collaboration between nurses and physicians, this makes the researchers strive to generate evidence towards nurse-physician collaboration through examining the attitude of healthcare professionals regarding collaboration between nurses and physicians as well as determining level of satisfaction regarding this collaboration. The researchers in this study adopt the idea of (save our future nurses).

## 1.3 | Study hypothesis

The researcher developed the following hypotheses based on review of literatures and role theory (Biddle, 1979; Conway & Hardy, 1988) cited in Elsous et al. (2017) which indicates that everyone action is according to socially defined category and communication among individuals and directed by the position for each individual have in a societal or professional relationship.

**Hypothesis 1** *The attitudes of healthcare professionals will be varying towards nurse-physician collaboration.*

**Hypothesis 2** *The staff nurses have more positive attitudes towards nurse-physician collaboration than the physicians and internship nurses.*

**Hypothesis 3** *Physicians have more positive attitudes towards nurse-physician collaboration than internship nurses.*

**Hypothesis 4** *Internship nurses are dissatisfied with level of collaboration between nurses and physicians.*

From the standpoint of role theory, staff nurses are more likely to have more positive attitude than physicians. This hypothesis is result from the past role difference which gives minor professional position to nurse and when nurse and physician come to work together for prolonged time and feel that they are portion of a big family. The arguing caused from insight of lowliness of nursing in the start of new employment dissolves with time.

### 1.4 | Aim of the study

1. To examine the attitudes of healthcare professionals towards nurse-physician collaboration
2. To explore the level of satisfaction among healthcare professionals with regard to quality of collaboration between nurses and physicians.

## 2 | METHODS

### 2.1 | Study design

A descriptive comparative study design was used in this study.

### 2.2 | Study setting

The current study was carried out in intensive care units, surgical department and medical department at Assiut University Hospital. The hospital consists of (9) floors. Critical care units in this hospital were general intensive care unit (ICU), cardiac care unit (CCU), cardiothoracic ICU, chest ICU, plastic ICU and emergency ICU. Surgical department was surgical unit (A1, A2) composed of 7 rooms with 60 bed, surgical unit (B1, B2) 6 rooms with 46 beds and surgical unit (C1, C2) 4 room with 42 beds. Medical department is divided into male and female, male is 6 rooms with 48 beds and female is 8 rooms with 64 bed.

### 2.3 | Study subjects

The healthcare professionals involved in the study were 338, 139 nurses, 158 internship nurses and 41 physicians, all available numbers who agreed to participate in the study.

**Inclusion criteria:** involves all internship nurses, staff nurses and physicians who are available at the time of the study in aforementioned study settings.

**Exclusion criteria:** all other healthcare team except who is mentioned in inclusion criteria.

### 2.4 | Tools of the study

The researchers used two tools to collect data from study participants as following: First one is the personal characteristics data sheet as age, gender, marital status, work settings, years of experience and educational qualification. Second one is the Jefferson Scale of Attitude towards Nurse-Physician Collaboration (JSANPC), it was developed by (Hojat & Herman, 1985) at Jefferson University and it was revised by (Hojat et al., 1999). This scale contains (15 statement) under four dimensions, first one shared education and teamwork (7 statements), second one caring as opposed to curing (3 statements), third one staff nurses' autonomy (3 statements) and last one physicians' authority (2 statements) used for measuring attitudes towards the collaborative relationship between nurse and physician. The first dimension high score shows a larger orientation to interdisciplinary learning and inter-professional collaborative relationship. The second dimension high score specifies extra positive view of staff nurses' involvement to psychosocial and educational side of patient care. The third dimension high score indicates more approve with staff nurses' participation in decisions on care of patients and plan. The fourth dimension high score show total rejection of total governing role of physicians in patients' care.

Jefferson Scale of Attitude towards Nurse-Physician Collaboration (JSANPC) were scored on a four-point scale strongly agree (4) and strongly disagree (1), the total scores were ranged from 15-60, with high values indicating more positive attitude towards nurse-physician collaborative relationships.

#### 2.4.1 | Validity of the study tool

The face validity of the study tool was conducted after the tool translated into Arabic, which assessed by five experts from faculty of nursing representative (three professors and two assistant professors) in the field of education from administration department at Assiut and Quena Universities. Then, the researchers using the translate-retranslate process to confirm right translation.

### 2.5 | Procedures

The procedures of this study included three sections: preparatory, pilot study and field work. Total data collection period actually was taken about 4 months started in July 2019 and ended October 2019.

#### 2.5.1 | Preparatory section

Preparatory section started at the beginning of July to its end, 2019. It includes reviewing related national and international literature in scientific journals, textbooks and scientific websites on the Internet.

Tools were translated into Arabic and retranslated into English for accuracy.

### 2.5.2 | Pilot study

It was done on 10% from study samples total of (34), 14 nurses, 16 internship nurse and 4 physicians. One of the researchers meets with the participants, presented here self to them and then asked them to participate in conducting this study by expressing their opinion towards the collaboration between nurses and physicians. After that, the researcher explained the purpose and title of the research to them and asked them to fill the study sheet to confirm the simplicity, understandability and for estimating time needed to fill the study tool. The researchers stay with the participants till they finished the tool for any clarification and any query. The time estimated for filling each form was about 20 min. Data obtained from the pilot study were analysed and no modifications were done so the pilot study not excluded from the sample. The Cronbach's  $\alpha$  for the Jefferson scale ranged from 0.70–0.93, thus indicating a high degree of reliability.

### 2.5.3 | Field work

The actual data collection took about 3 months from August–October 2019. The researchers met with all study participants to explain the purpose of the study and asked them for oral consent. The researchers then distributed the study tools, stayed with them for any clarification and take the form promptly after they finished. In each day, the researchers took the available number of participants at morning shift for 4 days weekly.

The internship nurses were assessed after internship experience at last 2 months of internship year during 2018/2019 for their attitude towards nurse–physician collaboration. The internship program usually starts after passing all nursing courses and the program as a whole, at 1st of August extending 12 months to the end of August coming year. This program was distributed into six groups according to period. Each group covers 2 months, practicing certain areas of nursing skills (intensive care, medical–surgical, nursing administration, paediatrics and obstetrics) and the last group is optional for student, under supervision of academic staff (internship coordinators) in collaboration with hospital assistant at different university hospitals mainly in Assiut governorate in addition to others according to the accessibility of the hospital to the internship students. This program is training on all specialties of nursing skills that is mostly similar among different Egyptian Universities.

## 2.6 | Ethical consideration

It is a routine procedure to take approval on research proposal from the Nursing Administration Department, the ethical committee and the graduate studies committee in the Faculty of Nursing at Assiut

University, Egypt. There is no risk for the study subjects during application of the research. An official permission to carry out the study was obtained from the responsible authorities. Oral agreement was taken from staff nurses who participated in the study. Confidentiality of gathered information and privacy of the participants was assured. Study participants have the right to free refuse or withdraw from the study at any time without any constrains.

## 2.7 | Analysis

All the following analyses were performed with the IBM SPSS 20.0 software. Variables categorization were defined by numbers and percentages (No and %), where continuous variables defined by mean and standard deviation (mean and *SD*). Where compared among continuous variables by *t* test and ANOVA test. A two-tailed  $p < .05$  was considered as statistical significant. We were used person correlation to appear the association between scores.

## 3 | RESULTS

### 3.1 | Socio-demographic data of study participants ( $N = 338$ )

The data in this table revealed that the total number of participants were 338, most (76.0%) of them had their age from 20–25 years, more than half of them (57.2%) of them were males while (42.8%) of them were female (Table 1). Also, it was noticed that more than half of them (57.2%) were single. About (43.3%) of them were working in medical units and most (77.8%) had <5 years of experience. And lastly, about half (53.9%) of staff nurses were graduated from secondary school of nursing diploma.

### 3.2 | Mean and standard deviation of individual items of (JSANPC)

The data in this table demonstrate that internship nurses scored high in eight items than staff nurses and physicians for instance; structure collaborative relationship should be concerned by physician 3.83 (0.43), a nurse should be viewed as a collaborator and coworker with a physician rather than his/her assistant 3.78 (0.49), during their education, physicians and nurses should be involved in teamwork to understand their respective roles 3.77 (0.48) (Table 2). While staff nurses scored high in six items than internship nurses and physicians for instance, they would be answerable to care they provided for patients, they are fit to assess and react to needs of psychological aspects of patients and they have specific proficiency in patient teaching and emotional support (3.57 (0.6), 3.45 (0.88), 3.41 (0.75)), respectively. Physicians scored higher than staff nurses and internship nurses in one item only namely doctors should be the dominant authority in all aspects of patient care 2.2 (0.88).

| Socio-demographic data              | Staff nurses<br>(N = 139) | Physicians<br>(N = 41) | Internship<br>nurses (N = 158) | Total<br>(N = 338) |
|-------------------------------------|---------------------------|------------------------|--------------------------------|--------------------|
|                                     | No (%)                    | No (%)                 | No (%)                         | No (%)             |
| Age group                           |                           |                        |                                |                    |
| 20–25 years                         | 81 (58.3)                 | 18 (43.9)              | 158 (100)                      | 257 (76.0)         |
| 25–30 years                         | 51 (36.7)                 | 19 (46.3)              | 0.0 (0.0)                      | 70 (20.7)          |
| More than 30                        | 7 (5.0)                   | 4 (9.8)                | 0.0 (0.0)                      | 11 (3.3)           |
| Gender                              |                           |                        |                                |                    |
| Male                                | 73 (52.5)                 | 30 (73.2)              | 32 (20.3)                      | 135 (57.2)         |
| Female                              | 66 (47.5)                 | 11 (26.8)              | 126 (79.7)                     | 77 (42.8)          |
| Marital status                      |                           |                        |                                |                    |
| Single                              | 80 (57.6)                 | 23 (56.1)              | 147 (73.2)                     | 250 (57.2)         |
| Married                             | 54 (38.8)                 | 18 (43.9)              | 11 (26.8)                      | 72 (40.0)          |
| Widow                               | 5 (3.6)                   | 0.0 (0.0)              | 0.0 (0.0)                      | 5 (2.8)            |
| Work settings                       |                           |                        |                                |                    |
| ICUs                                | 18 (12.9)                 | 15 (36.6)              | 126 (79.7)                     | 159 (18.3)         |
| Medical department                  | 64 (46.0)                 | 14 (34.1)              | 15 (10)                        | 78 (43.3)          |
| Surgical department                 | 57 (41.0)                 | 12 (29.3)              | 17 (10.3)                      | 69 (38.3)          |
| Experience                          |                           |                        |                                |                    |
| Less than 5 years                   | 103 (74.1)                | 37 (90.2)              | 158 (100)                      | 298 (77.8)         |
| More than 5 years                   | 36 (25.9)                 | 4 (9.8)                | 0.0 (0.0)                      | 40 (22.2)          |
| Educational qualification           |                           |                        |                                |                    |
| Secondary school of nursing diploma | 75 (53.9)                 | 0.0 (0.0)              | 0.0 (0.0)                      | 75 (22.1)          |
| Technical Institute of Nursing      | 59 (42.5)                 | 0.0 (0.0)              | 0.0 (0.0)                      | 59 (17.4)          |
| Bachelor degree of Nursing          | 5 (3.6)                   | 0.0 (0.0)              | 158 (100)                      | 163 (48.2)         |
| Bachelor degree of Medicine         | 0.0 (0.0)                 | 41 (100)               | 0.0 (0.0)                      | 41 (12.1)          |

**TABLE 1** Socio-demographic data of study participants (N = 338)

### 3.3 | Mean scores and differences between them for (JSANPC) sub-scales according to study participants

The data in this table demonstrate that there is high statistical significant difference between groups of participants in all subscales at ( $p = <.001^{**}$ ) (Table 3). The highest score was related to share education and teamwork (28) while the lowest one was related to physician's authority (8). It is observed that staff nurses have got the highest mean score (48.45 (4.03)) than internship nurses and physicians in general. The data also revealed that internship nurses scored high in one subscale, shared education and teamwork (25.56 (2.38)) than staff nurses and physicians. While staff nurses scored high in three subscales: caring versus curing, nurse's autonomy and physician's authority (10.29 (1.64), 10.32 (1.39) and 5.04 (1.5)), respectively, compared with internship nurses and physicians.

### 3.4 | Mean scores and differences between them for (JSANPC) sub-scales according to workplace

In general, the data in this table reveal that there are statistically significant differences between different work settings and

overall attitude ( $p = .002^*$ ) (Table 4). The ICU units have got the highest score (25.09 (2.64)) in subscale of shared education and teamwork, while medical department has got the highest score (9.86 (1.81)) in subscale of caring as opposite to curing. Finally, surgical department has got the highest score (10.24 (1.62) and 4.88 (1.7)), respectively, in subscales of nurse's autonomy and physician's authority.

### 3.5 | Correlation coefficient between (JSANPC) sub-scales and demographic characteristics for study participants

The results in Table 5 declare that there is high statistical significant negative correlation between age and overall attitude with ( $R = -0.278^{**}$ ), and also, there is statistical negative correlation between years of experience and overall attitude ( $R = -0.046$ ). It is observed that there is statistical significant positive correlation between years of experience and shared education and teamwork ( $R = 150^*$ ). In addition, there is statistical negative correlation between age and shared education and teamwork and nurse's autonomy ( $R = -0.326^{**}$ ,  $-0.227^{**}$ ), respectively.

**TABLE 2** Mean and standard deviation of individual items of (JSANPC)

| Items of JSANPC  | Internship nurses | Staff nurses | Physicians  | Total       |
|--|-------------------|--------------|-------------|-------------|
|  | M (SD)            | M (SD)       | M (SD)      | M (SD)      |
| Relationships with nurses (building collaborative relationship should be concerned by physician)                                 | 3.83 (0.43)       | 3.38 (0.7)   | 3.2 (0.56)  | 3.57 (0.62) |
| Inter-professional relationships between physicians and nurses should be included in their educational programs                  | 3.45 (0.79)       | 3.37 (0.69)  | 3.17 (0.54) | 3.38 (0.73) |
| Nurses should also have responsibility for monitoring the effects of Physicians treatment  | 3.43 (0.75)       | 3.37 (0.78)  | 3.17 (0.5)  | 3.38 (0.74) |
| Physicians and staff nurses should contribute to decisions regarding the hospital discharge of patients                          | 3.59 (0.63)       | 3.29 (0.89)  | 3.24 (0.54) | 3.42 (0.75) |
| There are many overlapping areas of responsibility between physicians and nurses   | 3.71 (0.57)       | 3.12 (0.77)  | 3.27 (0.55) | 3.41 (0.71) |
| During their education, physicians and nurses, should be involved in teamwork in order to understand their respective roles      | 3.77 (0.48)       | 3.35 (0.8)   | 2.98 (0.42) | 3.5 (0.68)  |
| Nurses should be accountable to patients for the nurses care they provide  | 3.25 (1.29)       | 3.57 (0.6)   | 3.17 (0.54) | 3.37 (0.99) |
| Nurses should be involved in making policy decisions affecting their working conditions  | 3.45 (0.79)       | 3.43 (0.8)   | 3.17 (0.59) | 3.41 (0.78) |
| Nurses are qualified to assess and respond to psychological aspects of patients' needs   | 2.63 (0.89)       | 3.45 (0.88)  | 3.07 (0.57) | 3.02 (0.94) |
| Psychological counselling (nurses have special expertise in patient education and psychological support)                         | 1.91 (1.37)       | 3.41 (0.75)  | 3.15 (0.57) | 2.67 (1.29) |
| Nurses should clarify a physician's order when they feel that it might have the potential for detrimental effects on the patient | 2.86 (1.44)       | 3.35 (0.79)  | 3.1 (0.54)  | 3.09 (1.14) |
| Nurses should be involved in making policy decisions concerning the hospital support services upon which their work depends      | 2.86 (1.44)       | 3.41 (0.75)  | 3.22 (0.61) | 3.13 (1.15) |
| A nurse should be viewed as a collaborator and colleague with a physician rather than his/her assistant                          | 3.78 (0.49)       | 2.91 (1.2)   | 3.24 (0.62) | 3.36 (0.96) |
| The primary function of the nurse is to carry out the physician's orders   | 1.69 (1.25)       | 2.94 (1.08)  | 2.61 (0.8)  | 2.32 (1.28) |
| Doctors should be the dominant authority in all healthcare matters   | 1.63 (1.2)        | 2.1 (0.85)   | 2.24 (0.66) | 1.9 (1.04)  |

### 3.6 | Level of satisfaction among internship nurses, staff nurses and physicians regarding the quality of collaboration between nurses and physicians

It is noted that internship nurses have got the highest score (38.6%) at the poor level comparing to staff nurses' and physicians' scores (12.2% and 31.7%), respectively (Figure 1). Also, staff nurses have got the highest score (33.1%) at the excellent level comparing to (12.2%) for nurse internship and (6.6%) for physicians. However, physicians have got the highest score (61%) at satisfactory level comparing to (54.7% and 48.7%), respectively, for staff nurses and nurse internship.

## 4 | DISCUSSION

Relationship and collaboration between staff nurses and physicians are fluctuated up till now. Many studies revealed level of collaboration between staff nurses and physicians is low (Elham

& El-Hanafy, 2018). And others discovered the level of collaboration from the side of staff nurses is high compared with the side of physicians (Melkamu et al., 2020). The aim of the current study is to examine the attitudes of healthcare professionals towards nurse-physician collaboration and explore the level of satisfaction among them regarding the quality of collaboration between nurses and physicians.

The results of Figure 1 in the current study show that internship nurses (IN) did not satisfied with the level of collaboration between nurses and physicians. This result support Hypothesis 3; this means that (IN) did not accept the way physicians cooperate with nurses. This can be backed to the experience they faced during period of internship and their observation that staff nurses in a relatively subservient role. Also, (IN) were graduated from baccalaureate degree as the same education degree for physicians, this is what makes them reject to be in the second step after physicians as they a qualify nurses and did not satisfied with this collaboration.

Moreover, gender role perception that is encouraged in Egyptian culture norms since long time contributes in part to subservient role of nurses. Based on data of our study (Table 1), male

**TABLE 3** Mean scores and differences between them for (JSANPC) sub-scales according to study participants ( $N = 338$ )

| JSAPNC factors                | Professions       | Max score | M (SD)       | SEM   | df  | F      | p value |
|-------------------------------|-------------------|-----------|--------------|-------|-----|--------|---------|
| Shared education and teamwork | Internship nurses | 28        | 25.56 (2.38) | 0.190 | 335 | 62.166 | <.001*  |
|                               | Staff nurses      |           | 22.79 (2.43) | 0.206 |     |        |         |
|                               | Physicians        |           | 22.27 (2.25) | 0.351 |     |        |         |
| Caring versus curing          | Internship nurses | 12        | 7.98 (1.99)  | 0.158 | 335 | 62.604 | <.001*  |
|                               | Staff nurses      |           | 10.29 (1.64) | 0.139 |     |        |         |
|                               | Physicians        |           | 9.39 (1.38)  | 0.215 |     |        |         |
| Nurse's autonomy              | Internship nurses | 12        | 8.97 (3.23)  | 0.257 | 335 | 11.523 | <.001*  |
|                               | Staff nurses      |           | 10.32 (1.39) | 0.118 |     |        |         |
|                               | Physicians        |           | 9.49 (1.38)  | 0.216 |     |        |         |
| Physician's authority         | Internship nurses | 8         | 3.32 (2.11)  | 0.168 | 335 | 37.197 | <.001*  |
|                               | Staff nurses      |           | 5.04 (1.5)   | 0.127 |     |        |         |
|                               | Physicians        |           | 4.85 (1.31)  | 0.205 |     |        |         |
| Overall attitude              | Internship nurses | 60        | 45.82 (4.65) | 0.370 | 335 | 14.530 | <.001*  |
|                               | Staff nurses      |           | 48.45 (4.03) | 0.342 |     |        |         |
|                               | Physicians        |           | 46 (4.22)    | 0.660 |     |        |         |

\*Significant at  $p < .05$ .**TABLE 4** Mean scores and differences between them for (JSANPC) sub-scales according to workplace

| JSAPNC factors                | Workplace | Max score | M (SD)       | SEM   | df  | F      | p value |
|-------------------------------|-----------|-----------|--------------|-------|-----|--------|---------|
| Shared education and teamwork | Surgical  | 28        | 23.06 (2.77) | 0.299 | 335 | 25.506 | .000*   |
|                               | ICU       |           | 25.09 (2.64) | 0.210 |     |        |         |
|                               | Medical   |           | 23.08 (2.37) | 0.246 |     |        |         |
| Caring versus curing          | Surgical  | 12        | 9.83 (1.91)  | 0.206 | 335 | 27.688 | .000*   |
|                               | ICU       |           | 8.27 (2.03)  | 0.161 |     |        |         |
|                               | Medical   |           | 9.86 (1.81)  | 0.188 |     |        |         |
| Nurse's autonomy              | Surgical  | 12        | 10.24 (1.62) | 0.175 | 335 | 8.243  | .000*   |
|                               | ICU       |           | 9.03 (3.01)  | 0.239 |     |        |         |
|                               | Medical   |           | 9.95 (1.99)  | 0.206 |     |        |         |
| Physician's authority         | Surgical  | 8         | 4.88 (1.7)   | 0.184 | 335 | 14.970 | .000*   |
|                               | ICU       |           | 3.62 (2.08)  | 0.165 |     |        |         |
|                               | Medical   |           | 4.6 (1.75)   | 0.182 |     |        |         |
| Overall attitude              | Surgical  | 60        | 48.01 (4.49) | 0.485 | 335 | 6.625  | .002*   |
|                               | ICU       |           | 46.01 (4.79) | 0.379 |     |        |         |
|                               | Medical   |           | 47.48 (3.78) | 0.392 |     |        |         |

\*Significant at  $p < .05$ .

physicians are more than female physician and Vic versa for staff nurses. This means that female nurses have to work more with male physicians. This could be the cause of gender role-perception based conflicts (Holyoake, 2011) which conflict is the one of the main causes disturbing collaboration between nurses and physicians. Also, according to Shahrzad et al. (2015) in their study about Middle Eastern countries in their generalized model that stated hierarchy of communication between physicians and nurses, nurses look like assistant to physicians and physicians having a higher

status than staff nurses also results of (Elham & El-Hanafy, 2018) in the same line.

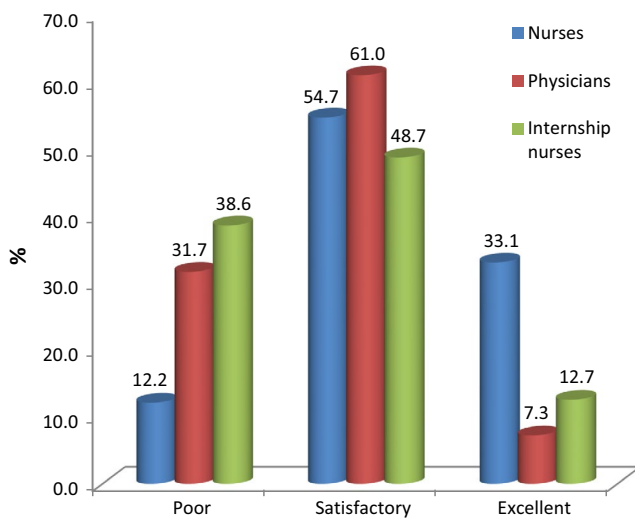
Otherwise, staff nurses were satisfied by the level of collaboration between nurses and physicians, which they are have got the high score in the excellent level. This means that staff nurses accept the way of collaboration between them and physicians as it is. This result in agreement with (Krogstad et al., 2002) who found that more than two third of staff nurses and doctors considered inter-professional collaboration good, whole work setting.

**TABLE 5** Correlation coefficient between (JSANPC) sub-scales and demographic characteristics for study participants

| JSANPC sub-scales             | Demographic characteristics |      |            |      |
|-------------------------------|-----------------------------|------|------------|------|
|                               | Age                         |      | Experience |      |
|                               | R                           | p    | R          | p    |
| Shared education and teamwork | -0.326**                    | .000 | 0.150*     | .044 |
| Caring versus curing          | -0.068                      | .361 | 0.073      | .333 |
| Nurse's autonomy              | -0.227**                    | .002 | -0.061     | .412 |
| Physician's authority         | 0.035                       | .642 | 0.093      | .213 |
| Overall attitude              | -0.278**                    | .000 | -0.046     | .539 |

\*\*Correlation is significant at the 0.01 level (2-tailed).

\*Correlation is significant at the 0.05 level (2-tailed).

**FIGURE 1** Level of satisfaction among internship nurses, staff nurses and physicians regarding the quality of collaboration between nurses and physicians

Result in Table 3 showed that there were statistically significant differences among three participants in all (JSANPC) subscales. Regarding to (IN), it is observed that they have a less positive attitude towards nurse–physician collaboration comparing to staff nurses and physicians. This finding on the contrary with the findings of Shahrzad et al. (2015) who founded that bachelor of nursing students had a positive attitude towards collaboration between physicians and nurses.

From researchers' point of view depending on the nature of work during the training period, the (IN) enrolled to follow specific instructions and practicing skills related to patient care in collaboration with nurses and physicians and agreement to collaborate with them means cooperation in work, responsibilities, participate in problem solving, decision-making and grows patient care plans (Mathur, 2011).

Regarding to staff nurses, they have the high positive attitude towards nurse–physician collaboration than physicians and internship

nurses (Hypothesis 1) which they have the highest mean score in general comparing to (IN) and physicians, also they have positive attitudes towards six items in Table 2. These findings were consistent with previous studies in Sweden, America and Egypt (Hojat et al., 1999; Hansson et al., 2010; and El-Sayed & Sleem, 2011). Also, many other findings that showed staff nurses have a positive attitude towards collaboration than the physician (Hughes & Fitzpatrick, 2010; Jones & Fitzpatrick, 2009; Taylor, 2009; Zheng et al., 2016), In addition to Falana et al., (2016) who found nurses has positive attitude towards nurse–doctor collaboration than doctors. Moreover, Elsous et al. (2017) mentioned that nurses showed more favourable attitudes than physicians towards collaboration.

Regarding to (JSANPC) subscales, it is observed that staff nurses have high mean score in three subscales, caring as opposite to curing, nurses' autonomy and physician authority. Past research in Egypt found that nurses have had lower level of professional autonomy (Dorgham & Al-Mahmoud, 2013), but Masoumeh et al., (2018) found that about 66.7% of staff nurses achieved high scores for autonomy. From researcher point of view, these results highpoint the significance of nurse to take steps forward to share in patient care choices and come to be side by side to physician rather than following them. According to (Karra & papathanassoglou, 2014) cited in (Aghamohammadi et al., 2019) stated that low autonomy is one of the most important reasons for staff nurses need go to nonclinical units rather than clinical units.

Regarding to physicians, they have the second highest positive attitude towards nurse–physician collaboration after staff nurses in general, Table 3. This result confirms (Hypothesis 2). This means that physicians accept the level of collaboration present between nurses and physicians which emerged from superior dominance over staff nurses in all patient care aspects and this makes them satisfied with their upper hand. This is confirmed by the results of Figure 1 that they have got the highest score at satisfactory level, also in Table 2 that they have got the highest positive attitudes towards their dominant authority comparing to staff nurses and (IN).

A totally domination of patient care from side of physician is totally rejected from side of internship nurses and staff nurses. This may be recognized by the researcher point of view, variances in income and gender, lack empowerment among members of the nursing profession, lack of organizational support for staff nurses and weak of nursing management in hospital could contribute to this, also physicians must convince themselves firstly by the main role of nursing profession and staff nurses with different categories that they are not their assistants. According to World Health Organization (WHO) (2020), staff nurses are not doctors' helpers. Nurses are health professionals in their own rights, with specific skills and training that enable them to perform a wide variety of essential roles."

Analysis of the data in Table 4 revealed that there were statistical significant differences in all workplaces at ( $p > .05$ ) = (.002\*) in general. A study conducted in Egypt by EL-Sayed and Sleem (2011) revealed that on medical–surgical nurses showed staff nurses had a positive attitude towards collaboration between physicians and nurses. Regarding to analysis of different work settings, it is observed



that all studied participants in ICUs confirm that high score related to shared education and teamwork. This is related to the interaction between colleagues in ICUs in addition to inter-professional collaboration are greater oriented from side of all healthcare providers.

Regarding to medical units, study participants confirm that high score related to caring as opposite to curing. It is logically, because nature of patients in medical settings needs educational aspects related to their diseases and emotional support.

Regarding to surgical units, study participants confirm that high score related to staff nurses' autonomy and physician's authority. This means that more agreement from side of all study participants with nurses' involvement in decisions on patient care and policy and rejection totally dominant role of physician in patient care.

In general, data in Table 5 demonstrate neither age nor experience is correlated positive with overall attitudes of collaboration except between experience and shared education and team work. This result took our attention to that collaboration between staff nurses and physicians need commitment from side of two parties to do what they must do specially the two greatest persons are authorized for patient care regardless to age or experience of them also experience of most studied participants not exceed 5 years although they demonstrated high collaboration in team work and shared education. According to Elsous et al. (2017), staff nurses and physicians frequently do not tell each other properly and if that occurs, exchange and collaboration are frequently dysfunctional.

Also, it is observed that there was significant negative correlation between age and both of shared education and team work and staff nurses' autonomy. From researchers' point of view, most of studied participants in this study have age from 20:25 years and the sample of those ages is not adequate enough to notice the effect as well as 53.9% of studied staff nurses in this study graduated from secondary school of nursing diploma. Mohadeseh et al. (2018) founded that there was a statistically significant relationship between staff nurses' autonomy in decision-making for patient care and staff nurses' educational level. In addition to that professional autonomy was directly correlated with age and clinical experience of staff nurses. Moreover, according to findings of Mohadeseh et al. (2018), there were statistically significant opposite relationships between age and autonomy in decision-making for patient care and work experience and autonomy in decision-making for patient care.

#### 4.1 | Limitations of the study

There are some limitations in this study, which are related to the few sample of physicians compared with the large number of nurses and internship nurses. More samples from different hospitals can be studied in the future. Also, data were collected in ICUS, surgical and medical departments; thus, for more generalization and to be representative of the targeted population, future researches should be conducted in more departments. In addition, the study was only conducted in one university hospital, while Assiut University has a total of 7 university hospitals making generalization some difficult.

## 5 | CONCLUSION

Generally, the current study revealed that internship nurses are not satisfied with the level of collaboration between nurses and physicians. Staff nurses are satisfied with level of collaboration and they also have got more positive attitude comparing to physicians and internship nurses, while physicians in the second step after staff nurses in satisfaction with collaboration. Studied healthcare team perceived surgical department with the high mean scores comparing to ICUs and medical department regarding to level of collaboration between nurses and physicians.

## 6 | RECOMMENDATIONS

Based on the results of this study, the researchers would like to recommend introducing topics related to collaboration between nurses and physicians in educational programs for nursing and medicine students is inevitable. Also, pay more attention for internship nurses who are considered the large number of future registered nurses who are hospital work depends on them largely.

Management support is required to nursing staff in different workplaces to increase their professional autonomy. Conducting seminars to physicians about deteriorated effect of practicing dominant authority on staff nurses; many nurses tent to leave the profession because of such practices. Conducting more studies are required to investigate the factors affecting staff nurses' autonomy, factors that contribute to physicians' authority, also, conducting interventional studies to bridging the gap between nurses and physicians' collaborative relationships at Egypt.

In addition to conducting comparative studies to stand on the nature of collaboration between staff nurses and physicians in different hospitals and to detect factors causal that reduced collaboration between staff nurses and physicians. Moreover, doing studies are required to inspect the relationship between nurse-physician collaboration and patients' outcomes and to explore how nurse-physician collaboration can prevent the occurrence of patient impairment.

Furthermore, future studies are required to evaluate the current education curriculums of both staff nurses and physicians in Egypt to determine what inter-professional education is currently included to promote shared experiences and better understanding of the roles of physicians and nurses. Doing more studies also are required to discover the obstacles of effective communications between staff nurses and physicians, clarifying behavioural prospects and to examine ways to integrate the escalating role of nurses into the revolutionizing working relationship with physicians.

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**CONFLICT OF INTEREST**

No conflict of interest present for the two authors.

**DATA AVAILABILITY STATEMENT**

No data available online.

**ORCID**

Eman Kamel Hossny  <https://orcid.org/0000-0003-2656-347X>

Hanaa Esmail Sabra  <https://orcid.org/0000-0001-7261-4448>

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