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ORIGINAL PAPER

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Attitudes of Physicians and Nurses Toward Interprofessional Collaboration: a Systematic Literature Review

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ABSTRACT

Background: Interprofessional collaboration involves coordinated efforts by professionals from various disciplines, such as physicians and nurses, aimed at improving patient care outcomes. This teamwork enhances cooperation among healthcare professionals with diverse expertise, contributing significantly to patient safety, satisfaction, expedited recovery, cost-effectiveness, and reduced mortality rates.

Objective: This paper explores the available evidence regarding the attitudes of physicians and nurses towards interprofessional collaboration and identifies factors that influence their willingness to engage in collaborative practice. **Methods:** A systematic review was conducted spanning from 2016 to 2023, adhering to predefined criteria and the PRISMA guidelines and checklist. Searches were performed in PubMed, Scopus, CINAHL Plus, Cochrane, and Google Scholar. The inclusion criteria comprised studies (regardless of design) addressing interprofessional collaboration, published within the last ten years, and involving both physicians and nurses. Only articles with full text access and written in English or Greek were included.

Results: The review identified 13 relevant studies. The analysis revealed that nurses generally exhibit more favourable attitudes towards interprofessional collaboration compared to physicians. Moreover, thematic analysis highlighted key factors influencing the attitudes of both nurses and physicians, including education level, age and years of experience. **Conclusion:** This review highlights critical aspects and gaps in current literature, emphasizing the need for future research to further explore these areas. Findings also underscore the importance of incorporate these insights into hospital policies to effectively enhance interprofessional collaboration.

Keywords: Interprofessional collaboration, physicians, nurses, attitudes.

1. BACKGROUND

The effective and timely response to public health challenges remains a key priority in general health strategies at both the state and organizational levels. Ensuring the seamless and efficient operation of healthcare organizations is a fundamental management objective, with employee collaboration playing a vital role in achieving success (1, 2).

The optimal functioning of a healthcare organization depends on the level of collaboration among various healthcare professionals, commonly referred to as interprofessional cooperation (3). Effective teamwork and collaboration among health professionals contribute to high-quality care delivery, efficient management, and improved patient outcomes, ultimately facilitating timely recovery and overall health improvement (4, 5).

Interprofessional collaboration refers to the cooperative interaction between professionals from different disciplines, such as physicians and nurses. It involves fostering teamwork among healthcare professionals from diverse specialties to enhance patient care (5, 6). Collaboration is defined as the interaction between physicians and nurses that allows the knowledge and skills of both to collaboratively influence the care provided to the patient (7). Aymen et al. (2017)

describe nurse–physician collaboration as “Nurses and doctors work together, sharing responsibilities in resolving difficulties and decisions that are made to frame and execute a plan related to patient care”(6). Poor collaboration between nurses and physicians negatively impacts patient outcomes, job satisfaction, and organizational costs (5, 8).

Historical data

Historically, the physician-centered model has dominated healthcare sector, with medical decision-making being the exclusive responsibility of physicians. For decades, physicians held primary authority not only in clinical decisions but also in the overall organization of healthcare services. The hierarchical structure of nurse-physician interactions was marked by physician dominance and nurse subordination, with doctors adopting a paternalistic and directive role while nurses were expected to follow their instructions (2, 10). Research indicates that this traditional dynamic has limited nurses' professional autonomy and authority, further reinforcing power imbalances within the healthcare system (8).

The therapeutic management of diseases, which was the primary focus of medical science, was largely controlled by physicians, leaving little room for other healthcare professionals to contribute to a more holistic approach to patient care (11, 12). Physicians held ultimate responsibility for patient treatment, further reinforcing their dominance within the healthcare system (15). Stein (1967) famously described this dynamic as one of physician dominance and nurse servility, a dynamic that persisted for decades (16). This imbalance placed physicians in a position of continuous authority over nurses, who were expected to follow directives and minimal direct communication with physicians, to whenever possible (16, 17). Many nurses have described this model as restrictive and demeaning, undermining the professional significance of nursing and contributing to workplace dissatisfaction (18).

Since the 1960s, Stein's research has highlighted that hierarchical perceptions on nurse-physician relationships are deeply embedded among healthcare professionals, patients, and society at large. In 1967, Stein was the first to formally describe this dynamic in his study, introducing the concept of the “doctor-nurse game” (19). This phenomenon emerged as nurses attempted to contribute to treatment decisions or subtly intervene when they identified potential medical errors. To navigate the rigid hierarchy, nurses developed a strategic approach characterized by indirect communication, allowing them to influence physicians' decisions without overtly challenging their authority (19). A key feature of this interaction was the physician's deliberate effort to acknowledge the nurse's input while maintaining a position of authority and avoiding any appearance of subordination (19).

In contemporary healthcare, the landscape has significantly evolved. The need to maintain or improve service quality while optimizing resource utilization

has become a key priority (20). Consequently, healthcare administrators are increasingly exploring and implementing cost-effective or zero-cost interventions to achieve these goals. Extensive research highlights the positive impact of interprofessional collaboration between physicians and nurses on workplace efficiency, job satisfaction—leading to increased productivity—and overall public health outcomes (5–7, 21, 22). Given this evidence, integrating collaborative models into healthcare systems is not merely an option but a necessity. However, meaningful change requires the willingness and active engagement of physicians, as their support is crucial for the successful implementation of collaborative practices (23). Additionally, patients—the ultimate recipients of healthcare services—must also challenge outdated stereotypes, as their acceptance and engagement play a vital role in fostering a more integrated and effective healthcare system (24).

A positive development is the increasing societal recognition of nursing as a vital profession that significantly contributes to the healthcare sector. This acknowledgment has driven significant advancements in nursing education, including its integration into university-level programs. Despite these educational and professional advancements—such as the scientific evolution of nursing, its redefinition within the hospital setting, and its repositioning through higher education—the core dynamics of nurse-physician relationships have remained largely unchanged in clinical practice (10).

The effectiveness of teamwork has been shown to depend significantly on team composition, which influences individual attitudes, behaviours, team performance, and overall organizational processes (26, 27). Research among healthcare professionals (HCPs) further supports the notion that collaboration and team cohesion enhance staff satisfaction, improve team and organizational effectiveness, and ultimately contribute to higher-quality, patient-centered care (28, 29). These findings highlight the necessity of fostering strong interprofessional collaboration to optimize healthcare delivery and improve patient outcomes.

Existing literature suggests that several factors hinder effective collaboration and communication among healthcare professionals. These include differences in educational background, professional hierarchy and power dynamics, varying perceptions of healthcare roles, historical and social positioning of different professions, distinct professional cultures, economic and organizational constraints, systemic hierarchy, and overlapping professional responsibilities (30, 31). These barriers not only strain interprofessional relationships but also increase the risk of errors in clinical practice. Furthermore, while both physicians and nurses recognize the importance of collaboration and express a willingness to engage in meaningful professional relationships, discrepancies in how they interpret the concept of collaboration may serve as a fundamental obstacle to its successful implementation (32). Addressing these differences is

crucial for fostering a more cohesive, effective and patient-centered healthcare team.

2. OBJECTIVE

To review the existing evidence on the attitudes of physicians and nurses toward interprofessional collaboration, and to identify the factors that influence their willingness to engage in collaborative practice.

3. MATERIAL AND METHODS

For this narrative review, an extensive literature search was conducted between 2016 and 2023, focusing on articles published in both English and Greek. The search was performed across several databases, including PubMed, Scopus, CINAHL Plus, Cochrane, Google Scholar, as well as Greek scientific medical and nursing journals. The goal was to collect research investigating the attitudes of physicians and nurses toward interprofessional collaboration. The search included the following keywords “Interprofessional collaboration”, “physicians”, “nurses”, “attitudes”. After screening for relevance and eligibility, a total of 13 studies were included, representing the most pertinent to address the following questions:

- a) What are the attitudes of nurses and physicians toward interprofessional collaboration?
- b) Are there any differences in the attitudes of nurses and physicians toward interprofessional collaboration?
- c) What demographic or organizational factors are associated with the attitudes of nurses and physicians toward interprofessional collaboration?

These questions served as the foundation of this review and provided a structured approach to exploring the attitudes and factors influencing interprofessional collaboration between nurses and physicians.

The literature search was specifically aimed at studies examining interprofessional collaboration between physicians and nurses. To be included in this review, articles had to meet the following inclusion criteria:

- Research study (regardless of design) addressing the topic of interprofessional collaboration.
- Studies published within the last ten years.
- The study population must include two samples (physicians sample and nurses sample).
- Articles with access to full text.
- Articles written in English or Greek.

4. RESULTS

As outlined above a total of 13 studies relevant to the topic were identified through the literature search and subsequently included in this review. These studies were conducted across various countries, as follows: Pakistan 1 (5), Egypt 1 (2), Palestine 1 (6), Singapore 1 (39) United States of America 2 (36, 38), Italy 2 (40, 41), Indonesia 1 (37), China 1 (42), Ethiopia 2 (7, 8), and in Greece 1 (35) (Table 1).

The participants of the studies involved both physicians and nurses. The number of participants varied

across studies, with the range for nurses being from 31 to 543 and for physicians from 24 to 423. The participants were employed in various healthcare settings, including primary health care sector, general nursing departments and intensive care units. This diversity in settings offers a comprehensive view of attitudes toward interprofessional collaboration across different healthcare environments.

Methodological approaches:

The primary methodological approach used in the studies was surveys, employing a variety of instruments. The Jefferson Scale of Attitude toward Physician-Nurse Collaboration (JSAPNC) was used in 9 of the 13 studies. The questionnaire consists of 15 questions and uses a Likert scale for their evaluation with a range of values from 1 (strongly disagree) to 4 (strongly agree). A higher total score indicates a more positive perception of collaboration.

The remaining 4 studies used different instruments to assess interprofessional collaboration, including:

The CPS (Collaborative Practice Scale), which is a tool designed to measure the interaction between doctors and nurses in terms of collaboration. It evaluates the behaviour of nurses based on their experiences and physicians’ behaviour, with a focus on sharing responsibilities and setting common goals to achieve the best therapeutic outcome for the benefit of the patient (44, 45).

The “Communication and Collaboration among physicians and nurses” (CCCT) questionnaire, (16) developed by Vazirami, was used in one study. This questionnaire includes questions that assess the attitudes and opinions of both doctors and nurses regarding interprofessional collaboration and communication.

The Safety Attitudes Questionnaire team work climate (SAQ) questionnaire assess the quality of collaboration between health professionals and identifies potential barriers to effective collaboration (38).

The Nurse-Physicians Collaboration Scale (NPCS) (47). reflects many of the key definitions of collaboration in the literature: a) shared participation in treatment/care decision-making, b) sharing information about patients, and c) collaboration between nurses and physicians.

The attitudes of nurses and physicians toward interprofessional collaboration.

Regarding the first research question, the results of the review indicate that in the majority of studies (9 out of 13), nurses reported a more positive attitude towards interprofessional collaboration than physicians (2, 5–7, 37, 39, 40, 48). In contrast, 3 out of 13 studies found that physicians had higher scores on the perception of collaboration compared to nurses. Notably, all 9 studies in which nurses showed a more positive attitude, used the Jefferson Scale, a tool designed to measure attitudes toward interprofessional collaboration.

This type of relationship between physicians and nurses is thought, as suggested by Elsous et al. (2017), to have partially contributed to the career changes

Authors/date	Purpose	Study Design/ Sample	Instrument	Main Findings RN-MD Attitudes toward inter-professional collaboration
Abdullah K, Muhammad T, Almeera I, Jannat S, and Mujahid A., (Pakistan 2021)	To determine the attitudes of physicians and nurses working in different hospitals in the Islamabad-Rawalpindi region of Pakistan.	Cross-sectional study Convenience sample 374 Health care professionals Nurses (51,1%) Physicians (48,9%) In 3 hospitals from government sector and 3 from private sector.	The Jefferson Scale of Attitudes toward Physician – Nurse Collaboration (Hojat et al. 1999) Validity: Not mentioned Internal consistency: Cronbach alpha .71 Data collected: self-administered questionnaires.	Nurses had significantly better opinions about IPC compared to physicians (mean: 50.81 vs. 47.48, p<.01). Nurses also outsourced physicians in all four domains of the JSAPNC
Eman K, Hanaa E., (Egypt 2020)	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.	A descriptive comparative study Convenience sample 338 participants (158 internship nurses, 139 nurses and 41 physicians) University Hospital	The Jefferson Scale of Attitudes toward Physician – Nurse Collaboration (Hojat et al. 1999) Validity: Not mentioned Internal consistency: Cronbach alpha 0.70–0.93 Data collected: self-administered questionnaires	Staff nurses have the high positive attitude (48.45 (4.03)) towards collaboration between nurses and physicians comparing to physicians and internship nurses. 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.
Degavi G., (Ethiopia 2019)	To assess interprofessional collaboration between nurses and physicians	Descriptive cross sectional study Convenience sample Nurses (n = 226) Physicians (n = 67) Hospital	The Jefferson Scale of Attitudes toward Physician – Nurse Collaboration (Hojat et al. 1999) Validity: Not mentioned Internal consistency: not mentioned Data collected: self-administered questionnaires	Nurses demonstrate more favorable total Jefferson scale of attitude than physicians (p-value 0.003) with mean score of 49.18 (SEM 0.39) and 46.64 (SEM 0.89) respectively. The younger age group showed more frequent collaborative behaviour compared to old age groups (p =0.002). The respondents with short service year showed more frequent collaborative behavior compared to respondents with long term service year (p =0.000).
Elsous A, Radwan M, Mohsen S., (Palestine, 2017)	To examine the attitudes of nurses and physicians toward nurse-physician collaboration	Descriptive cross sectional study Convenience sample Nurses (n = 313) Physicians (n = 101) Response rate: 57% Nurses 64% Physicians 23.87% Two public hospitals	The Jefferson Scale of Attitudes toward Physician – Nurse Collaboration (Hojat et al. 1999) Validity: The item content validity index and scale content validity index ranged from 0.77 to 1.00 and 0.88 to 0.94, respectively. Internal consistency: The Cronbach alpha was 73.2 for the entire model (74.7–89.5). Data collected: self-administered questionnaires	Nurses expressed more positive attitudes toward collaboration than physicians (M ± SD on four-point scale: 3.40 ± 0.30 and 3.01 ± 0.35, resp.) There was a positive correlation between JSAPNC and the age (0.127). The two factors which showed positive correlations were doctor's authority (0.142) and shared education (0.169). In return, experience was found to have positive correlation only with shared education factor (0.108).
Zheng RM, Sim YF, Koh GC., (Singapore, 2016)	To determine the attitudes of primary care physicians and nurses towards IPC, if demographic characteristics influenced their attitudes, and the factors perceived to facilitate IPC.	Cross sectional questionnaire survey Convenience sample Nurses (n = 253) Physicians (n = 161) Response rate:91% National Healthcare Group Polyclinics (NHGP).	The Jefferson Scale of Attitudes toward Physician – Nurse Collaboration (Hojat et al. 1999) Validity: Not mentioned Internal consistency: Cronbach alpha 0.776 Data collected: self-administered questionnaires	Nurses had more positive attitudes than physicians (50.39 vs. 51.61, p = .006). Educational qualification among nurses was independently associated with JSAPNC scores (p = .018). Nurses with advanced education score 1.26 (95%CI = 0.22–2.30) points higher than nurses with basic education. Male participants had poorer mean JSAPNC score compared to females (50.27 vs. 51.38)
Bowles D, McIntosh G, Hemrajani R, Yen MS, Phillips A, Schwartz N, Tu SP, Dow AW., (USA 2016)	To evaluate for a difference in the perception of IPC between physicians and nurses and to explore potential contributing factors at the individual and organisational levels to any observed difference.	Descriptive cross sectional study Convenience sample Resident physicians (n = 47), attending physicians (n = 18), and nurses (n = 54) A large tertiary care academic medical centre.	IPC scale (Kenaszchuk et al. 2010) Validity: Not mentioned Internal consistency: Not mentioned Data collected: Electronic surveys	Significantly lower perceptions of IPC scores for nurses in comparison to the scores of both the resident and attending physician groups (p = .0001 for both). Hours of work per week and number of patient per day were significantly associated with IPC scores (both p = <.0001)
Alcuskay M, Ferrari L, Rossi G, Liu M, Hojat, M, and Maio V., (Italy 2016)	To evaluate the attitudes toward collaboration of nurses, general practitioners and specialists practicing in newly established Medical Homes in Parma Local Health Authority, Emilia-Romagna region, Italy.	Descriptive cross sectional study Convenience sample Response rate:91% 104 physicians (45 GPs, 59 specialists) and 87 nurses 12 Medical Homes	The Jefferson Scale of Attitudes toward Physician – Nurse Collaboration (Hojat et al. 1999) Validity: Not mentioned Internal consistency: Cronbach alpha .82 Online survey	Nurses reflected a significantly more positive attitude toward collaboration (p .01). Lower scores from practitioners older than 55 years of age (p .01). Women scored significantly higher than men (p .01)
Suryanto V P, Copnell B., (Indonesian 2016).	To examine nurses' and physicians' attitudes towards collaboration in the Emergency Department in the Indonesian context.	Comparative study Convenience sample physicians (n = 24) nurses (n = 47) Response rate: nurses 91% physicians 77% General hospital	The Jefferson Scale of Attitudes toward Physician – Nurse Collaboration (Hojat et al. 1999) Validity: Not mentioned Internal consistency: Cronbach alpha 85 Data collected: self-administered questionnaires	Nurses had higher scores compared to emergency physicians, the mean scores were 55.3 and 50.5 respectively (P = 0.000) Also, experience related to participants' attitudes towards collaboration (P = 0.023).
Weaver C, Callaghan M, Coope A, Brandman J, O'Leary K., (Chicago 2015).	The evaluation of teamwork in relation to the provision of safe and effective care to hospitalized cancer patients	Descriptive cross sectional study Convenience sample Resident physicians (n=16), Oncology physicians (n=15) Hospitalists (n=9) nurses (n=89) Response rate: n=129 (67%) Resident physicians 59% Oncology physicians 64% Hospitalists 67% and nurses 71% Haematology-Oncology units in an academic hospital	The Safety Attitudes Questionnaire team work climate (Sexton et al. 2006) Validity: Not mentioned Internal consistency: referral to the creator of the tool Online survey	All physicians' categories rated the collaboration with nurse as high or very high (87%– 100%) In contrast nurses only 35%– 65% rated the quality of collaboration as high or very high. Nurses providing the lowest ratings for teamwork (69.7) and residents providing the highest (81.9; ANOVA P = .01). Nurses perceived negative attitudes as the biggest barrier to teamwork (p<.001), and hospitalist the difficulty to reach other providers (p<.001).

<p>Caricati L, Guberti M, Borgognoni P, Prandi C, Spaggiari I, Vezzani E, and Lemmi M., (Italy 2015).</p>	<p>The analysis of the influence of profession and group commitment on interprofessional collaboration between nurses and physicians based on the dual identity model prediction.</p>	<p>Descriptive cross sectional study Convenience sample Nurses (n = 447), Physicians (n = 166) Response rate: 64.2% Hospital</p>	<p>Nurse-Physicians Collaboration Scale (NPCS Ushiro, 2009) Internal consistency: Cronbach alpha 0.94 Professional commitment was measured on 5- point Likert scale (Cadinu & Reggioni, 2002; Licata & Klein, 2002) Internal consistency: Cronbach alpha 0.89 Team commitment was measured on 5- point Likert scale (Le Blanc et al. 2010) Internal consistency: Cronbach alpha 0.80 Validity: Assessed by following Fornell and Larcker's (1981) procedure Data collected: self-administered questionnaires</p>	<p>Physicians scored higher on perception of collaboration (p<.001). Team commitment positively predicted IPC (p<.001), while professional commitment had no significant effect(p=.07)</p>
<p>Wang Y, Liu YF, Li H, and Li T., (China 2015).</p>	<p>To compare the attitudes of paediatric workers and undergraduate medical/ nursing students toward collaboration</p>	<p>Descriptive, comparative study Convenience sample Paediatricians (n = 118) Paediatric interns (n = 98) Medical students (n = 96) Paediatric nurses (n=126) Nursing interns (n = 118) Nursing students (n = 100) PIS consists of paediatrician, paediatric interns, and medical students. NIS consists of paediatric nurses, nursing interns, and nursing students. Children's Hospital</p>	<p>The Jefferson Scale of Attitudes toward Physician – Nurse Collaboration (Hojat et al. 1999) Validity: referral to the creator of the tool Internal consistency: Not mentioned Data collected: self-administered questionnaires</p>	<p>The mean score for PIS was 47.9 For the NIS, the mean score was 48.33. NIS demonstrated a more positive attitude towards teamwork than PIS (P = 0.04). Among the participants of PIS, the paediatricians obtained the highest scores and the medical students obtained the lowest (P = 0.03), while among participants of NIS, paediatric nurses got higher scores than nursing interns (P = 0.03). Clinical practice experience appeared to influence attitudes towards interprofessional collaboration (P = 0.03).</p>
<p>Amsalul E, Boru B, Getahun F and Tulu B., (Ethiopia 2014).</p>	<p>To assess attitudes of nurses and physicians towards nurse-physician collaboration and the level of satisfaction with regard to quality of collaboration between them.</p>	<p>Cross sectional study Stratified random sampling technique Nurses (n =176) Physicians (n =53) Response rate: 90.50%. Two referral Hospitals</p>	<p>The Jefferson Scale of Attitudes toward Physician – Nurse Collaboration (Hojat et al. 1999) Validity: Not mentioned Internal consistency: 0.79 for nurses, 0.84 for physicians and 0.78 for combined Data collected: self-administered questionnaires</p>	<p>Nurses demonstrate more favorable attitudes than physicians with mean score of 49.63 and 47.49 respectively (p = 0.043) statistically significant differences were noted with regard to subscales caring vs curing, and physician dominance (p = 0.01, p = 0.004, respectively). The level of satisfaction regarding the collaboration between them, it appeared that 72 nurses (41%) and 21 (40%) doctors rated it as "poor" and only 5 (3%) nurses and none of the physicians rated it as excellent.</p>
<p>Matziou V, Vlahioti E, Perdikaris P, Matziou T, Megapanou E and Petsios K., (Greece 2014).</p>	<p>To investigate the physician and nursing perceptions regarding communication and collaboration as well as the factors that may influence these activities</p>	<p>Descriptive study Convenience sample Physicians (n =93) Nurses (n =197) Response rate: Nurses 98.5% Physicians 93% Two public hospitals</p>	<p>"Communication and Collaboration among physicians and nurses" questionnaire (Vazirani, Hays, Shapiro, & Cowan, 2005). Validity: Not mentioned Internal consistency: In Part A Cronbach's alpha was 0.87 (only nurses). In Part B, Cronbach's alpha was 0.91 for physicians and 0.78 for nurses Data collected: Self-administered questionnaire</p>	<p>Years of experience, the size of the clinic, the university degree and the postgraduate studies were found to be significant factors according to nurses' view (p<0.05). For the physicians, age, sex, years of experience and the size of clinic affected the communication and collaboration with the nursing staff significantly (p< 0.05).</p>

Table 1 : Articles included in the Literature review

among nurses, which in turn may have contributed to the reduction and shortage of nursing staff (6).

Differences in the attitude of Nurses and Doctors towards Interprofessional Collaboration.

Regarding the second research question, the analysis of the Jefferson Scale subscales revealed that nurses scored higher than physicians in both the "care versus treatment" aspect (2, 5, 7, 8, 37) and the psychosocial aspect of care (6, 40). This suggests that nurses tend to have more favourable attitudes towards contributing to the psychosocial aspects of patient care.

Furthermore, in the majority of studies, nurses expressed agreement with the rejection of the dominant role of physicians (2, 5–7, 37, 39, 40, 48) and demonstrated a positive attitude towards the autonomy of nurses, in contrast to physicians (8).

Across most studies, both nurses and physicians displayed positive attitudes towards "shared education and teamwork," with nurses generally showing more favourable views on this particular aspect compared to

physicians (2, 5–7, 37, 39, 40, 48). Overall, participants highlighted the importance and benefits of interprofessional collaboration and considered its inclusion in their education to be essential.

In studies that used perception measurement tools instead of attitude measurement tools, physicians tended to perceive and rate the level of collaboration much more positively than nurses (36, 38, 41). Bowles et al. (2016) suggested that this difference in perception may be attributed to the higher workload that doctors experience compared to nurses (36).

Demographic or other organizational factors related to the attitude of nurses and physicians towards interprofessional collaboration.

In the study by Suryanto et al. (2016), male nurses were found to have a more positive attitude towards interprofessional collaboration than their female counterparts (37). This contrasts with the findings of Zheng et al. (2016), where female nurses demonstrated a more positive attitude towards collaboration (39, 40).

However, in the study by Kaifi et al. (2021), gender did not significantly affect the overall score on the scale, although women showed a more positive attitude regarding the "care versus treatment" parameter (5). Similarly, the study by Girish (2019) concluded that gender was not significantly correlated with interprofessional collaboration (7, 48).

Nurses with higher education were found to have a more positive attitude towards interprofessional collaboration in several studies (35, 37, 39). However, a contrasting result was reported by Hossny and Sabra (2021), where nurses with higher education, who felt they held an equal degree to physicians, were dissatisfied with the submissive role traditionally assigned to nurses with basic education in their interactions with physicians. These nurses were less satisfied with the level of cooperation with physicians compared to nurses with lower educational qualifications (2).

Positive attitude towards collaboration was associated with the age of both nurses and physicians, with younger nurses displaying a more positive attitude (6, 37, 40). However, this association was not observed with years of experience (6). In contrast, the findings of Hossny, Sabra (2021) and Zheng et al., (2016) do not support a positive association between age and interprofessional collaboration (2, 39), although they do agree that experience does not seem to impact attitudes (2, 6, 7, 39). On the other hand, the study by Suryanto et al. (2016), conducted in an emergency and accident department, found that experience had a significant effect on attitudes towards collaboration. Specifically, the more experienced participants were, the more positive their attitudes towards collaboration (35, 37).

In the same study, it was shown that general practitioners had a more positive attitude towards interprofessional collaboration compared to specialists. This was attributed to the fact that specialists possess more specialized knowledge and skills related to patient care, which makes them less dependent on other healthcare professionals in their practice (37) 2016).

As for comparisons between organizations, only the study by Kaifi et al. (2021) is mentioned. Their findings report that healthcare professionals working in public hospitals, both physicians and nurses, had a more positive attitude towards interprofessional collaboration compared to their counterparts in private hospitals (5).

Regarding the relationship between departments and interprofessional collaboration, intensive care departments scored higher on the parameter of joint education and teamwork, general departments scored higher in the "care versus treatment" parameter, while surgical departments scored higher in terms of nurse autonomy and the rejection of physician dominance (2). Additionally, the study by Elsous et al. (2017) found that general departments exhibited a more positive attitude towards collaboration compared to surgical and obstetric departments (6).

5. DISCUSSION

A significant number of studies indicate that the level of collaboration between physicians and nurses is generally low (54). However, some studies suggest that nurses tend to have a higher level of collaboration compared to physicians (55). Furthermore, there seems to be a discrepancy between the two groups in terms of satisfaction with their collaboration. While physicians, in the majority of studies, report being satisfied with the collaboration, nurses tend to express less satisfaction (2).

This finding is consistent with a meta-analysis of 51 studies conducted from 1999 to 2013, which indicated that nurses tended to score higher on attitude-based scales, while physicians scored higher on perception-based scales (49). The measurement of perceptions reflects the current state of collaboration within the participants' environment, while the measurement of attitudes reflects the ideal or desired level of collaboration for the participants (36). Nurses in countries where the complementary model of professional responsibility is more prevalent, or those in more liberal healthcare systems like the United States and Greece, tend to have more favorable attitudes towards physician-nurse collaboration compared to nurses in countries where the hierarchical model is more common, such as Italy (40, 50). In Middle Eastern, Asian countries, and Ethiopia, the hierarchical model remains dominant, which leads to a greater physician dominance in the nurse-physician relationship, further contributing to the challenges in nurse-physician collaboration (7, 51). Despite these cultural and systemic differences, studies consistently show that nurses generally display a more positive attitude towards interprofessional collaboration and prioritize nurse-physicians collaboration more than physicians do (50). Nurses are generally more enthusiastic about collaboration and teamwork with physicians (39, 52). In contrast, physicians do not always assign the same level of importance to collaboration, which can limit the potential for effective teamwork (53).

In the study by Bowles et al. (2016), it is noted that the dispersion of patients, particularly in general departments, significantly increases the workload of physicians, which is seen as an obstacle to interprofessional collaboration. Physicians often have around 17 patients under their care, but due to factors such as increased admissions and bed shortages, patients may be transferred to different departments. Consequently, the attending physician is required to visit patients across various departments. This added complexity not only increases the workload but also hinders the development of positive attitudes toward interprofessional collaboration (36).

In a study by Weaver et al. (2015), conducted in an oncology department, it was argued that the need for multidisciplinary teams (including surgeons, oncologists, and radiation therapists) in cancer care could negatively impact nurse-physician teamwork in hospital settings (38). Additionally, the studies revealed

differences in the perceived barriers to collaboration. Nurses identified negative attitudes towards communication from physicians as a significant obstacle, while physicians cited difficulties in approaching other healthcare providers as the main challenge to teamwork (41).

In most studies, physicians are predominantly male, while the majority of nurses are female. As highlighted in the study by Hossny and Sabra (2021), cultural and societal norms in Middle Eastern countries, tend to reinforce the dominant role of physicians and the subordinate role of nurses, a dynamic that has been ingrained for centuries (2, 54, 56). These societal beliefs, combined with the subordinate position of women in relation to men, further solidify the dominance of male physicians. According to a study by Migotto et al. (2019), nurses report lower collaboration when male-led nursing teams collaborate with female physicians. However, when female physicians lead units and the nursing teams are predominantly female, nurses tend to report more positive attitudes towards collaboration (57). Despite these cultural dynamics, many nurses and physicians in these regions express satisfaction with the current state of collaboration, where the physician holds the dominant role in patient care, a situation that appears to satisfy both parties (2).

In the countries previously mentioned, specialized nurses—who hold qualifications equivalent to those of physicians—tend to be more dissatisfied with the collaboration dynamics. They are often frustrated by the subordinate role that nurses, in general, adopt in their relationships with doctors, which contrasts with the experience of nurses with basic education who seem more accepting of the current status quo (2). According to the World Health Organization (WHO, 2020), nurses are not mere assistants to doctors. They are healthcare professionals with their own rights, skills, and training, enabling them to perform a wide range of essential roles within the healthcare system. This underscores the importance of recognizing and valuing the unique contributions that nurses, especially those with specialized training, bring to the team, advocating for a more equitable and collaborative approach between physicians and nurses.

Nurses with higher education tend to have a more positive attitude towards collaboration compared to those with basic education. This can be attributed to the fact that advanced education programs often foster a greater appreciation for the value of teamwork and interprofessional collaboration. However, this might also explain why more educated nurses are often less satisfied with the degree of collaboration they experience with physicians, as they may have higher expectations for effective collaboration. The need for both basic and continuing education in nursing and medical professions is crucial in addressing these challenges. Emphasizing interprofessional education and fostering mutual understanding between these two groups is key. Nurses and physicians typically receive their

training in separate environments, following distinct curricula, with little interaction. Despite this, they are expected to work together seamlessly in patient care, a situation that doesn't always reflect the reality of their working relationships. Although nursing as a profession has evolved significantly, particularly with the advancement of university education and a stronger presence in hospitals, the fundamental dynamics between nurses and physicians have not changed as much as expected. This persistent issue highlights the importance of ongoing education and the need to challenge the traditional hierarchical structures that can inhibit effective collaboration. Interestingly, both nurses and physicians share a positive attitude towards shared education and teamwork, which likely stems from their mutual recognition of the importance and benefits of interprofessional collaboration. This points to the potential for improvement if these groups were given more opportunities for structured and collaborative educational experiences.

Age appears to be a contributing factor to interprofessional collaboration, with older nurses often showing more positive attitudes. This could be attributed to the natural maturation that comes with age and experience, fostering a deeper understanding and acceptance of the roles of other healthcare professionals, especially within the complementary model of care. Nurses with more years of service in a particular department may have encountered a broader range of situations, providing them with a more seasoned and open-minded perspective on collaboration (6, 37). However, the study also highlighted that younger nurses, particularly those with advanced education, tend to have a more positive attitude towards collaboration. This finding further supports the notion that higher education plays a significant role in fostering a positive outlook on interprofessional collaboration. Thus, both age and educational level seem to influence nurses' attitudes toward teamwork, with both experience and advanced training contributing to more favorable views on collaboration with physicians. This underscores the importance of integrating education and experience to enhance teamwork between healthcare professionals.

6. CONCLUSION

The literature review reveals that nurses generally exhibit a more positive attitude towards interprofessional collaboration compared to physicians. However, both groups express a strong desire for joint education and teamwork. The findings emphasize that incorporating both nurses and physicians in interprofessional education programs is essential for fostering collaboration.

The primary point of disagreement between the two groups lies in the perceived role of the physician. Nurses tend to reject the dominant role of the physician in patient care, advocating for a more balanced, collaborative approach. In contrast, physicians often continue to view themselves as the primary decision-

makers in patient care, reinforcing a hierarchical structure. This disparity is further evident in physicians' lack of recognition for the nurse's role, particularly in psychosocial aspects of care.

Despite these differences, both nurses and physicians agree on the importance of shared education and teamwork, indicating that interprofessional collaboration is crucial for improving patient care. Therefore, it is essential to incorporate interprofessional education into healthcare training programs. At both the organizational and governmental levels, there is a need for post-graduate programs that focus on enhancing interprofessional collaboration, strengthening the nurse's role, and clarifying the responsibilities of all healthcare professionals involved in patient care. Such efforts will help address existing challenges and promote a more collaborative and effective healthcare environment.

Limitations of the study

The studies included in this literature review were conducted across various settings, which introduces a lack of homogeneity and may pose challenges when attempting to generalize the findings. Furthermore, the relatively small number of articles that met the inclusion criteria for this review, coupled with the differences in their methodological approaches, may limit the applicability and comparison of the research results. Additionally, while eight studies used attitude measurement tools, the remaining studies employed different tools that assessed perceptions, leading to inconsistencies in how the data were collected and interpreted. These variations in data collection methods may further complicate the ability to draw comprehensive conclusions across all studies. Moreover, the fact that most studies were conducted by nurses introduces a potential bias. Consequently, caution should be exercised when applying the findings to broader contexts or different healthcare settings.

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