ORIGINAL ARTICLE

Assessment of interprofessional collaborative practice components of perioperative teams

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ABSTRACT

Objective: The purpose of this study was to conduct a hospital workforce survey of nurses to determine what interprofessional collaborative practice components they have in place at their worksites. The findings could indicate what is needed to create, expand, and maintain an effective interprofessional collaborative practice environment.
Methods: The study used a random sample of working perioperative nurses who were members of a national perioperative registered nurse association database and had interprofessional collaborative practice training either by continuing medical education or micro credentialing. These nurses were sent two surveys to assess their worksite presence of interprofessional components. These validated surveys assess an organization's capacity to have an interprofessional collaboration by examining the workplace environment, environmental mechanism, and institutional support of interprofessional collaboration.
Results: Interprofessional collaboration within the perioperative worksite setting exists in most of the structures in place. However, urban sites were more likely to lack supportive components that build, evaluate, and continuously create interprofessional teams.
Conclusions: There was an uneven implementation of the interprofessional collaboration components. The components vary by site, with urban hospitals having few components resulting in a more asymmetrical interprofessional team. The study's findings indicate a need for an assessment of worksite interprofessional collaboration to ensure all components are in place and for evaluation and improvement of interprofessional collaboration.

Key Words: Interprofessional components, Perioperative, nurses, worksite data, assessment tools

1. INTRODUCTION

As the Institute of Medicine,[1] Schot et al.,[2] and Wei et al.[3] have indicated, one of the critical skills to be a health care leader, especially with the move to a patient-centered, quality outcome model, is to a build interprofessional (IP) collaborative environment. Schot et al.[2] and Moss et al.[4] research shows that the healthcare leader who is confident in communicating with coworkers across multiple disciplines has better patient outcomes and higher job satisfaction and retention. According to the Robert Wood Foundation,[5] there is evidence that IP teams can help reduce medical errors improve the quality and timeliness of care. IP teams can enable providers to provide higher quality, patient-centered care to diverse patient populations. The Affordable Care Act has promoted IP care teams to provide quality care.

Thus, the Institute of Medicine[6,7] has recommended that all nurses and doctors be taught vital skills. They include: assert values and ethics of interprofessional practice by placing patient interests at the center of health care delivery and embracing the cultural diversity and differences within health

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care teams; leverage the unique roles and responsibilities of interprofessional partners to appropriately assess and address the health care needs of patients and populations served; communicate with patients, families, communities and other health professionals; perform effectively in various team roles to deliver patient- or population-centered care that is safe, timely, efficient, effective and equitable.

However, as Moss et al.[4] found, less is known about if the nurses in the worksite have skills in implementing critical building blocks of IP collaboration, which are: the organizational culture that jointly trains nurses and residents, supports senior leadership, equality in decision making, a climate of trust, anyone, such as a nurse, can be the leader of the team, all team members have equal importance, evaluation and on going training of IP teams, IP built into electronic charting, rounds, and plans of care.[2,8,9] Organizations also should provide continuous training and assessment on IP.[3,10] Brunt et al.[1] research showed barriers for nurses who want to build and lead in interprofessional environments. There is less research on how nurses can access the critical components needed for an IP approach.[1]

Etherington et al.'s[11] study cited that nowhere is the issue of building and maintaining an interprofessional collaboration more urgent than in the perioperative environment. Etherington et al.[11] examined the role of perioperative nurses, which is in an environment composed of multidisciplinary teams. Urisman et al.[8] and Etherington et al.'s[11] studies found that perioperative nurses care for patients with multiple risk factors in a complex environment with competing tasks carried out by multiple disciplines that rely on how well information is communicated. Urisman et al.,[8] Wei et al.,[3] and Heloise et al.[12] all found that the perioperative team should function in an interdependent way, but that does not always happen. Clark,[13] Costello et al.,[14] and Urisman et al.[8] have identified that one of the reasons this occurs is due to many disciplines working together that often have a different focus, and that can result in competing priorities. Schot et al.[2] and the Institute of Medicine (IOM)[1] have shown that these competing priorities often occur because someone in the team may not understand what they should be doing.

Several studies by Schot et al.,[2] Urisman et al.,[8] and Joseph[15] have shown that an effective IP team has to include a range of factors such as the organizational culture that jointly trains nurses and residents, support from senior leadership, equality in decision making, equality in who gets to be the leader, a climate of trust, IP built into electronic charting, rounds, and plans of care. Other studies by Wei et al.[3] and Marion et al.[10] have found that organizations need to continuously train and assess IP to improve IP collaboration.

Brunt et al.[1] and Moss et al.[4] indicated that one of the reasons for the lack of understanding of how to create and maintain an effective IP work environment is due to the lack of studies that have used a nurse-centered perspective on the presence and use of the IP practice in an operating room setting. Additionally, studies such as Marion et al.[10] and Moss et al.[4] have shown the lack of worksite-centered studies on how well and to what extent IP is implemented. Moss et al.[4] connects the lack of workforce data and information to a lessened ability to identify what needs to change to improve and strengthen IP nurse-centered environments. Marion et al.[10] found that limited to no access to workforce data to analyze nurse IP collaborative models results in little to no reflection on IP practices.[10] In order to address this gap in the nursing and IP research, this study examined the presence or lack of IP components from a nurse's perspective.

Purpose of study

The purpose of this research was to determine the presence of IP workplace components in a perioperative nursing setting, as measured by the Interprofessional Collaboration Survey (16) and the Interprofessional Collaboration Measurement Scale (17). The second purpose was to examine if there was a difference in IP and its implementation by type of worksite. The study and all the surveys used the World Health Organization's definition of IP, which is as follows: "multiple health workers from different professional backgrounds working together with patients, families, caregivers, and communities to deliver the highest quality of care."[18]

2. METHODS AND MATERIALS

A random sample of 3,000 active perioperative nurses who were members of a national perioperative registered nurse association database and had interprofessional training either by continuing medical education or micro credentialing, were sent the survey from May to August 2020. The survey used the Interprofessional Collaborative Practice Survey, RUSH[16] and the Interprofessional Collaboration Measurement Scale.[17] These validated surveys assessed organizational change readiness and IP collaborative practice. See appendices 1 and 2 for survey questions. The Interprofessional Collaborative Practice Survey has been validated as a stand-alone measure or an organization's assessment of interprofessional components. These surveys have also been used and validated to identify potential improvement and intervention opportunities; they help identify the organization's capacity to deploy IP care. A random sample was generated using the random number generator in Excel.

The survey was sent out via SurveyMonkey®. The use of

SurveyMonkey® allowed for the respondent information to exclude: first name, last name, email address, Internet Protocol address, and custom data such as zip code, locations, and or addresses from results. Thus, the researchers have no access to the respondent's name, address, hospital or clinic location, email, or Internet Protocol address. The data gathered and used by the researchers was stored in a code-protected computer with access only given to the researchers. The process used was essential to ensure an honest assessment of their IP workplace capacity and guarantee a high level of anonymity.

The survey also included additional questions about the respondent's background, years of experience, levels of training in interprofessional collaboration, interprofessional plan of action, region, urban, rural, or suburban, type of worksite/hospital/medical surgery center, number of beds, number of patients per year, and perceived level of IP collaboration in their role. Due to the combination of ordinal, nominal, and interval data, an ANOVA analysis was used with a significance level of alpha .05 or less to examine associations between IP and the nurse's assessment of within their setting, location, and patients were seen. The statistical package used was SPSS 26. According to Portnoy and Watkins,[19] when using ANOVA with a significance level of alpha .05 or less, a sample size of 310 or more was needed to achieve 80% power. The results will help identify elements that assist or deter the building of IP teams. This study was Internal Review Board approved.

3. RESULTS

A total of 310 participants responded to the study survey. The survey was sent out three separate times in four months to get the 10% response rate. The survey varied in respondents' degrees, years working and location, and worksite size. The highest level of education for most respondents was an RN degree (90%), with NP (5%), DNP (3%), and Ph. D. (2%).

Table 1. Demographic background of sites, years of experience, and education

Items				
Years of education	RN	NP	DNP	PH.D.
	90%	5%	3%	2%
Years of work experience	10-15	16-20	21-32	33
	20%	15%	28%	37%
Location	Urban	Suburban	Rural	Regional
	42%	25%	19%	12%
Number of bed	200	300	400	401 plus
	25%	25%	25%	25%

The years of experience varied, with 20% having between 10 to 15 years, 15% having between 16 to 20, 28% having between 21 to 32 years, and the remaining having upwards of 33 years plus. The majority, 83%, worked in a hospital versus 16% in a medical surgery center. The location of the worksites had the majority 42% at an urban setting followed by 25% at a suburban setting, 19% at a rural setting, and 12% at a in a regional setting. There was variation in the number of beds at the work settings: 25% with 200 beds and under, 25% with 300 beds, 25% with 400 beds, and with 401 to 500 beds. The number of patients seen at each site per year was as follows: 25% 10,000 patients, 25% 10,0001 to 30,000 patients, and 25% 30,001 to 50,000 patients, with the remaining unknown. See Table 1 for demographic information.

The overall responses illustrated a positive trend in the IP activities level and type at all sites. The majority responded that 77% had an IP plan of care, 54% had IP rounds, and 74% had electronic medical records that used IP care or communication. There was, however, a percentage of locations that only had limited components of IP such as IP plan of actions (17%), IP rounds (32%), IP huddles and EMR with IP documentation only within specific specialties (10%). There was also an overall lower level of joint IP training and IP evaluation. Respondents reported that only 32% took part in joint training between residents and nursing residents. Less than half the institutions, at 40%, evaluate employees' cooperation as part of IP teams, and only 33% evaluate their IP teams' impact and effectiveness.

The study did show a divide between urban and rural or suburban sites. An ANOVA analysis was used to examine what, if any, significant differences there were between responses based on the type of hospital or surgical center location. A significant difference was found between urban and non-urban sites within certain components of IP. For urban sites, 84% did not see IP teams promoting equality in decision making (p = .01), and 52% stated it does not create a culture

that enables quick change (p = .01). There was also a difference between urban sites stated there was an evaluation of the impact and effectiveness of IP teams (p =.02). There was also a difference (p = .02), between sites with urban centers responding at 30%, that the site promotes equality in decision-making on IP teams. A total of 30% of urban sites stating that the site promotes a culture where an IP team leader can come from any discipline (p = .02). Doctors on the IP teams in an urban setting are not seen at 52% as willing to discuss the nursing issue (p = .02). There is also a difference, (p = .01), in anticipating needs, with 50% stating that medical staff is unwilling to cooperate with new nursing practice in urban settings (see Table 2) for a breakdown by question between locations.

Table 2. Significant differences by location by IP components

		Regional	Urban	Suburban	Rural
Fosters a climate of trust.	Disagree	0.0%	11.6%	4.8%	3.2%
	Agree	11.3%	14.5%	11.3%	14.5%
Promotes a culture where an interprofessional team's leader can come from any discipline.	Disagree	15.6%	58.3%	5.2%	20.8%
	Agree	15.4%	30.8%	34.6%	19.2%
	Cannot Evaluate	0.0%	0.0%	66.7%	33.3%
Doctors are willing to discuss nursing issues.	Disagree	23.8%	52.4%	23.8%	0.0%
	Agree	10.8%	40.5%	24.3%	24.3%
Doctors would not be willing to discuss their new practices with nurses.	Disagree	0.0%	42.9%	28.6%	28.6%
	Agree	0.0%	54.5%	27.3%	18.2%
Has a culture that enables quick change.	Disagree	12.9%	52.6%	17.2%	17.2%
	Agree	8.7%	43.5%	21.7%	26.1%
Promotes equality in decision-making on interprofessional teams.	Disagree	7.6%	84.8%	7.6%	0.0%
	Agree	18.2%	30.3%	24.2%	27.3%
Medical staff would be willing to cooperate with new nursing practices.	Agree	0.0%	50.0%	50.0%	0.0%
	Some specialties	10.0%	37.5%	27.5%	25.0%

4. DISCUSSION

The presence of IP teams has for some locations-built trust, fostered conflict resolution, promoted equality. These findings, however, were less accurate in urban hospitals, where doctors are still dominating within the IP team. In those locations, the doctors saw their work as more important than the nurses on the team. There was less information passed between doctors and nurses, less of an ability to make quick changes, and less of a sense of equality in that no one other than a doctor could lead the IP team. These findings indicate that, as seen in the Robert Woods Johnsons[5] and by the Institute of Medicine,[6,7] that nurses have to be seen as potential and actual leaders to help foster a sense of equality, information sharing, and the potential for a quick change.[5,6]

The study found IP, within the perioperative setting, had some structure in place but not the supportive components that build, evaluate, and continuously create available IP across and within all settings. The study found, for example, that one of the missing components within the urban settings was the understanding that anyone, such as nurses, could be the leader of the IP team. Studies by Robert Woods Johnson,[5] Schot et al.,[2] and the Institute of Medicine[6,7] have all shown that nurses in IP and of nurses being seen as IP leaders have an impact on the sense of quality, information sharing and the impact of IP components to be able to make quick changes to improve patient outcomes.

Also, the study results support a need for continuous education and evaluation of IP components and IP teams, as numerous studies by Moss,[4] Wei. et al.,[3] Brunt et al.,[4] and Schot et al.[2] have shown that this is a requirement for IP in order to evolve, grow, and maintain their ability to impact patients. According to Sullivan et al.[20] and Wei et al.,[3] and the IP Education report of 2016,[21] the ability to learn, improve, and evaluate the impact of IP is imperative and a necessary part of IP. The study results found that this was missing from all locations, especially urban settings. There is

also a lack of ongoing evaluation. That finding indicates that an essential component of IP is missing in most locations, as the Committee for Assessing Progress on implementing the Institute of Medicine Report[6, 7] has stated that the ongoing evaluation is imperative to building and maintaining IP within a hospital.

Limitations

The study could be limited by a lower than anticipated response rate. In order to ensure a sample size of 310, the survey was sent out three times over a four-month time frame during 2020. Thus, it could have captured changes impacted by COVID-19 at differing sites.

The study only looked at one part of the perioperative team, the nurses. Future studies could look at all the team members. The results might indicate that the IP level depends on the position and job is as part of that team. The study found urban sites with different experiences than suburban and rural sites. Future studies will need to oversample to ensure consistent differences within and between these sites.

The site differences could be due to different patient populations each of them serves. Urban sites might have a higher number of public payments patients as compared to the suburban and rural sites. The study did not ask about types of patients, payment methods and or if the site was a safety net hospital. Future studies should examine if these factors impact the level of IP components.

5. Conclusions

The study found that IP differed between urban and non-urban sites. Urban sites were less likely to have all the components needed for an effective IP team. These urban sites varied in scope and depth of IP and leaders within those systems. This study results illustrate how only having some parts in place of IP could potentially limit IP benefits. Implementing a needs assessment tool could allow for a more holistic and complete implementation of IP principles.

This could improve and show positive outcomes exhibited within and around the IP model. Achieving this could mean better outcomes for patients and a worksite with a sense of equality, cross-discipline information sharing, ongoing evaluation and education, and the sense that quick change is achievable. A more robust form of IP could also have a more positive impact on patient outcomes, which according to the Robert Woods Johnson Foundation, is one of the primary reasons to have IP teams.[5] As we have seen from the current pandemic, the ability to pivot and change, work as one team across disciplines, integrate ongoing education, and create an equitable worksite is imperative to address current and future health demands.

Conflicts of Interest Disclosure

The authors declare they have no conflicts of interest.

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