ORIGINAL ARTICLE

The level of teamwork as an index of quality in ICU performance

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Abstract

Background: The benefits of improved interdisciplinary collaboration in the health care section are well documented in the literature, including fewer errors and shorter delays and thus enhanced effectiveness and maximised patient safety. Given that the first step in improving teamwork involves uncovering individual team member's attitudes, this study was planned to investigate the level of collaboration, as part of organizational culture in the environment of ICU in Hippokratio Hospital.

Methods: Considering as team all the medical and nursing stuff necessary for the integraded care of the ICU-patient, all the ICU personnel was included in the study, as well as that of other cooperating clinical departments and labs of Hippokratio hospital. For the purpose of the study a questionnaire was adopted and was given to 250 individuals, 196 of which responded (response rate 78.4%).

Results: Responders, in general, valued teamwork as crucial for the performance of ICU. However, the study revealed a relative low consensus regarding the level of teamwork within each unit and inadequate collaboration between certain departments and ICU. Interestingly enough, most of the responders were willing to share responsibility but unwilling to share decision making or accept questioning of their actions. Finally, low consensus was also observed regarding the composition of the team, some responders (mostly clinicians) undervaluing the contribution of labs. Certain differences were detected across departments, as well as between physicians and nurses, the statistical significance of which is indicated.

Conclusion: Although the benefits of teamwork are well understood, realization of effective cooperation seems to be yet too far from our interdisciplinary practice. Teaching of teamwork skills and team concepts should become part of our medical or nursing education and training, if we should want to achieve a substantial improvement of quality of healthcare services, especially in high risk areas such as the ICUs. Hippokratia 2010; 14 (2): 94-97

Key words: interdisciplinary collaboration, ICU-teamwork, inter-professional interactions, teamwork measuring

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Interdisciplinary practice refers to people with distinct disciplinary training, working together for a common purpose, as they make different complementary contributions to patient-focused care[1,2]. Historically, inter-professional interactions were authoritarian and dominated by physicians pervading hospital burocracies in the past. Today, teamwork became the central focus for specialist service delivery and hospital managers promote collaborative interactions as the key to efficient and effective care[1,2].

The benefits of improved interdisciplinary collaboration in the health care section are well documented in the literature, including fewer errors and shorter delays and thus enhanced effectiveness and maximized patient safety[3-5]. However, our medical and nursing education and training seems based on the assumption that health care is delivered by individuals in isolation: teaching of teamwork skills and team concepts is virtually nonexistent. ICUs, with their diverse activities, large number of specialists who are called to cooperate, dynamic changes and time stress, are prone to high incidence of accidents, thus included in the "high risk" areas of a hospital, in the performance of which teamwork is obviously crucial.

Objective

Given that the first step in improving teamwork involves uncovering individual team members´attitudes[1,6,7], this study was planned to investigate the level of collaboration and communication as a part of organizational culture in the environment of our ICU.

Methods

Considering as team all the medical and nursing staff necessary for the integraded care of the ICU patient, we included in this study the ICU personnel as well as that of other cooperating clinical departments and labs of our hospital. For the purpose of the study we adopted an existing questionnaire from the literature[1], which was given to 250 individuals, 190 of which responded (response rate 76%).

Responders were asked to express their opinion regarding 14 statements (Table 1), to describe their personal perception of quality of collaboration and communication that they have experienced with various team members (Table 2) to express their opinion regarding the composition of the ICU-patient care team (Table 3). Data were

Table 1: Statements to be answered by the five main sectors included in the survey by SA, A, D, SD.

1. Patient care decisions in my department/unit should include more input from team members.
2. All team members should feel free to question the decisions of other team members.
3. Good communication (briefing) among team members prior to a procedure is important for patient safety.
4. Good communication (debriefing) among team members after a procedure is important for patient safety.
5. My department/unit encourages teamwork and cooperation among its members.
6. In my department/unit disagreements are resolved based on what is best for the patient rather than "who" is right.
7. Nurses should not question the decisions made by physicians in the team.
8. When a patient safety issue is recognized, I have some reservations of raising the issue with the patient care team leader.
9. I am never in doubt regarding who is leading the patient care team.
10. Patient care team leaders should encourage questions from all team members.
11. Good communication and coordination among team members is as important as technical proficiency for the safety of the patient.
12. The team approach to patient care reduces errors committed by the members of the team.
13. The team approach to patient care helps team members make better decisions.
14. The team approach to patient care reduces efficiency.

SA=strongly agree, A=agree, D=disagree, SD=strongly disagree

Table 2: Describe your personal perception of the quality of collaboration and communication (VL,L,A,H,VH), that you have experienced with:

1. Head of dept of Anesthesiology.
2. Anesthesiologists.
3. Nursing staff, operating room (OR).
4. Head of dept of Surgery.
5. Surgeons.
6. Nursing staff, dept of Surgery.
7. Head of dept of Internal Medicine.
8. Internists.
9. Nursing staff, dept of Internal Medicine.
10. Lab physicians.
11. Paramedics.
12. Pharmacists.
13. Head of ICU.
14. ICU physicians.
15. Nursing staff, dept of ICU.

V=very low, L=low, A=adequate, H=high, VH=very high

combined in one data set, grouping responders in five main sectors (surgery, anesthesiology, laboratories, intensive care, internal medicine), as well as in two major groups (physicians and nurses).

Missing values were less than 10%, thus considered negligible. To assess the degree of construct validity of the survey, a factor analysis was performed, using a Varimax rotation method[1,8].

The internal consistency of items composing each one of the predicted factors was assessed using coefficient of reliability. SPSS version 11.00 was used for data analysis, including factor analysis and descriptive statistics.

Descriptive results of the questionnaire

The teamwork effect (Table 1, questions 11, 12, 13).

In general, responders perceived the effects of teamwork very positively and only 11.2% believe that the team approach to patient care reduces efficiency. Comparisons across sectors revealed a statistically significant difference only for question 11, with the internists less likely to appreciate the benefits of cooperation and coordination (p=0.01).

Team communication (Table 1, questions 3, 4, 10).

Responders manifested a strong consensus on the importance of communication strategies within the team and the encouragement of questioning from all team members. There were not significant differences between departments, except for question 4, with the lab personnel less likely to believe in the necessity of debriefing after a procedure (p=0.017). Comparisons between nurses and physicians also revealed a significant difference in question 10, with the nurses of department of Anesthesiology less likely to consider encouragement of question-

Table 3: Who, to your opinion, should be included in the ICU-patient care team? Answer by SA,A,D,SD.

1. ICU physicians.
2. ICU nursing staff.
3. Technicians.
4. Consulting physicians.
5. Lab physicians.
6. Paramedics.
7. Pharmacists.

SA=strongly agree, A=agree, D=disagree, SD=strongly disagree

Table 4: Quality of collaboration with ICU personnel as perceived by other departments (VL,L,A,H,VH).

			SURG	ANESTH	LAB	INT-MED
HEAD OF ICU	PHYSICIANS	L-VL	31.6%	15.4%	37.5%	27.3%
		A	42.1%	23.1%	37.5%	36.4%
		H-VH	26.4%	61.6%	25%	36.4%
	NURSES	L-VL	40%	23.1%	-	30.8%
		A	43.3%	42.9%	100%	46.2%
		H-VH	16.7%	42.9%	-	23.1%
ICU DOCTORS	PHYSICIANS	L-VL	10%	7.7%	37.5%	13.6%
		A	40%	23.1%	-	40.9%
		H-VH	50%	69.2%	62.5%	45.5%
	NURSES	L-VL	16.7%	14.3%	-	14.3%
		A	50%	42.9%	100%	42.9%
		H-VH	43.3%	42.9%	-	42.9%
ICU NURSES	PHYSICIANS	L-VL	5%	8.3%	37.5%	13.6%
		A	45%	33.3%	12.5%	50.1%
		H-VH	50%	58.4%	50%	36.4%
	NURSES	L-VL	12.9%	7.1%	-	8.3%
		A	29%	28.6%	66.7%	58.3%
		H-VH	58.1%	64.3%	33.3%	33.3%
ICU NURSE MANAGER	PHYSICIANS	L-VL	10.5%	8.3%	37.5%	14.3%
		A	52.6%	41.7%	37.5%	38.1%
		H-VH	36.9%	50%	25%	47.6%
	NURSES	L-VL	16.1%	14.3%	-	10%
		A	35.5%	42.9%	66.7%	60%
		H-VH	48.1%	42.9%	33.3%	30%

V=very low, L=low, A=adequate, H=high, VH=very high

ing within the team as important (p=0.007).

Cooperation (Table 1, questions 1, 5, 9).

The level of teamwork proves to be disappointingly low in all departments and this reflects obviously a specific aspect of the organizational culture of the hospital. Most of the responders believe that patient care decisions should be made more collectively and are often in doubt regarding who is the team leader. Only about two thirds agree that teamwork and cooperation are encouraged in their department and that conflicts are resolved based on what is best for the patient. Statistically significant differences were shown in question 1 (p=0.01), where some disagreements were noticed in departments of Surgery and Internal Medicine and question 6 (p=0.000) with the lower consensus observed in the dept. of Anesthesiology and the ICU.

Free questioning - reservations (Table 1, questions 2, 7, 8).

Most of the responders (81.4%) would not hesitate to raise a patient safety issue with the team leader. However, a significant difference was revealed between departments (p=0.003), due to the obviously greater reservations manifested in the department of Anesthesiology.

Finally, the majority of physicians are unwilling to accept questioning of their decisions by nurses. As expected, the majority of nurses disagree with this statement, while the stronger support is observed in the department of Anesthesiology.

We indicatively demonstrate in percentages how the personnel of the four main sectors rate their experience with the ICU staff (Table 4), as well as the opinion of the ICU personnel regarding the quality of collaboration with the medical and nursing staff of other sectors (Table 5). Findings are obviously disappointing: less than 50% of the responders rate the level of cooperation with the others as adequate, a large number rate it as low or very low and only a few seem to cooperate with others in a high or very high level.

In this last part of the survey, responders are asked to express their opinion regarding the composition of the ICU-patient care team. In Table 3 a very low consensus is demonstrated, with a large number of responders-mostly clinicians-undervaluing the contribution of lab physicians, paramedics and pharmacists in the team.

Discussion

In general, responders value teamwork as crucial for the performance of ICU. Although the benefits of teamwork are appreciated, it seems that this is related mainly to the share of responsibility, while the traditional authoritarian and hierarchical culture dominates: few are willing to accept questioning of their decisions, especially from the nursing staff. Cooperation and coordination is not encouraged by team leaders and conflicts are not handled based upon the patient´s benefit. Very low consensus

Table 5: Quality of collaboration with other sectors´ personnel, as perceived by ICU staff.

	Low-Very Low	Adequate	High-Very High
Nurse Manager OR	40%	60%	-
Nursing staff OR	40%	55%	5%
Head Anesth Dpt	38.9%	55.6%	5.6%
Anesthesiologists	26.3%	57.9%	15.8%
Head Surg Dpt	60%	35%	5%
Surgeons	45%	45%	10%
Nurse Manager Surg Dpt	40%	55%	5%
Nursing staff Surg Dpt	40%	50%	10%
Head Int Med Dpt	52.6%	47.4%	-
Internists	42.1%	52.6%	5.3%
Nurse Manager Int Med Dpt	52.6%	47.4%	-
Nursing staff Int Med Dpt	33.3%	56.6%	11.2%
Lab Physicians	16.7%	66.7%	16.7%
Paramedics	21.1%	52.6%	23.4%
Pharmacists	75%	20%	5%

exists regarding the composition of the patient-care team in the ICU, with clinicians undervaluing contribution of lab physicians, paramedics and pharmacists. The level of cooperation and communication between those who are supposed to form the ICU patient care team proved to be inadequate.

Although the extent of our investigation does not allow us to drive firm conclusions about the existing level of cooperation and coordination in the ICU of a typical third-grade Greek hospital, it is obvious that realization of effective teamwork is yet too far from our interdisciplinary practice.

In a heath system in which patient complexity, outcome indicators and informed familie are representative of current reality, an interdisciplinary approach to care is crucial to successful navigation of a patient´s experience in the ICU[6]. Research has shown that the lack of communication and interdisciplinary collaboration may be responsible for as much as 70% of the adverse events currently reported[4]. Identifying a group of health providers as a team, does not imply that they will perform well or at all as a team. Teamwork consists of attitudes, knowledge and skills[1], the improvement of which demands sustainable efforts. We cannot assume that health professionals have either the skills or the attitudes required for inter-professional practice. They may need to learn how to collaborate. Inter-professional education at the undergraduate, graduate and practice levels seems to be essential today, since health professionals are called to work together and to provide more coordinated and comprehensive care to patients[9-11]. Literature is focused on planning and application of effective educational projects, as well as investigating factors which enhance or impede the implementation of these projects[11-13].

The main conclusion is that developing a culture of collaboration and coordination in health care requires a commitment to engage in shared learning and dialogue. Dialogue has the potential to encourage collegial learning, change thinking, support new working relationships and improve patient care.

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