Attitudes of A Staff Before and After Educational Action for The Implementation of Safe Surgery Checklist

Cátia Cristiane Matte Dezordi, Sabrina Wagner Benetti, Carolina Renz Pretto, Sandra Emilia Drews, Alcione Carla Meier, Leticia Busatto, Eniva Miladi Fernandes Stumm

Regional University of the Northwest of the State of Rio Grande do Sul

Brazil

ABSTRACT

*Aim: To evaluate attitudes about the safety atmosphere of a surgery staff before and after an educational action for the implementation of the safe surgery checklist. **Method**: Quantitative research of experimental type in the period of December 2016 to November 2017. A questionnaire of Safety Attitudes was applied, Surgical Center version for 101 professionals that work in the surgical center of a general hospital before and after na educational action for the implementation of the safe surgery checklist. The data analysis was done with the use of descriptive statistics. **Results**: Most of the items belonging to the SAQ/CC obtained increase in averages after the educational action. "Communication in the Surgical Atmosphere" was the most approached domain highlighted in the educational action and presented an increase of the averages in all itens; the item that didn´t obtain a satisfactory score in this domain was "The equipments of the surgical center are adequate". The most pontuated descriptive measure after the educational action was "The transmission of information among professionals of the surgical center before the realization of a surgical procedure is important for the security of the patient", with a lower deviant pattern. **Conclusion:** The educational action developed aiming at the implementation of the safe surgery checklist is importante to qualify the assistance to the patient in the surgical period with safety.*

Descriptors: Safety of the Patient; Organizational Culture; Education; Perisurgical Nursery; Surgical Center.

INTRODUCTION

The safety culture is defined as a product of values, attitudes, perceptions and competences, in groups and individually, that determine a behavior pattern and an engagement with the safety of the institution and aims to substitute the blame and the punishment for the opportunity of learning through the mistakes (SAMMER et al., 2010). In Brazil, with the creation of the National Program of the Patient Safety (NPPS), the culture turned out to be considered a principle of risks' management directed to the quality and safety of the patient.

The evaluation of the safety culture occurs through the use of psychometrics tools of the safety atmosphere perceived by the health staff (LEE et al., 2010). The expression. "Safety Environment" has

been widely discussed in literature and used as a synonym of 'culture'. Safety environment can be defined as the timing measure of the state of culture of the institution's safety and can be measured by the individual perceptions about the organization attitudes. To recognize its importance and impact in the health organizations the base is to develop any type of safety programm with emphasis on the learning and organizational improvement.

The studies demonstrate that positive perceptions about safety security are associated to the adoption of safe behaviors, improvement on communication, educational actions, reduction of adverse events, attitude changes, group work, investigation and strategic planning, which contribute to a safe and qualified assistance (LEE et al., 2010; EL-JARDALI et al., 2011).

Several advances were evidenced about the patient's safety, however, it becomes necessary to identify perceptions of professionals about safety with the focus on the patient, to evaluate how it is managed in diferente contexts, to develop strategic visions and enlarged practices to improve the safety culture (VICENTIN; ALMABERTI, 2016), especially in a complex environment like the surgical center. We highlight that the implementation of the List of Verification of Safe Surgery (LVSS) is an intervention that reduces avoidable complications.

In this sense, an international multicentric study showed a reduction of 36% of complications and 47% of mortality in surgical patients after the *checklist* implementation (HAYNES et al., 2009). Another research in 2010 (WHO, 2011) evidenced a breakdown in the mortality rate by mistakes in surgeries and reduction of complications of 35,2% to 24,3%. Investigation in 14 hospitals of South Carolina (USA) showed a reduction of 22% of the post-surgical deaths and characterized itself as one of the first studies that presented the true impact of the LVSS in large scale (HAYNES et al., 2017). This list aims to reinforce daily practices, to improve communication, work group and to accomplish critical phases of safety and, in this way, reducing avoidable risk.

Even with proven eficiency of the aims and of the *checklist*, hospital institutions still fight to implement and/or enlarge the adhesion of the LVSS by the surgical staff. Freitas et al. (2014) point out that the biggest challenge is convincing people of the importance of this practice, to ensure its applicability and to modify perceptions of the staff about the patient's safety. The authors report themselves to the LVSS as the greatest cause of resistance of surgical staff, for the fact of considering it a bureaucratic process added to the lack of knowledge of its relevance.

The nurse as a leader, coordinator and educator in health plays an important role concerning the educational actions in the implementation, awareness, integration and dissemination of different attitudes of the patient's safety among the surgical staff. It is the professional with abilities in the approach of subjective aspects intending to reduce the resistance to changes, adaptation to the needs of the environment, among others. (TOSTES; HARACEMIW; MAI, 2016).

In Brazil, there are few studies that analyse professionals perceptions concerning the safety environment linked to the educational actions aiming at the implementation of the *checklist*. The understanding of this process can contribute to the change of paradigms and to the promotion of safety culture. This involves and values attitudes, perceptions and professional behaviors, determinant to the engagement to the surgical patient safety. Taking into account these considerations, the present research

has as an objective to evaluate perceptions about safety atmosphere of a surgical staff, before and after an educational action for the implementation of the safe surgery *checklist*.

METHOD

Research of quantitative approach of experimental type carried out in the surgical center of a philanthropic hospital size IV of the Northeast region of the state of the Rio Grande do Sul. This state presents part of the results that integrate the dissertation: "Evaluation of a multiprofessional staff about safety environment before and after the implementation of the *checklist* safe surgery".

The surgical center is composed of six surgical rooms and carries out approximately 232 elective surgeries and 234 emergency surgeries of different complexities. In relation to the type of health staff that act on it, there are approximately 60 surgeons of diverse specialities six Medicine, resident surgeons, 10 anesthetists, six pediatrician plantonists, six nurses, 42 nurse technicians.

The following inclusion criteria were listed: to work for at least a month in the surgical center and to accept to sign the Term of Free and Clarified Consent (TFCC); and of exclusion criteria: to be off work on health license or not having participated of the first stage of the research.

The research period was from December 2016 to November 2017. It occured in five stages. At first, we talked to the nurses and the surgical center administrator about the activities to be carried out, and right after that, the Questionnaire of Safety Attitudes was applied on the Surgical Center version (LORENÇÃO; TRONCHINI, 2016) for 107 health professionals that worked at the mentioned Unit in the month of December 2016 and January 2017.This stage was characterized by the adaptation and pilot test with its application during 15 days from the Safety Surgery Verification List of the WHO (World |Health |Organization) to the location's reality.

On the fourth moment, which happened in the months of February and March 2017, an educational action was carried out with a nursery staff in the four shifts, morning, afternoon and two nights. That took place in a staff meeting that counted with approximately 35 professionals, among technicals and nurses that work in the scheduling, surgical room and Recuperation Post Anesthesic |Unit. For the night shift, the action was carried out *in loco* at the surgical center and included all participants of the nursery staff. The meetings counted with the expressive participation of these professionals who could suggest, dialogue and expose their previous knowledge and doubts about the thematic.

For the medical staff, the educational action took place in a residence classroom, counted with six residentes and two preceptors and in four distinct moments, *in loco* at the surgical center with the doctors who waited for the beginning or the end of the surgery in a waiting room. With the medical staff, the scheduling and the participation for the action were challenging. The activity started with the coordinators of the surgery service and anesthesia, subsequently with preceptors, residents, other anesthesists and with greater difficulty, the surgeons, as in this period there were not any meetings of the clinical body, usually suffering with overload of procedures and unavailable schedules to participate of the action. The doctors' contributions were directed to the quantity of material, professionals, time for checklist application, term of surgical consent, antibiotic therapy and data to be added or excluded from the *checklist* of the adapted safe surgery.

The approached contents in the educational action were standardized to favor the awareness about the importance of the surgical patient safety, effective communication and implementation of the LVSS with a subsequent presentation and explanation of the way of using the *checklist* adapted to the local reality.

Subsequently, after the educational action the LVSS was implemented fot the nursery and medical staff. After 60 days of educational action and implementation of the checklist, the same data collection instrument was applied again, SAQ/CC for 101 professionals, due to the fact that six of them didn´t participate of the second stage, three nursing technicians left the institution, one of them was on maternity leave and two doctors were not working at the surgical center any longer.

The SAQ/CC owns six domains (LOURENÇÃO; TRONCHIN, 2016) according information explicited in Table 1. Concerning the denominations of each domain, the authors who adapted and validated the instrument followed the domains of the original questionnaire (SEXTON et al., 2006) and the ones of the short translated and adapted version by Carvalho (2011).

Table 1 – Domains of the Questionnaire of Safety Attitudes on the Surgical Center Version (LOURENÇÃO; TRONCHIN, 2016)

Domains	Description	Example of items
Safety Environment Seven items: 28, 29, 30, 32, 34, 35 e 38	Evaluates the perception of the professionals in what concerns their organizational engagement for the security of the patient.	The patient's safety is constantly reinforced as a priority here at the Surgical Center.
Perception of the Management Four items: 5, 6, 7, 11 e 14.	Refers to the approval of the professionals concerning the management actions referring to safety.	The administration of this hospital is doing a good job.
Perception of Stress Four items: 31, 33, 36 e37.	Concerns the recognition of how much the stressors values influence the execution of the work.	I feel frustrated with my work.
Work Conditions Six items: 16, 17, 18, 22, 26 e 23.	Refers to the perception of the quality of the work environment.	I am encouraged by my workmates to inform any concern that I might have with the patient´s safety.
Communication in the surgical environment Four items: 9, 10, 15 e 19	Perceptions about the transmission of communication in the surgical environment.	The transmission of information is common at the surgical center.
Perceptions of the professional performance Four items: 12, 21, 24 e 25	Perception of professionals concerning to tiredness and overload of work in the professional performance.	I am less efficient at work when I'm tired.

Source: Adapted by the researcher

The SAQ\CC is composed by three parts. The first one contais 15 items refering to the quality of communication and colaboration between the professionals that work at the surgical environment, in which

the research's participant answered about its relationship with each one of the professional categories. The second part is composed by 40 assertives that include the patient's safety through six domains identified in Table 1. The third part is composed by demographic information: age, sex, race/ethnic group, professional category, time and acting (LOURENÇÃO; TRONCHIN, 2016).

Each item of the SAQ/CC follows a scale of five points of *Likert,* ordenated and scored in the following way: disagrees totally (0 point), disagrees partially (25 points), neutral (50 points), agree partially (75 points) and agrees totally (100 points); the option "doesn´t apply" was not scored. In the final score, 0 corresponds to the worst perception of the safety environment and 100 to the best perception. They are considered positive values when the total score is equal to 75. The calculation is carried out adding up the answers of the items of each domain and dividing the result by the number of items of each domain, after the inversion of the reverse items. The average time used by each participant for the filling of the questionnaire was from 10 to 20 minutes, in consonance to other studies (CARVALHO et al., 2011; CAUDURO et al., 2015).

The participants of the study were divided in a nursery staff (nurses, technicians and nursery assistants) and a medical staff (anesthesiologists, surgeons, pediatricians and residents). We highlight that the educational action was developed by the researcher. Before the educational action the invitation and clarifications related to the research were done for each participant in the work environment. To those who accepted to participate in both of them, an envelope with the TFCC and SAQ/CC was delivered printed in paper. The SAQ/CC was made available to the professionals to be filled in the researcher's presence or through the deposit in a sealed box available in the unit, according to what was previously arranged, before and after the implementation of the *checklist* of hte safe surgery.

For the analysis of the variables descriptive statistics was used including absolute values and percentages, averages and standard deviations and tables to better visualize the results. The research followed all the ethical norms predicted in the Resolution 466/12 of the National Health Committee that involves human beings. The Project was approved by the Ethical Committee Norm number 1.834.908 e CAAE 60803516.9.0000.5350.

RESULTS

A hundred and one instruments that corresponded to the number of professionals who participated in the two stages of the data collection were analysed, before and after the educational action. Firstly, in the figure 1, the averages of the participants of the research perceptions were explicited before and after the educational action according to the domains SAQ.

Figure 1 - Perceptions of professionals of the surgical center, before and after the educational action, according to the domains SAQ/CC Ijuí /RS – December 2016 to July 2017.
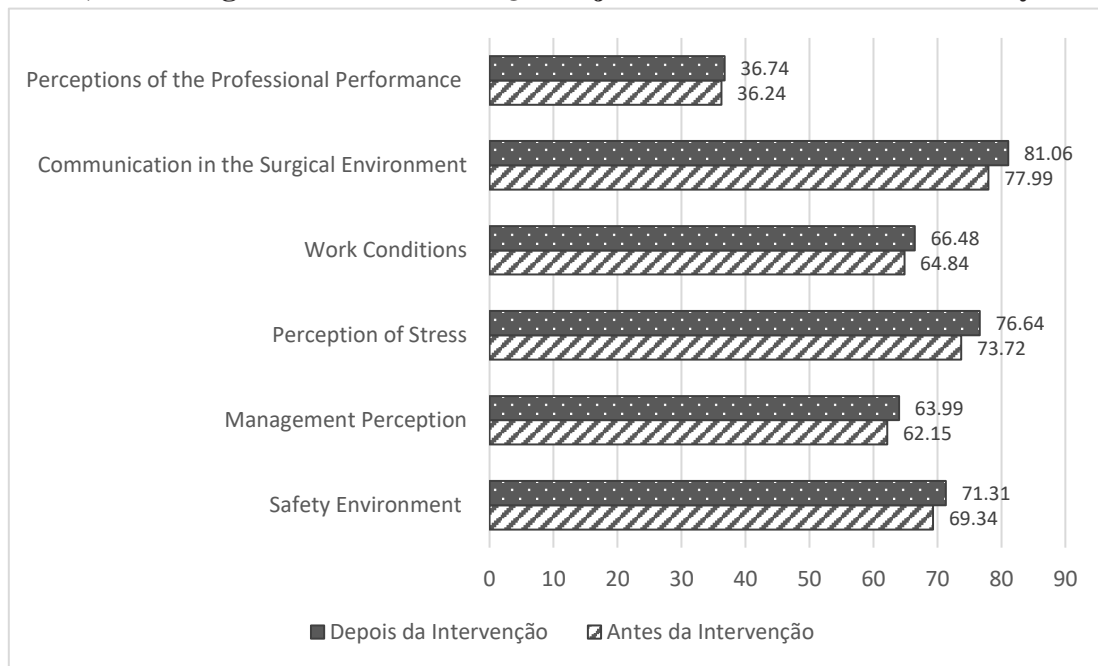
Still concerning the data contained in the Figure 1, we verify that the domains "Communication in the Surgical Environment" and "Perception of Stress" showed satisfactory scores, equal ou above 75, after the educational action. Sequentially, the ones that equally obtained increasem but didn't reach satisfactory scores were "Safety Environment", "Work Conditions", "Management Perception" and with a smaller pontuation "Perceptions of the Professional Performance".

On Table 01 the distribution of the descriptive answers are presented for domain scores "Safety Environment", "Perceptions of Management" and "Perception of Stress" of SAQ/CC, before and after the educational action. On the first domain we verify that the questions with a satisfactory score after the educational action were "*The medical staff of this Surgical Center makes a good job*", followed by the question "*All staff of the surgical center takes responsibility for safety*" and "*The patient's security is constantly reinforced as a priority here in hte Surgical Center*". The question that obtained greater increase of average, after the educational action was "*The information obtained through the reports of the adverse events are used to make the assistance safer in this Surgical Center*", but it didn´t reach a satisfactory score

Table 1 – Descriptive measures of the domains scores "Safety Environment", "Perceptions of Management" and "Perceptions of Stress" of SAQ/CC, before and after the educational action. Ijuí /RS– December 2016 to July 2017

Questionings	Before Intervention	After Intervention
Domain 1 – Safety Environment	69,4±24,1	69,9±23,7
28. The moral in this surgical center is high		
29. The medical staff in this surgical surgery makes a good job	79,5±20,7	82,4±19,2
30. All the personnel of the Surgical Center takes responsibility for safety	75,7±26,6	77,0±26,0
32. The patient's ssafety is constantly reinforced as a priority here at the Surgical Center	73,8±28,6	76,0±28,9
34. Very important issues are communicated in the shift changes	68,2±23,9	61,7±29,9
35. Here there is wide adhesion to the clinical principles and criteria based in evidences related to the patient´s safety	61,3±25,0	63,9±28,4
38. The information obtained through the reports of the adverse events are used to make the assistance safer in this Surgical Center	59,6±28,2	67,0±26,4
Domain 3 - Perceptions of Stress*		
31. I feel tired when I wake up in the morning and I have to face another day of work	71,5±32,5	76,8±28,1
33. I feel exhausted with my work	75,3±30,7	78,3±26,8
36. I feel frustrated with my work	88,3±21,7	90,2±19,6
	60,3±34,3	62,0±33,3

*Reverse Scor

In relation to the domain "Safety Environment" that didn't obtain increase of the average after the action was the item "*Very important issues are communicated in the shift changes*". We highlight that this showed smaller average and greater standard deviation what denotes disparity in the participants' answers.

Still concerning the data contained in Table 01 we verify that in the domain "Perception of Management" the only question that obtained a satisfactory score was "*This hospital is a good place to work*". The answers that showed increase of average after action were respectively: "*The administration of this hospital is making a good job*", followed by "*I receive an adequate feedback about my performance*" and "*The administration of this hospital supports my daily effort*". The question that obtained reduction after the educational action "*In this surgical center the number of professionals is enough to attend the number of patients*".

Concerning the domain "Perception of Stress" reverse score, we verify the increase of averages after the educational action in all the questions. We have to point out that only an alternative didn't reach the satisfactory score after the action: "*I feel that I am working too much*". The question that obtained the greatest increase was "*I feel tired when I Wake up in the morning and I have to face another day of work*", followed by "*I feel exhausted with my work*".

Sequentially, in Table 2, the descriptive measures of the domains' are explicited as follows "*Work Condiitions*", "*Communication in the Surgical Environment*" and "*Perception of Professional Performance*". On the domain "*Work Conditions*" the questions that obtained satisfactory scores after the educational action were: "*I am encouraged by my workmates to inform any concern that I might have with*

the safety of the patient" and the item 26 with the answer "It *is easy for the professionals that work in this surgical center to make questions when there is something they don't understand*", this last one presented a satisfactory score, but presented reduction after the educational action. The question that almost maintained itself unchanged was "*The hospital deals in a constructive way with the problematic professionals*" with a lower average, compared to the other items that make part of this domain.

Table 2 – Descriptive measures of the domains scores "Work Conditions", "Communication in the surgical environment" and "Perceptions of professional performance" of SAQ/CC, before and after the educational action

Ijuí/RS – December 2016 to July 2017

Questionings	Before the educational action	After the educational action
Domain 4 -Work Conditions		
16. I am encouraged by my workmates to inform any concern that I might have with the patient´s safety	77,3±27,8	81,8±23,4
17. The safety culture in this surgical center makes it easy to learn with others	58,4±26,9	63,3±27,9
18. The hospital deals in a constructive manner with the problematic professionals	51,5±29,0	51,0±28,2
22. I get adequate and convenient information about occurrences in hospital that might affect my work	51,8±26,3	52,5±24,6
23. I know the adequate means to direct questions related to the patient's safety in this surgical center	69,8±28,3	71,8±27,8
26. It is easy for the professionals that work in this surgical center to make questions when there is something they don´t understand	78,7±24,8	77,5±24,1
Domain 5 – Communication in the surgical environment		
9. The transmission of informationamong the surgical center professionals before the surgical procedure is important for the patient´s safety	93,5±15,3	98,8±6,5
10. The transmission of information is common in the surgical center	78,2±21,7	79,2 ±20,9
15. The decision taking in the surgical center uses information of the involved professionals	73,0±24,9	76,5±23,8
19. The equipment of the surgical center is adequate	67,3±23,4	70,0±25,3
Domain 6 – Perceptions of the professional performance*		
12. The tiredness affects my performance during emergency situations	40,1±34,5	40,4±32,9
21. When my working load becomes excessive my		

performance might go down	28,7±30,7	32,8±30,7
24. I am less efficient at work when I am tired	35,6±32,3	34,3±35,1
25. I am more probable to commit mistakes in tense and hostil situations		
	39,6±34,3	38,4±34,3

*Reverse score.

Concerning the data contained in Table 2, in relation to the domain "Communication in the Surgical Environment" widely approached in the educational action presented an increase in all averages. We point out the question "*The equipment of the surgical center are adequate*" which was the only one in this domain that didn´t reach the satisfactory score. The most scored item after the educational action was "*The transmission of information among the professionals of the surgical center before the accomplishment of a surgical procedure is important for the patient´s safety*", this one with a lower deviation standard.

On the other hand, in the domain "Perceptions of the Professional Performance", an item that was equally calculated with a reverse score, in none of the questions a satisfactory score was evidenced.

The descriptive measure that obtained an increase after the educational action was the question "*When my working load is excessive my performance is damaged*". The other item "*The tiredness damages my performance during emergency situations*", almost kept unchanged, and the other questions, "*I am less efficient at work when I am tired*" and "I have greater probability to commit mistakes in tense and hostil situations", were reduced after the educational action.

DISCUSSION

The fact of using the SAQ/CC before and after the educational action with the nursing and medical staff showed that it was effective, evidenced by the increase in the averages of the participants's perceptions. However, we verify the need of giving a continuation to the moments like this one, that allow changes and widening of knowledge, clarification of doubts, aiming at improving the professionals' perceptions concerning the environment safety in the surgical environment.

We evaluate that the fact that the domains "Communication at the Surgical Environment" e "Perceptions of Stress" presente satisfactory results shows that the educational action was effective, that is, communication and stress were widely approached and target of several questionings, more especifically, by the nursing staff. The other domains didn´t presente satisfactory results, in other words, punctuation over 75.

Studies tha in the same way used the SAQ, in diferente environments ambientes, also indicated unsatisfactory scores and the participants questioned about the need of developing organizational strategies to promote actions and atitudes aiming at widening the perceptions about culture safety (CARVALHO et al., 2015; CAUDURO et al., 2015; LUIZ et al., 2015; CORREGGIO et al., 2014; MARINHO; RADÜNZ; BARBOSA, 2014).

Among the descriptive measures of the domain "Safety Environment" the ones that obtained satisfactory scores concerning the perceptions of the professionals about the good performance of the

medical staff, responsibility and priority of the staff about the patient's safety. These results meet the research that used the SAQ/OR in eight hospitals of Harvard, before and after the implementation of the *checklist* (HAYNER et al., 2011). The authors detected improvement in the perceptions of professionals concerning staff work and the safety environment and state that this result is due to to implementation of the *checklist* of the safe surgery. Another investigation with nurses in Taiwan showed strong association between the group work and of safety attitudes between them (LEE et al., 2010).

The group work improves the culture of the patient´s safety, spreads the acception and adhesion of the LVSS (SINGER et al., 2016). A systematic revision of literature (RUSS et al., 2013) showed a good relationship between groupwork, use of LVSS and pointed out two main functions of the *checklist*: to composse a set of verifications of basic safety that qualify the adhesion to the clinical practices, to improve the interdisciplinary and the communication among the professionals. In this context, Carvalho et al. (2015) state that the group work characterize itself as one of the main challenges in the surgical environment and that the harmonic relation, interaction and cooperation are fundamental aspects.

In relation to the domain "Safety Environment", the item that didn´t obtain improvement was the communication of important issues in the changes of shifts. In this sense, the communication constitutes itself in a weakened actionin inumerous institutions of health assistance. Casey e Wallis (2011) report themselves to the adequate communication between the members of the staff as a basic principle of the nursing practice, however it needs to be standardized. The authors point out that sharing information and reports of incidents are formal aspects of communication. In thi sense, Almeida et al. (2012) point out that the information of the patient in shift changes and in the transferences of units needs to be precise, clear, and correct as when ommited or misinterpreted it can contribute for the assistance fails.

In the research here analysed it was evidenced a disparity in the participants' perceptions concerning the descriptive measures about the information of adverse events (AEs). The average in the question that inquired about information through the AEs reports had an increase after the educational action, however unsatisfactory score. A result that equally happened concerning the questions of adequate and convenient information about occurences in the hospital that can affect professional's work and knowledge in what concerns the adequate means to put forward questions related to the patient´s safety, with an average, after educational action of 52,5 e 71,8, respectively.

We evaluate that giving correct information about incidents that involve safety or concerns related to them needs to be encouraged. In this sense, there are evidences of subnotifications of mistakes, in some institutions, in which the professionals are blamed or punished for informing abou their occurence (OLIVEIRA et al., 2014). The authors report themselves to this evaluation as a moral question and it doesn´t fail in the process of work.

In what concerns the satisfactory scores refering to the descriptive measures that integrate the domain "Communication in the Surgical Environment", denotes improvement in the participants' perceptions refering to the transmission of information among professionals, if compared before the realization of a surgical procedure, a relevant aspect to the implementation and adhesion of the LVSS. Other items that, equally presente positive scores, above 75, were the use of the information of professionals involved in decision taking and their value about information transmission in this environment. These

results also demonstrated advances in the process of communication in this environment.

The item that presented greater average in the domain "Communication in the Surgical Environment" (84,5) was the hospital to be a good place to work. We think that this perception is important and comes to meet Cauduro et al (2015) e Carvalho et al. (2105), when stating that to be satisfied with the institution in which we work influences directly in the assistance quality and in the staff productivity. Another investigation that compared the satisfaction of Brazilian with those who work in the USA and Ireland showed that the Brazilian nos felt more satisfied with their work than the others (TAYLOR et al., 2012; RELIHAN et al., 2009).

Concerning the domain "Work Conditions", the items less scored were "*The hospital deals with the problematic professionals in a constructive manner*" and "*I get adequate and convenient information about ocurrences in the hospital that can affect my work*", with unsatisfactory scores, that is, below 75. These results come to meet two researches with professionals of surgical centers, one in the South region and the other in the Federal District (CARVALHO et al. 2015; CORREGGIO et al., 2015). The last one identified that assistential professionals have difficulty in perceiving the commitment of the management with the dormant factors of the safety culture. The authors report themselves to the educational action as na alternative to mobilize the staff to express their opinions in relation to the culture of patient's safety. In this contexto, Nie et al. (2013) state that to know and to evaluate this institutional culture makes it possible to identify weaknesses, potentialities in the process and to sensitize the professionals about the thematic.

In the domains "Perception of Stress" and "Perception of Professional Performance", we verify that the item "*I feel that I am working too much*" didn´t obtain a satisfactory score and the second "*When my working load becomes excessive my performance is damaged*", the less scored. These results denote weaknesses refering to the professionals' perceptions in what concerns the identification of the influence of the working load in the patient's safety. Allied to the working load, the item "*the number of professionals is not suficiente to attend the number of patients*", reduced from 56,8 to 53,5 after the educational action. Cho et al. (2003), in a study in North-American hospitals with 10.000 nurses and more than 230.000 patients, showed that a high proportion of surgical patients per nurse led to a greater risk of death, after 30 days of hospitalization and death for complications potentially avoidable. Novaretti et al. (2014) report themselves to the overworking load as related to the desproportion between the number of nursing professionals and of patients as a risk fator to the incidence of hospital infections in critical patients. The authors state that the overworking load is obstacle to develop frequent educational actions, with damage to the availability and efficiency of participation.

Still in relation to the item "insufficiency of professionals to attend the patients", we consider that the adequate dimensioning of staff is an important indicator of the patient's security and this statement comes to meet Chakravarty (2013), who developed a study in \india, with 175 doctors and 60 nurses. The author concluded that from the point of view of 76% interviewees, the overworking load was na important reason for the occurence of AE and there is a need of adequate dimensioning of health professionals. He reports himself to attitutes directed to standartization of procedures, implementation of techniques, routines of assistance, awareness and commitment of the staff in the safe assistance.

Concerning the domains "Work Conditions", "Perceptions of Management" and "Perception of

Professional Performance" that obtaines low scores of the items that integrate them, indicate changes to improve the environment of the patient´s safety among the professionals. These items were also identified, in national studies, as challenges to be upgraded in the surgical environment (CARVALHO et al., 2015; CAUDURO et al., 2015; CORREGGIO et al., 2015; MARINHO; RADÜNZ; BARBOSA, 2014). Actions that aim at widening knowledge, improving conditions of work, availability of materials, adequate equipment and professional dimensioning, allied to the hospital's management are some atitudes that modify the culture scenery of safety among professionals (MARINHO; RADÜNZ; BARBOSA, 2014).

The educational action in the patient´s safety aims at producing, systematizing and spreading knowledge (BRAZIL, 2013). It implies in learning experiences that give the opportunity to the professional of using the scientific evidence and to be able to describe the components of care centered in the patient, to identify deviations in their practice and to determine actions for their corrections (KIERSMA; PLAKE; DARBISHIRE, 2011).

We evidence the mismatch between what should be done and what in fact happens in the educational and assistential practices, a challenge for professionals that work in patient's safety (NATIONAL PATIENT SAFETY FOUNDATION, 2016). The curricular guide of patient's safety of the WHO presentes wide upgrading od diferente asoects that envolve the teaching of patient's safety, guides strategies and makes lectures available , reading material, online activities, training of abilities, videos, games, besides discussions based in case studies and sceneries that picture the practice (WHO, 2011).

Marinho, Radünz e Barbosa (2014) report themselves to the nurse as a representative of the category of the health staff, for acting during all teh time with the patient and establishing a bond with the other professionals. The nurse supervises in a continuous and systematic manner the nursing staff and develops educational actions to widen the assistance quality. A study that evaluated perceptions of the nursing staff of a surgical center in São Paulo, about trainings of assistential activities, reinforces the need of the nurse to consider the technical dimension and the routine of work, in the elaboration of the annual program of capacitations (FERNANDES; PENICHE, 2015).

The evaluation of the perceptions of the medical and nursing staff about the safety environment, before and after the educational action, aiming at the implementation of the *checklist* of the safe surgery, provided us with important subsidies that guided the implementation of *checklist*, more especifically in what concerns the changes in the professionals' perceptions that join the two staff, the nursing and the medical one. This statement can be done based on the averages of the scores of each domain that join the instrument allied to the process of implementation of the *checklist*. As a limitation we verify that the evaluation of the educational action can be done at regular braks, in special after the implementation of the *checklist.*

CONCLUSION

To evaluate perceptions of the medical and nursing staff that work in a surgical center about the safety environment was important for providing subsidies for the implementation of the *checklist* of the safe surgery in the refered unit. It provided us important information that guided the implementation of the checklist, more especifically in what concerns the changes in the perceptiosn of the professionals that join

the two work groups. We think that the use of a validated instrument can contribute much with the nurse that works in a surgical center in the sense of obtaining a precise diagnosis about the safety environment of the two work groups and which is fundamental to qualify the assistance to the patient in the perisurgical stage with safety.

We consider that the results of this research equally can be used by managers, teachers, nurses, and other professionals that work in surgical centers, researchers and students, in the sense of encouraging them for the construction of more investigations about this thematic, including in otehr surgical centers, in a way to make it possible to make inferences and also other researchs with different methodological approaches.

REFERENCES

ALMEIDA, Ana Carolina Goulardins de et al. Intra-hospital transport of critically ill adult patients: complications related to the team, equipment and physiological factors. Acta Paul. Enferm., São Paulo, v. 25, n. 3, p. 471-476, 2012. Available from <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103- 21002012000300024 & lng = en & nrm = iso> .access on 01 Dec. 2017. http://dx.doi.org/10.1590/S0103 -21002012000300024.

BRAZIL. Ministry of Health. Cabinet of the Minister. Ordinance No. 529, of April 1, 2013. **Establishes the National Patient Safety Program.** Brasília. Available at: <http://www.saude.pr.gov.br/arquivos/File/0SEGURANCA_DO_PACIENTE/Porta ria5292013_1.pdf> Accessed on 05 nov. 2016.

CARVALHO, R. E. F. L. Cross-cultural adaptation of the Safety Attitudes Questionnaire for Brazil - Security Attitudes Questionnaire. 2011. 158 f. Thesis (Doctorate). University of São Paulo, Ribeirão Preto, 2011. Available at: <http://scholar.google.com/citations?view_op=view_citation&hl=en BR & user = 1Q7Yn2wAAAAJ & citation_for_view = 1Q7Yn2wAAAAJ: 3fE2CSJIrl8C>. Accessed on Oct 02. 2017.

CARVALHO, P.A. et al. Safety culture in the surgical center of a public hospital, in the perception of health professionals. Rev. Latino-Am. Nursing, Nov.-Dec. 2015. [Access. March 27, 2017] 23 (6): 1041- 8. Available at: http://www.scielo.br/pdf/rlae/v23n6/en_0104-1169-rlae-23-06-01041.pdf.

CASEY, Anne; WALLIS, Alison. Effective communication: Principle of Nursing Practice E. **Nursing Standard,** [s.l.], v. 25, n. 32, p. 35-37, 13 abr. 2011. RCN Publishing Ltd. http://dx.doi.org/10.7748/ns2011.04.25.32.35.c8450

CAUDURO, Fernanda Letícia et al. Safety culture among surgical center professionals. Cogitare Nursing, [s.l.], v. 20, n. 1, p.129-138, 31 March. 2015. Federal University of Paraná. http://dx.doi.org/10.5380/ce.v20i1.36645.

CHAKRAVARTY, Abhijit. A survey of attitude of frontline clinicians and nurses towards adverse events. **Medical Journal Armed Forces India,** [s.l.], v. 69, n. 4, p. 335-340, out. 2013. Elsevier BV. http://dx.doi.org/10.1016/j.mjafi.2013.01.009.

CHO, S. H. et al. The effects of nurse staffing on adverse events, morbidity, mortality, and medical costs.**Nurs Res**. 2003; 52 (2): 71-9. https://www.ncbi.nlm.nih.gov/pubmed/12657982

CORREGGIO, Thâmy Canova da; LOVER, Lucia Nazareth; BARBOSA, Sayonara de Fátima. Evaluation of patient safety culture in Surgical Center. Revista SOBECC, São Paulo, v. 19, n. 2, p. 67-73, Jun. 2014. ISSN 2358-2871. Available in: <https://revista.sobecc.org.br/sobecc/article/view/60>. Accessed on: 02 Dec. 2017

EL-JARDALI, Fadi et al. Predictors and outcomes of patient safety culture in hospitals. **BMC Health Services Research,** [s.l.], v. 11, n. 1, p.1-12, 24 fev. 2011. Springer Nature. http://dx.doi.org/10.1186/1472-6963-11-45.

FERNANDES, Hellen Maria de Lima Graf; PENICHE, Aparecida de Cássia Giani. Percepção da equipe de enfermagem do Centro Cirúrgico acerca da Acreditação Hospitalar em um Hospital Universitário. **Revista da Escola de Enfermagem da USP,** [s.l.], v. 49, n., p. 22-28, dez. 2015. Fap. UNIFESP (SciELO). http://dx.doi.org/10.1590/s0080-623420150000700004.

FREITAS, Marise Reis de et al. Avaliação da adesão ao *checklist* de cirurgia segura da OMS em cirurgias urológicas e ginecológicas, em dois hospitais de ensino de Natal, Rio Grande do Norte, Brasil. **Cadernos de Saúde Pública,** [s.l.], v. 30, n. 1, p.137-148, jan. 2014. FapUNIFESP (SciELO). http://dx.doi.org/10.1590/0102-311x00184612.

HAYNES, Alex B. et al. A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population. **New England Journal of Medicine**, [s.l.], v. 360, n. 5, p.491-499, 29 jan. 2009. New England Journal of Medicine (NEJM/MMS). http://dx.doi.org/10.1056/nejmsa0810119.

HAYNES, A. B. et al. Changes in safety attitude and relationship to decreased postoperative morbidity and mortality following implementation of a checklist-based surgical safety intervention. **BMJ Quality & Safety**, [s.l.], v. 20, n. 1, p.102-107, 1 jan. 2011. BMJ. http://dx.doi.org/10.1136/bmjqs.2009.040022.

HAYNES, Alex B. et al. Mortality Trends After a Voluntary Checklist-based Surgical Safety Collaborative. **Annals of Surgery,** [s.l.], v. 266, n. 6, p. 923-929, dez. 2017. Ovid Technologies (Wolters Kluwer Health). http://dx.doi.org/10.1097/sla.0000000000002249.

KIERSMA, Mary E.; PLAKE, Kimberly S.; DARBISHIRE, Patricia L. Patient Safety Instruction in US Health Professions Education. **American Journal of Pharmaceutical Education,** [s.l.], v. 75, n. 8,

p.162-173, out. 2011. American Journal of Pharmaceutical Education. http://dx.doi.org/10.5688/ajpe758162.

LEE, Wui-chiang et al. Hospital Safety Culture in Taiwan: A Nationwide Survey Using Chinese Version Safety Attitude Questionnaire. **BMC Health Services Research,** [s.l.], v. 10, n. 1, p. 1-8, 10 ago. 2010. Springer Nature. http://dx.doi.org/10.1186/1472-6963-10-234.

LOURENÇÃO, Daniela Campos de Andrade; TRONCHIN, Daisy Maria Rizatto. Patient safety in the surgical environment: translation and cultural adaptation of a validated instrument. Acta Paul. Enferm., São Paulo, v. 29, n. 1, p. 1-8, Feb. 2016. Available from <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103- 21002016000100002 & lng = en & nrm = iso> .Access on 11 Nov. 2017. http: // dx .doi.org / 10.1590 / 1982-0194201600002.

MARINHO, Monique Mendes; RADÜNZ, Vera; BARBOSA, Sayonara de Fátima Faria. Assessment of safety culture by surgical unit nursing teams. **Texto & Contexto - Enfermagem,** [s.l.], v. 23, n. 3, p.581-590, set. 2014. FapUNIFESP (SciELO). http://dx.doi.org/10.1590/0104-07072014002640012.

NATIONAL PATIENT SAFETY FOUNDATION. Accelerate improvement of patient safety fifteen years after To Err is Human. 2016 [access: 2017 nov. 23]. Available at: https://proqualis.net/ article / free-of-damage-accelerate-improvement-of-safety-patient-fifteen-years-later-of-err-human

NIE, Yanli et al. Hospital survey on patient safety culture in China. **BMC Health Services Research,** [s.l.], v. 13, n. 1, p.1-11, 24 jun. 2013.Springer Nature. http://dx.doi.org/10.1186/1472-6963-13-228.

NOVARETTI, Marcia Cristina Zago et al. Nursing work overload and incidents and adverse events in ICU patients. Rev. Bras. Enferm., Brasília, v. 67, n. 5, p. 692-699, Oct. 2014. Available from<http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034- 71672014000500692 & lng = en & nrm = iso> .access on 02 Dec. 2017. http://dx.doi.org/10.1590/0034-7167.2014670504 .

OLIVEIRA, Roberta Meneses et al. Strategies for promoting patient safety: from the identification of the risks to the evidence-based practices. **Escola Anna Nery - Revista de Enfermagem,** [s.l.], v. 18, n. 1, p.1-8, 2014. GN1 Genesis Network. http://dx.doi.org/10.5935/1414-8145.20140018

RELIHAN E et al. Measuring and benchmarking safety culture: application of the safety attitudes questionnaire to an acute medical admissions unit. **Ir. J. Med. Sci**. [Internet]. 2009 [Access Ago 17, 2017];178(4):433-9. Available from: https:// www.ncbi.nlm.nih.gov/pubmed/19437091.

RUSS, Stephanie et al. Do Safety Checklists Improve Teamwork and Communication in the Operating Room? A Systematic Review. **Annals of Surgery,** [s.l.], v. 258, n. 6, p.856-871, dez. 2013. Ovid

Technologies (Wolters Kluwer Health). http://dx.doi.org/10.1097/sla.0000000000000206

SAMMER, Christine E. et al. What is Patient Safety Culture? A Review of the Literature. **Journal of Nursing Scholarship,** [s.l.], v. 42, n. 2, p.156-165, 21 jan. 2010. Wiley-Blackwell. http://dx.doi.org/10.1111/j.1547-5069.2009.01330.x.

SEXTON, John B. et al. The Safety Attitudes Questionnaire: psychometric properties, benchmarking data, and emerging research. **BMC Health Services Research**, [s.l.], v. 6, n. 1, p.6-44, 3 abr. 2006.Springer Nature.http://dx.doi.org/10.1186/1472-6963-6-44

SINGER, Sara J. et al. Relationship Between Operating Room Teamwork, Contextual Factors, and Safety Checklist Performance. **Journal of The American College Of Surgeons**, [s.l.], v. 223, n. 4, p. 1-44, out. 2016. Elsevier BV. http://dx.doi.org/10.1016/j.jamcollsurg.2016.07.006

VICENT,Charles e AMALBERTI, Rene. Cuidado de Saúde mais Seguro: estratégias para o cotidiano do cuidado– Rio de Janeiro, 2016.

TAYLOR, Jennifer et al. Do nurse and patient injuries share common antecedents? An analysis of associations with safety climate and working conditions. **BMJ Quality & Safety,** [s.l.], v. 21, n. 2, p. 101-111, 19 out. 2011. BMJ. http://dx.doi.org/10.1136/bmjqs-2011-000082.

TOSTES, Maria Fernanda do Prado; HARACEMIW, Annelise; MAI, Lilian Denise. Surgical safety checklist: Considerations from the institutional micropolitics. **Esc. Anna Nery**, Rio de Janeiro, v. 20, n. 1, p. 203-209, March. 2016. Available in <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-81452016000100203-&lng=en&nrm=iso>. Accessed on 10 Jul. 2017. http://dx.doi.org/10.5935/1414-8145.20160027.

WORLD HEALTH ORGANIZATION.**World Alliance for Patient Safety.** WHO patient safety curriculum guide: multi-professional edition. Geneva: WHO, 2011.