

Critical incidents involving Semiology during practical activities of nursing undergraduates

Incidentes críticos envolvendo Semiologia nas atividades práticas de graduandos de enfermagem
Incidentes críticos involucrando Semiología en las actividades prácticas de estudiantes de enfermería

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ABSTRACT

Objective: To identify critical incidents (situations, behaviors and feelings) during practical activities, involving knowledge and skills related to the discipline of Semiology and Semiotics. **Method:** Descriptive research using the critical incident technique, with the Snow Ball technique for the selection of participants and an instrument for collection of data. The reports were categorized according to the elements of the critical incident (situations, behaviors and feelings). **Results:** A total of 62 reports from senior (n = 46), sophomore and junior (n = 16) students were analyzed. The students were predominantly female (90.3%). The majority described a situation of a physical examination, expressed mastery of the skills necessary for the activity and reported positive feelings. **Conclusion:** The reports showed that the knowledge and skills acquired in the discipline allowed for a development of practical activities with familiarity and positive feelings. The importance that the students attribute to the recognition of the activities by the professor, the patient and family stands out.

Descriptors: Nursing; Teaching; Traineeships; Physical Examination; Behavior.

RESUMO

Objetivo: Identificar os incidentes críticos (situação, comportamentos e sentimentos) durante atividades práticas, envolvendo conhecimentos e habilidades relacionados à disciplina de Semiologia e Semiotécnica. **Método:** Pesquisa descritiva que utilizou a técnica de incidente crítico, com recrutamento pela técnica de *Snow Ball* e coleta de dados por meio de instrumento. Os relatos foram categorizados segundo os elementos do incidente crítico (situações, comportamentos e sentimentos). **Resultados:** Foram analisados 62 relatos de alunos concluintes (n=46) e intermediários (n=16), predominantemente do sexo feminino (90,3%). A maioria retratou a situação de exame físico, manifestando o domínio das competências para o desempenho da atividade e referiu relato de sentimentos positivos. **Conclusões:** Os relatos retrataram que o conhecimento e as habilidades aprendidas na disciplina possibilitaram o desempenho com familiaridade das atividades práticas e sentimentos positivos. Destaca-se a importância que os alunos atribuem à valorização das atividades desenvolvidas, tanto pelo professor quanto pelo paciente ou acompanhante.

Descritores: Enfermagem; Ensino; Estágios; Exame Físico; Comportamento.

RESUMEN

Objetivo: Identificar los incidentes críticos (situación, comportamientos y sentimientos) durante las actividades prácticas, involucrando conocimientos y habilidades relacionadas a la disciplina de Semiología y Semiotecnica. **Método:** se trata de una investigación descriptiva utilizando la técnica del incidente crítico, con reclutamiento mediante el método Bola de Nieve (*Snow Ball*) y levantamiento de datos por medio del instrumento. Los informes se categorizaron según los elementos del incidente crítico (situaciones, comportamientos y sentimientos). **Resultados:** Se analizaron 62 informes de alumnos concluyentes (n=46) e intermediarios (n=16), predominantemente del sexo femenino (90,3%). La mayoría relató la situación del examen físico, manifestando el dominio de las competencias para el desempeño de la actividad con sentimientos positivos. **Conclusiones:** Los informes destacaron que el conocimiento y las habilidades aprendidas en la disciplina posibilitaron el desempeño con

familiaridad de las actividades prácticas y trajeron sentimientos positivos. Cabe destacar la importancia que los alumnos atribuyen a la valorización de las actividades desarrolladas, tanto por el profesor como por el paciente o acompañante.

Descritores: Enfermería; Enseñanza; Prácticas; Examen Físico; Comportamiento.

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INTRODUCTION

The feelings experienced by undergraduate nursing students during their interaction with the patient, the professor and the environment can be either positive or negative, especially in the first practical experiences⁽¹⁾.

The student is expected to assume responsibilities, meet demands and expectations and perform activities that arouse feelings of unpreparedness to face the unknown. Situations interpreted as stressors can lead to emotional instability and lower academic performance, interfering with the quality of the nursing care provided⁽²⁾. On the other hand, feelings of trust, usefulness and commitment to the profession are usually associated with positive experiences⁽³⁾ with the interlocutors or in the different learning environments⁽⁴⁾, and may be predictors of an adequate future performance.

Practical activities are fundamental for the development of professional skills, feelings and ethical training in the nursing professional⁽⁴⁾. In addition, these activities increase self-knowledge and help the learner to develop a critical opinion about the professional activity, which will be essential for a more conscious and situation-appropriate decision making⁽⁵⁻⁶⁾. Therefore, these activities help to consolidate theoretical learning and to train professionals who are more capable and prepared to promote comprehensive and high-quality care⁽⁶⁻⁸⁾.

The discipline of Semiotics and semiology has a prominent role in this process, as it aims to contribute to the development of cognitive, procedural and attitudinal knowledge and skills in the students, so that they can evaluate the needs, conditions and responses of any patient under their care.

The Critical Incident Technique (CIT) is a set of procedures that can be used to assess the learners' perceptions about the contribution of a discipline to the performance of their activities. A critical incident is understood as:

[...] any observable human activity that is sufficiently complete in itself to permit inferences and predictions to be made about the person performing the act. To be critical, an incident must occur in a situation where the purpose or intent of the act seems fairly clear to the observer and where its consequences are sufficiently definite to leave little doubt concerning its effects. [...] a procedure which assists in collecting representative samples of data that are directly relevant to important problems⁽⁹⁾.

The technique, as described by its creator⁽⁹⁾, is a set of procedures for collecting direct observations of human behavior, in such a way as to facilitate their potential usefulness in solving practical problems. The objective of the technique is to develop psychological principles that can help understanding the influence of individual behaviors on a particular situation. This technique⁽¹⁰⁾

is an important tool for assessing the teaching-learning process. In addition, it can help understanding the situations that affect the construction of practical knowledge and the meaning given to the learning experiences, promoting a reflexive exercise⁽¹¹⁾.

The CIT has its advantages and disadvantages. Due to the fact that the memories are retrospective, it is necessary to consider that important facts for the evaluation of the incident may be forgotten, or that there can be distortions of the facts or emotional interferences that may influence the perception of critical incidents, among other factors⁽⁹⁾.

On the other hand, the technique is very easy to use, since they are real retrospective reports, with the interviewee's own words, ideas and feelings about the situation reported. The answers are not influenced and there is the possibility of identifying a situation still not reported and analyzing its frequency and relevance. In addition, it is a low-cost, easy-to-apply technique (questionnaires, forms, interviews and reports). The literature indicates that the use of this technique in teaching is efficient due to its simplicity and applicability⁽¹²⁾.

According to a review of primary studies that described its use in nursing research, it is a technique that is rarely used and diffused among researchers⁽¹³⁾. Another review study concluded that the CIT allows for an in-depth assessment of factors involved in care, which may strengthen the construction of knowledge in the area and improve the quality of care⁽¹⁴⁾. The technique was also used to evaluate critical incidents in the undergraduate teaching-learning process according to the students' and professors' perceptions⁽¹⁵⁾, to analyze the feelings of the nursing students in their first contact with patients⁽³⁾, among others.

A study points out that, among the feelings related to the student, the patient and the undergraduate course, 36.8% of the reports presented positive feelings⁽³⁾. At the time, these results contributed to a reflection on the teaching plans, the negative consequences and the importance of reinforcing positive experiences and helping the student to be more confident and to feel useful and committed to the future profession⁽³⁾. The same purpose is expected from the findings of this research regarding the discipline of Semiotics and semiology. In addition, this study seeks to contribute to the analysis of the importance of methods, techniques and communication skills used in data collection and in nursing interventions, contents of the studied discipline, for the development of practical activities in the subsequent disciplines of the course.

OBJECTIVE

To identify critical incidents (situations, behaviors and feelings) during practical activities, involving knowledge and skills related to the discipline of Semiotics and semiology.

METHOD

Ethical aspects

The study complied with the norms of the institution and with Resolution 466/12 of the National Health Council. In compliance with the ethical norms, the participants were oriented about the objectives and purposes of the research and about the confidentiality of their identification. Those who agreed to participate in the study signed the Informed Consent Form (TCLE) in two copies.

Study design and setting

This descriptive research was conducted in a Nursing School in the state of São Paulo, Brazil, in the second semester of 2016. In this institution, the discipline Semiotics and semiology focuses on adults or older adults and the evaluation is directed to the collection of objective and subjective data through methods of interaction, observation, measurement and their respective techniques.

Population, sample, inclusion and exclusion criteria

Of the 236 students regularly enrolled in the fourth and fifth year of the undergraduate courses in Nursing (Bachelor's degree or teaching license), 72 (30.5%) expressed an interest to participate in the study. The reports of students who had already taken the discipline of Semiotics and semiology and were performing practical curricular activities were included. The reports with incomplete CI elements, illegible handwriting, quotes related to other professionals and those that did not address the topic of interest were excluded.

Data collection procedure

The participants were selected using the Snow Ball technique, a non-probabilistic sample technique that may be useful when the research question is related to sensitive issues for respondents⁽¹⁶⁾. The critical incident technique⁽⁹⁾, introduced in Brazil in the 70's⁽¹⁰⁾, was used to obtain the data.

The instrument constructed to collect the data was composed of characterization items (gender, age and academic period – sophomore or junior and senior) and directions for the participant to remember a situation of a practical activity that involved the application of knowledge and skills learned in Semiotics and semiology. After this moment, the participant was asked to record in written the aspects related to the situation recalled, the behaviors involved, that is, the characteristics of the actions that took place and, finally, the aspects or feelings resulting from the action (for the student). Each student made only one report, whose components constituted a CI.

Analysis of results and statistics

After reading, 10 incomplete reports were excluded from the analysis: one report that did not have one or more of the elements necessary for the analysis (1); one report with illegible handwriting, making it impossible to read (1); quotes related to other professionals (4); and reports that did not address the topic of interest (4).

The steps adopted in the analysis⁽¹⁵⁾ of the reports included in the present study were: initial reading, identification of the elements of the critical incident, grouping of reports by similarity and, finally, categorization of the elements described by the participants.

The categorization of the reports was done by the researcher and validated by another member of the study team, and agreement was obtained between them. Categories that correspond to the components of the critical incident were established. They are:

- a) Situations reported: the categories identified were physical examination; physical examination and anamnesis; and evaluation of body part.
- b) Behaviors or actions: reflection on learning experiences (positive or negative) and development of activities (familiarity or previous skills, appreciation or recognition by the professor or team, assistance of the professor or team, and recognition or appreciation by the patient or family). The behaviors were analyzed in the light of their result: with or without success.
- c) Feelings, that is, affective states experienced by students: positive and negative expressions were identified.

The academic period of the student was considered in this analysis. The student who had just completed the discipline Semiotics and semiology and developed his/her first practical activities was considered sophomore or junior, while the student who was finishing the Nursing course was considered as senior.

For the analysis of the data, frequency was used for academic period, gender and elements of the critical incident (situation, behavior and feeling) and mean was used for age.

RESULTS

A total of 62 (100%) reports were considered suitable for analysis, 16 (25.8%) from sophomore or junior students and 46 (74.2%) from senior students. Regarding gender, 56 (90.3%) were women. Regarding age, the participants of this study were between 19 and 35 years old, with a mean age of 23.2 years and predominance of the age group between 21 and 23 years.

Regarding the CI elements in the behaviors reported, all referred to aspects of the development of the activity. Of the total, 20 contained reflection on the academic experiences, and different feelings were mentioned. These aspects are listed in the table below (Chart 1).

Regarding the category reflection about learning experiences, there were positive reports, in which the feelings most indicated were satisfaction, relevance of their role and knowledge. Negative feelings such as frustration and apprehension were mentioned, and its immediate consequences were not gratifying. Examples are:

The feeling is of satisfaction for the knowledge acquired in order to provide quality care to the patient. (Report 8)

At the moment I was a little anxious and frustrated. But after everything went well, I was able to calm down. (Report 50)

Chart 1 – Categories of behaviors and feelings described by students

Reported Behavior	Reported Feelings	
Reflections on learning experiences Positive (n = 17) Negative (n = 3)	Satisfaction Relevance of their role Feeling gratified Relevance of knowledge Mastery of knowledge	Perception of success in future events Feeling of duty fulfilled Confidence Hope Perception of inability to obtain success in future events Frustration Apprehension
Development of the activity With familiarity (previous skills) (n = 18) Without familiarity (restricted prior skills) (n = 12) With appreciation/recognition by the professor/team (n = 8) Without appreciation/recognition by the professor/team (n = 1) With the help of the professor/team (n = 5) With recognition/appreciation by the patient/family (n = 13) No recognition/appreciation by the patient/family (n = 5)	Satisfaction Pride Confidence Ability to use prior knowledge Insecurity Frustration Inability Humility Satisfaction Safety Confidence Frustration Safety Feeling sheltered Anxiety Autonomy Satisfaction Safety Confidence Impotence Satisfaction	Recognition Happiness Relief for correct execution Motivation Apprehension Concern Usefulness Joy Happiness Satisfaction Joy Gratitude Proximity to other Tranquility Tension Anxiety

Still among negative experiences, the perception of incapacity to reach success in future events was described by a student in the following report:

The patient did not have much mobility and I, as a student, did not know how to perform the physical examination in the position he was. [...] the nurse in charge did the physical examination in my place. I felt incapable and felt that I would have difficulties if I came across another situation like that. (Report 41)

In the category development of the activity, when the students reported having previous competences (familiarity), they expressed confidence for the execution of the action and there was a predominance of positive feelings.

[...] internship where I was able to apply all the knowledge I acquired in Semiotics [...] complete physical examination to collect data [...] I was already more familiar with the steps of the physical examination and the patient was already used to going through these steps with other nursing students. So it was a smooth and easy process. In addition to the knowledge acquired, I was pleased to finally be able to conduct the

physical examination and identify alterations. I felt prepared for the next stages and felt I had enough knowledge (Report 1)

The opposite was reported when failure and lack of prior skills for the development of the activity were perceived, with emphasis on insecurity.

During the application of these contents in the internship, I initially felt quite insecure. In addition, I had many doubts about the data I was collecting, whether I was listening correctly, or if I had characterized a certain change correctly [...]. (Report 47)

When the activity developed was accompanied by the appreciation/recognition of the student's performance by the teacher/team, the feeling reported most frequently was satisfaction. However, when the opposite was perceived by the student, that is, restriction or lack of appreciation or recognition for the development of the activity, the feeling reported was frustration.

Faced with the challenge of a new activity, the presence or the help of the professor/instructor led to feelings of security and acceptance. Likewise, the feeling expressed in situations in

which the student identified recognition/appreciation of the patient/family was positive.

It is important to mention that, in general, when the students developed the activity without identifying recognition/appreciation by the patient/family, the feelings emanated were negative. However, one of them reported a positive evaluation for having overcome the challenge and carried out the activity, even without the desired recognition.

Regarding the situation reported, three (3) categories were identified: 74.2% reported physical examination, 11.3% reported an evaluation of body part and 14.5% reported physical examination and anamnesis (Table 1). Some CIs (61.3%) classified the patient involved in the situation as clinical, psychiatric, surgical or oncological. Others (16.1%) cited the age group, such as children, adults or older adults.

Table 1 – Distribution of the situations, the results of the actions and the feelings described by the participants (intermediate and senior) of the study (N = 62)

Period	sophomore or junior				Senior				Total
	Success		Failure		Success		Failure		
Result of actions	Success		Failure		Success		Failure		
Situation	Feeling		Feeling		Feeling		Feeling		
	+	-	+	-	+	-	+	-	
Physical examination	8	2	0	3	30	3	0	0	46
Physical examination and anamnesis	1	0	0	0	5	3	0	0	9
Evaluation of body part	2	0	0	0	5	0	0	0	7
Total	11	2	0	3	40	6	0	0	62

Note: +: positive feeling; -: negative feeling.

The situations experienced by the students of the different academic periods, the results (success or failure) of their actions, as well as the feelings (positive or negative) generated, are described in Table 1.

Senior students (100%) reported success in the development of the activities. The following is an example of a successful situation:

[...] I was conducting the physical examination [...], when the intensive care patient began to desaturate [...] which evolved with dyspnea [...] I conducted a pulmonary auscultation, [...]; I told the resident in charge, who soon noticed the respiratory discomfort [...]. I felt safe and prepared for the occurrence. I believe that I have acted with wisdom in the face of adversity [...]. (Report 5)

Among sophomores and juniors students, 81.3% reported success in the activity. One of the reports exemplifies a situation in which the student, despite not feeling ready for the task, was able to identify the challenge as an incentive to keep studying:

[...] I believe that these feelings [insecurity] helped me to keep studying to try to improve [...] these abilities. (Report 47)

Regarding feelings, 51 (82.3%) reports presented positive feelings and 11 (17.7%) were negative feelings (Table 1). Senior

students had a higher frequency (86.9%) of positive feelings than sophomore and junior (68.7%), considering the CIs of each group. Negative aspects were more often reported by sophomore and junior level students when they were not successful in the activities developed, when they indicated limited familiarity with the situation or reported they needed assistance to accomplish the activity.

DISCUSSION

There was a lower participation of sophomore and junior students (25.8%). This fact can be justified by the dynamics of academic activities carried out in different places and institutions, which may have made it difficult to confirm the invitation to participate in the research.

The results showed that 90.3% of the participants were female. Several authors have already described Nursing as a predominantly female profession⁽¹⁷⁻¹⁹⁾.

The mean age of 23.2 years is in accordance with data from the Brazilian Institute of Geography and Statistics (IBGE)⁽²⁰⁾, which indicate that 58.5% of students attending Higher Education in 2014 were between 18 and 24 years old.

Regarding the situation element of the CIs reported, there was a predominance of physical examination (72.6%) conducted in patients hospitalized in clinical, psychiatric, surgical or oncological units. The students' reports indicate the applicability of the content taught in the studied discipline in the different practical learning environments that are necessary for their formation, as the literature highlights.

The students need to be prepared to deal with the different situations they will have to face. They also must acquire mastery of specific knowledge in order to provide nursing care⁽⁶⁾. The knowledge acquired by the student during the nursing course represents new situations, opportunities, paths and goals, making the student in charge of his own learning⁽²⁰⁾.

Authors emphasize that the students are active and dynamic subjects in the learning process⁽²¹⁾, and they should be able to recognize the importance of knowing how to do and why to do the physical examination in order to understand its relevance in the professional context. Only with this they can carry out activities with autonomy, accuracy, quality and respectability. This situation is exemplified in report 47. However, it is necessary to consider that unsuccessful experiences (such as that reported in report 41) may affect future occurrences⁽²²⁾.

It is part of the professor's, the team's and the senior students' expectations that they can carry out the activities successfully. The opportunity to develop the activities successfully and without help from the professor/team aroused positive feelings in both groups of students. All the senior students were able to successfully complete the activities (Table 1). However, 18.7% of the sophomore and junior students were not successful in the reported situation, while for others success was only obtained with the help of the professor or the nurse.

The skills acquired with the help of the professor, as a facilitator of learning, are noteworthy⁽²³⁾. This idea reinforces the need for professor to intervene in order to minimize problems and, consequently, improve the students' performance and clarify the association between theory and practice⁽²⁴⁾. Teachers have a fundamental role as facilitators of the teaching-learning process, since they commit themselves to pedagogical practices and assist the students in the construction of knowledge⁽²¹⁾.

In addition, the reports portrayed the daily relationships and the exchanges of information during the activity. On the other hand, the reports also showed that students searched for validation of the data collected or even help to collect it.

According to data from this investigation, students mentioned situations in which they expected approval from the team that accompanied them during the internship. It should be noted that the consequences of the activity, in this case the encouragement given by significant people, will also affect future occurrences.

According to Ito and Takahashi⁽²⁵⁾, nurses have a fundamental role in the learning process of the student who carries out the curricular internship in their unit of work, since they are seen by the students as a reference and are also the mediators between the student and the service and the student and the health team. Therefore, the health care professional must be prepared to pass on his experience to the student, who assimilates both the theoretical knowledge acquired in the classroom and the knowledge coming from the practice experienced.

Even though it is an activity expected by Nursing students, the internship is accompanied by an emotional load⁽⁸⁾, in the face of the unknown. It is a space for reflection on theory and practice and also for consolidating knowledge⁽²⁶⁾.

Faced with the need to perform practical activities for the first time, the students may believe they are not capable, may fear that the patient does not accept them or may even worry about exposing the patient to some risk. Therefore, this situation is a generator of anxiety and stress. This fact has already been highlighted by other authors^(3-6,27).

In 82.3% of the reports, positive feelings were evidenced. These feelings were more predominant among senior students (86.9%) than sophomore and junior students (68.7%) (Table 1). Sophomore and junior students, due to a lack of sufficient experience for the development of the activity, end up having negative feelings when faced with new situations.

The literature indicates that the most present feelings among nursing students in their first contacts with the patient in a practical field are: anxiety, fear, insecurity and uneasiness⁽²⁷⁾. These feelings are considered negative and corroborate those observed in the present study. However, a study already mentioned indicates that, in general, there is a predominance of positive feelings in the initial contacts of students with patients under their care⁽³⁾.

Dias, Almeida and Maia⁽²⁸⁾ tried to identify the feelings in practical experiences and concluded that the students feel they are being evaluated, that not everyone realizes the importance of the internship, and that the mere presence of the professor, even with no evaluation, causes discomfort. This was identified in one report (Chart 1). These aspects reinforce the need for discussions on the subject, in order to contribute to the

construction of skills, competences and attitudes for professor and students⁽²⁸⁾.

It should be noted, however, that learning is the process through which behavior changes as a result of experience. It is not restricted to the assimilation of content, skills or techniques, but is also related to feelings^(24,28-29).

In general, the students consider a situation as positive when they can evolve personally and professionally and can develop critical reflection and the ability to seek new paths. When they reach their pre-established goal, they demonstrate the positive influences in their life, learn to plan their activities, become more confident and gain autonomy in their own learning, which makes them believe that they will carry this learning throughout their life⁽³⁰⁾.

Study limitations

The limitations of the study are related to the characteristics of the CIT, which reports to facts recovered by the use of memory and by the individual's perception.

Contributions to the area of nursing and health

The findings of this study contribute to the reflection on the teaching-learning process, through the knowledge of situations considered critical by the students. It can also contribute to review the selected teaching situations, the demands and the results obtained in the curricular disciplines of the Nursing course.

CONCLUSION

This study allowed the identification of critical incidents (situations, behaviors and feelings) during practical activities, involving knowledge and skills related to the discipline of Semiology and Semiotics.

The largest number of reports was obtained from senior students, and the situation most reported was physical examination. There was a predominance of positive feelings reported by both groups of students. However, aspects that may be considered as anxiogenic were identified in the practical activities.

Regarding the behaviors described, there was a predominance of familiarity with the situation, evidencing mastery of the necessary skills learned in the discipline of Semiology and Semiotics.

It is important to highlight that mastery of skills and recognition by the professor, patient or family during the activities developed by the student result in expressions of confidence and positive feelings regarding the situations experienced. These findings reinforce the reflection about the need for joint work between those responsible for the disciplines in the curriculum, which can enhance the positive aspects and reduce the negatives in situations similar to those discussed and thus benefit the learner and the patients under his care.

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