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RESEARCH OF RADIOLOGICAL NURSING PRAXIS: APPLICATION OF THE PSYCHODYNAMIC OF WORK METHODOLOGY¹

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ABSTRACT

Objective: to report the use of the Psychodynamics of Work Method, highlighting the varioud stages, from the demand to the interpretation of the data, from two different researches performed with nursing staff from hemodynamics and nuclear medicine services.

Method: a theoretical-methodological reflection through reporting experiences regarding the use of Psychodynamics of Work in doctoral researches applied to nursing workers in two different services which use radiological technologies. Although both studies have used Psychodynamics as a theoretical-methodological reference, it is possible to highlight differences between them, mainly regarding data collection and analysis.

Results: an association of the practice in research and the application of Psychodynamics of Work, in particular regarding demand, material collection, the validation process and data analysis, is carried out throughout the discussion. A table summary table of the method applied in the two surveys is presented at the end of the reflection, which shows the principles and the methodological tools.

Conclusion: the report of the experiments shows that when Psychodynamics of Work is used as a methodological theoretical reference, knowledge and familiarity regarding the method is paramount. Undoubtedly, the adaptation of the Psychodynamics of Work methodology and its theoretical contribution, allows for interesting discussions as well as reflections on the part of the workers, mainly regarding the need for changes in praxis.

DESCRIPTORS: Qualitative research. Worker. Nursing research. Radiological technology. Occupational health services.

INVESTIGAÇÃO DA PRÁXIS EM ENFERMAGEM RADIOLÓGICA: APLICAÇÃO DA METODOLOGIA DA PSICODINÂMICA DO TRABALHO

RESUMO

Objetivo: relatar a utilização do Método da Psicodinâmica do Trabalho, destacando os caminhos percorridos desde a demanda até a interpretação dos dados, de duas pesquisas distintas realizadas com trabalhadores de enfermagem em hemodinâmica e medicina nuclear.

Método: trata-se de uma reflexão teórico-metodológica por meio do relato de experiência sobre a utilização da Psicodinâmica do Trabalho em pesquisas de doutorado aplicadas com trabalhadores de enfermagem em dois diferentes serviços, que utilizam as tecnologias radiológicas. Embora ambas as pesquisas tenham utilizado a Psicodinâmica como referencial teórico-metodológico, é possível destacar diferenças entre elas, principalmente quanto a coleta e análise dos dados.

Resultados: realiza-se durante toda a discussão uma associação da prática em pesquisas e a aplicação da Psicodinâmica do Trabalho, especialmente quanto à demanda, coleta do material, processo de validação e análise dos dados. Ao fim da reflexão apresenta-se um quadro-síntese do método aplicado nas duas pesquisas, evidenciando os princípios e os dispositivos metodológicos aplicados.

Conclusão: o relato das experiências aqui descritas evidenciam que ao utilizar a Psicodinâmica do Trabalho como referencial teórico metodológico é primordial o conhecimento e a familiaridade com o método. Sem dúvida, a adaptação da metodologia da Psicodinâmica do Trabalho e seu aporte teórico, possibilita interessantes discussões bem como reflexões por parte dos trabalhadores, principalmente quanto às necessidade de mudanças na práxis.

DESCRIPTORES: Pesquisa qualitativa. Trabalhador. Pesquisa em enfermagem. Tecnologia radiológica. Serviços de saúde do trabalhador.

INVESTIGACIÓN DE LA PRÁXIS EN ENFERMERÍA RADIOLÓGICA: APLICACIÓN DE LA METODOLOGÍA DE LA PSICODINÁMICA DEL TRABAJO¹

RESUMEN

Objetivo: relatar la utilización del Método de la Psicodinámica del Trabajo, destacando los caminos recorridos desde la demanda hasta la interpretación de los datos, de dos investigaciones distintas realizadas con trabajadores de enfermería en hemodinámica y medicina nuclear.

Método: se trata de una reflexión teórico-metodológica por medio del relato de experiencia sobre la utilización de la Psicodinámica del Trabajo en investigaciones de doctorado aplicadas con trabajadores de enfermería en dos diferentes servicios, que utilizan las tecnologías radiológicas. Aunque ambas investigaciones han utilizado la Psicodinámica como referencial teórico-metodológico, es posible destacar diferencias entre ellas, principalmente en cuanto a la recolección y análisis de los datos.

Resultados: se realiza durante toda la discusión una asociación de la práctica en investigaciones y la aplicación de la Psicodinámica del Trabajo, especialmente en cuanto a la demanda, recolección del material, proceso de validación y análisis de los datos. Al final de la reflexión se presenta un cuadro-síntesis del método aplicado en las dos investigaciones, evidenciando los principios y los dispositivos metodológicos aplicados.

Conclusión: el relato de las experiencias aquí descritas evidencian que al utilizar la Psicodinámica del Trabajo como referencial teórico metodológico es primordial el conocimiento y la familiaridad con el método. Sin duda, la adaptación de la metodología de la Psicodinámica del Trabajo y su aporte teórico, posibilita interesantes discusiones así como reflexiones por parte de los trabajadores, principalmente en cuanto a las necesidades de cambios en la praxis.

DESCRIPTORES: Investigación cualitativa. Trabajador. Investigación en enfermería. Tecnología radiológica. Servicios de salud del trabajador.

INTRODUCTION

This article reports the use of the Psychodynamics of Work Method, highlighting two doctoral theses that investigated praxis in radiological nursing. Psychodynamics of Work was utilized which was adapted, highlighting the stages from the demand to the data interpretation and analysis. It should be emphasized that the studies investigated the strain on workers who work in radiological nursing and were developed in different specialties: hemodynamic service (research A) and nuclear medicine (research B), which results in characterizing various types of work, especially those with exposure to ionizing radiation.

The need to discuss and share two different examples of the use of the theoretical and methodological framework of the Psychodynamics of work was discussed in this paper, as this theory was initially developed for practice in work clinics and not for academic/scientific research. Although it has well defined methodological steps, it does not represent a directly applicable method for the use in scientific research, however, it can be aggregated to different perspectives, with compatible epistemic bases.

New technologies, the demands of the world of work, the demand for high productivity coupled with the great demand for labor, have imposed new ways of relating to work. This reality is no different in nursing work in services that use radiological technology. In addition to all these requirements, the worker works with ionizing radiation, which can negatively affect the worker's health.

Both presented studies propose an adaptation to the Psychodynamics of work Method recognizing the centrality that the work has in the diverse social spaces. There are still few studies related to the health of the nursing worker in these services and it is understood that the discussion about the applicability of Psychodynamics of Work as a theoretical methodological reference in these areas can be seen as an important tool which can be used to understand work organization in these speciality services.¹⁻²

Psychodynamics of Work was originally developed to be applied by researchers and workers.³ Based on the principles of action research and privileging the qualitative aspects, it allows to intervene in work situations and also to understand the psychological processes as it deals with the relationship between work and mental health.³

The action "has no immediate visibility, it always preserves an abstract side,"^{3:35} hence the need to mediate it with verbal comments from the workers. The method favors the worker's discourses, particularly the collective,⁴⁻⁵ as only then is it possible to detect the visible and invisible aspects of the work as each context presents itself differently.⁶

The Psychodynamics of work methodology is developed in different stages, they include: demand and pre-research, research itself, research material, interpretation method, validation and refutation. The following describes the steps that were taken in the two research examples.

METHOD AND ITS APPLICATION

The demand

Demand is the first step of this method and must follow certain criteria which is established by Dejours.⁴ These criteria include: who demanded the research? What does it demand? And, to whom is this demand directed? These criteria were followed with some adaptations and are answered in the following description.

The demand consists of a spontaneous request or is even provoked by the workers, and may come from a group of non-institutionalized workers or from a union group, among others. "Demand is the workers' prerogative and is only acceptable if the research is directed at a certain situation".^{3,111} In fact, it conditions the feasibility of the research, requiring a specific explicit work. In order for a demand to be accepted and performed, it is necessary to gather conditions that culminate in the formation of an *ad hoc* collective, that is to say, a group of workers that will participate in the research.⁴ The *ad hoc* collective is the central category in the Psychodynamics of work as it represents the work and produces together, in other words, a collective immersed in the same daily work. This collective must be homogeneous in relation to the professional category or the situations faced in the work and also be a heterogeneous collective regarding the work organization.

According to the criteria of those who demanded it, the researches were based on a spontaneous process with workers in the hemodynamics and nuclear medicine services, different organizations, but with the same professional category. In research A, the demand came from a nursing meeting in the hemodynamics department, in which the following questions were presented: who should remain in the exam room assisting the hemodynamicist physician? How is the dosimeter used? At what kind of risk are workers exposed to while working with ionizing radiation? How should occupational control of workers be performed?

The demand for research B arose from the experience and previous experiences of researchers in the nuclear medicine service itself. Unsafe practice was observed, and many workers had doubts regarding ionizing radiation exposure, doubts that are very similar to the demand identified in research A.

The pre research began after the demands were gathered, which consists of preparing the data regarding the demand itself for the actual research.

This preparation requires that the researcher clearly defines the research participants, i.e., to whom this demand is directed to. For this to occur it is important to gather information about the work process and its transformations, accessing technical, scientific and legal documents connected to the investigated subject as well as visiting the research site.^{3,5} These questions are important because "the research is based on a collective constituted *ad hoc*, and not on isolated individuals."^{4:142}

In order to gather this information, a survey was used in research A, with the participants of a nursing meeting on hemodynamics in the Southern region of Brazil, through a structured questionnaire. The poll covered: training of participants, time spent working in activities involving exposure to ionizing radiation, number of jobs performed in these activities, weekly workload practiced in activities with ionizing radiations and, finally, health problems.

A pre-research in research B was performed in two nuclear medicine services through the observation of the work itself and the work environment, as well as the application of a semi-structured questionnaire which was used to discover what the work of nursing professionals in nuclear medicine services included, with the option to reiterate or refute the information obtained in the observation. The observation and the questionnaire aimed to understand the relation of the worker to the organization and work process, as well as the perception of the strain and workloads to which they were exposed.

Based on the data obtained from these surveys, the sites and the research participants were selected. The participants are called *ad hoc* workers.

In both polls, the number of workers per service that participated in the pre-search, the time that the participants were already working in the services surveyed, and the health problems were also considered for the choice of location and the *ad hoc* worker collective related to work in radiological nursing.

Based on the data obtained and on the criteria established by Dejours,⁴ the research question was concerned about the health, radiation protection and strain on nursing staff while working in these services.

In the studies, the *ad hoc* worker group was composed of: nursing workers from a hemodynamic service (research A) and nursing workers from two nuclear medicine services, one public service and one private service (research B), all of them were located in Florianópolis, Santa Catarina, Brazil.

After the definition of the research site and the *ad hoc* worker collective, the data collection was started in order to obtain the research material. The material was extracted by means of data collection techniques, i.e., observations and collective interviews. Besides these techniques, research material, data collected through documentary analysis and application of questionnaires were utilized.

Observation has specificities in this methodology, as before its results integrate the research material, they are confronted with the literature, that is to say, it is not limited to the description of the observed facts, also restoring the workers with their comments about their manifestations.³⁻⁵

The facts observed "are subjective, more precisely intersubjective".^{3:35} Therefore, it is important to put into writing what was detected during the course of the research, because "workers are contradictory, have changing interests, unpredictable feelings, are distressed, have desires, fears."^{3:35} One must also consider that "apprehending and understanding work relations requires more than mere observation and, above all, it demands that the listener directs its attention to those who do the work."^{3:35}

The principal of Psychodynamics of work is to understand the position of the subject in the relation and the work space, and it is necessary to predict comings and goings in the interactions between researcher and worker, evidencing the dialectic process.

Research material collection

The research in the hemodynamic service - research material collection

Adapting to what Dejours⁵ proposes in this research, the observation went through stages, beginning with the recognition of the research scenario. For such recognition, four meetings were organized, occurring on weekly basis, aiming to familiarize the scenario and the procedures performed there. These meetings were used to focus on the objectives, clarify the research, with special attention given to the method and the importance of worker collaboration, and also to present the Term of Free and Informed Consent, which was signed on that occasion.

The data were collected in 36 meetings with the *ad hoc* worker collective, in the period between March and November in 2009, with approximately 54 hours of observations, initially performed twice

a week, for two months. After, observations were made once a week, for another two months; and, finally, once every fortnight for four months.

This frequency was adopted as it was felt there was a need to appropriate knowledge of this area in order to respond to the questions that arose at each meeting and to describe the facts which were observed with greater ownership and also because it is recommended that the report is drafted immediately after the end of each meeting while the observation is still fresh in the researchers' memory.^{3-4,6} The complete record, reporting the workers' comments, preserves the workers' way of thinking or imagining the content of their work.

The meetings took place in the morning and afternoon, lasting between one to two hours. This time varied according to the type of examination and the conditions of the patients. At each meeting, concrete situations were discussed regarding that work process, which lead to the workers correcting the researchers' observations, adding to the descriptions about certain activities and the reason for non-compliance with certain prescribed norms, among other contributions. This corroborates the authors' assertion that "comments are advanced during discussions, when they are rejected, or reused and reworked."^{3:117} A notepad and voice recorder were used to collect these data. The observations were initially conducted in order to meet the demand, as well as any other demands that arose during the work process. Subsequently, with the workers' trust, they began to inquire about the reason for certain attitudes, such as: incorrect use of dosimeters and non-use by some workers, not wearing protective lead clothing; in summary, corrections were made, and the workers accepted these interventions well.

The data were typed and the recordings were transcribed on a weekly basis, which generated summaries which were later interpreted by the researchers, which were validated by the *ad hoc* worker collective at the observation site and at the collective interviews. As for collective interviews, it should be noted that this methodology does not rely on a questionnaire or individual interviews. It initially uses research with the *ad hoc* worker collective. The group discussion contributes to the collective elaboration of topics related to work organization and strain related to working conditions.^{3,5} Thus, it is important to emphasize that spoken word is a privileged means to work with this methodology, as it is through language that the worker can express "how he

experiences the work, how he suffers at work, how he performs at work and how he relates at work".

At the collective interview, also called a group interview, the statements of a worker is confronted with the collective workers participating in the survey.⁷ To obtain important data in an interview, "active listening, in which the researcher allows the worker freedom to speak and then to attribute meanings" is important.^{7:189}

Thus, the process of reflection was guided by the statements of the workers, which were developed as they highlighted certain situations that were experienced in their daily work. It should be remembered that this reflection included the summaries that had already been validated in the observations. These were generally added and resulted in new interpretations. In the discussion process there were disagreements between the *ad hoc* collective, allowing group reflection, and corroborating that it does not matter "who is the spokesperson, what matters is the consensual themes, or at least, the subject of contradictory discussion between the group members."^{3:108} Another interesting point is the fact that "comment is not always continuous, nor does it have a character of absolute permanence."^{4:149} Finally, "the discourse is the privileged mediator of this relationship and it is the discourse which makes Psychodynamics of work function"^{4:158}

The interviews took place in the actual workplace of the participants, where workers gathered for meals, with an average of four to five workers participating in each interview.

In relation to the documentary analysis added to the Method, the monthly reports of individual dosimetry of two years (2008 and 2009), frequency and the accomplishment of the occupational examinations, the radiometric evaluation of the examination room and documents related to the work organization were analyzed, such as work scales, established norms and routines, and reports on the demand for exams in 2008 and 2009. Institutional documents were also analyzed, such as a service contract for individual dosimetry, location of property and building plans, among others.

The research in the nuclear medicine service - research material collection

After the *ad hoc* worker collective was established, two revisits were carried out in each research area, this was to guarantee the workers commitment to participation, at which time some information

regarding the work process was collected and which allowed access to the services, and also allowed that the importance of the research and its demand could be explained to the managers and directors. This procedure was very important as it made it possible to "understand what the workers who participated in the survey say, and to have a representation of the environmental conditions available". The workers signed the Terms of Free and Informed Consent.

In order to understand the strain experienced by the nursing staff in nuclear medicine, it was necessary to adapt some methodological elements of Psychodynamics of work, as it was sought to favor the understanding of the relations between the worker, the work organization and its relation with the task performed.

Firstly, observation was used to try and understand the work process, the work relations and the experiences of each worker in both researched services (public and private). The observation occurred in a non-participant way, that is to say, the researcher did not interfere in the work routine and it was decided to observe complete work shifts, with ten observations in each service performed with an average duration of four hours, totaling an approximately 80 hours of observation time during the period from August to November 2015. The observation periods were varied and all shifts, morning and afternoon, were equally observed. This insertion of the researcher in the workplace and the opportunity to observe the work consisted of fundamental strategies, allowing to understand the position, the relations and all the elements of the singularity of the workers during the working day.

During the observation phase, records were kept and the annotations were later shown to the workers. This is an important step in Psychodynamics of Work, as what interests researchers is "to put in writing what was detected by researchers in the course of the research."^{4:152} At the end of each shift, the researcher performed a summary of the main points, identifying those that needed further clarification, paying attention to the reliable record of everything that had been observed. This is an annotated, subjective, live summary. It is not a simple summary or decoding of recorded material.^{4,8}

In the study with nuclear medicine nursing workers, contrary to what is proposed in Psychodynamics of work, the interviews did not happen completely collectively. Due to the fact that it was shift work and localized in two different places, it was decided to conduct individual interviews and,

later, to hold collective interviews. This adaptation to the method was necessary to understand the relation of the *ad hoc* worker collective, with their work and with the work collective while considering the differences in each service.

The interviews were performed in the working environment, usually at lunch time and/or at work intervals, and were recorded and later transcribed. Workers were questioned about the duality between enjoyment and suffering, organization and working conditions, and also about practices performed differently than what is asked.

It must be highlighted that during the interviews it was possible to perform validation and refutation of the aspects noted during the observation. The researchers made notes and records of some perspectives and inferences during the interviews, which were later defined in the collective interviews.

Considering that the objective of the research is to identify the relationship between the collective and the work,⁴ the collective interviews occurred after previous analysis of the information from the individual interviews, and was performed with the *ad hoc* worker collective of each service at shift change. A meeting was held in the form of a talk wheel, in which the workers debated different themes, agreed or disagreed, and were free to express their point of view. A space for reflection, exchange of experiences, discussion, divergences and discoveries about the work of nursing in nuclear medicine was formed, arriving at what is called "workers thinking about their own situation."^{4:149} The collective interviews were also transcribed in full and gave rise to the research material which was transferred and organized using the QualiQuantiSoft® software for further analysis.

The validation process in Psychodynamics of Work

Validation in Psychodynamics of work is as important as research itself, because it is inherent to all stages of research and is characterized by an intrinsic process in observation and interviews. The purpose of validation is to ensure the distance between the researcher's experience and the workers' discourse,³⁻⁵ i.e. the discourses must be listened to and interpreted.

Validation usually takes place in two steps. As already mentioned, validation occurs concurrently by listening and observing the workers, the interpretations and hypotheses are performed dur-

ing the research itself, which generate new analysis material, which must be discussed again with the workers.^{4,6,8}

The second stage of validation is not treated as an obligation to the method, but is usually recommended, as it is a devolution to the workers, through a synthesis of the results, interpretations and outcomes with emphasis on the demand that the search was based on. It is highlighted that in Psychodynamics of Work there is the possibility of this stage "being submitted to discussion with other workers who did not directly participate in the research",^{3:126} allowing the validation process to occur by including workers who did not compose the *ad hoc* worker collective, but who are part of the functional framework of the studied services.

In both surveys, the validation steps were operationalized. The first stage of validation took place during the observations and interviews at the research site with the *ad hoc* worker collective. The data were validated at the same time and were interpreted and compared with the literature. Thus, new information was generated that were revalidated in the following meetings.

In the research with the workers from the hemodynamics service, the second stage occurred with the inclusion of other workers who did not participate in the research, but who were part of the functional work of the service researched. In the research with the workers from the nuclear medicine service, the validation happened with the *ad hoc* worker collective of the two services (public and private), who met for the first time. The workers were invited to an extended meeting, aiming to validate the interpretation of the results, which occurred outside the formal workplace. This place is called a space outside the research site.³⁻⁴

During the validation process, the reports were discussed and modified, based on the comments and suggestions of the *ad hoc* workers.

Data analysis: the experience with Content Analysis and Collective Subject Discourse

Psychodynamics of Work was developed to be applied to clinical work practices. Therefore, data analysis is one of the main challenges in academic studies. This technique, based on the discourse of the workers and, especially, on the collective discourse of the *ad hoc* workers, generates a substantial amount of analysis material, with the majority consisting of extensive statements. In view of this

complexity, many questions were asked regarding the most appropriate method of data analysis. In order to choose the best method of data analysis, the researchers considered the applied collection methods, as well as the objective of each research, based on the theoretical-methodological reference of Psychodynamics of work. Content Analysis was used in research A, and Collective Subject Discourse in research B (CSD).

In research A, the validated material was classified into analysis categories and subcategories according to the similarity of the contents, using the data extracted from the reports, which are the categories related to the thesis and the objectives, that is to say, work organization strain on the workers; as well as what emerged from the study, i.e., the training and permanent education for the nursing praxis in hemodynamics services. Situations experienced by both the researcher and *ad hoc* workers were described in these categories and subcategories as well as the steps already described in the research, including pre-research data.

In view of these categorizations, the data interpretation commenced, as according to the reference "interpretation material is commented observation".^{4:154} Thus, the authors^{3-5,8} draw attention to the subjectivity of research in Psychodynamics of Work and propose the interpretation of the data together with the worker and researcher collective.

Considering that this is an academic work, data interpretation occurred in a more isolated way and not in conjunction with researchers, another reason justifying the adaptation of the methodology for each study. This analysis took into account the experience of the researchers who interpreted the research material in light of the theoretical *corpus* proposed in this study, driven by the subjective experiences of the workers.

Finally, it should be highlighted that all categories and subcategories had a direct relation with the observation of the work process, with the analyzed data and with the statements of the workers, as well as the opinions of the *ad hoc* worker collective and of the institution participating in the entire investigative process in all stages of the research.

CSD was used in research B, which is a data analysis technique which searches to process different testimonies, with similar meanings, regarding a specific theme, joining them together in discourses written in the first person singular.⁹ This technique seeks to highlight the discourse, a characteristic of collective thought, in all steps of

research, from question planning, data collection and data analysis.⁹ This attribute draws attention as it is in harmony with the precepts of Psychodynamics of Work which is not concerned with who is the speaker, but with the consensual themes of the collective or *ad hoc* workers.³

For the construction of CSD,¹⁰ the creators of the method formulated four methodological figures that must be applied during the elaboration of the discourses, these include: key expressions, central idea, anchorage (not obligatory) and CSD itself.

In CSD, the "discourses of the testimonies do not cancel out or reduce themselves to a common unifying category, because what one seeks to do is to rebuild".^{10:19} That is to say, based on individual discourses, a reconstruction of a synthesis discourse which contemplates the collective representation of a certain phenomenon.

The methodological figures were carefully systematized, with the exception of anchoring, as it was understood that the correlation between the key expressions and the central idea, together with non-participant observation, satisfactorily contributed to the description of the meaning of the analyzed discourses.

The number of times a given topic is mentioned is not relevant to DSC, but rather the importance that the discourse has for the worker, who in the end will compose the collective discourse that represents the discourse of the *ad hoc* workers.

It should be observed, that the central idea describes the main meaning of each discourse and therefore, individualizes the set of discourses that have the same meaning, thus representing the collective. In turn, the key expressions contribute to qualify the central meaning of a discourse, its relation being indisputable to the central idea. The key expressions and central idea are indispensable for making sense of the statements, with the central idea being identifying function and the key expressions being the function of incorporating the meaning.⁹

The two researches were submitted to the Committee on Ethics in Research with Human Beings, as the method requires "specific ethical conditions, like every action, due mainly to the confrontation of opinions"^{3:81} and the subjectivity of workers, which is characteristic of scientific research.

For a better understanding of the application of the Psychodynamics of Work Method, Table 1 summarizes the principles adopted (P) and the methodological tools applied in the two surveys.

Table 1 - Synthesis of the Psychodynamics of Work Method applied to the two researches

Adopted principals (P)	Methodological tools applied
P1: Demand is the worker's prerogative	Research A and B: was a spontaneous process with the workers from the hemodynamics and nuclear medicine services.
P2: The demand needs to be known in its situation and pre-research conditions.	<u>Demand and Pre-study</u> Research A: survey with nursing workers from hemodynamic services. Research B: observation and questionnaires applied to nursing workers in two nuclear medicine services
P3: listening to the person who is doing the work is dynamic.	<u>Definition of <i>ad hoc</i> workers</u> Research A: nursing workers from a hemodynamics service. Research B: nursing workers from two nuclear medicine services. Study A and B: Returning the pre-research data to the subjects. Linking the comings and goings, the interactions between researcher and worker, the dialectic becoming evident between both.
P4: Intersubjective facts	The daily obtained comment was the raw material of this appropriation of the workers' subjectivity, and therefore shows the importance of partially validating the data at each meeting.
P5: to understand the position of the subject in the relation and in the work space.	This understanding was respected, observing the type of exposure to ionizing radiation in the evaluated workplaces.
P6: the word is the privileged mediator of the researcher's relationship with the workers.	<u>Collection of research material</u> Research A: 36 meetings - observation, collective interview and document analysis. Research B: 10 observations in each service, individual interviews and collective interview.
P7: The relationship between the collective and the work is the research target.	<u>Procedural and participatory analysis and validation</u> Research A: with the nursing workers who participated in the research and invited from other services. Research B: with the nursing workers of the two nuclear medicine services that participated in the research, through a meeting which included all the research participants. The findings were revealed in parts, whose totality was only discovered through the extended validation in the two studies.

Analytical categories emerged from the analysis of the data, which responded to the research objectives from the collected material and the validation process. Although the categories were different, they highlighted that when the strain resulting from exposure to ionizing radiation manifests, workers do not associate it with the physical workload. They use defense strategies, such as denial and relate strain to genetic predisposition, to being women and even to chance. They also indicated that radiological technologies are considered work instruments which are external to nursing, which may be related to the invisibility of ionizing radiation in the researched environments. It was also shown that radiological nursing is a unique area of nursing which requires knowledge, skills and attitudes inherent to nursing education and specific physics and radiological protection.

CONCLUSION

Research using the Psychodynamics of Work methodology begins with a demand, which occurred in the investigation processes referred here.

Thus, the acceptance of the pre-research demand was essential for linking the other steps which were established in this methodology: the research itself, the research material, interpretation and validation, as well as the extended validation, which was configured as one of the main moments of apprehension of the study object, in which the relations inside the work and outside of it, the contradictory opinions, among other revelations, were clearly evident.

The research materials extracted from the techniques used to collect data were modified at each meeting, because in addition to being partially validated, these data consisted of joining each comment and each absence of comment to what is inscribed as contradictory in relation to the study object. Therefore, the findings were revealed in parts, and only fully discovered in the extended validation.

By proposing the adaptation of this method, it was identified that although it was developed to investigate mental suffering, it had a direct relation with the proposed studies. Thus, although the adaptation of this methodology was not simple, because the available framework deals with the mental

workloads, it was possible to give visibility to the various workloads present in the daily work routine.

It must be emphasized that the theoretical and methodological foundations adapted to achieve the objectives are consistent with the epistemological foundations of the main intervention disciplines related to health and worker safety, and also because the central issue is the same: health and radiation worker protection.

In spite of recognizing the limitations of the studies, such as the subjectivity expressed by the workers, it is believed that it is relevant, as it allows a better understanding of nursing work in services that use radiological technologies as working instruments. Undoubtedly, the adaptation of the Psychodynamics of Work methodology with its theoretical contributions, contributed to a lot of discussions and allowed the collective workers to reflect, and therefore change attitudes regarding their health, safety and protection for nursing workers. .

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