

Instrument development to measure nursing work intensification

Elaboração do instrumento para mensurar a intensificação do trabalho da enfermagem

Elaboración de un instrumento para medir la intensificación del trabajo de enfermería

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Abstract

Objective: To describe the process of developing and validating instrument content to measure nursing work intensification.

Methods: This is a methodological study carried out in five of the eight steps proposed by DeVellis. I - Determine clearly what it is you want to measure; II - Generate an item pool; III - Determine the format of the measurement; IV - Have initial item pool reviewed by experts; V - Consider inclusion of validation items. Data production took place in the second half of 2021. Participants were 18 nursing workers in the exploratory step (elaboration of items), 12 PhD holders who made up the committee of judges/experts and 43 nursing workers in the pre-testing step. Data processing occurred mainly by calculating the Content Validity Index.

Results: The instrument is organized into 60 items, arranged in seven domains: Interface with work; Pace and demands of work; Conditions for work; Interprofessional relationships; Institutional aspects; Repercussions of work on worker health; Patients' clinical conditions. The Content Validity Index ranged from 0.44 to 1.00, with items with a value lower than 0.80 being excluded. In pre-testing with the target population, this measure varied from 0.90 to 1.00. The instrument in its complete formation presented an overall assessment of 0.95.

Conclusion: The instrument was considered valid by the committee of judges/experts and by the target population, constituting an innovative tool to be used to measure nursing work intensification.

Resumo

Objetivo: Descrever o processo de elaboração e validação de conteúdo do instrumento para mensurar a intensificação do trabalho da enfermagem.

Métodos: Estudo metodológico realizado em cinco das oito etapas propostas por DeVellis. I - Determinar claramente o que se deseja medir; II - Gerar um *pool* de itens; III - Determinar o formato da medida; IV - Ter o conjunto de itens revisados por especialistas; V - Considerar a inclusão de itens de validação. A produção dos dados ocorreu no segundo semestre de 2021. Os participantes foram 18 trabalhadores de enfermagem na etapa exploratória (elaboração dos itens), 12 doutores que compuseram o comitê de juizes/especialistas e 43 trabalhadores de enfermagem na etapa do pré-teste. O processamento dos dados ocorreu principalmente pelo cálculo do Índice de Validade de Conteúdo.

Resultados: O instrumento está organizado em 60 itens, dispostos em sete domínios: Interface com o trabalho; Ritmo e exigências do trabalho; Condições para o trabalho; Relações interprofissionais; Aspectos institucionais; Repercussões do trabalho na saúde do trabalhador e; Condições clínicas do paciente. O índice de validade conteúdo variou de 0,44 a 1,00, sendo excluídos os itens com valor inferior a 0,80. No pré-teste

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com a população alvo, esta medida variou de 0,90 a 1,00. O instrumento em sua formação completa apresentou avaliação global de 0,95.

Conclusão: O instrumento foi considerado válido pelo comitê de juízes/especialistas e pela população alvo, constituindo-se em uma ferramenta inovadora a ser empregada para mensurar a intensificação do trabalho da enfermagem.

Resumen

Objetivo: Describir el proceso de elaboración y validación del contenido de un instrumento para medir la intensificación del trabajo de enfermería.

Métodos: Estudio metodológico realizado en cinco de las ocho etapas propuestas por DeVellis. I) Determinar claramente lo que se desea medir; II) Generar un *pool* de ítems; III) Determinar el formato de la medida; IV) Someter el conjunto de ítems a una revisión por parte de especialistas; V) Considerar la inclusión de ítems de validación. La producción de los datos se llevó a cabo en el segundo semestre de 2021. Los participantes fueron: 18 trabajadores de enfermería en la etapa exploratoria (elaboración de los ítems), 12 doctores que formaron el comité de jueces/especialistas y 43 trabajadores de enfermería en la etapa de prueba piloto. El procesamiento de los datos se realizó principalmente mediante el cálculo del Índice de Validez de Contenido.

Resultados: El instrumento está dividido en 60 ítems, organizados en siete dominios: Interfaz con el trabajo, Ritmo y exigencias del trabajo, Condiciones de trabajo, Relaciones interprofesionales, Aspectos institucionales, Repercusiones del trabajo en la salud del trabajador y Condiciones clínicas del paciente. El índice de validez de contenido varió de 0,44 a 1,00, y se eliminaron los ítems con valor inferior a 0,80. En la prueba piloto con el público destinatario, esta medida varió de 0,90 a 1,00. El instrumento total presentó una evaluación global de 0,95.

Conclusión: El instrumento se consideró válido por parte del comité de jueces/especialistas y del público destinatario, de forma que se constituyó como una herramienta innovadora que será empleada para medir la intensificación del trabajo de enfermería.

Introduction

The transformations in the world of work that occurred from the 1970s onwards constitute a work process intensification based on the neoliberal model. It is a construct with several facets, which occurs due to increased number of tasks and/or increased complexity of tasks performed by workers⁽¹⁾ and/or performance of several tasks simultaneously.⁽²⁾ It is noteworthy that these tasks, on a daily basis, are carried out with the same technological standard⁽³⁾ and without the financial return that is available to them.

From the point of view of contractual relations, the labor market, in recent decades, has increasingly demanded a qualified, versatile worker who can work on several front lines, according to employers' needs, which generates repercussions on workers' subjectivity.⁽⁴⁾ This intensification requires greater expenditure of physical, cognitive and emotional capabilities by workers,⁽⁵⁾ promoting a series of health problems, resulting in decreased job satisfaction, increased absenteeism and poor work-life balance. In the health area, it has a strong impact on the reduction in quality of care provided to patients/users.⁽⁶⁾

It is noteworthy that work is intensified, above all, in forms of employment and contractual relationships, which are characterized by informality, temporary contracts, intensification of pace of work, increased unemployment rate, competitive-

ness, turnover and multifunctionality in the work process.⁽⁷⁾ Work intensification is also linked to the way people access information on their mobile devices and have the ability to work anytime, anywhere. This reality of the modern world represents a health problem for individuals, as work becomes a source of stress in their lives.⁽⁸⁾

In different areas of activity, there are multi-purpose and multifunctional workers, pressured to achieve increasingly higher production targets and with fewer subsidies. These professionals often work in a context of insecurity, with increasing unemployment and/or underemployment, generating competitiveness among peers and constant needs for training and qualifications to remain in the job market.⁽⁹⁾

In the health area, work is also influenced by the process of productive restructuring, since, under the logic of neoliberalism, workers experience different contexts of labor exploitation. At the same time, new productivity standards are required among workers, intensifying work rhythms and lengthening the working day in favor of greater productivity.⁽⁶⁾

Nursing constitutes around 59% of the health-care workforce worldwide. In Brazil, it accounts for 70% of the health workforce, with the possibility of growth of 51% in the number of these professionals by 2030.⁽¹⁰⁾ With vertical management, the profession experiences overlapping working hours and/or duplication of employment relationships, social discredit of profession, precariousness and insufficient

material resources, unhealthy working conditions, tension and psychological pressure and inadequate remuneration.⁽¹¹⁾

In the nursing area, several factors are related to work intensification, highlighting acceleration the pace of work, precariousness of work, lack of human resources, staff sizing, increased workload and/or work overload, fragile conditions and labor relations and, extension and/or duplication of working hours.⁽⁶⁾

Thus, given the lack of a research instrument that can measure work intensification, this study aims to describe the process of instrument elaboration and content validity to measure nursing work intensification.

Methods

This is a methodological development study carried out in five steps (construction and content validity) proposed by DeVellis.⁽¹²⁾ Construct validity (steps VI, VII and VIII) will be the target of future study, aiming to ensure reliability and a better understanding of the phenomenon in other scenarios.

The first aims to determine clearly what it is you want to measure. This involves establishing the conceptual structure for the construct operational definition and its dimensionality. To this end, an integrative literature review was carried out,⁽⁶⁾ in order to identify the factors that contribute to nursing work intensification. A descriptive, exploratory study with a qualitative approach was also carried out,⁽¹³⁾ which aimed to understand the factors that intensify work from the perspective of nursing professionals working in medical and surgical clinical units.

After defining the conceptual structure, the instrument was constructed by creating a pool of items with the elements that are related to the construct studied. A total of 90 affirmative questions were prepared, using clear and objective language, avoiding inductive and/or redundant words. After critical analysis of the instrument, the material was refined, which now has 62 items distributed across seven domains.

The third step aims to determine the format for measurement. A Likert-type scale was chosen, whose scores represent the frequency with which a given event occurs: (1) never, (2) rarely, (3) sometimes, (4) frequently or (5) always. Step IV aims to have initial item pool reviewed by experts, which is aimed at achieving content validity. The committee of judges/experts was composed based on the following criteria: being a PhD holder/researcher and with scientific production in the areas of interest (nursing care, work process in health and nursing, construction studies and instrument validity). Judge selection occurred intentionally, based on inclusion criteria and by consulting the *Curriculum Lattes*. Thus, 12 PhD holders working in health and teaching institutions from different regions of the country made up the committee of judges/experts. This step took place from July to September 2021.

Judges were contacted via electronic address (e-mail), explaining the origin of the instrument developed as well as the relevance of validity. Upon judge's acceptance, a new email was sent with the Informed Consent Form (ICF) in two copies, together with expert characterization questionnaire and assessment form, accompanied by guidelines regarding its correct completion.

Instrument analysis allowed judges to assess items/domains by attributing their degree of agreement using a Likert scale with five levels of agreement: 0) completely disagree, (1) partially disagree, (2) neither agree nor disagree, (3) partially agree, (4) completely agree. Space was also made available for judges/experts to assess items/domains in relation to clarity of writing, relevance, objectivity, simplicity, feasibility and vocabulary in the form of comments.

As judges returned the instrument, they were double-entered into a database to calculate the Content Validity Index (CVI) for each domain/items. To calculate the CVI, the following formula was used: number of responses 3 or 4, divided by the total number of responses. Finally, the acceptable agreement index was standardized, being at least 0.80 and, preferably, greater than 0.90.⁽¹⁴⁾ The instrument was assessed by an expert committee in two rounds. The first contains all the instrument domains and items. The second round aimed to

assess a reduced version, containing only included items and those that required changes in wording.

The fifth step considered inclusion of validation items. After judges' assessment and CVI calculation, each item and possible domains were analyzed again by the researchers with the aim of detecting flaws, making adjustments (wording and position), exclusion (when considered not relevant) and new inclusions.

Furthermore, in order to guarantee instrument clarity for the target population, pre-testing was carried out, which was applied to a development sample with the target population. A total of 18 nurses and 25 nursing technicians working in medical and surgical clinical units of a university hospital in southern Brazil participated in this step. Professionals working as a nurse or nursing technician in the unit for at least three months were included. Workers who were away on leave of any nature during the data production period (November 2021 to January 2022) were excluded. The proportionality criterion between nurses and nursing technicians and between work shifts was respected.

This step took place in person, with data collection carried out by a staff of collectors previously trained for this purpose. At this step, participants were instructed to answer two questions for each item (120 answers). The first was related to the frequency with which a certain event happens. The

answer was presented using a Likert scale: (1) never, (2) rarely, (3) sometimes, (4) often, (5) always.

The second question was related to participants' understanding of the event presented in the first question, for instance: "Regarding item 1, did you have: (0) - excellent understanding, (1) - good understanding, (2) - little understanding, or (3) - no understanding". It should be noted that, for each item, participants could answer two other questions: one of them was related to the possibility of making suggestions or proposing new item possibilities and, in the following question, they could paraphrase the item according to their understanding.

The option to assess the CVI at this step consists of the fact that this indicator assesses item clarity and also representativeness/relevance. The mean time to complete the instrument (considering the 120 questions) was 20 minutes (Figure 1).

The study complied with Brazilian ethical standards under Opinion 4.104.436 and Certificate of Presentation for Ethical Consideration (*Certificado de Apresentação para Apreciação Ética*) 30816020.5.0000.5346.

Results

In the present study, we sought to focus on the validity process by judges/experts as a way of improving the instrument. All comments and suggestions

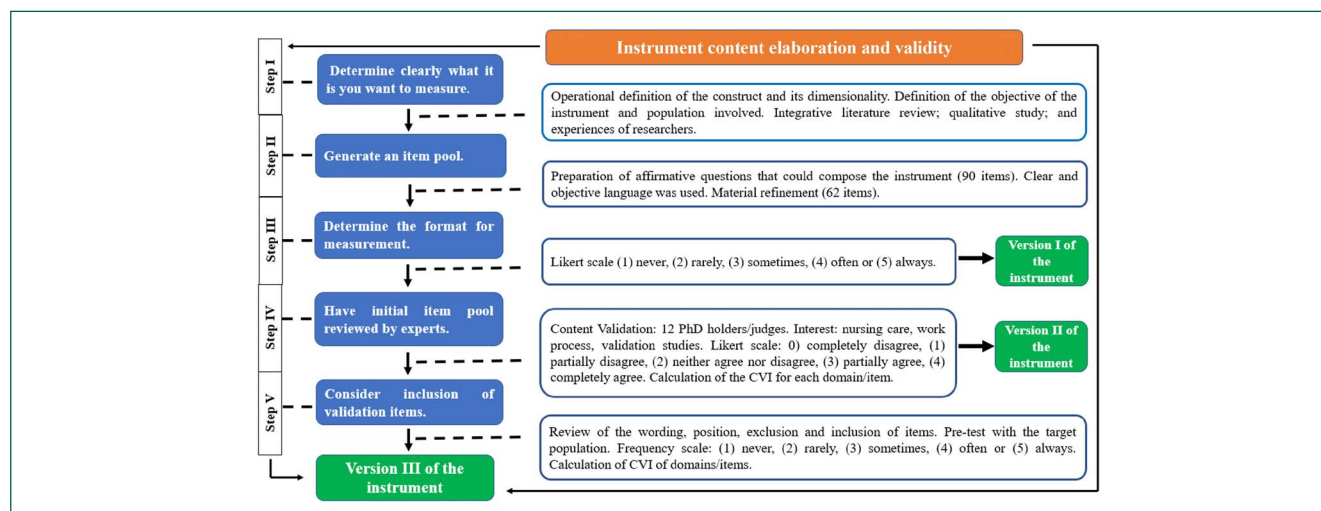


Figure 1. Steps of developing the instrument to measure work intensification

Chart 1. Analysis of items and domains that required modifications in wording

Version I	Judges' comments	CVI	Version II	CVI
Domain 1 - Relationship between worker and work.	Change the domain name to "Interface with work".	0.94	Interface with work.	1.00
I feel overwhelmed with my work activities.	No comments.	1.00	I feel overwhelmed with my work activities.	1.00
I feel valued and I believe that the work I do contributes to the quality of care provided in this sector.	I suggest breaking this item into two.	0.83	I feel valued in this unit/institution.	1.00
I feel safe while carrying out my tasks.	No comments.	0.91	I have confidence to carry out my activities.	1.00
I am satisfied with the work I do in this unit.	No comments.	0.91	I feel satisfied with the work I do in my unit.	1.00
I need to exert a lot of emotional burden to carry out my tasks.	My job requires....	0.91	My work requires a great emotional burden to carry out my activities.	1.00
Domain 2 - Work rhythm/routine/demands	Delete the bars. It is scattered and does not favor subsequent analysis.	0.94	Pace and demands of work.	1.00
Excessive work interferes with the quality of my actions.	No comments.	1.00	Excessive work interferes with the quality of my activities.	1.00
I need to reorganize/readjust my time to complete all work activities.	No comments.	0.91	I need to reorganize my time to complete all work activities.	1.00
My job requires me to work most of the time standing and/or walk a lot.	No comments.	1.00	My job requires me to stand most of the time and/or walk a lot.	1.00
I consider the number of workers to be adequate during my work shift.	No comments.	1.00	The number of workers is adequate during my work shift.	1.00
Item 30 - consumable materials (catheters, gauze, gloves...), makes it difficult to carry out my work.	I suggest not specifying the materials.	0.91	The quality of the materials makes it difficult to carry out my work.	1.00
There are interpersonal conflicts at my workplace.	I suggest including "among the workers" at the end of the sentence.	0.91	At my workplace, there are interpersonal conflicts between workers.	1.00
In this institution, issues that favor the quality of care are discussed.	Replace "quality of care" with "quality of work/care practice".	0.91	Issues that favor quality of work/care practice are discussed here.	1.00
Domain 6 - Repercussions of work on my health	No comments.	0.97	Repercussions of work on worker health.	1.00
Work makes me very stressed.	Delete the word "very".	1.00	Work makes me stressed.	1.00

from judges were accepted as well as items were reformulated in order to meet them in their entirety. After the content validity step was completed, of the 60 items assessed, 13 items and three domains had minor changes in wording, seven were excluded, six were included and three were allocated to other domains. Chart 1 presents the list of items that required reformulation according to the committee of experts.

Among the excluded items are: I feel sad when I cannot handle all the demands at work (CVI = 0.57); I feel irritated by the situations I experience at work (CVI = 0.47); During the shift, I need to interrupt some work activities to take care of others (CVI = 0.53); My work presents contradictory and/or discordant demands (CVI = 0.44); My work requires making complex decisions (CVI = 0.63); The quality of the equipment makes my work difficult (CVI = 0.71); and Inadequate infrastructure and furniture make my work difficult (CVI = 0.71). These items were excluded due to the low CVI value. The items included were: The work I do contributes to quality of care in this unit/institution (CVI = 0.83); At my work, there is an appropriate place for breaks and rest (CVI = 1.00); Inadequate maintenance of equipment makes my activities difficult (CVI = 0.83); Inadequate temperature in this sector

interferes with my work (CVI = 1.00); Inadequate lighting in this sector interferes with my work (CVI = 1.00); and Here issues that favor workers' quality of life are valued (ICV = 1.00).

Among the items that were reallocated to other domains are: I have the feeling that, during my work, "time flies" (CVI = 0.83); I need to resolve unforeseen events that happen during my work shift (CVI = 0.95); and I consider the environment in which I work to be healthy (CVI = 0.83). It is noteworthy that 19 items have reverse flow, due to item wording, so as not to induce the response, and due to the fact that the items contain expressions in positive and negative form.

The instrument is made up of seven domains, namely: Domain I - Interface with work (items 1 to 8 - general CVI 0.94) deals with how nursing workers perceive themselves at work and in work settings. Domain II - Pace and demands of work (items 9 to 23 - general CVI 0.94) describes the work process organization, time and place for breaks; norms and routines; scientific knowledge for clinical practice and carrying out repetitive activities simultaneously.

Domain III - Working conditions (items 24 to 32 - general CVI 0.97) addresses relationships in the workplace, focusing on interprofessional communication and collaboration. Domain IV -

Interprofessional relations (items 33 to 37 - general CVI 0.97) refers to the organizational aspects of work, worker participation in decision-making processes, professional qualification for workers' clinical practice and quality of life.

Domain V – Institutional aspects (items 38 to 47 - general CVI 0.97) is related to worker illness as a result of work practice. It encompasses issues such as stress, occurrence of workplace accidents and physical and psycho-emotional problems. Domain VI – Repercussions of work on my health (items 48 to 55 - general CVI 0.97) describes a set of elements that encompass relationships in the workplace, with a focus on interprofessional communication and collaboration. Domain VII – Patients' clinical conditions (items 56 to 60 - general CVI 0.97) deals with patients' clinical aspects (level of severity, use of technological resources, degree of dependence and patient turnover).

After restructuring the instrument (version III), it was applied to a sample of 43 nursing workers who work in the medical and surgical clinical units of a university hospital in southern Brazil, with the aim of verifying their understanding in regarding the instrument domain and item clarity. After reading the item, participants indicated their level of understanding about each item. Chart 2 presents the CVI of items based on assessment by expert judges.

Chart 2. Analysis of CVI of items based on assessment by expert judges

Domains	CVI
Domain I – Interface with work	1.00
1. I have difficulty solving problems that arise at work.	0.91
2. I feel overwhelmed with my work activities.	1.00
3. I feel valued in this unit/institution*.	1.00
4. The work I do contributes to quality of care in this unit/institution.	0.83
5. I feel powerless in the face of the activities to be carried out.	1.00
6. I have confidence to carry out my activities*.	1.00
7. I feel satisfied with the work I do in my unit*.	1.00
8. My work requires a great emotional burden to carry out my activities.	1.00
Domain II - Pace and demands of work	1.00
9. The pace of work in this sector is intense.	1.00
10. I have the feeling that, during my work, "time flies".	0.83
11. I have enough time to carry out my activities*.	1.00
12. There is enough time to take breaks and rest at work*.	1.00
13. At my work, there is an appropriate place to take breaks and rest*.	1.00
14. I need to extend my work shift to finish my activities.	0.83
15. Excessive work interferes with the quality of my activities.	1.00

Continue...

Continuation.

16. Norms and routines facilitate the development of work activities in the unit*.	0.91
17. I need to resolve unforeseen events that happen during my work shift.	0.95
18. I need to reorganize my time to complete all work activities.	1.00
19. I perform activities repetitively.	1.00
20. I perform different activities simultaneously.	1.00
21. My work requires a lot of physical effort.	1.00
22. My job requires me to stand most of the time and/or walk a lot.	1.00
23. My work requires a diversity of knowledge.	0.91
Domain III - Working conditions	0.97
24. The number of workers is adequate during my work shift*.	1.00
25. I consider the environment in which I work to be healthy*.	0.83
26. Consumable materials are insufficient to carry out my work.	1.00
27. The quality of materials makes it difficult to carry out my work.	1.00
28. The equipment is insufficient to provide patient care.	0.91
29. Inadequate maintenance of equipment makes my activities difficult.	0.83
30. Excessive noise in this sector interferes with my work.	1.00
31. Inadequate temperature in this sector interferes with my work.	1.00
32. Inadequate lighting in this sector interferes with my work.	1.00
Domain IV - Interprofessional relationships	0.97
33. At my workplace, there are interpersonal conflicts between workers.	1.00
34. There is effective collaboration between workers in this unit*.	0.91
35. Communication between nursing workers is effective*.	0.91
36. Communication between multidisciplinary staff workers is effective*.	0.91
37. I have difficulties in work relationships.	0.83
Domain V - Institutional aspects	0.97
38. Issues that favor quality of work/care practice* are discussed here.	1.00
39. Managers support my daily efforts*.	0.91
40. I have the possibility to participate in decision-making processes*.	0.83
41. There is flexibility regarding work shifts in this unit*.	0.91
42. In my workplace there is a strong demand for results.	1.00
43. I feel pressured by my superiors to carry out all the activities during work shift.	0.83
44. I have feedback regarding the performance of my activities*.	0.91
45. In this institution, I have access to professional training/qualification*.	0.91
46. In this institution, there is an incentive to exercise professional autonomy*.	0.91
47. Issues that favor workers' quality of life* are valued here.	
Domain VI - Repercussions of work on worker health	0.97
48. Work makes me stressed.	1.00
49. I have pain as a result of activities carried out at work.	0.91
50. The activities I carry out favor the occurrence of workplace accidents.	0.91
51. I have needed medical treatment as a result of my work activities.	0.83
52. My work favors the occurrence of psycho-emotional illnesses.	0.83
53. My work favors the occurrence of physical illnesses.	0.91
54. I have changes in my sleep pattern due to work activities.	0.83
55. My work has a negative impact on my social/family life.	0.83
Domain VII - Patients' clinical conditions	0.97
56. There is a high patient turnover in this unit.	1.00
57. In my work, the degree of patient dependence is high.	1.00
58. My work requires the use of technological resources that are difficult to use.	0.97
59. I need to decide which patients I should see as a priority.	0.97
60. I treat more serious patients than is recommended for my workplace.	0.97

*Items with reverse score.

Discussion

The instrument, developed in this study, was considered valid by the committee of judges and the target population, contributing to clinical and scientific practice, as it represents an innovative tool

to be used to measure nursing work intensification in hospital settings. In content validity, domain and item analysis took into account aspects such as clarity, understanding, language and relevance, in order to verify domain dimension and representativeness according to the study topic and ease of understanding by the target audience.⁽¹²⁾

The number of evaluators can vary between five and ten professionals with knowledge in the areas of interest. Therefore, the aforementioned authors also recommend reading stratified by question, seeking better agreement among participants. Thus, CVI analysis constituted a reliable strategy for analyzing the proportion of a particular question to validate the instrument as a whole.⁽¹⁴⁾

This study presented a mean CVI score above what is recommended in the literature. It is recommended that the proportion of expert judges in agreement remains at least 0.80 and, preferably, equal to or greater than 0.9.⁽¹⁵⁾ Research carried out in Australia reveals that CVI has characteristics that make it suitable for methodological studies, due to the ease of interpretation and understanding of data, in addition to allowing a detailed review with exclusion or replacement of domains/items.⁽¹⁶⁾

The previous application of the instrument to a sample, in this study characterized as pre-testing, allowed that, upon reaching version II of the instrument, it was possible to elucidate domain/item clarity, relevance and relevance by nursing workers. It is noteworthy that the CVI of items varied from 0.93 to 1.00, revealing that the methodological choices adopted were correct. It is worth noting that the recommended reliability scores are stratified as follows: between 0 and 0.20 = small; between 0.21 and 0.40 = reasonable; between 0.40 and 0.60 = moderate; between 0.61 and 0.80 = substantial; and between 0.81 and 1.00 = almost perfect.⁽¹⁷⁾

It is evident in domain I, Interface with work, that nursing professionals' health-disease process is directly related to their work, whether in public, private or philanthropic institutions. Hospital settings have their own characteristics,⁽¹⁸⁾ and workers are predisposed to a greater number of risk factors, including physical, chemical, biological, ergonomic and lifestyle factors.⁽¹⁹⁾

A recent study carried out with nursing professionals showed that they present fear, increased irritability, work overload, sadness and loneliness. The COVID-19 pandemic also had impacts on work processes and organization of services, influencing the size of the number of professionals, working day and the type of execution of activities, in addition to demanding greater vigilance regarding prevention and contagion.⁽²⁰⁾

It was evident that organization of work requires workers to be versatile and multifunctional, with a significant distance between prescribed work and real work, which predisposes workers to suffering, in addition to the existence of precarious work.⁽¹¹⁾ Work processes, especially in healthcare institutions, are intrinsically related to workers' own subjectivity, which can sometimes also be a source of work intensification.

As for domain II, Pace and demands of work, it is evident that it is closely related to pace of work acceleration, which is an aspect that has been part of workers' daily lives since the industrial revolution. In this context, health workers and, in particular, nursing workers are also immersed in this scenario, which exposes them to work intensification and precariousness, factors that lead to illness and can substantially compromise the quality of care provided.⁽²¹⁾

Managing time is a fundamental principle for managing tasks in work settings. The accelerated pace of work increases workers' workload and responsibilities, resulting in an increased risk of workplace accidents and greater wear and tear on workers, with consequences for their quality of life.⁽⁴⁾

Intensified work demands originate from accelerated pace of carrying out activities, constantly changing working conditions, which subject workers to increasing workloads, reduced deadlines, constant planning and decision-making about work and career, and the continuous learning of new knowledge and professional skills.⁽²²⁾

The third domain concerns working conditions. Nursing work is recognized as a painful profession, which is directly related to suffering, requiring extensive physical and emotional effort from nursing professionals.⁽²³⁾

Nursing professionals' daily work generally presents unfavorable working conditions, with emphasis on shortage of professionals, overload of activities, low remuneration and scarcity of material resources, equipment and infrastructure of institutions, conditions that can lead to exhaustion, illness and death.⁽²⁴⁾

A recent study points to a global shortage of nursing professionals, warning of a number of people who will not have their health needs met. Brazil has a number of nursing professionals similar to that of developed countries, but with an unequal distribution and a small percentage of nurses in the workforce composition. It is noteworthy that, to achieve health for all, greater investment in quality training, improvement in working conditions and a greater number of health workers and, in particular, nursing workers are necessary.⁽²⁵⁾

The fourth domain discusses interprofessional relationships, which involve the nursing staff and other healthcare professionals. Collaborative practice will only be possible when there are collaborative experiences between those involved. The importance of integration between staff with new clinical practices is highlighted in order to establish more solid networks, which will have a decisive influence on daily work.⁽²⁶⁾

The nursing work process is conceived as a complex, multifaceted phenomenon, being influenced and sometimes influencing the connections between assistance, management, research and education in care practices. These practices are inserted in a context that is affected by the interpersonal relationships of nursing staff and other healthcare staff members, infrastructure, installed technical capacity, in addition to the cultural and power relations present in the healthcare service's organizational dimension.⁽²⁷⁾

In this context, collaborative, interprofessional teamwork is of fundamental importance for the quality of healthcare, safety and satisfaction of both patients and workers. It requires effective communication and collaboration practices from those involved, integrated work and adequate (inter)professional training. On the other hand, fragmentation and rigidity in work, little collabora-

tion/communication and lack of materials make teamwork difficult.⁽²⁸⁾

The fifth domain deals with the institutional aspects that involve nursing workers' daily lives. The nursing practice environment can be defined by the presence or absence of characteristics that favor the development of its activities. These characteristics are related to the participation of nursing workers in the discussion of hospital matters; adequate number of personnel and resources; fundamentals focused on quality of care; positive working relationships between workers in the multidisciplinary staff; and skill, leadership and support from nursing managers to nurses/nursing staff.⁽²⁹⁾

A multicenter study carried out in Jordan, Oman, Saudi Arabia and the United Arab Emirates reveals that healthcare institutions with positive practice environments show greater engagement among workers who work directly in care and service management. It is noteworthy that these positive environments enable the development of professionals' skills, reduce the occurrence of incidents and improve relationships between work staff.⁽³⁰⁾

Collaborative teamwork is of fundamental importance for the quality of healthcare, safety and satisfaction of both patients and professionals.⁽³¹⁾ In another study, it was demonstrated that the environment of three hospitals located in southern and southeastern Brazil is considered favorable to nurses' professional practice, as they have autonomy and control over the environment, good relationships with doctors and organizational support.⁽²¹⁾

Domain VI, Repercussions of work on worker health, seeks to discuss aspects related to workers' illness as a result of their work practice. Thus, in the face of an intensified work environment, the activities carried out by nurses can expose workers to health damage, which may result from the organization and work process. In addition to this, difficulties in interpersonal relationships and inadequate body postures for carrying out procedures and transporting patients also stand out.⁽³²⁾

Repercussions of work on worker health can be classified as positive (satisfaction, autonomy, safety, among others) and negative (physical or psycho-emotional). Physical repercussions in-

clude tiredness, pain (headache, musculoskeletal, joint, lumbar pain, gastralgia) and digestive disorders (nausea, vomiting, loss or increase in appetite, diarrhea, among others). Regarding the psycho-emotional repercussions, forgetfulness (escape from ideas), stress, sadness, irritability, exhaustion, anxiety, depression, panic, difficulties in interpersonal relationships and exacerbation of symptoms related to manic-depressive episodes and schizophrenia stand out.⁽³³⁾

The aspects mentioned above are intrinsically related to work activity and are intensified by the transformations in the world of work arising from this new configuration of global capitalism. A Brazilian study carried out on medical records of nursing workers who were away from work reveals that, of the 2,761 absences, 449 had musculoskeletal causes, the most prevalent being back pain, followed by 78 who had a psychiatric diagnosis, with depression being the most common prevalent.⁽³⁴⁾

Domain VII deals with patients' clinical conditions. In this context, it should be noted that there are a series of factors that may result in an increase in hospital admission rates for acute or chronic health conditions. As a result, they require greater investment in treatment and rehabilitation actions for patients/users.

Among the factors mentioned above, we can list the epidemiological and demographic transition of the world population, population growth and aging and rapid urbanization. In addition to these, there are lifestyle changes especially related to stress, nutritional transition and adoption of a sedentary lifestyle, excess weight, among others.

The study presents contributions to nursing and health, since the instrument represents a technical-technological product, being considered an advance for teaching, research and management, since the methodological steps of content elaboration and validation followed rigorously all scientific recommendations. Therefore, it enables formulating strategies and policies aimed at worker health, improving the quality of care offered to patients and resource management in institutions.

It is suggested to expand the study, in order to verify construct validity (steps VI, VII and VIII),

and in a multicenter manner, ensuring reliability and better understanding of the phenomenon in other scenarios. Thus, the study continues with construct validity, a condition that will make it possible to determine the degree of coherence with which the instrument measures the theoretical attribute under study.

The instrument was assessed by a committee of judges/experts and by the target population, remaining with 60 items distributed across seven domains. It was evident that the items represented the analyzed content so that no changes were necessary in question wording. In assessment by the expert committee, the CVI of items ranged from 0.44 to 1.00. Items with a CVI lower than 0.80 were excluded and others were included as recommended by experts. In pre-testing, the CVI of items ranged from 0.90 to 1.00. In relation to the mean CVI of the domains, the score ranged from 0.94 to 0.97, and the instrument in its complete formation presented a CVI of 0.95.

In particular, the novelty of the topic stands out as well as its relevance to nursing, considering that there is no research instrument to measure nursing work intensification, this being a contemporary phenomenon, which greatly affects the quality care provided to the population and working conditions. In a context in which nursing working conditions have been widely debated, presenting to the scientific community a study on nursing work intensification constitutes an important contribution from a theoretical and knowledge production point of view. Furthermore, it represents an advance for teaching, research and management, as it enables formulating strategies and policies aimed at worker health, improving the quality of care offered to patients and the management of resources in institutions.

As a limitation of this study, the fact that it was carried out in a single professional and cultural context stands out, i.e., with nursing workers from a university hospital in southern Brazil. Furthermore, the instrument still needs to be applied to a development sample of at least 300 participants for construct validity so that it can be considered valid and reliable.

Conclusion

The organization of the domains and items of the instrument presented here occurred primarily by approaching the central topics that relate to work intensification in the context of nursing. The instrument construction process was based on theoretical-methodological references of high scientific rigor, which constitutes an innovative tool to be used to measure work intensification, especially in hospital settings.

Collaborations

Arboit EL, Freitas EO, Balsanelli AP, Santos JLG, Magnago TBS and Camponogara S collaborated with project design, relevant critical review of intellectual content, data analysis and interpretation, article writing and approval of the final version to be published.

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