Factors associated with the psychological empowerment of nursing in hemodialysis services

Fatores associados ao empoderamento psicológico da enfermagem em serviços de hemodiálise

Factores asociados al empoderamiento psicológico de enfermería en servicios de hemodiálisis

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How to cite:
Nicole AG, Tronchin DM. Factors associated with the psychological empowerment of nursing in hemodialysis services. Acta Paul Enferm. 2023;36:eAPE03691.

DOI
http://dx.doi.org/10.37689/acta-ape/2023AO036911

Keywords
Empowerment; Power, psychological; Health personnel; Health facility environment; Patient safety; Renal dialysis

Descritores
Empoderamento; Poder psicológico; Pessoal de saúde; Ambiente de instituições de saúde; Segurança do paciente; Diálise renal

Descriptores
Empoderamiento; Poder psicológico; Personal de salud; Ambiente de instituciones de salud; Seguridad del paciente; Diálisis renal

Submitted
December 13, 2021

Accepted
August 29, 2022

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Associate Editor (Peer review process):
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Abstract

Objective: To explore the associations between psychological empowerment of nursing professionals and the practice environment, safety climate and sociodemographic and labor variables.

Methods: This is a quantitative and correlational study. The population consisted of 64 nursing professionals working in four hemodialysis services located in the state of São Paulo, Brazil. For data collection, the following were applied: sociodemographic and labor characterization questionnaire, the Brazilian versions of the Psychological Empowerment Instrument, the Practice Environment Scale and the Safety climate domain of the Safety Attitudes Questionnaire. Data were analyzed using descriptive statistics, association tests and linear regression.

Results: The overall mean of psychological empowerment was 68.7 (SD=10.8), of the practice environment, 2.9 points (SD=0.8), and of safety climate, 71.1 (SD=19.5). Evidence of positive and strong associations between psychological empowerment and the practice environment (r=0.57; p<0.001) and safety climate (r=0.62; p<0.001) were found. Each point in the domain of safety climate and in the practice environment increased, respectively, 0.24 (p<0.001) and 4.17 (p=0.021) in mean the values of psychological empowerment. At the same time, the practice environment and safety climate values influenced psychological empowerment by 44%. Self-determination (p=0.007) and impact (p=0.019) were higher among nurses.

Conclusion: The psychological empowerment of nursing professionals is influenced by the practice environment characteristics, safety climate and professional category.

Resumo

Objetivo: Explorar as associações entre o empoderamento psicológico de profissionais de enfermagem e o ambiente da prática, o clima de segurança e as variáveis sociodemográficas e laborais.

Métodos: Estudo quantitativo e correlacional. A população foi constituída por 64 profissionais de enfermagem atuantes em quatro serviços de hemodiálise localizados no Estado de São Paulo, Brasil. Para a coleta de dados, foram aplicados: questionário de caracterização sociodemográfica e laboral, as versões brasileiras do *Psychological Empowerment Instrument,* do *Practice Environment Scale e* o domínio Clima de segurança do *Safety Attitudes Questionnaire.* Os dados foram analisados por meio de estatística descritiva, testes de associação e regressão linear.

Resultados: A média geral do empoderamento psicológico foi 68,7 (DP=10,8), do ambiente da prática 2,9 pontos (DP=0,8) e do clima de segurança 71,1 (DP=19,5). Foram encontradas evidências de associações positivas e de forte intensidade do empoderamento psicológico e o ambiente da prática (r=0,57; p<0,001) e o clima de segurança (r=0,62; p<0,001). Cada ponto no domínio do clima de segurança e no ambiente da

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Conflicts of interest: nothing to declare.

prática elevou, respectivamente, 0,24 (p<0,001) e 4,17 (p=0,021), em média, os valores do empoderamento psicológico. Simultaneamente, os valores do ambiente da prática e do clima de segurança influenciaram o empoderamento psicológico em 44%. Os sensos de autodeterminação (p=0,007) e de impacto (p=0,019) foram mais elevados entre os enfermeiros.

Conclusão: O empoderamento psicológico dos profissionais de enfermagem é influenciado pelas características do ambiente da prática, pelo clima de segurança e pela categoria profissional.

Resumen

Objetivo: Estudiar las relaciones entre el empoderamiento psicológico de profesionales de enfermería y el ambiente de la práctica, el clima de seguridad y las variables sociodemográficas y laborales.

Métodos: Estudio cuantitativo y correlacional. La población fue formada por 64 profesionales de enfermería que trabajan en cuatro servicios de hemodiálisis ubicados en el estado de São Paulo, Brasil. Para la recopilación de datos se aplicaron los siguientes instrumentos: cuestionario de caracterización sociodemográfica y laboral, las versiones brasileñas de *Psychological Empowerment Instrument, Practice Environment Scale* y el dominio Clima de seguridad del *Safety Attitudes Questionnaire.* Los datos fueron analizados mediante estadística descriptiva, pruebas de asociación y regresión lineal.

Resultados: El promedio general del empoderamiento psicológico fue 68,7 (DP=10,8), del ambiente de la práctica 2,9 puntos (DP=0,8) y del clima de seguridad 71,1 (DP=19,5). Se encontraron evidencias de asociaciones positivas y de fuerte intensidad entre empoderamiento psicológico y el ambiente de la práctica (r=0,57; p<0,001) y el clima de seguridad (r=0,62; p<0,001). Cada punto del dominio del clima de seguridad y del ambiente de la práctica elevó en promedio 0,24 (p<0,001) y 4,17 (p=0,021), respectivamente, los valores del empoderamiento psicológico. Al mismo tiempo, los valores del ambiente de la práctica y del clima de seguridad influyeron en el empoderamiento psicológico un 44 %. El sentido de autodeterminación (p=0,007) y de impacto (p=0,019) fueron más elevados entre los enfermeros.

Conclusión: El empoderamiento psicológico de los profesionales de enfermería está influenciado por las características del ambiente de la práctica, por el clima de seguridad y por la categoría profesional.

Introduction

The context of work in hemodialysis services involves the dependence on complex technology, the need for specialized care, the interaction between various professional categories in therapeutic follow-up, the concomitant management of different comorbidities and the submission to frequent invasive procedures, printing constant challenges to the care process. [1]

It is in this scenario that nursing professionals perform their work, permeated by the technical-scientific aspects of the care process, by interprofessional relationships and by the humanistic dimension, aiming to qualify care.

In the search for improvement of quality and safety in health care, it is urgent that professionals develop an active orientation to work, pointing out the direction in which they feel able to shape their activities and their own work, which is defined as psychological empowerment. [2]

This theoretical perspective involves a critical analysis by individuals of how contextual elements strengthen or inhibit their intrinsic motivation for work, shaped by cognitions: meaning – purpose of work for professionals; competence – belief in their own ability to perform actions; self-determination – sense of autonomy to perform work and decide how to behave; and impact – the extent to which they feel able to influence institutional results. [2]

Thus, psychological empowerment implies feelings of awareness of the work context and responsibility for individual production, developing a motivational state that can be beneficial to promote improvements in professional practice. [3,4]

International studies have shown that psychological empowerment mediates the relationship between characteristics of nursing work, transformational leadership and effectiveness at work, between the environment of professional nursing practice and engagement at work as well as between leadership style and burnout. [5-8]

Given the above, it is believed that the psychological empowerment of nursing professionals is closely related to the perception of the context in which they develop their work activities, which can be influenced by the practice environment and safety climate, reverberating in successful experiences for both workers and patients undergoing hemodialysis therapy.

However, there is a shortage of studies in hemodialysis services aiming to investigate this relationship and verify the elements that contribute or not to strengthening the sense of psychological empowerment, in order to qualify the care and management processes.

Thus, this research aimed to explore the associations between the psychological empowerment of nursing professionals and the practice environment, safety climate and sociodemographic and labor variables.

Methods

This is a quantitative, correlational study, developed in four hemodialysis services located in the municipalities of São Paulo and Campinas, São Paulo, Brazil.

We included services that have an active hemodialysis program for adult patients with chronic kidney disease and that have been in operation for at least 6 months. We excluded those who underwent an interdiction process in 2018 and 2019. To apply the criteria, we sought to contact, via email and/or telephone, the 78 hemodialysis services registered on the website of the Brazilian Society of Nephrology located in the aforementioned municipalities. Most of them did not return to their contacts or had outdated email addresses. Of those who returned, only five services expressed interest in participating. Of these, one was excluded due to delays in documentation.

The population consisted of nursing professionals who work in direct patient care and work in the hemodialysis service for at least 6 months. Those who were on vacation, leave or leave of away from their work activities of any nature at the time of data collection did not participate. Thus, 66 workers became eligible, being given the collection instruments; however, two did not return, configuring a response rate of 97%. Thus, the non-probabilistic and convenience sample consisted of 64 professionals.

Data collection was carried out between January 13 and 31, 2020, in person, by the researcher herself. We used four instruments: Characterization sheet, Psychological Empowerment Instrument – Brazilian version (PEI-Br), Practice Environment Scale (PES) – Brazilian version and safety climate domain of the Safety Attitudes Questionnaire (SAQ – Short Form 2006). [9-11]

The characterization form included the following sociodemographic and work variables: age, sex, marital status, professional category, other employment relationship, weekly working hours, work regime and time of experience in hemodialysis and in the current service.

The PEI-Br was used to assess psychological empowerment perception. The instrument contains 12 assertions, distributed in four subscales, namely: meaning, competence, self-determination and impact. The answer is issued using a seven-degree Likert-type scale. The value assigned to the answers varies from 1 to 7, and the general score in each subscale is obtained by the mean of the sum of answers, therefore, the minimum of each subscale is 3, and the maximum, 21 points. In the total score, the minimum value is 12 and the maximum is 84. There is no established cut-off point, being considered more psychologically empowered the higher the score. [9]

The PES was used to measure perception about the practice environment. It has 24 items, arranged in five subscales: nurse participation in hospital affairs; nursing foundations for quality of care; nurse manager ability, leadership, & support of nurses; staff and resource adequacy; and collegial nurse-physician relations. Items are answered based on a 4-degree Likert scale. The mean of the sum of answers indicates the general score and in each subscale. The cut-off point is 2.5 and higher values indicate favorable perception. [10,12]

The safety climate domain of the SAQ – Short Form 2006 was used to assess professionals' perception of a strong and proactive organizational commitment to patient safety, containing seven propositions. The answer is provided by means of a Likert-type scale, containing 5 points and a variation from strongly disagree (0 points) to strongly agree (100 points). The final score corresponds to the mean of answers, considering a positive perception when it reaches values above 75. [11]

On the agreed date, the researcher asked the nursing manager for the list of nursing workers, aiming to select the participants according to the eligibility criteria, giving professionals the option to respond at the time and place that seemed most

convenient to them. To avoid embarrassment, it was requested that, after completion, the instruments be kept unidentified and returned directly to the researcher.

Data were entered and organized in an electronic spreadsheet and, later, analyzed using the R statistical software. It is a free and open access computer program, aimed at statistical and graphic operations, both basic and advanced. Descriptive statistics were used, using the absolute and relative frequencies for categorical variables, and measures of central tendency and dispersion for continuous variables. To compare the subscales with each other, in each construct, a mixed effects model was used, comparing them two by two using the Tukey test. The analysis of the relationship between the subscales was performed using the Pearson correlation coefficient. To interpret the strength of association, we considered 0.10 to 0.29 to be weak, 0.30 to 0.49 to be moderate, and ≥ 0.50 to be strong. [13] In order to verify the relationship between psychological empowerment subscales and numerical sociodemographic and labor variables, we used Pearson's correlation test, and, for categorical ones, the Wilcoxon-Mann-Whitney, Kruskal-Wallis and Welch tests. The significance level established was 5%. A linear regression model was developed to assess how much of information (R^2) on psychological empowerment was produced by the practice environment and safety climate. [14]

This study was registered on *Plataforma Brasil*, under CAAE (*Certificado de Apresentação para Apreciação Ética* - Certificate of Presentation for Ethical Consideration) 06582919.0.0000.5392, 06582919.0.3003.0068 and 06582919.0.3002.0070, and approved through Opinions 3,723,983, 3,761,101 and 3,765,46, respectively, being conducted in accordance with Resolution 466 /2012.

Results

Table 1 shows the results regarding workers' sociodemographic and labor characteristics.

Regarding the perception of psychological empowerment, the overall score obtained a mean of 68.9 (SD=10.8), ranging between 33 and 84 points. Regarding the PES total value, the mean corresponded to 2.9 points (SD=0.7), with a minimum of 1.4 and a maximum of 4 points. The safety climate domain had an overall mean score of 71.1 (SD=19.5), with a minimum of 25 and a maximum of 100 points. Table 2 shows the values of the assessment subscales of psychological empowerment and practice environment.

Regarding psychological empowerment, the meaning subscale obtained a better score. There was a difference between the subscales, since competence and meaning presented similar distributions, behaving differently ($p<0.0001$) of self-determination and impact. As for the practice environment, a better result was found in the collegiate relationships subscale between physicians and nurses. When comparing the subscales with each other, "nurse participation in hospital affairs" and "collegial nurse-physician relations" showed evidence of the same distribution, but they were distinguished

Table 1. Distribution of sociodemographic and labor characteristics of participants

Variables	n(%)	Mean (SD*; min-max**)	95%***CI
Age (years)		41.1 (9.2; 23 – 68)	(38.79; 43.37)
Sex			
Women	47(74.6)		(62.66; 83.72)
Men	16(25.4)		(16.28; 37.34)
Prefer not to inform	1(1.6)		
Marital status			
Married	31(48.4)		(36.63; 60.42)
Single	25(39.1)		(28.06; 51.31)
Divorced or legally separated	8(12.5)		(6.47; 22.78)
Professional category			
Nurse	11(17.2)		(9.88; 28.21)
Nursing technician	50(78.1)		(66.57; 86.50)
Nursing assistant	3(4.7)		(1.61; 12.90)
Other employment relationship			
No	41(64.1)		(51.82; 74.71)
Yes	23(36.0)		(25.29; 48.18)
Workload			
Weekly workload (hours)		47.9 (17.4; 30 – 79)	(43.82; 52.46)
Work regime			
Consolidation of Labor Laws	63(98.4)		(91.67; 99.72)
Legal entity	1(1.6)		(0.28; 8.33)
Time of experience in hemodialysis			
Length of experience in the area (years)		12.8 (7.5; 0.5 – 39)	(11.11; 14.79)
Time working in the service (years)		8.3 (7.8; 0.5 – 39)	(6.67; 10.54)

*SD – standard deviation; **min-max. – minimum and maximum values; ***CI – confidence interval

Table 2. Distribution of means, standard deviation, median and confidence interval, according to nursing professionals' perception of psychological empowerment and practice environment

Subscales	Mean (SD*)	Median	95%**CI
Psychological empowerment			
Meaning	19.6(2.6)	21.0	(18.87; 20.15)
Competence	19.7(2.4)	21.0	(18.69; 19.88)
Self-determination	14.5(4.5)	14.5	(13.36; 15.56)
Impact	15.4(4.3)	16.0	(14.23; 16.35)
Practice environment			
Nurse participation in hospital affairs	2.6(1.0)	2.8	(2.38; 2.86)
Nursing foundations for quality of care	2.9(0.8)	2.9	(2.66; 3.04)
Nurse manager ability, leadership, & support of nurses	3.0(0.8)	3.2	(2.80; 3.20)
Staff and resource adequacy	3.0(0.9)	3.3	(2.74; 3.20)
Collegial nurse-physician relations	3.3(0.7)	3.3	(3.14; 3.48)

*Standard deviation; **Confidence interval

(p<0.0001) from the others. When analyzing the general means of the constructs, strong and significant positive relationships were found between the PEI-Br and the PES (r=0.57; p<0.001) and between the PEI-Br and safety climate (r= 0.62; p<0.001). Table 3 shows the correlations between the subscales.

Table 3. Relation of the Brazilian version of the PES subscales, safety climate domain and the PEI-Br subscales

Practice environment and safety climate	Psychological empowerment			
	Meaning	Competence	Self-determination	Impact
Participação dos enfermeiros na discussão dos assuntos (nurse participation in hospital affairs)	r = 0.32 p = 0.010	r = 0.16 p = 0.197	r = 0.34 p = 0.005	r = 0.60 p < 0.001
Fundamentos de enfermagem voltados para a qualidade do cuidado (nursing foundations for quality of care)	r = 0.35 p = 0.004	r = 0.29 p = 0.021	r = 0.42 p < 0.001	r = 0.59 p = 0.001
Habilidade, liderança e suporte do coord./ supervisores de enf. aos enfermeiros/equipe de enf. (nurse manager ability, leadership, & support of nurses)	r = 0.37 p = 0.003	r = 0.25 p = 0.045	r = 0.41 p < 0.001	r = 0.61 p < 0.001
Adequação da equipe e dos recursos (staff and resource adequacy)	r = 0.40 p = 0.001	r = 0.38 p = 0.002	r = 0.23 p = 0.067	r = 0.35 p = 0.005
Relações colegiais entre médicos e enfermeiros (collegial nurse-physician relations)	r = 0.36 p = 0. 004	r = 0.29 p = 0.019	r = 0.20 p = 0.118	r = 0.60 p < 0.001
Clima de segurança (safety climate)	r = 0.49 p < 0.001	r = 0.45 p < 0.001	r = 0.48 p < 0.001	r = 0.51 p < 0.001

r - Pearson correlation coefficient

The regression model proposed to predict the value of the general characteristics of PEI-Br, based on the practice environment and safety climate, showed that each point in the climate domain and in the PES increased, respectively, 0.24 (p<0.001) and 4.17 (p=0.021), in mean, the PEI-Br values. Safety climate and practice environment simultaneously explained 44% (R^2) of the PEI-Br results, and the estimated value for new samples corresponded to 37.4% (predictive R^2). When comparing the PEI-Br subscale scores according to sociodemographic and work characteristics, a significant difference was found in the perception between nurses and nursing technicians/assistants regarding the self-determination (mean=17.3; SD=3.0 and mean=13.9; SD=4.6; p=0.007) and impact subscales (mean=17.9; SD=3.0 and mean=14.8; SD=4.4; p=0.019), with higher values among nurses. No evidence of association was found among the other variables.

Discussion

Regarding worker characteristics, it was noticed a configuration formed mostly by young adults, women and married. Most worked as nursing technicians, under a CLT regime, with an employment relationship, had a long working day and time of experience in hemodialysis and in the service.

These characteristics are analogous to those of national studies in the context of hemodialysis services. [15,16] It is pointed out that the high working hours mentioned indicate an overload for workers that, although not uncommon, can lead to precarious work and compromise quality of care.

The results showed that professionals felt psychologically empowered, with variations between cognitions. Better scores were observed in the meaning and competence subscales. These findings are similar to those observed in studies conducted in different care areas and countries, such as Turkey and Iran. [17,18]

In hemodialysis services, research developed in Canada reported that nurses felt psychologically empowered, and that the subscales meaning and

competence, as in the present study, were the ones that most contributed to express the construct. [19]

In Brazil, in an investigation involving 165 health professionals working in a teaching hospital, perceptions of meaning and competence were also configured as the main components of psychological empowerment. In the comparison between groups represented by nurses, physicians and other professionals (psychologists, nutritionists, pharmacists and social workers), the first group obtained the worst mean in the competence subscale (p=0.004). [20]

In this research, it is highlighted that impact and self-determination, in addition to being the components of psychological empowerment with lower scores, showed evidence of a significant difference between nurses and nursing technicians/assistants. It is inferred that, especially nursing technicians, were not convinced of their ability to decide on the best actions in the exercise of care processes and the possibility of influencing the results for patients and institutions.

The lack of studies on nursing staff psychological empowerment in hemodialysis services limited the discussion. Yet these results are worrying, as it is considered that each nursing professional, regardless of their occupation, should have autonomy to make decisions that are within their scope of competences and be responsible for the results of their practice. [21]

Although it seems paradoxical, self-determination tends to rise in the face of individual perception of the possibility of making choices, making their own decisions, even if guided by other people and circumscribed by organizational norms. [22]

In this way, it is understood that nursing technicians/assistants' autonomous work in hemodialysis services can be achieved, under the supervision of a nurse and based on care protocols, encouraging work motivation.

The findings showed significant evidence that the sense of psychological empowerment at work is higher, the better the perception of acting in environments favorable to nursing practice and positive safety climate. Through regression analysis, it was observed that the practice environment and safety climate influenced psychological empowerment, with an explanatory power of 44%.

Studies employing structural equation modeling have indicated a direct positive predictive effect of the practice environment on psychological empowerment. In the models, psychological empowerment had a mediating effect on the relationship between practice environment and work engagement. [6,7]

In this investigation, the practice environment was assessed as favorable, with a worse result in the subscale "nurse participation in hospital affairs", which reached a borderline value. It is considered that, by cultivating environments in which team members are involved in decision making and feel safe to express their opinions, professional growth is encouraged, helping them to become motivated to discover new knowledge and innovations and, in this way, promote changes in search of better results, increasing visibility and recognition of nursing contribution to clinical and institutional results. [23,24]

In research developed in hemodialysis services in Greece, this subscale presented an unfavorable perception, being pointed out as an indicator of professional devaluation. [25] Historically, nursing faces challenges to occupy decision-making spaces, considering the maintenance of vertical organizational structures and lack of people management policies, such as career plans, salary floor for the exercise of nursing, professional valorization, among others. In this aspect, it is confirmed that it is essential to discuss and expand initiatives that demonstrate to society, policymakers, the institution's governing body and other health professionals the different forms of nursing work and how it contributes to the population's health and to health service quality. Furthermore, it is necessary to adjust monetary or other investments to strengthen the profession, both at the local level and in public policies. [26]

In turn, safety climate was assessed with a negative perception, revealing weaknesses in institutional attitudes for the development of a patient safety culture. When actions involve punishment and individual accountability, there is a deterioration in patient safety and quality of care, as it reduces the readiness of professionals to report incidents. [27] In this regard, it is worth highlighting a study in which

it was identified that the recognition of a fair culture influences the psychological empowerment of nurses, which, in turn, affects the development of activities aimed at patient safety. [28]

Among the limitations, we highlight the recruitment of institutions to constitute the study scenarios, given the records with outdated electronic addresses, making it difficult to present the research purpose and design as well as the fear shown by hemodialysis services to allow the assessment of sensitive aspects of management practices. However, the study showed a high response rate of participants, being representative for this sample.

Future investigations on this topic in the national scenario and in hemodialysis services are recommended, including studies with qualitative approach and mixed methods, to allow understanding about the relationships found in this investigation.

Conclusion

Psychological empowerment was composed mainly of meaning and competence cognitions (mean=19.6; SD=2.6 and mean=19.7; SD=2.4; p<0.0001), being strongly explained (R^2 = 44%) by nursing professionals' perception about the practice environment and safety climate. There was a significant difference in the perception between nurses and nursing technicians/assistants regarding the self-determination (mean=17.3; SD=3.0 and mean=13.9; SD=4.6; p=0.007) and impact subscales (mean= 17.9; SD=3.0 and mean=14.8; SD=4.4; p=0.019), with higher values among nurses. Thus, the study showed that the psychological empowerment of nursing is associated with practice environment and safety climate, pointing to the need to institute management practices that advance in the transformation of elements that enhance these attributes.

Acknowledgments

To the *Universidade Federal do Espírito Santo*, for granting the leave of absence of Professor Andressa Garcia Nicole to carry out her doctoral course at the Nursing Management Program of the Nursing School of the *Universidade de São Paulo*. To the Coordination for the Improvement of Higher Education Personnel (CAPES - *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior*), for granting the doctoral scholarship to Andressa Garcia Nicole.

Collaborations

Nicole AG and Tronchin DMR contributed to project design and development, data analysis and interpretation, article writing, relevant critical review of intellectual content, and final approval of the version to be published.

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