

Factors associated with engagement in nursing workers

Fatores associados ao engajamento em trabalhadores de enfermagem

Factores asociados al compromiso de los trabajadores de enfermería

 Ana Paula Carvalho Campos¹,  Patrícia Campos Pavan Baptista²

Received: 29/07/2024 Accepted: 01/08/2024 Published: 20/09/2024

Abstract:

Objective: to measure the engagement of nursing workers and verify the association between engagement and sociodemographic variables in these workers. **Method:** quantitative cross-sectional research, with nursing workers, from the Mother and Child Department, of a private and philanthropic hospital, in the city of São Paulo - SP/Brazil. Data collection took place in 2022, via the REDcap™ digital platform, with sociodemographic questions and the UWES-9 (Utrecht Work Engagement Scale). Descriptive analyzes were carried out and correlations between variables were obtained using Spearman's correlation coefficient, using the free software R version 4.2.2 for the analyses. **Result:** for half of the 210 respondents, all dimensions and the total scale score presented median values above 5.00, indicating high worker engagement. The variables Age and Professional category had a positive statistical association with engagement, and it was identified that nursing workers who did not have health issues in the previous month had a higher median score. **Conclusion:** the study showed high participant engagement, with all items scoring greater than or equal to 5.00. Engagement was positively correlated with the variables age, with greater engagement among older ages, and with the professional category, which showed the highest median score among nursing assistants and technicians, 5.33, while nurses had a median score of 5.06.

Keywords: Nursing care; Work engagement; Organization and administration; Management.

Resumo:

Objetivo: mensurar o engajamento em trabalhadores de enfermagem e verificar a associação entre o engajamento e as variáveis sociodemográficas nestes trabalhadores. **Método:** pesquisa transversal quantitativa, com 210 trabalhadores de enfermagem, do Departamento Materno-Infantil, de um hospital particular e filantrópico, da cidade de São Paulo – SP. A coleta de dados aconteceu em 2022, pela plataforma digital REDcap®, com questões sociodemográficas e a escala de engajamento UWES-9 (*Utrecht Work Engagement Scale*). Foram realizadas análises descritivas, e as correlações entre as variáveis foram obtidas através do coeficiente de correlação de Spearman, utilizando o software livre R versão 4.2.2 para as análises. **Resultado:** para metade dos respondentes, todas as dimensões e o escore total da escala apresentaram valores medianos superiores a 5,00, indicando alto engajamento dos trabalhadores. As variáveis Idade e Categoria profissional tiveram associação estatística positiva com o engajamento, e identificou-se que o trabalhador de enfermagem que não apresentou problema de saúde no último mês teve escore mediano maior. **Conclusão:** o estudo evidenciou alto engajamento dos participantes, com todos os itens com escore maior ou igual a 5,00. O engajamento apresentou correlação positiva com as variáveis Idade, com Maior engajamento entre as idades mais avançada, e com a Categoria profissional, que evidenciou entre os auxiliares e técnicos de enfermagem o escore mediano maior, de 5,33, enquanto o enfermeiro obteve escore mediano 5,06.

Palavras-chave: Cuidados de Enfermagem; Engajamento no trabalho; Organização e administração.

Resumen:

Objetivo: medir el compromiso de los trabajadores de enfermería y verificar la asociación entre el compromiso y las variables sociodemográficas de estos trabajadores. **Método:** Investigación cuantitativa transversal, con trabajadores de enfermería, del Departamento Materno-Infantil, de un hospital privado y filantrópico, en la ciudad de São Paulo, SP, Brasil. La recogida de datos se realizó en 2022, a través de la plataforma digital REDcap®, con preguntas sociodemográficas y la UWES-9 (*Utrecht Work Engagement Scale*). Se realizaron análisis descriptivos y se obtuvieron correlaciones entre variables mediante el coeficiente de correlación de Spearman, utilizando el software libre R versión 4.2.2 para los análisis. **Resultado:** Para la mitad de los 210 encuestados, todas las dimensiones y la puntuación total de la escala presentaron valores medios superiores a 5,00, lo que indica un alto compromiso de los trabajadores. Las variables edad y categoría profesional tuvieron una asociación estadística positiva con el compromiso, y se identificó que los trabajadores de enfermería que no habían presentado ningún problema de salud en el último mes tenían una puntuación mediana más alta. **Conclusión:** el estudio mostró un elevado compromiso de los participantes, ya que todos los ítems obtuvieron una puntuación mayor o igual a 5,00. El compromiso se correlacionó positivamente con las variables edad, con un mayor compromiso entre las edades más avanzadas, y con la categoría profesional, que mostró la puntuación mediana más alta entre los auxiliares y técnicos de enfermería, 5,33, mientras que los enfermeros tuvieron una puntuación mediana de 5,06.

Palabras Clave: Atención de enfermeira; Compromiso laboral; Organización y administración.

Autor Correspondente: Ana Paula Carvalho Campos – c.anapaula@gmail.com

1. Hospital Israelita Albert Einstein, São Paulo/SP, Brazil

2. Escola de Enfermagem of the Universidade de São Paulo, São Paulo/SP, Brazil

INTRODUCTION

Engagement can be understood as commitment, involvement, absorption, dedication, and focus on work and energy^{1,2}. In theoretical discussions, engagement originated from Positive Psychology, which prioritizes the development of the optimal aspect of human beings, when thinking about their health and well-being³.

The pioneers on engagement were theorists Abraham Maslow and Carl Rogers, citing engagement in Humanistic Psychology, presented by Maslow in 1954 in the work "Motivation and Personality", but it received little attention. Positive Psychology effectively spread in 1998, with psychologist Martin Seligman, who said that Psychology should go beyond just repairing errors and deficiencies, and it should identify and strengthen skills. The movement presented the construct "*Work Engagement*", a positive motivational construct that is related to work, having a psychological, contemporary and prosperous background, both for the administration and academic spheres³.

It is important to state that engagement is not something imposed. The individual chooses to engage. This happens through a favorable organizational environment created by the organization, with availability of resources, autonomy and security, where there is meaning, connection and satisfaction in carrying out the work⁴.

In this aspect, research has shown that health professionals are among the most engaged occupational groups⁵. This may be related to the object of action of these workers, since their activities are related to the care, treatment and recovery of individuals.

Data from the World Health Organization (WHO) indicate that, nowadays, there are over 27.9 million nursing workers worldwide, of which 19.3 million are nurses; showing an increase of 4.7 million between 2013 and 2018. This reinforces nursing as the majority in the health sector, representing around 59% of health professionals. The demand for a skilled nursing workforce is ongoing due to aging and population growth, as well as the increasing complexities of healthcare needs⁶.

Young nursing professionals (generation X, born between 1965 and 1980; generation Y, born between 1981 and 2000; and millennials, born after the year 2000) have not been as connected to work as those born before 1964 (the Baby Boomers) who are considered workaholics. Younger people more often leave the profession, as they do not feel fulfilled and want balance between work and personal life and better opportunities. To stay at work, they see appreciation of teamwork and feedback from managers as encouragement⁷. Therefore, retaining good professionals has represented a major challenge in contemporary times and a crucial need for health services.

It is becoming increasingly important to admit a culture of collaborative management, in which leaders and nursing workers complement each other and are the key to the institutions' collective initiatives, a model that improves professional health, integration in interprofessional work, safety in work environment and care results^{8,9}.

Therefore, the positive results of an institution are directly influenced by worker engagement, with better financial results, customer satisfaction, worker retention and lower turnover, in addition to the predominance of quality and innovation⁴.

This topic has been explored both in Brazil and internationally. In nursing, it is important to recognize that a nursing staff member with reduced energy and dedication can be extremely harmful for health institutions.

Thus, it has become relevant to study engagement among nursing workers, with a view to identifying factors that can permeate this construct, enabling the development of management strategies that can improve the engagement of nursing workers in health services.

The study aims to measure the engagement of nursing workers and verify the association between engagement and sociodemographic variables in these workers.

METHOD

Quantitative cross-sectional study, carried out between October and December 2022, as part of the research entitled "Presenteeism and engagement in nursing workers". For the development and design of the study, the STROBE (STrengthening the Reporting of OBservational studies in Epidemiology) instrument was used¹⁰.

The chosen location was the Mother and Child Department of Hospital Israelita Albert Einstein, a large general, private and philanthropic hospital in the city of São Paulo/SP - Brazil, chosen for convenience, as it was the researcher's workplace.

Population comprised by 358 nursing workers, with the sample calculation carried out by the PASS program, assuming the minimum expected calculation of 180 evaluated professionals. This number would be enough to test a *Spearman* correlation coefficient regarding the null hypothesis of equality at zero with a significance level of 5% and power of 94% for coefficients from 0.300¹¹.

The sample was collected through e-mail invitation, with an individual link, via the web platform for the construction and management of databases and online research *REDCap*TM (Research Electronic Data Capture)¹². Two instruments were used to collect data: "Questionnaire for Sociodemographic and Work Analysis (QSD)" and the Scale translated and validated into Brazilian-Portuguese "Utrecht Work Engagement Scale of 9 items (UWES-9)".

The QSD questionnaire was designed with structured questions to identify the studied population. This instrument was created by the authors, and developed exclusively for use on this study, with variables addressing personal questions (age, sex, marital status, children and family provider), work (professional category, time since graduation, time working on company, work environment, work shift, if there is any other employment relationship), transportation (transportation means and time spent to get to work), and health (were there any health issues in the last month)

The UWES-9 instrument, chosen for its worldwide scope, is divided into three dimensions (Vigor, Dedication and Absorption) and assesses workers' engagement at work using a seven-point Likert scale (0 = never to 6 = always), with evaluation of the total score or each independent dimension. Answers vary between 0 and 6, and the higher the total score, the greater the worker's engagement^{5,13,14}. Engagement can be categorized as very low, low, average, high and very high, for this reason the UWES instrument was standardized, establishing statistical values¹³.

Numerical data are presented with descriptive statistics, and for qualitative variables absolute and relative frequency distributions were presented and, for quantitative variables, the main summary measurements were presented (mean, standard deviation (SD), first quartile (Q1), median, third quartile (Q3), interquartile range (Q1-Q3), minimum value and maximum value).

Due to the asymmetric distributions of scores on the scale, the non-parametric Mann-Whitney and Kruskal-Wallis tests were used to evaluate the association of scores with qualitative variables. *Spearman's* correlation coefficient was used to associate the quantitative variables with the dimension scores and the total scale score. The significance level adopted was 5% and the free software R version 4.2.2 was used in the analyses^{7,15,16}. For the analysis, data was exported from the *REDCap™ platform to Microsoft Office Excel™* spreadsheets via the *Microsoft 365™* online platform.

The research was approved by the Research Ethics Committees of the School of Nursing of the University of São Paulo (EEUSP), under opinion, CAAE: 58240922.2.0000.5392 and by Hospital Israelita Albert Einstein, under opinion, CAAE 58240922.2.3001.0071, through Plataforma Brasil. The Informed Consent Form (ICF) was accepted virtually by all participants, before responding to the survey, still following the Resolution of the National Health Council 466/2012^{17,18} and the guidelines of Circular Letter nº 2 /2021/CONEP/SECNS/MS¹⁹.

RESULTS

210 nursing workers met the inclusion criteria, as illustrated in Figure 1. Their characteristics are presented in Table 1. The majority of respondents were female (99.05%), with an average age of 38 years, were married or in a stable relationship (64.76%), had children (67.14%) and were their family's financial provider (92.38%).

Figure 1. Study population and participants who answered the sociodemographic questions and the UWES-9 instrument. São Paulo/SP - Brazil, 2023.

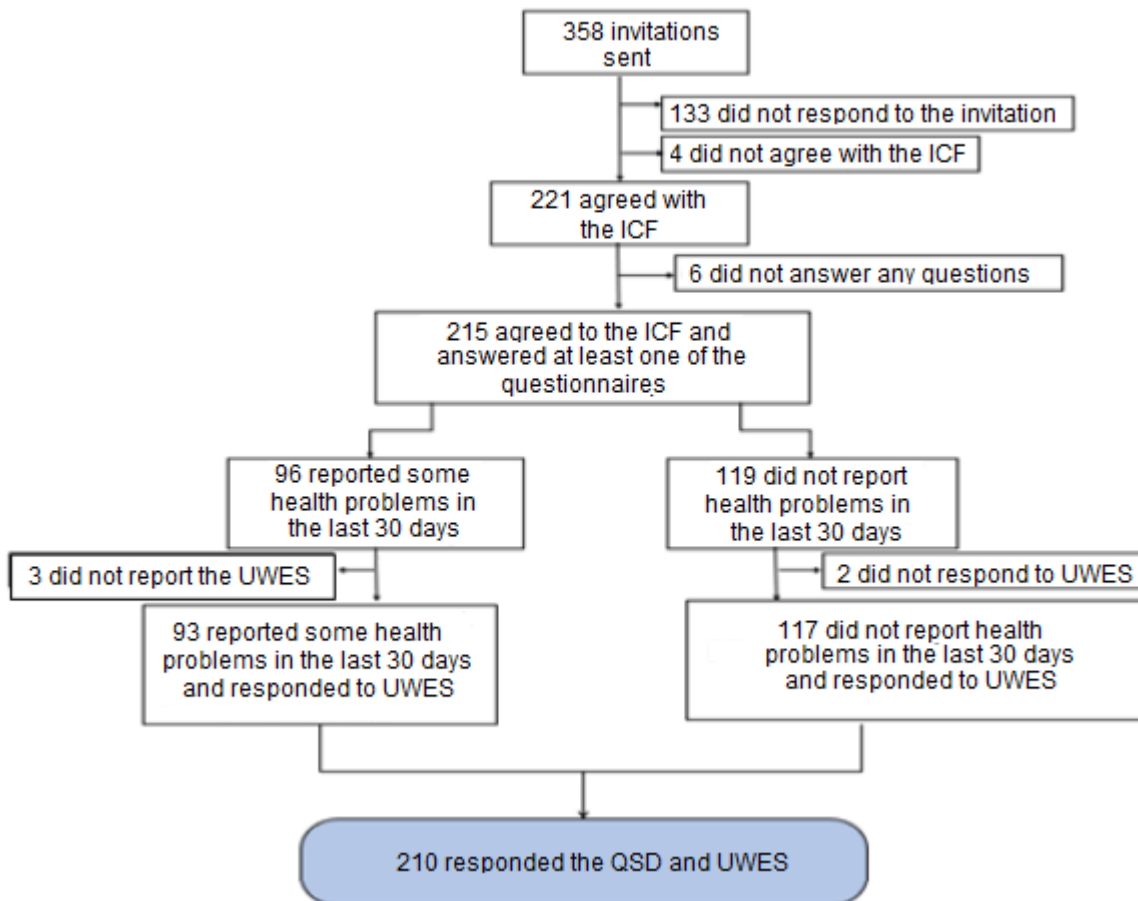


Table 1. Distribution of nursing workers according to sociodemographic data and work characteristics (n e %). IIQ: interquartile range. São Paulo/SP - Brazil, 2023.

Variable		n (%)
Sex	Feminine	208 (99.05)
	Masculine	2 (0.95)
Age (years)	mean (SD)	38 (8)
	median (IIQ)	38 (33-43)
	minimum-maximum	19-63
Marital status	Married/Stable relationship	136 (64.76)
	Single	74 (35.24)
Have children?	No	69 (32.86)
	Yes	141 (67.14)
Is the provider financial of the family?	No	16 (7.62)
	Partially	125 (59.52)
	Main	69 (32.86)
Category Professional	Nursing Assistant and Technician	108 (51.43)
	Graduate Nurse	102 (48.57)
Workplace	Pediatric ICU	36 (17.14)
	Neonatal ICU	48 (22.86)
	Pediatrics	26 (12.38)
	Maternity	78 (37.14)
	Obstetric center	17 (8.10)
	Birth center	26 (12.38)
	Nursery	8 (3.81)
Work shift	Daytime	132 (62.86)
	Night shift 12 x 36 hours	72 (34.29)
	Hourly	6 (2.86)
Has another link employment?	No	191 (90.95)
	Yes	19 (9.05)
Time working in nursing (years)	mean (SD)	13.3 (7.7)
	median (IIQ)	13.0 (7.0-18.0)
	minimum-maximum	(0.0-38.0)
Time working in nursing (years)	mean (SD)	13.3 (7.7)
	median (IIQ)	13.0 (7.0-18.0)
	minimum-maximum	(0.0-38.0)
Operating time in the company (years)	mean (SD)	8.5 (6.6)
	median (IIQ)	8.0 (3.0-12.0)
	minimum-maximum	(0.0-32.0)

It was found that 51.43% were nursing assistants and technicians. The three places with the most participants were: maternity ward (37.14%), Neonatal ICU (22.86%) and Pediatric ICU (17.14%). 93 (44.29%) respondents reported a health problem in the last 30 days.

For 50% of respondents, the median score in all dimensions of the UWES-9 scale (Vigor, Dedication and Absorption) was higher than 5.00, and the total score was 5.22, indicating high engagement (Table 2).

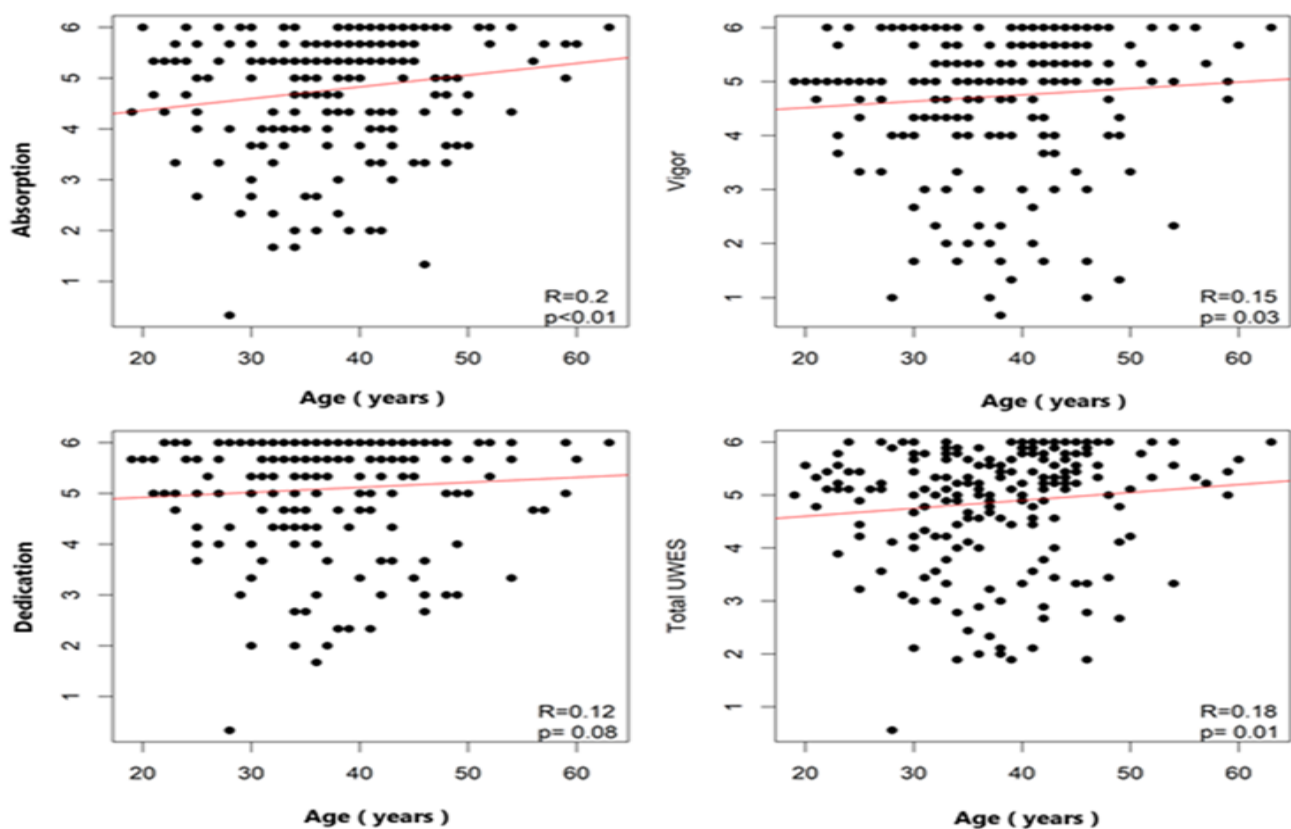
The variables Age and Professional category were the only ones that had significant statistical associations with the UWES-9 scale. Age correlated with the dimensions Vigor, Absorption and the total score, indicating a directly proportional relationship between age and engagement, that is, the older the nursing profession, the greater their engagement (Figure 2).

Nursing assistants and technicians presented significantly higher scores, dimensions and total when compared to nurses, indicating that they are more engaged (Table 3).

Table 2. Median value of the dimensions and total score of the UWES-9 scale of nursing workers. IIQ: interquartile range. São Paulo/SP - Brazil, 2023.

UWES-9	median (IIQ)	minimum-maximum
Vigor	5.00 (4.33-5.67)	(0.67-6.00)
Dedication	5.67 (4.67-6.00)	(0.33-6.00)
Absorption	5.00 (4.00-5.67)	(0.33-6.00)
Total	5.22 (4.44-5.67)	(0.56-6.00)

Figure 2. Dispersion between AGE and dimension and total UWES 9 scale scores. The red line (ascending) represents the regression line between the two variables in each graph. R: Spearman correlation coefficient. São Paulo/SP - Brazil, 2023.



Regarding Workplace (keeping in mind that workds could work in more than one location, due to relocations) those who worked in the pediatric ICU had a significantly lower total score, with a median value of 4.84, and those who worked in the ICU had a higher median total score in the maternity and/or nursery (5.33), in the birth center and obstetric center (both 5.56), with significantly higher scores in the Absorption dimension (p=0.016, 0.026, 0.045, respectively) and workers in the obstetric center had a significantly higher score, also, in the Dedication dimension (6.00, p=0.029) (Table 3).

The Work shift, like the other variables, did not show statistical significance; however, hourly workers had the lowest engagement scores. In the present study, the UWES-9 scores were higher, with statistical relevance, in nursing workers who did not present health problems in the last 30 days, with a median value of 5.33 for Vigor ($p=0.001$), Absorption 5.33 ($p=0.068$) and Total 5.33 ($p=0.005$) and 5.67 for Dedication ($p=0.006$), indicating greater engagement of these professionals (Table 3).

Table 3. Value of the dimensions and total scores of the UWES-9 scale according to the professional category and workplace. IIQ: interquartile range. São Paulo/SP- Brazil, 2023.

Variable	n	Force		Dedication		Absorption		Total	
		median (IIQ)	p	median (IIQ)	p	median (IIQ)	p	median (IIQ)	p
Category Professional									
Nursing Assistant and Technician Graduate Nurse	108 102	5.00 (4.67; 5.67)	0.022	5.67 (5.00; 6.00)	0.0004	5.33 (4.33; 5.67)	0.004	5.33 (4.89; 5.78)	0.004
		5.00 (4.00; 5.33)		5.33 (4.33; 5.92)		5.00 (4.00; 5.33)		5.06 (4.00; 5.44)	
*Pediatric ICU									
No	174	5.00 (4.33; 5.67)	0.208	5.67 (4.67; 6.00)	0.034	5.33 (4.08; 5.67)	0.028	5.22 (4.56; 5.67)	0.058
Yes	36	5.00 (3.92; 5.67)		5.17 (3.67; 5.75)		4.67 (3.67; 5.67)		4.84 (3.41; 5.62)	
*Neonatal ICU									
No	162	5.00 (4.33; 5.67)	0.310	5.67 (4.67; 6.00)	0.485	5.33 (4.33; 5.67)	0.069	5.22 (4.56; 5.67)	0.182
Yes	48	5.00 (4.00; 5.33)		5.67 (4.33; 6.00)		5.00 (3.67; 5.67)		5.00 (3.86; 5.59)	
*Pediatrics									
No	184	5.00 (4.33; 5.67)	0.301	5.67 (4.67; 6.00)	0.292	5.33 (4.00; 5.67)	0.138	5.22 (4.44; 5.70)	0.182
Yes	26	5.00 (4.33; 5.33)		5.33 (4.33; 5.67)		4.67 (4.00; 5.33)		5.17 (4.14; 5.33)	
*Maternity/ Nursery									
No	130	5.00 (4.00; 5.67)	0.215	5.67 (4.33; 6.00)	0.319	5.00 (3.67; 5.67)	0.016	5.11 (4.11; 5.67)	0.114
Yes	80	5.00 (4.67; 5.67)		5.67 (4.67; 6.00)		5.33 (4.33; 5.67)		5.33 (4.81; 5.78)	
*Obstetric center									
No	193	5.00 (4.00; 5.67)	0.388	5.67 (4.33; 6.00)	0.029	5.00 (4.00; 5.67)	0.045	5.22 (4.22; 5.67)	0.082
Yes	17	5.33 (4.67; 5.67)		6.00 (5.67; 6.00)		5.67 (5.00; 5.67)		5.56 (5.11; 5.67)	
*Birth center									
No	184	5.00 (4.33; 5.67)	0.275	5.67 (4.59; 6.00)	0.235	5.00 (4.00; 5.67)	0.026	5.22 (4.41; 5.67)	0.061
Yes	26	5.33 (4.67; 5.67)		5.67 (5.08; 6.00)		5.67 (4.75; 5.92)		5.56 (4.78; 5.75)	
Shift									
Daytime	132	5.00 (4.33; 5.67)	0.233	5.67 (4.67; 6.00)	0.426	5.33 (4.00; 5.67)	0.096	5.22 (4.53; 5.78)	0.215
Hourly	6	4.50 (3.84; 4.67)		5.00 (4.25; 5.50)		4.00 (3.33; 4.67)		4.50 (3.73; 4.95)	
Night	72	5.00 (4.00; 5.33)		5.50 (4.59; 6.00)		5.00 (3.92; 5.67)		5.22 (4.22; 5.44)	

DISCUSSION

The population analyzed in this study showed high engagement, with a score of 5.00. High engagement at work means that the worker has a greater identification with the objectives of the work, inspiration to carry it out, and the necessary resources to meet demands or go beyond, with high performance, differentiating themselves.

Porto-Martins *et al.*¹³ show in their study that the total average work engagement score corresponds to 3.74 and that score values above 4.67 are considered high engagement and above 5.51, very high engagement. In the present study, it was found that older nursing workers and nursing assistants and technicians were the most engaged.

Corroborating this study, da Silva *et al.*²⁰ found a positive correlation between engagement and age, with a higher score among nursing workers over 40 years old. Also, Garbin *et al.*²¹, in research in Southern Brazil, obtained similar findings, with a similar median value of 5.22, with emphasis on the dedication dimension, and the only sociodemographic variable to be statistically related to engagement was age, with a higher score among professionals above 40 years old, however, also found high levels of engagement in the under 34 age group.

In Porto and Azores, Borges *et al.*²² obtained high levels of engagement in the population of nursing workers, with a positive correlation with older people and emphasis on the Dedication domain, proposing that the most dedicated nurse faces the profession with a feeling of belonging, and experience can facilitate familiarity.

The positive correlation between age and work engagement can be justified by associating it with the individual's career stage. When grouping individuals by age group, associating them with the phase of their professional career that they are in, there are: between 18 and 28 years old, this is the beginning of active life, with lower engagement in work (Average= 4.1); between 29 and 39 years old, when the professional career is defined (Average = 4.4); and above 40 years of age, the consolidation of the professional career, this is the phase in which engagement reaches greater levels (Average = 4.7)^{5,14}.

Hisel²³ highlighted that, among 1,004 nurses, the veterans showed higher engagement, and Millennials showed less engagement. Also Balay-Odao *et al.*²⁴, studying the differences between generations of nurses, identified that Millennials had low engagement at work (4.08), with the average engagement being for veterans 4.80, Baby Boomers 4.48 and Generation X 4.19. These findings support the idea that older generations are more engaged in various aspects of their work, showing higher dedication, focus, and lower likelihood of leaving their

jobs, or their profession entirely. However, with many older nurses approaching retirement, it is important to develop strategies to better engage younger generations.

In this scenario, the entry of recent graduates through junior positions represents an opportunity to value new talents, while valuing experienced professionals, allowing the worker to continue working until their career ends in retirement, as long as they adapt to the institution's values.

All workers studied are engaged, although the study reported that the median engagement scores were lower among those who worked in the pediatric ICU, and higher among those who worked in the maternity ward and/or nursery, in the birth center and in the obstetric center, remembering that the same worker can work in more than one location.

The location and work shift for most workers in the study hospital is fixed; however, hourly workers, who had less engagement, are allocated according to the demands of the institution, being able to work in several sectors and varied shifts, respecting legal resting time.

Low work engagement produces decreased productivity, high turnover, lost revenue and concerns about patient safety. Nurse retention is essential for safe patient care, and chronic occupational fatigue, negative engagement and joy (negative direction) at work are known predictors of nurse turnover intentions²⁵.

It is possible to understand that not only individual characteristics influence engagement, but there are factors related to the work itself, and that despite different locations, different people and advancing age, engagement can be maintained and motivate the individual.

It is very likely that in adequate conditions and with adequate resources, feeling satisfied and seeing meaning in their work, despite their advanced age and not being at full health capacity, the individual may still have high engagement.

According to the Regional Nursing Council (Conselho Federal de Enfermagem - COFEN)²⁶, the predominance of nursing professionals in the working class in average. In a study done in a Brazilian public hospital, Santos *et al.*²⁷ had a greater number of nursing technician participants. A disparity was observed when comparing the present study with the national reality, in which nurses are in a much smaller proportion in most realities.

The small difference found between the number of nurses and other nursing professionals can be explained by the characteristics of the units studied and the hospital itself. This hospital, which focuses on private care and health plans, has always aimed to excel in the quality of care provided. It has received important international recognition, such as the Joint Commission International accreditation since 1999, and Magnet TM designation in 2022. The

institution has understood, since the 1980s, that quality is a global phenomenon, crucial for the growth and economic survival of healthcare organizations in the new century²⁸

An interesting finding from the study is that, despite the overall predominance of engagement across the population, nursing workers who had not experienced health problems in the past 30 days showed higher engagement levels. Fiorini *et al.*²⁹ found that initially highly engaged workers, when ill, exhibited lower productivity when compared to those who were initially less engaged.

De Beer³⁰ corroborates this study by describing that illness negatively influences attitudes, dedication and satisfaction at work, exhibiting a negative relationship between working while ill and engagement.

Therefore, it is a crucial part of leaders' work to pay attention to the health of their teams, seeking not only the early diagnosis of diseases that can cause disabilities, but also promoting improvements so that work is carried out in a welcoming, stimulating and healthy environment.

CONCLUSION

The present study showed that more than half of participants were classified as high engagement or more, with a total median score of 5.22. The Engagement had positive correlation with the variables age, with greater engagement among older ages, and with the professional category, which showed the highest median score among nursing assistants and technicians, 5.33, while nurses had a median score of 5.06 ($p=0.004$).

Among the limitations of the study were the difficulty in accessing the research, as workers are not used to accessing institutional email frequently, limiting the number of participants; many participants interrupted the research before completion due to difficulty in handling the technology, and the cross-sectional design of the study, which does not allow monitoring of outcomes.

However, the present study aimed to identify how engagement correlates with nursing workers, to implement gaps and progress studies in the future, benefiting human resources management, with possibilities of devising strategies to maintain and strengthen engagement in nursing, collaborating with the culture of safety and quality in care at the health institution.

REFERENCES

1. Schaufeli WB, Salanova M, González-romá V, Bakker A. The Measurement of engagement and burnout: a two sample confirmatory factor analytic approach. *Journal of Happiness Studies*. 2002; 3 (1):71-92. Access July 2021. Available from: <https://www.wilmarschaufeli.nl/publications/Schaufeli/178.pdf> DOI: <https://doi.org/10.1023/A:1015630930326>
2. Schaufeli W, Bakker A. Defining and measuring work engagement: bringing clarity to the concept. 2010. Access June 2021. Available from: <http://dx.doi.org/10.4324/9780203853047>
3. Porto-Martins PC, Basso-Machado PG, Benevides-Pereira AMT. Engagement at work: a theoretical discussion. *Fractal, Rev Psicol [Internet]*. 2013; 25(3):629-44. Access June 2021. Available from: <https://doi.org/10.1590/S1984-02922013000300013>
4. Maylett TM. *MAGIC Engagement Book: the five keys to engaging people, leaders and organizations*. Trans. by Rogério Chér. Platypus, 2019. 296p.
5. Magnan ES, Vazquez ACS, Pacico JC, Hutz CS. Standardization of the Brazilian version of the Utrecht Work Engagement Scale. *Psychological Assessment* 2016; 15(2):133-40. Access June 2021. DOI: <https://doi.org/10.15689/ap.2016.1502.01>
6. World Health Organization (WHO). *State of the world's nursing 2020: investing in education, jobs and leadership*. Geneva: World Health Organization; 2020. 116p. Access June 2021. Available from: <https://www.who.int/publications/i/item/9789240003279>
7. Stevanin S, Voutilainen A, Bressan V, Vehviläinen-Julkunen K, Rosolen V, Kvist T. Nurses' generational differences related to workplace and leadership in two European countries. *West J Nurs Res* 2020; 42(1):14-23. Access Jan 2022. DOI: <https://doi.org/10.1177/0193945919838604>
8. American Nurses Association (ANA). *American Nurses Credentialing Center (ANCC) Magnet Recognition Program®*. [internet]. Access Sep 2023. <https://www.nursingworld.org/organizational-programs/magnet/>
9. George V, Massey L. Proactive Strategy to Improve Staff Engagement. *Nurse Lead*. 2020; 18(6):532-5. Access Jan 2022. DOI: <https://doi.org/10.1016/j.mnl.2020.08.008>
10. Cuschieri S. The STROBE guidelines. *Saudi J Anaesth* 2019; 13:S31-4. Access Jan 2022 DOI: https://doi.org/10.4103/sja.SJA_543_18
11. Bussab, WO, Morettin, PA. *Basic Statistics*. 5ed. São Paulo: Saraiva, 2006. 537p.

12. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research Electronic Data Capture (REDCap) - A metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform.* 2009; 42(2):377-81. Access July 2022. DOI: <https://doi.org/10.1016/j.jbi.2008.08.010>
13. Porto-Martins PC, Benevides-Pereira AM, Pasqualotto, RA. Translation of the UWES Manual (UTRECHT WORK ENGAGEMENT SCALE) into Portuguese PT-B. 2009. 52p. Access July 2021. Available from: https://www.researchgate.net/publication/325652192_Traducao_do_Manual_do_UWES_UTRECHT_WORK_ENGAGEMENT_SCALE_Escala_de_Engagement_no_Trabalho_de_Utrecht_para_portugues_PT-B/citation/download
14. Vazquez ACS, Magnan ES, Pacico JC, Hutz CS, Schaufeli WB. Adaptation and Validation of the Brazilian Version of the Utrecht Work Engagement Scale. *Psico-USF.* 2015; 20(2):207-17. Access July 2021. Available from: <https://doi.org/10.1590/1413-82712015200202>
15. Siegel S, Castellan Jr JN. *Non-parametric statistics for behavioral sciences.* 2nd ed. Porto Alegre: Artmed, 2006.
16. R Core Team. *A: A language and environment for statistical computing.* R Foundation for Statistical Computing, Vienna, Austria. 2022. Available from: <https://www.r-project.org/>
17. Brazil. Ministry of Health. Resolution No. 466, of December 12, 2012. National Health Council. Brasília. 2012. Access July 2021. Available from: https://bvsms.saude.gov.br/bvs/saudelegis/cns/2013/res0466_12_12_2012.html
18. Rates CMP, Costa MR, Pessolacia JDR. Characterization of risks in search of an ethics committee in research protocols: bioethical analysis. *Rev Bioét.* 2014; 22(3):493-9. Access July 2021. Available from: <https://doi.org/10.1590/1983-80422014223032>.
19. Brazil. Ministry of Health. Executive Secretariat of the National Health Council. National Research Ethics Commission. Circular letter nº 2/2021/conep/secns/ms.2021. Access Nov 2021. Available from: https://conselho.saude.gov.br/images/Oficio_Circular_2_24fev2021.pdf.
20. Silva AG, Cabrera EMS, Gazetta CE, Sodr e PC, Castro JR, Cordioli Jr JR, et al. Engagement in primary health care nurses: A cross-sectional study in a Brazilian city. *Public Health Nurs.* 2020; 37:169-77. Access Nov 2021. Available from: <https://doi.org/10.1111/phn.12694>
21. Garbin K, Pasqualotti A, Chambel MJ, Moretto CF. Age as a Differential in the engagement of nursing professionals. *Psic: Teor e Pesq.* 2019; 35:e35516. Access July 2021. Available from: <https://doi.org/10.1590/0102.3772e35516>

22. Borges E, Abreu M, Queirós C, Maio T. Engagement in nurses: comparative study between mainland Portugal and the Açores. *International Journal on Working Conditions* 2017; 14,154-66. Access July 2021. DOI: <https://doi.org/10.25762/vveg-e571>
23. Hisel ME. Measuring Work Engagement in a multigenerational nursing workforce. *Journal of Nursing Management*. 2020; 28(2):294-305. Access July 2022. DOI: <https://doi.org/10.1111/jonm.12921>
24. Balay-Odao EM, Cruz JP, Alquwez N, Al Otaibi K, Al Thobaity A, Alotaibi RS, et al. Structural empowerment and work ethics influence on the work engagement of millennial nurses. *J Nurs Manag*. 2022; 30(2):501-10. Access July 2023. DOI: <https://doi.org/10.1111/jonm.13532>
25. Rutledge DN, Douville S, Winokur E, Drake D, Niedziela D. Impact of engagement factors on nurses' intention to leave hospital employment. *J Nurs Manag*. 2021; 29(6):1554-64. Access July 2023. DOI: <https://doi.org/10.1111/jonm.13287>
26. Federal Nursing Council (Conselho Federal de Enfermagem - COFEN). Brazil. Nursing in Numbers. [internet] Access Sep 2023. Available from: <https://www.cofen.gov.br/enfermagem-em-numeros/>.
27. Santos BS, Rocha FLR, Bortolini J, Terra FS, Valim MD. Factors associated with presenteeism in nursing workers. *Rev Bras Enferm*. 2022; 75(1):e20201290. Access Sep 2023. Available from: <https://doi.org/10.1590/0034-7167-2020-1290>
28. Hospital Israelita Albert Einstein. 10 years of Joint Commission International Accreditation. *Health News*. 2009. [internet] Access 27 Sep 2023. Available from: <https://www.einstein.br/noticias/noticia/10-anos-acreditacao-joint-commission-international>
29. Fiorini LA, Houdmont J, Griffiths A. Nurses' perceived work performance and health during presenteeism: Cross-sectional associations with personal and organizational factors. *J Nurs Manag*. 2020; 00:1-9. Access Sep 2023. Available from: <https://doi.org/10.1111/jonm.13065>
30. De Beer LT. The effect of presenteeism-related health conditions on employee work engagement levels: A comparison between groups. *SA Journal of Human Resource Management*. 2014; 14(1). Access June 2021. Available from: <https://doi.org/10.4102/sajhrm.v12i1.640>

Associated Publisher: Rafael Gomes Ditterich

Conflict of Interests: the authors declared there is no conflict of interests

Financing: none

CONTRIBUTIONS

Concept – Campos APC, Baptista PCP

Investigation - Campos APC

Writing – first draft - Campos APC, Baptista PCP

Writing – revision and editing - Campos APC, Baptista PCP

How to cite this article (Vancouver)

Campos APC, Baptista PCP. Factors associated with engagement in nursing workers. Rev Fam, Ciclos Vida Saúde Contexto Soc. [Internet]. 2024 [cited in *insert day, month and year of access*]; 12(2):e7780. DOI: <https://doi.org/10.18554/refacs.v12i2.7780>.

How to cite this article (ABNT)

CAMPOS, A. P. C.; BAPTISTA, P. C. P. Factors associated with engagement in nursing workers. **Revista Família, Ciclos Vida e Saúde no Contexto Social**, Uberaba, MG, v. 12, n. 3, e7780, 2024. DOI: <https://doi.org/10.18554/refacs.v12i2.7780>. Access in: *insert day, month and year of access*.

How to cite this article (APA)

Campos, A. P. C & Baptista, P. C. P. (2024). Factors associated with engagement in nursing workers. Rev. Fam., Ciclos Vida Saúde Contexto Soc., 12(3), e7780. Retrieved in *insert day, month and year of access* from <https://doi.org/10.18554/refacs.v12i2.7780>.



This is an open access article distributed under the terms of the Creative Commons License