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Original Article

Construction and validity of an instrument to assess talent retention factors in nurses*

Construção e validade de instrumento para avaliação dos fatores de retenção de talentos em enfermeiros

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ABSTRACT
Objective: to construct and validate an instrument to assess talent retention in nurses. **Methods:** methodological study whose stages were as follows: construction of the instrument by integrative literature review; content validation; and agreement by experts. To establish psychometric properties, it was applied to 290 nurses for construct validity through exploratory factor analysis, principal components method and *Promax* rotation. Evaluation of the internal consistency of the constructs by Cronbach's Alpha coefficient and McDonald's omega coefficient. **Results:** content validation by 10 experts obtained a degree of agreement >80% and second-order agreement coefficient (AC2 Gwet) between 0.83 and 0.89. After factor analysis, we obtained: instrument with 25 items, high degree of reliability and internal consistency; Kaiser-Meyer-Olkin test = 0.947; Bartlett p<0.001; and α from 0.87 to 0.92 with the formation of four factors explaining 74% of the variance. **Conclusion:** the instrument showed evidence of content and construct validity and adequate internal consistency. **Contributions to practice:** this innovative instrument for Nursing science enables managers to identify their teams' own talent retention factors, directing assertive measures for retaining nurses according to the predominant motivators.
Descriptors: Aptitude; Personnel Turnover; Job Satisfaction; Nurses; Validation Study.

RESUMO
Objetivo: construir e validar instrumento para avaliação da retenção de talentos em enfermeiros. **Métodos:** estudo metodológico cujas etapas foram as seguintes: construção do instrumento por revisão integrativa de literatura; validação de conteúdo; e concordância por especialistas. Para estabelecer propriedades psicométricas, foi aplicado a 290 enfermeiros para validade de construto por meio de análise fatorial exploratória, método dos componentes principais e rotação *promax*. Avaliação de consistência interna dos construtos pelos coeficientes Alpha de Cronbach e ômega de McDonald. **Resultados:** na validação de conteúdo por 10 especialistas, obtiveram-se grau de concordância >80% e coeficientes *second-order agrément coefficient* (AC2 Gwet) entre 0,83 e 0,89. Depois da análise fatorial, obtiveram-se: instrumento com 25 itens, elevado grau de confiabilidade e consistência interna; teste de Kaiser-Meyer-Olkin = 0,947; Bartlett p<0,001; e α de 0,87 a 0,92 com a formação de quatro fatores explicando 74% da variância. **Conclusão:** o instrumento apresentou evidências de validade de conteúdo, constructo e consistência interna adequada. **Contribuições para a prática**: este instrumento inovador para ciência de Enfermagem possibilita aos gestores identificar os fatores de retenção de talentos próprios de suas equipes, direcionando medidas assertivas para retenção de enfermeiros de acordo com os motivadores predominantes.
Descritores: Aptidão; Reorganização de Recursos Humanos; Satisfação no Emprego; Enfermeiras e Enfermeiros; Estudo de Validação.

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Introduction

There are approximately 28 million nursing professionals, the largest category in the health sector worldwide. By 2030, it is assumed that there will be a shortage of more than 4 million professionals, especially nurses, to meet the health needs of the population and services, especially in low- and middle--income countries[1-2].

With this, global healthcare faces unprecedented modern challenges related to the shortage of skilled labor, especially in more remote and ruralized regions for nursing succession, considering the aging of professionals versus the new generations' interest in the profession and turnover, considered a critical factor in retaining nurses[1-4].

Turnover among nurses currently affects most countries, being the main cause of nursing shortages[5]. It is a worrying factor whose negative impact leads to work inefficiency, decreased productivity, overload, deficit in the scaling of the scale, decreased quality of care and dissatisfaction in relation to those who stay, which can influence the retention of professionals[6-8]. To retain nurses, it is important to understand the factors that motivate them to stay in the institution, as well as tactics to reduce turnover[9].

The most relevant factors associated with the retention of nursing staff identified in studies are related to individual factors, such as age, commitment, motivation, trust; interpersonal factors such as leader management, recognition, autonomy; and organizational factors, the latter being related to compensation and benefits, training and development, and management model[10-11].

Creating an organizational culture that is sustainable and committed to retaining nurses is a strategy that reduces costs with turnover, ensures greater productivity, better use of resources, patient safety, and increased work performance, since it allows the optimization of processes, systems, and work automation[12-13]. Although studies on talent management and retention in organizations are widely discussed nowadays, research related to talent management and retention in the health sector is scarce in the literature, particularly regarding nursing, in which this context becomes even more challenging[7-8].

Considering nursing as the most numerous work force within a healthcare institution, the turnover of this team is a worrisome factor due to the negative impact on work efficiency, decreased productivity, work overload of professionals who are in the units, deficit in the dimensioning of the scale, and dissatisfaction at work for those who stay[6].

Another context to be considered is the challenge of managing several generations of people (Baby Boomers, Generation X, Millennials and Generation Z) in the same institution, increasing the potential for conflict in the workplace, leading to high turnover and low professional engagement. These factors can increase the complexity of management and cause serious problems to the institution, since they affect its results[14].

Considering talent retention as a performance factor in a healthcare organization and the gap in Nursing science about an assertive tool that makes it possible to identify factors that influence talent retention, the authors felt the need to develop and validate the content of an instrument that can objectively aid the recognition of such motivating factors for talent retention and test its psychometric properties.

To this end, we chose to adopt the Model of Development of Psychometric Scales because it includes specific methods, grouped into three poles: theoretical, empirical, and analytical. Although this methodological reference originates from Psychology, the growth of its use by Nursing denotes the recognition and reliability of this model in the development of instruments[15-16].

Thus, the guiding questions of the study were: is it possible to measure motivators of talent retention in nursing? and can the psychometric properties of an instrument that identifies motivators of talent retention in nurses become valid and reliable? Thus, the objective of this research was to construct and validate an instrument to assess talent retention in nurses.

Methods

This is a methodological study, based on the Classical Test Theory of Psychometrics and the Instrument Construction Model composed of theoretical, empirical (experimental) and analytical (statistical) procedures[16]. The theoretical procedures were composed of three phases:

Phase 1. construction of the instrument, based on the integrative review of national and international literature with a focus on publications from 2008 to 2019, for which the search was made for dissertations, theses, and articles, with the use of controlled descriptors on talent retention, aptitude, human resource management, leadership, training of human resources in health, job satisfaction, and people development. The inclusion criteria were publications in the last twelve years, texts available in Portuguese, English or Spanish, available in full and with online access. In the development of the talent retention motivators instrument, the construct was operationalized into factors. These factors were listed according to their frequency of citation in the studies analyzed during the literature review. Thus, the construction of the construct was not based on a single theory, but rather on factors that influence talent retention evidenced by both the nursing and people management literature. Thus, the main results of the analyzed studies on talent retention were organized by citation frequency and content and grouped from the experience of the researchers.

The process of making the data collection instrument resulted in six talent retention factors: I. Work environment, II. Leadership, III. Training and development opportunities, IV. Benefits and compensation, V. Succession, and career plan, and VI. Balance between work and personal life. Each factor was used as a guideline to elaborate the 29 items for the responses of the study participants, where a five-point Likert scale was used, where 1 totally disagree, 2 disagree most of the time, 3 neither agree nor disagree, 4 agree most of the time, 5 totally agree.

Phase 2. content validity of the data collection instrument by experienced judges, checking the appropriateness of each item and its associated factors for overall appearance, clarity, ease of understanding, objectivity, and items covered. This phase occurred in the first half of 2020. The committee of judges, selected according to their experience in people management in the work context of public health institutions managed by a Social Health Organization, was initially composed of 11 judges, although the instrument assessment process was completed by 10 judges, of which one was excluded from the sample for not being available to continue the assessment. Of these, six were nurse managers with the position of manager or director of nursing, and four were administrators/managers of human resources/people management in public health institutions, a context explored by the researchers. It is noteworthy that the judges did not have direct working relationships with the study participants, since they are part of the collaborators of the strategic area of the Social Health Organization and not of the care area, in which the participants are inserted.

The minimum level of agreement was 80% for each of the 29 items evaluated. To help measure the level of agreement among the body of judges, a two-point rating scale was used in which the judge assigned the score he/she considered appropriate, (0. Inadequate, 1. Adequate) to each item evaluated. In the case of an "inadequate" rating for any of the five criteria, an open space was included in which the judges could point out suggested adjustments to make the instrument more accurate. The initial approach to the judges was via electronic mail (e-mail), with a presentation and objective of the research, its purpose and importance, as well as specific instructions about the content validity judgment procedures and the instrument itself. The judges were asked to authorize their participation and to sign the free and informed consent form. After undergoing the judges' evaluation, the instrument moved on to phase three.

Phase 3. After being validated by the judges, the instrument was submitted to a pre-test (seman-

tic analysis of the items) on 35 nurses from the target population to assess their perceptions of the questionnaire. The pre-test aims to verify that the items are understandable to all members of the population for which the instrument is intended. Data were collected by the researcher by means of individual questionnaires formulated by the Research Electronic Data Capture (REDCap) software, which were sent via internet and answered by those who agreed to participate in the research and signed the Informed Consent Form.

The empirical procedures were performed in the fourth phase of the study, when the content-validated instrument was applied to middle-management nurses (target population), with the purpose of performing the instrument's construct validation. The middle management nurses in the institution where the study was conducted are the interface between the top management and the operational staff. They alternate the roles of leadership and subordination, assuming a fundamental role in the transformation of the institution since they receive instructions from the strategy (superiors) and implement them in partnership with the nursing staff.

Data collection occurred in November 2020 and was carried out in a public health network in São Paulo and Minas Gerais, managed by an Social Health Organization located in the southeastern region of Brazil and composed of 16 hospital units, three emergency rooms, six outpatient care units, three primary and secondary health care networks, and five psychiatric units.

The study population consisted of all middle--management nurses linked to the Social Health Organization (Social Health Organization), totaling 310 professionals. Those who did not respond to the invitation to participate in the study and senior nurses were excluded from the sample. Data were collected by the researcher by means of individual questionnaires formulated by the REDCap software and sent via Internet to the nurses so that they could be part of the sample of this investigation upon acceptance and signature of the Free and Informed Consent Form. In the end, 290 answers were collected (response rate of 94%) that made up the sample of this study, which is configured as an ideal proportion, since it met the recommended criteria, obtaining a satisfactory subject-to-item ratio (10:1). Regarding the analytical procedures, the data obtained in the previous phase were submitted to statistical analyses and tests with the purpose of conferring validity to the instrument.

For the results obtained by the content validity evaluation, performed by ten expert judges, the Content Validity Index (CVI) was calculated, which measures the proportion of experts who agree on certain aspects of the instrument and its items. The CVI score for each item was calculated using the proportion of adequacy indicated by the experts, and the instrument's CVI score was given by the average of the indices obtained for each item. For this study, Content Validity Index values or agreement coefficients higher than 0.8 were considered satisfactory. Inter-rater agreement was obtained by the second-order agreement coefficient (AC2 by Gwet) with ordinal weights, given the nature of the response categories. Coefficients were accompanied by 95% confidence intervals and p-values for the zero-equality hypothesis test.

The exploratory factor analysis was used to evaluate the instrument's construct, applied to the polychoric correlation matrix between the scale items, estimated by the principal component's method and Promax oblique rotation. The criterion for selecting the number of factors was eigenvalues above one. Exclusion criteria for the items were those whose communalities were less than 0.5 and factor loadings less than 0.4. The Measure of Sample Adequacy (MSA) is another way to assess the adequacy of the exploratory factor analysis application; it ranges from 0 to 1, reaching 1 when a variable is perfectly explained without error by the other variables. In this study, values above 0.80 were considered adequate.

To evaluate the internal consistency of the constructs identified in the exploratory factor analysis, Cronbach's alpha coefficient and McDonald's total omega coefficient were used. The comparison of me-

ans among the dimensions of Talent Retention was carried out via the Friedman non-parametric test, followed by Dunn-Bonferroni multiple comparisons to maintain the global significance level. The analyses were performed with the aid of R, lavaan, Psych, AMOS, and SPSS packages. The significance level adopted was 5%.

The present study was approved by the Research Ethics Committee of the Hospital Israelita Albert Einstein (Albert Einstein Hospital), São Paulo, through Brazil Platform (Certificate of Ethical Appreciation Presentation 30442420.7.0000.0071 and Opinion 3,999,567/2020), following the ethical and legal precepts of research involving human beings. All research participants were guaranteed data confidentiality and anonymity, and the Informed Consent Form was applied.

Results

With an extensive literature review, it was possible to establish the concept of the study's object (talent retention), the constitutive and operational attributes that guided the instrument's development and, at the end, operationalize the construct in factors, and, for each factor, associate the items with greater affinity. The initial instrument was composed of 29 items distributed in six factors: I. Work environment (items 1 to 7), II. Leadership (items 8 to 11), III. Training and development opportunities (items 12 to 16), IV. Benefits and compensation (items 17 to 20), V. Succession and career plan (items 21 to 26), and VI. Balance between work and personal life (items 27 to 29).

The content validation of the instrument was performed by 10 specialists, aged between 33 and 60 years (average of 46 years) and mostly women (70.0%). The most incident position was related to the Nursing Directory (40.0%) and the title was Specialist (70.0%). The time of training ranged from four to 38 years (average of 19 years) and the time working in the area ranged from 11 to 38 years (average of 23 years).

In this study, two rounds of presentation were carried out for the judges, because it was observed, in the first evaluation of the judges, that three items presented Content Validity Index lower than 80%: Q14 (I have already been promoted in this institution), Q16 (I am proud to work in this institution, where most managers are career employees) and Q29 (My work schedule often conflicts with my personal life), which were changed after suggestion by the judges to, respectively, Q14 (The institution offers opportunities for me to develop and be prepared for new challenges and functions), Q16 (I am proud to work in an institution where most managers are internally developed employees throughout their careers) and Q29 (My working hours interfere with my personal life). In the second resubmission to the judges, all these items reached CVI values between 88.9% (Q29) and 100.0% (Q14 and Q16).

In addition, Gwet's second-order agreement coefficient (AC2) showed excellent agreement according to the criteria proposed by Altman, the lowest coefficient being 0.83, observed for clarity, and the highest 0.89, observed for objectivity of the items (Table 1).

Table 1 – Agreement coefficients (AC2 Gwet) among the ten judges. São Paulo, SP, Brazil, 2021

Aspect	Coefficient (CI* 95%)	p-value
Appearance	0.86 (0.80; 0.93)	< 0.001
Clarity	0.83 (0.74; 0.92)	< 0.001
Understanding	0.83 (0.75; 0.92)	< 0.001
Objectivity	0.89 (0.83; 0.95)	< 0.001
Relevance	0.86 (0.79; 0.92)	< 0.001

*CI: Confidence Interval of the Gwet coefficient

After the judges' validation, together, the instrument and a demographic questionnaire were applied in the form of a pre-test to a sample of 35 individuals from the target population, who indicated no need for changes.

The instrument was applied to 290 nurses, most of whom were female (88.6%); mean age was 39 years; 63.1% were married; 70.0% had children; the

most frequent level of education was specialization (66.6%); 50.0% had one to five years in the company, and 50.7% worked 10 km or less from home.

For the construct evaluation, exploratory factor analysis was used. Initially, the polychoric matrix was calculated for the 29 items of interest. The results showed positive correlation among most items, but two items were from theoretical factor six, 6.1 and 6.3 showed very low correlation in relation to the others. These items were excluded as they would not make an important contribution to the instrument.

The Sample Adequacy Measure for the set of 29 items was 0.94, and for the individual items, the values ranged from 0.39 to 0.97, with some items showing unacceptable levels to proceed with the analysis in that set of items (Table 2).

Table 2 – Measures of sample adequacy to exploratory factor analysis (n=290). São Paulo, SP, Brazil, 2021

Item/ measure	Measure of sample adequacy (MSA*)									
Item	m1_1	m1_2	m1_3	m1_4	m1_5	m1_6	m1_7	m2_1	m2_2	m2_3
MSA	0.95	0.95	0.95	0.91	0.94	0.92	0.96	0.94	0.95	0.95
Item	m2_4	m3_1	m3_2	m3_3	m3_4	m3_5	m4_1	m4_2	m4_3	m4_4
MSA	0.96	0.95	0.95	0.95	0.95	0.97	0.93	0.94	0.89	0.95
Item	m5_1	m5_2	m5_3	m5_4	m5_5	m5_6	m6_1	m6_2	m6_3	–
MSA	0.91	0.89	0.96	0.96	0.97	0.97	0.56	0.96	0.39	–

*MSA: Measure of Sample Adequacy

Thus, items 6.1 (MSA considered bad) and 6.3 (MSA considered unacceptable) were removed and the sample adequacy measure was reassessed for the new set. Bartlet's test of sphericity for the set of 27 items showed p<0.001 (chi-square test statistic 9509.7 with 351 degrees of freedom), i.e., there is evidence of factor analysis adequacy for this sample.

The next step was to evaluate the Scree plot (Figure 1), identifying the number of eigenvalues greater than one. It should be noted that three or four factors would be sufficient to satisfactorily explain the variability of the 27 items.

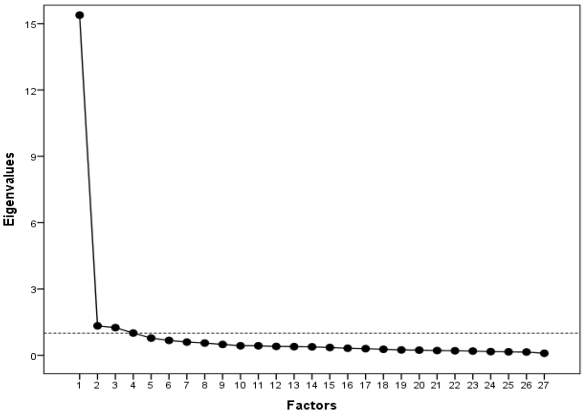

Figure 1 – Scree plot for the 27 items of the Talent Retention Motivators Instrument (n=290). São Paulo, SP, Brazil, 2021

Subsequently, the communality measures were evaluated for the 27 items, and all were above 0.5 as is the goal (minimum of 0.51). The factorial loadings matrix was also evaluated to identify the correlation of the items with respect to each factor. The goal is for all standardized factorial loadings to be greater than 0.40.

It was identified that items 3.5 (I am proud to work in an institution where most managers are employees who have been developed internally throughout their careers) and 3.3 (The institution offers opportunities for me to develop and be prepared for new challenges and functions) showed factor loadings lower than 0.40 (respectively, 0.33 and 0.37), and were therefore removed from this stage of the exploratory factor analysis.

The new solution with 25 items resulted in the final version of the exploratory factor analysis, which has four factors, all with factor loadings of at least 0.40 and communalities greater than 0.50. Together, the four factors explain 74% of the total variability of the items. Therefore, the final instrument, called Instrument of Talent Retention Motivators (IMRT- in Portuguese), composed 25 items, divided into four factors, which needed to be renamed to give more meaning to the correlated items. Factor 1. succession and career plan focused on opportunities; Factor 2. work environment; Factor 3. professional engagement; Factor 4. leadership and professional growth (Table 3).

Table 3 – Factorial loadings and communalities of the exploratory factor analysis by principal components and Promax rotation (n=290). São Paulo, SP, Brazil, 2021

Items	Factor1	Factor2	Factor3	Factor4	Communality
m5_1 There are career opportunities for me in this institution.	1.00	0.08	-0.14	-0.07	0.87
m5_2 I believe that, working in this institution, I will have opportunities for professional growth and career promotion.	1.00	0.06	-0.16	-0.13	0.95
m5_3 The opportunity to work in other areas and other positions in the institution stimulates my search for professional improvement.	0.87	0.06	-0.01	-0.04	0.77
m5_4 I feel motivated when I see that the institution values the talents of its employees.	0.41	0.00	0.17	0.40	0.85
m5_6 I consider that there is in the institution an effort to retain talents.	0.41	-0.16	0.30	0.33	0.71
m1_6 I feel that my work contributes to the success of this institution.	0.03	0.80	-0.08	0.08	0.69
m1_4 In my work environment I have autonomy to discuss themes relevant to the institution.	0.00	0.70	-0.17	0.33	0.71
m1_5 The company's brand and tradition are aspects that contribute for my permanence in its staff.	0.07	0.72	0.24	-0.21	0.63
m1_7 The institution provides constructive, friendly, and collaborative relations among employees.	0.00	0.67	-0.04	0.25	0.71
m1_2 The institution offers conditions that make me proud to be part of it.	0.12	0.47	0.46	-0.04	0.84
m4_3 The compensation offered by the institution is within the market parameters.	-0.24	-0.02	0.96	-0.07	0.53
m4_2 The benefit programs influence my will to stay in the institution.	0.06	-0.02	0.80	-0.11	0.57
m4_4 I believe that the promotion programs offered by the institution contribute to talent retention of professionals.	0.28	-0.13	0.55	0.24	0.82
m3_2 The training practices developed by the institution boost my performance.	-0.04	0.28	0.53	0.17	0.76
m6_2 The institution offers good working conditions, providing balance in my professional, family and social life.	0.04	0.35	0.48	-0.03	0.60
m3_1 The people development policy makes me want to stay in this institution.	0.13	0.30	0.43	0.14	0.81
m4_1 I receive incentives from the institution for my personal and professional development.	0.08	-0.04	0.43	0.39	0.65
m2_4 My leadership clearly exposes the level of performance expected from each team member.	-0.17	0.03	-0.03	0.97	0.69
m2_1 The leadership style practiced by my immediate and middle managers values the team's talents.	0.08	0.14	-0.09	0.82	0.86
m2_2 The leadership exercised by my immediate superior contributes positively to my performance.	0.03	0.28	-0.12	0.72	0.77
m2_3 Feedbacks received from various sources (peers, subordinates, superiors) impact the improvement of my performance.	-0.06	0.15	-0.05	0.76	0.62
m1_1 My work environment stimulates talent development.	0.27	0.01	0.09	0.51	0.69
m3_4 The internal selection processes practiced by the organization stimulate my professional improvement.	0.38	-0.08	0.20	0.44	0.79
m1_3 The institution offers opportunities for the use of talents and career development.	0.32	-0.04	0.19	0.43	0.72
m5_5 The result of my work is recognized in my performance evaluation.	0.27	0.25	0.03	0.40	0.75
Percentage (%) of total variance explained	0.64	0.04	0.03	0.02	
Percentage (%) of total variance explained	0.64	0.68	0.71	0.74	
Cronbach's Alpha	0.919	0.866	0.888	0.927	

Note: % variance explained - Promax rotation (74%); Kaiser-Meyer-Olkin criterion (KMO = 0.947); Bartlett's test: Chi-square = 8,362.57, p<0.001

Excellent Cronbach's alpha and McDonald's Omega coefficients were also observed, both with the same values, ranging from 0.866 (Factor 2) to 0.927 (Factor 4), values considered high for exploratory studies.

Additionally, there were (Table 4) mean differences among the dimensions of talent retention ($p<0.001$). The factors did not present a normal distribution, which is why the Friedman test (non-parametric test for related samples) was used to compare the levels among the factor scores. The average score for Work environment (F2) was higher than the others. Succession and career plan with focus on opportunity (F1) and Leadership and professional growth (F4) were like each other and higher than Professional engagement (F3).

Table 4 – Description of the scores calculated by factors of the Talent Retention Motivators Instrument (n=290). São Paulo, SP, Brazil, 2021

Factors in talent retention	Median	1st quartile	3rd quartile	Minimum	Maximum	p*
Talent retention						<0.001
F1 - Succession and career plan with focus on opportunity	4.2	3.8	4.8	1.0	5	
F2 - Work environment	4.4	4.0	4.8	1.8	5	
F3 - Professional engagement	4.0	3.3	4.6	1.6	5	
F4 - Leadership and professional ascension	4.3	3.9	4.8	1.8	5	

*p: descriptive level from Friedman test; a, b and c show different means according to Bonferroni correction

Discussion

The construction of the Instrument of Talent Retention Motivators (IMRT-in Portuguese), encompassed by the results of the integrative literature review, met the gap recognized by the very studies analyzed in the review about the scarcity of objective and validated instruments to assess talent retention factors in nurses.

The instrument developed was initially submitted to content validation. The literature recommends that the index of acceptable agreement between experts should be at least 0.80, and preferably higher than 0.90, which corroborates the findings of the validation of this study[15,17]. A pre-test was also performed with 35 nurses from the target population, who were later excluded from the study sample. According to researchers, the pre-test allows corrections to be made because it reveals possible inconsistencies, enriching the validity of the instrument[15,18].

The results of the Exploratory Factor Analysis, the talent retention motivators instrument was reduced from the previous six factors and 29 items to four factors and 25 items: "succession and career plan with focus on opportunity", "work environment", "professional engagement", "leadership and career advancement". These four factors were renamed due to the regrouping of the items and have a close theoretical connection to the original six factors.

The internal consistency of the items is an important issue in assessing the psychometric properties of an instrument. The four factors obtained high Cronbach's alpha values. Cronbach's alpha coefficient reliability usually ranges from 0 to 1, and values starting at 0.700 are considered acceptable for exploratory studies[15,19].

The first factor named "succession and career plan with focus on opportunity" corresponds almost in its entirety to the items suggested in the original factor that deals with work motivation, career opportunities and professional growth that the institution stimulates and offers. Items also related to the company's valuation policy were analyzed in a Brazilian study that points out that the lack of perspective

of professional growth was perceived by the nursing staff, a factor that can generate dissatisfaction and contribute to the turnover of these professionals[20].

The data indicate that the mean score of the second factor "work environment" was higher than the others, understanding that: autonomy at work; constructive relationships with colleagues; healthy atmosphere; and company brand and tradition confer, for the study population, greater perception of talent retention and intention to remain. This finding is in line with other studies that reinforce the need for a favorable work environment, essential to increase nurses' intention to remain in the institution[3,21-22].

As from the third factor, renamed "professional engagement", which comprised seven items of the initial structure, we noticed a recombination of them, most of them being related to benefits and remuneration (four items), followed by training and development (two items) and balance between work and personal life (one item). In theory, although conceived as independent[19-21] in the perceptions of the professionals in the study, remuneration, incentives, working conditions and benefit programs, as well as training and capacity building, are part of the same factor, which was named "Professional engagement".

In this context, actions for the engagement of nursing should be constantly implemented. It is considered relevant the investment in continuing education programs, health education, improvements in workflows and work routines[23].

Institutions must provide conditions for employee retention, and one of the possible answers is to offer opportunities for education, training, and skills development. These aspects must be considered through performance evaluation and individual and collective needs. They also reinforce that employees who are satisfied with training and capacity building for the exercise of their functions remain in the institution and have a lower intention of turnover[23-25].

Non-monetary benefits, on the other hand, are those that have the greatest impact on employees, because they can lead to the perception that institutions are interested in the individual needs of their employees beyond their work. This generates more commitment and better staff retention[23].

People development policies and benefits, not only financial but also in terms of professional training, can generate autonomy to perform tasks, and these factors are considered opportune for continuous personal development[1].

The respondents' average age, 39, indicates that they belong to Generation X. Remuneration is not a fundamental value for this generation, which values the relational environment at work and the opportunities for career succession, has greater involvement at work, when compared to Generation Y, which seeks placement based on autonomy and the possibility of professional development at work. Currently, it is the generation with more career visibility and that is in higher and better hierarchical position in organizations[25-26].

The fourth factor, renamed "leadership and professional ascension", which composed eight items of the initial structure, is mostly related to Leadership (four items), followed by Work environment (two items), Training and development (one item) and Succession and career (one item). Studies show a correlation between leadership and work environment with talent retention[18,26]. A workforce is more committed when they trust their leadership, receive clear communications, and believe that leaders have the expertise for the job.

Leaders have become protagonists of employee retention. Nursing leaders have expressive influence in the implementation of improvements in management and in the care process[26], which can contribute to the care team being motivated to perform their role and responsibility, however, more committed to the institution.

Also, Generation X nurses like the middle-aged nurses in this study reported that leadership attention and autonomy to contribute to hospital decisions are key factors for talent retention[1], which corroborates another study, in which the authors reported that ac-

credited hospitals have a higher perception of shared governance, where nurses perceive more autonomy in the work environment[25].

Study limitations

The results may have limited generalizability to public health institutions, since the study was conducted in a single professional and cultural context, that is, with middle-management nurses who work in public health institutions managed by a Social Health Organization. Another limiting factor of this research is the quantitative characterization and work locus of the judges, experienced in the management of public health services. Moreover, the results of the factors related to the intention to remain in the institution may vary depending on the time, cultural background, and socioeconomic conditions. To achieve mainly a heterogeneous sample, with multiple environments, it is suggested to expand the study with greater heterogeneity of institutions not only from the public context, but also from the private one at different levels of care.

Contributions to practice

This is an innovative study, which adds contributions to nursing management since it validated the steps of an instrument capable of identifying the motivating factors for retaining talent among nurses. The results of this study can contribute to the development of more effective measures for retaining nurses and provide subsidies for assertive decision-making by managers in the management and development of people. In addition, it can provide information to managers about their workforce. It also supports the implementation of necessary changes to improve nurse satisfaction and retention in the workplace. It opens a range for the need for other studies that deepen the theme of quality of life at work versus retention of talent and that consider the specificities of private healthcare institutions.

Conclusion

The Talent Retention Motivators Instrument allows us to evaluate the motivators of talent retention in nurses of public health institutions managed by a Social Health Organization. The result of the exploratory factor analysis was an instrument with 25 items divided into four dimensions: Factor 1. Succession and career plan focused on opportunities; Factor 2. Factor 3. professional engagement; Factor 4. leadership and professional growth. The instrument presents a good level of validity and reliability, being an important tool for managers in the development and implementation of more appropriate strategies aimed at minimizing turnover in health institutions. Further research is necessary to deepen the analysis of the components of factor 1 of the instrument, correlating them, since the factor analysis showed that it explains a large part of the construct. Further studies that evaluate the application of the instrument to nurses in contexts different from those explored in this study are also recommended.

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Authors' contribution

Conception and design of the research, writing of the manuscript, final approval of the version to be published, and agreement to be responsible for all aspects of the manuscript related to the accuracy or completeness of any part of the manuscript to be investigated and resolved appropriately: Kuratomi SSK.
Analysis and interpretation of data, writing of the manuscript, relevant critical review of the intellectual content, and final approval of the version to be published: Trovo MM, Carvalho R.

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