

Nursing in Primary Health Care: association between leadership, psychological capital, and burnout implications

Enfermagem na Atenção Primária à Saúde: associação entre liderança, capital psicológico e implicações no burnout
Enfermería en la Atención Primaria de Salud: relación entre liderazgo, capital psicológico e implicaciones en el burnout

Debora Paulino da Silva Almeida¹

ORCID: 0000-0002-1843-6430

Paula Vitali Miclos^{II}

ORCID: 0000-0002-9868-4660

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

^{II}Sociedade Beneficente Israelita Albert Einstein. São Paulo, São Paulo, Brazil.

How to cite this article:

Almeida DPS, Miclos PV. Nursing in Primary Health Care: association between leadership, psychological capital, and burnout implications. Rev Bras Enferm. 2022;75(Suppl 3):e20210942. <https://doi.org/10.1590/0034-7167-2021-0942>

Corresponding author:

Debora Paulino da Silva Almeida
E-mail: enf.deborapaulino@gmail.com



EDITOR IN CHIEF: Antonio José de Almeida Filho
ASSOCIATE EDITOR: Hugo Fernandes

Submission: 01-05-2022 Approval: 04-22-2022

ABSTRACT

Objectives: to verify the association between authentic leadership and burnout syndrome in Primary Health Care nursing professionals and analyze the relationship between positive psychological capital and burnout syndrome in subordinate nursing professionals. **Methods:** a field, descriptive-exploratory, cross-sectional study with a quantitative approach, developed with the nursing team, in Basic Health Units in the city of São Paulo, with the application of the sociodemographic questionnaires, Burnout Characterization Scale [*Escala de Caracterização do Burnout*], Authentic Leadership Questionnaire and Psychological Capital Questionnaire. **Results:** in leaders' perception, there was no evidence of significant associations between burnout and authentic leadership scales. There was a significant negative association of the burnout scale dimensions with the leadership dimensions regarding the subordinates. There was evidence of significant negative associations in the burnout scores with the scores of the psychological questionnaire dimensions. **Conclusions:** in nursing, burnout is associated with authentic leadership and psychological capital.

Descriptors: Burnout; Leadership; Primary Health Care; Nursing, Team; Adaptation, Psychological.

RESUMO

Objetivos: verificar a associação entre liderança autêntica e síndrome de *burnout* em profissionais de enfermagem da Atenção Primária à Saúde e analisar a relação entre capital psicológico positivo e síndrome de *burnout* em profissionais de enfermagem liderados. **Métodos:** estudo de campo, descritivo-exploratório, transversal, de abordagem quantitativa, desenvolvido com a equipe de enfermagem, em Unidades Básicas de Saúde do município de São Paulo, com aplicação dos questionários sociodemográfico, Escala de Caracterização do *Burnout*, *Authentic Leadership Questionnaire* e *Psychological Capital Questionnaire*. **Resultados:** na percepção dos líderes, não houve evidências de associações significantes entre as escalas de *burnout* e liderança autêntica. Com relação aos liderados, observou-se associação negativa significativa das dimensões da escala de *burnout* com as dimensões de liderança. Nas associações dos escores de *burnout* com escores do questionário de capital psicológico, observaram-se evidências de associações negativas significantes. **Conclusões:** na enfermagem, o *burnout* está associado com liderança autêntica e capital psicológico.

Descritores: Esgotamento Profissional; Liderança; Atenção Primária à Saúde; Equipe de Enfermagem; Adaptação Psicológica.

RESUMEN

Objetivos: verificar relación entre liderazgo auténtico y síndrome de *burnout* en profesionales de enfermería de la Atención Primaria de Salud y analizar relación entre capital psicológico positivo y síndrome de *burnout* en profesionales de enfermería liderados. **Métodos:** estudio de campo, descriptivo-exploratorio, transversal, de abordaje cuantitativo, desarrollado con el grupo de enfermería, en Unidades Básicas de Salud de São Paulo, con aplicación de encuestas sociodemográfica, Escala de Caracterización del *Burnout*, *Authentic Leadership Questionnaire* y *Psychological Capital Questionnaire*. **Resultados:** en la percepción de los líderes, no hubo evidencias de relaciones significantes entre las escalas del burnout con liderazgo auténtico. Con relación a liderados, observado relación negativa significativa de las dimensiones del *burnout* con las dimensiones del liderazgo. En las relaciones de los escores del liderazgo con escores de las dimensiones del capital psicológico, observado evidencias de relaciones negativas significantes. **Conclusiones:** en la enfermería, *burnout* está relacionado con liderazgo auténtico y capital psicológico.

Descritores: Agotamiento Profesional; Liderazgo; Atención Primaria de Salud; Grupo de Enfermería; Adaptación Psicológica.

INTRODUCTION

Nursing is a fundamental part of the multi-professional team and stands out for its robust performance in Primary Health Care (PHC), which has its practice directed toward comprehensive care⁽¹⁾. Nurses have an academic background focused on human and social needs. However, the high demand, the overload of activities, and the lack of human resources exemplify the difficulties encountered by the category in the work process⁽²⁾.

In this context, we could observe that extrinsic and intrinsic factors influence the employee's job and can lead to the development of mental disorders, including burnout syndrome, which is considered a response to chronic stress at work⁽³⁻⁴⁾. It is worth mentioning that burnout is a phenomenon involving the entire occupational context, and it is not considered a professional's exclusively problem. Thus, evaluating the work environment is an essential strategy to minimize the risks for the development of the syndrome since issues in leadership, bureaucracy in health services, lack of autonomy, low salary, lack of recognition, and difficulty in teamwork are all factors that influence professional burnout⁽⁵⁾.

Faced with the adversities found in the health system, the team tries to develop resources for coping and adaptation at work to search for better performance and greater job satisfaction. Therefore, the psychological capital, a construct that reflects the individual's positive psychological state, is characterized by the capabilities for optimism, confidence, resilience, and hope⁽⁶⁾.

Likewise, the leader will act as an essential instrument for a good organizational environment and team coordination. Authentic leadership has emerged in the health area because it is a leadership model capable of providing management openness and transparency to the team, with an appreciation of morals, ethics, and human relations; therefore, the coordinator explores the potentialities and promotes the development of the group's positive psychological capacity⁽⁷⁻⁹⁾.

Considering the importance of the leadership model in the work environment, it becomes relevant to analyze how interpersonal and intrapersonal factors influence burnout syndrome since this will damage the employee's health and harm the team and, consequently, the institution.

OBJECTIVES

To verify the association between authentic leadership and the development of burnout syndrome in nursing professionals from Primary Health Care units and analyze the relationship between positive psychological capital and burnout syndrome in subordinate nursing professionals.

METHODS

Ethical aspects

The study complied with Resolution 466/12 of the National Health Council and was approved by the Research Ethics Committee (CEP) of Hospital Israelita Albert Einstein and the São Paulo Municipal Health Department.

Design, period, and place of study

It is a cross-sectional study, guided by the STROBE tool, with a quantitative data approach. The data collection was carried out in 12 Basic Health Units (UBS) managed by the *Instituto Israelita de Responsabilidade Social (IIRS) of Hospital Israelita Albert Einstein (HIAE)*, located in the southern area of the city of São Paulo. It took place from October to November 2020, following the biosafety standards for the prevention of COVID-19.

Population, criteria of inclusion and exclusion

The population consisted of the nursing staff, composed of senior nurses, assistant nurses, and auxiliary nurses.

The choice of the senior nurse as a leader was due to a particular characteristic of this institution: the Family Health Strategy (FHS) nursing team is composed of auxiliary nurse, nurse - who assumes the assistance role and works in an FHS team - and the senior nurse, who develops the team administrative and leadership activities and is technically responsible for the nursing service.

The participation criteria for inclusion consisted of working as a senior nurse in the same sector for at least six months to participate in the research in the role of a leader; working as a nurse or auxiliary nurse in the same basic health unit for at least six months to participate in the study in the role of subordinate.

The exclusion criteria were to be away from the job due to sick leave or maternity leave during the data collection period, and if the sector leader refused to participate in the study, the study would exclude all subordinates from that unit.

Based on the established criteria, the eligible population was composed of 207 professionals, of which 12 were leaders and 195 subordinates (68 nurses and 127 auxiliary nurses). The sample was composed of 12 senior nurses corresponding to the team leaders, and the subordinates were represented by 62 assistant nurses and 118 auxiliary nurses, totaling 192 professionals. The number of subordinates for each leader varied due to the number of teams per unit since we invited everybody to participate.

Study protocol

Researchers used four instruments for data collection. The first tool was the sociodemographic questionnaire to characterize the sample according to age, gender, marital status, training time, education level, job position, and time working in the job and at that unit. All participants answered this instrument.

The second instrument was the Burnout Characterization Scale (BCS) [*Escala de Caracterização do Burnout (ECB)*], developed and validated by Tamoyo in 2009, which measures burnout syndrome through a self-administered questionnaire composed of three dimensions: Emotional Exhaustion; Dehumanization; and Disappointment at work. The assessment used a Likert-type scale ranging from 1 to 5⁽¹⁰⁾. All research participants answered this questionnaire.

Next it was used the Authentic Leadership Questionnaire (ALQ). The instrument, validated for the Brazilian Portuguese

language in 2018⁽¹¹⁻¹²⁾, assesses the degree of authenticity of the leader in two versions: one applied to the leader and the other to the subordinate⁽¹³⁾. Both instruments are self-administered, each composed of 16 items, which assess four domains: Transparency in relationships, Moral and ethical perspective, Balanced information processing, and Self-awareness. The assessment occurs by a Likert-type scale, which progressively scores the leader's level of authenticity in a score from 0 to 4⁽¹¹⁾. All research participants answered the questionnaire considering the respective version of each group: leader/subordinate.

Finally, the Psychological Capital Questionnaire (PCQ-12), validated for the Brazilian Portuguese language in a reduced version, aims to analyze the degree of development of the psychological capital of the individual through twelve items that assess: Self-efficacy/confidence, Optimism, Hope, and Resilience. The analysis employed a Likert-type scale, with a progressive level of agreement from 0 to 6⁽¹⁴⁾. This instrument was answered only by the team of subordinates, considering that the basis of authentic leadership comes from the principles of positive psychological capital⁽¹⁵⁾.

It is evident that the application of the ALQ and PCQ-12 questionnaires was conditioned on the authorization and granting of the inventories by the Mind Garden company, obtained by the researchers.

The questionnaires were presented on a tablet, using the software "Research electronic data capture (RedCap)"⁽¹⁶⁾, in the following order: sociodemographic questionnaire; Burnout Characterization Scale (BCS); Authentic Leadership Questionnaire in the Self version for the leader and Rater version for the subordinate; and Psychological Capital Questionnaire for the subordinate. Data collection occurred individually, in a private environment, from October to November 2020.

Analysis of results and statistics

For data analysis, categorical variables were described by absolute and relative frequencies; and numerical variables by means, minimum and maximum values, standard deviation (SD), medians, and quartiles⁽¹⁷⁾. The distributions of instrument scores were verified by employing histograms, boxplots, and quartile comparison charts, with the help of the statistical program SPSS⁽¹⁸⁾.

For the leaders, the models with Gamma distribution were adjusted in the relations between the scores of the burnout instrument dimensions and the authentic leadership dimensions⁽¹⁹⁾. To investigate relations between the scores of the dimensions of the Burnout instrument and the dimensions of authentic leadership and psychological capital - answered by the professionals who acted as subordinates- mixed models with Gamma distribution⁽¹⁹⁾ were adjusted, contemplating the dependence between the answers of professionals from the same work team.

The results were presented as ratios of means, 95% confidence intervals, and p-values; and, to control the level of significance, the p-values obtained in the models were corrected by the method proposed by Benjamini et al.⁽²⁰⁾. The model adjustments were performed with the R⁽²¹⁾ and gamlss⁽²²⁾ packages, considering a 5% significance level.

RESULTS

In the study sample, 192 professionals were included: 12 leaders, one from each BHU participating in the study; and 180 subordinates: 10 (5.6%) from BHU Alto do Umarama, 12 (6.7%) from BHU Arrastão, 20 (11.1%) from BHU Campo Limpo, 9 (5.0%) from BHU Jardim Helga, 26 (14.4%) from BHU Jardim Mitsutani, 14 (7.8%) from BHU Jardim Olinda, 15 (8.3%) from BHU Jardim das Palmas, 14 (7.8%) from BHU Paraisópolis I, 16 (8.9%) from BHU Paraisópolis II, 13 (7.2%) from BHU Paraisópolis III, 15 (8.3%) from BHU Parque Regina and 16 (8.9%) from BHU Vila Prel.

The research participants were between 31.5 and 44.7 years old, with a mean of 38.4 years (SD = 4.4 years) in the group of leaders. And between 23.3 and 73.6 years old, with a mean of 39.8 years (SD = 8.2 years) in the group of subordinates. The majority were women (91.7% of leaders and 87.8% of subordinates). More than half of the professionals were married or living in a stable union (66.7% of leaders and 67.8% of subordinates). It was observed that 9 (75.0%) of the professional leaders and 103 (57.2%) of the subordinates had more than ten years of education, and all leaders and 62 (34.4%) subordinates had postgraduate degree *latu sensu* (specialization) or *stricto sensu* (masters/doctorate).

The group of leaders was composed of senior nurses. In the group of subordinates, 118 (65.6%) were auxiliary nurses and 56 (31.1%) nurses. For the leaders, the median time working in the job position was 13.5 years (first quartile, 9 years; and third quartile, 15.5 years), and working at the BHC was 6.3 years (first quartile, 4.3 years; and third quartile, 8.3 years). For the subordinates, the median time in the job position was 9 years (first quartile, 4 years; and third quartile, 14 years), and the median time at the BHC was 3.4 years (first quartile, 1.5 years; and third quartile, 8 years).

When asked about having other employment relationships as a health professional, all leaders responded negatively, and eight (4.4%) subordinates had more than one employment relationship. In the six months before the survey, one (8.3%) leader and ten (5.6%) subordinates needed some time off due to mental health issues.

Regarding the leaders' perception, there is no evidence of significant associations between the scores of the BCS dimensions and the scores of all ALQ dimensions (corrected p-values > 0.05), as shown in Table 1.

In Table 2, it stands out that for each increase of one unit in the "Transparency in relationships" score, the average value of the subordinate's "Disappointment at work" score is reduced by 10.4%. For each increase of one unit in the leader's "Balanced processing" score, the average value of the subordinate's "Disappointment at work" score is reduced by 10.4%; and for each increase of one unit in the leader's "Self-awareness" score, the average value of the subordinate's "Disappointment at work" score is reduced by 12.5%.

In Table 3, we observe that for each increase of one unit in the "Hope" score, there are reductions of 20.3% in the "Emotional Exhaustion" score, 12.7% in the "Dehumanization" score, and 24.8% in the "Disappointment at work" score. As well as, for every increase of one unit in the "Optimism" score, there are 15.4% reductions in the "Emotional Exhaustion" score, 11.3% reductions in the "Dehumanization" score and 20.0% reductions in the "Disappointment at work" score.

Table 1 - Relations between scores of the Authentic Leadership Questionnaire dimensions and scores of the Burnout Characterization Scale dimensions in professional leaders participating in the research (n = 12)

| Dimension scores | Ratio of Medians (95% CI) | p value | Corrected p value |
|-------------------------------------|---------------------------|---------|-------------------|
| BCS – Emotional Exhaustion | | | |
| ALQ – Transparency in relationships | 0.894 (0.665; 1.190) | 0.427 | 0.758 |
| ALQ – Moral and ethics perspective | 0.843 (0.632; 1.115) | 0.256 | 0.758 |
| ALQ – Balanced processing | 0.979 (0.617; 1.530) | 0.933 | 0.933 |
| ALQ – Self-awareness | 0.920 (0.707; 1.198) | 0.573 | 0.758 |
| BCS – Dehumanization | | | |
| ALQ – Transparency in relationships | 0.892 (0.642; 1.222) | 0.508 | 0.758 |
| ALQ – Moral and ethics perspective | 0.792 (0.555; 1.120) | 0.191 | 0.758 |
| ALQ – Balanced processing | 1.129 (0.635; 1.959) | 0.695 | 0.758 |
| ALQ – Self-awareness | 1.133 (0.834; 1.540) | 0.471 | 0.758 |
| BCS – Disappointment at work | | | |
| ALQ – Transparency in relationships | 0.771 (0.586; 1.006) | 0.075 | 0.758 |
| ALQ – Moral and ethics perspective | 0.828 (0.617; 1.103) | 0.228 | 0.758 |
| ALQ – Balanced processing | 0.898 (0.558; 1.424) | 0.689 | 0.758 |
| ALQ – Self-awareness | 0.857 (0.655; 1.123) | 0.320 | 0.758 |

95% CI – 95% confidence interval; p-value obtained by model with Gamma distribution; p-value corrected by the method proposed by Benjamini et al.; ALQ – Authentic Leadership Questionnaire; BCS – Burnout Characterization Scale.

Table 2 - Relations between scores of the Authentic Leadership Questionnaire dimensions and scores of the Burnout Characterization Scale dimensions in professional subordinates participating in the survey (n = 180)

| Dimension scores | Ratio of Medians (95% CI) | p value | Corrected p value |
|-------------------------------------|---------------------------|---------|-------------------|
| BCS – Emotional Exhaustion | | | |
| ALQ – Transparency in relationships | 0.938 (0.885; 0.995) | 0.034 | 0.067 |
| ALQ – Moral and ethics perspective | 0.968 (0.919; 1.019) | 0.220 | 0.330 |
| ALQ – Balanced processing | 0.903 (0.856; 0.954) | < 0.001 | 0.001 |
| ALQ – Self-awareness | 0.905 (0.859; 0.952) | < 0.001 | 0.001 |
| BCS – Dehumanization | | | |
| ALQ – Transparency in relationships | 0.981 (0.933; 1.032) | 0.458 | 0.507 |
| ALQ – Moral and ethics perspective | 1.017 (0.974; 1.061) | 0.451 | 0.507 |
| ALQ – Balanced processing | 0.983 (0.938; 1.030) | 0.465 | 0.507 |
| ALQ Self-awareness | 0.987 (0.944; 1.032) | 0.568 | 0.568 |
| BCS – Disappointment at work | | | |
| ALQ – Transparency in relationships | 0.896 (0.843; 0.951) | < 0.001 | 0.001 |
| ALQ – Moral and ethics perspective | 0.952 (0.901; 1.005) | 0.077 | 0.132 |
| ALQ – Balanced processing | 0.896 (0.847; 0.948) | < 0.001 | 0.001 |
| ALQ – Self-awareness | 0.875 (0.830; 0.922) | < 0.001 | < 0.001 |

95% CI – 95% confidence interval; p-value obtained by model with Gamma distribution; p-value corrected by the method proposed by Benjamini et al.; ALQ – Authentic Leadership Questionnaire; BCS – Burnout Characterization Scale.

Table 3 - Relations between scores of the Psychological Capital Questionnaire dimensions and scores of the Burnout Characterization Scale dimensions in professional subordinates participating in the research (n = 180)

| Dimension scores | Ratio of Medians (95% CI) | p value | Corrected p value |
|----------------------------------|---------------------------|---------|-------------------|
| BCS – Emotional Exhaustion | | | |
| PCQ12 – Self-efficacy/confidence | 0.884 (0.840; 0.930) | < 0.001 | < 0.001 |
| PCQ12 – Hope | 0.797 (0.759; 0.838) | < 0.001 | < 0.001 |
| PCQ12 – Resilience | 0.854 (0.811; 0.899) | < 0.001 | < 0.001 |
| PCQ12 – Optimism | 0.846 (0.807; 0.888) | < 0.001 | < 0.001 |
| BCS – Dehumanization | | | |
| PCQ12 – Self-efficacy/confidence | 0.916 (0.877; 0.957) | < 0.001 | < 0.001 |
| PCQ12 – Hope | 0.873 (0.835; 0.914) | < 0.001 | < 0.001 |
| PCQ12 – Resilience | 0.875 (0.839; 0.913) | < 0.001 | < 0.001 |
| PCQ12 – Optimism | 0.887 (0.850; 0.924) | < 0.001 | < 0.001 |
| BCS – Disappointment at work | | | |
| PCQ12 – Self-efficacy/confidence | 0.829 (0.787; 0.873) | < 0.001 | < 0.001 |
| PCQ12 – Hope | 0.752 (0.717; 0.788) | < 0.001 | < 0.001 |
| PCQ12 – Resilience | 0.841 (0.797; 0.888) | < 0.001 | < 0.001 |
| PCQ12 – Optimism | 0.800 (0.763; 0.839) | < 0.001 | < 0.001 |

95% CI – 95% confidence interval; p-value obtained by model with Gamma distribution; p-value corrected by the method proposed by Benjamini et al.; PCQ-12 – Psychological Capital Questionnaire; BCS – Burnout Characterization Scale.

DISCUSSION

The research sample showed nursing professionals with a mean age of 38 years in the group of leaders and 39 years in

the subordinates. Most were women, and more than half of the professionals were married or living in a stable union. These data corroborate the findings in the literature regarding gender⁽²³⁻²⁶⁾ and marital status⁽²⁴⁻²⁶⁾. As for age, other studies indicate

a predominantly young adult public^(23-24,26), but stands out one study with a mean age of 45 years for nurses in Primary Health Care, which is closer to the findings of this research⁽²⁵⁾.

It was observed that 75% of the professionals who were leaders and 57.2% of the subordinates had more than ten years of training, and all leaders and 34.4% of the subordinates had postgraduate degree *lato sensu* (specialization) or *stricto sensu* (masters/doctorate). For the leaders, the median time in the job position was 13.5 years, and for the subordinates, nine years. These data are close to the results found in a research carried out with Primary Health Care nurses, in which the average time working in the job position was over ten years⁽²⁵⁾. This information is relevant since the literature reports that factors such as age under 30 years, high educational level, lack of a stable affective relationship, and jobs requiring direct care for others influence burnout syndrome development⁽²⁷⁾.

About gender, there are controversies since, for some authors⁽²⁸⁻²⁹⁾, burnout syndrome has no predilection for one gender, but some studies identify the female gender as the most affected⁽³⁰⁾.

In the leaders' perception, there was no correlation between authentic leadership and burnout syndrome, which suggests that the development of the syndrome is not related to the way of leading. Intrapersonal, interpersonal, and organizational factors have been mentioned in the literature as burnout triggers⁽³¹⁾.

In this study, we observed divergences in the association between the authentic leadership perceived by the subordinates and the burnout syndrome due to an association between the authentic leadership perceived by the subordinates and the burnout syndrome of the Primary Health Care nursing team. The opposite result occurred in research carried out with 946 nurses in Taiwanese hospitals by evaluating the relationship between authentic leadership and the "Emotional exhaustion" dimension of the burnout syndrome, finding no significant correlation⁽⁸⁾. Another research carried out with 907 recently graduated nurses working in hospitals in Ontario pointed out that authentic leadership was associated with lower levels of burnout⁽³²⁾.

It is noteworthy that the relationship between leadership and burnout has been studied in different areas since it is perceived that the leader has a significant impact on the health and well-being of their team and the development of burnout syndrome in their subordinates⁽³³⁾. In this same context, it was noticed that authentic leadership positively impacts the work environment⁽³¹⁾, which indirectly contributes to reducing team burnout and improving the well-being and health of the employees^(31-32,34).

In this sample, it was also possible to identify that, in the team's perception, leaders with higher levels of self-awareness and balanced processing impact the reduction of emotional exhaustion rates of their subordinates. Considering that balanced processing is when the leader analyzes all parts objectively before making decisions and that self-awareness represents the knowledge of one's strengths and limitations and how this affects other people⁽³⁵⁾, we found that the team has less physical and emotional exhaustion when the leader adopts this posture, in line with studies conducted with the nursing team^(32,36).

Analyzing the dimension "Disappointment at work," when the leader has high scores in the dimensions "Transparency in relationships," "Balanced processing," and "Self-awareness," the team reduces 10% to 12% the rate of "Disappointment at work.

"Therefore, the importance of developing such skills in leaders must be emphasized since this dimension of burnout syndrome is defined by the perception of the professional feeling saturated with work, depressed, or even broken⁽²⁷⁾.

The findings of this study add to the results described in the literature regarding the positive effects of authentic leadership in reducing professional burnout^(32,37-38). Research conducted in Canada with 1,009 recently graduated nurses indicates that this is related to the positive environment that the authentic leader creates, improving the team's work experience and promoting the strengthening of confidence, which develops in nurses the ability to better deal with the challenges of professional practice and then reduces burnout syndrome⁽³⁹⁾. Likewise, it was found by the American Association of Critical-Care Nurses that authentic leadership is essential to the development of a healthy work environment⁽⁴⁰⁾.

Through authentic leadership, the motivation and engagement of professionals are increased, resulting in the team's improved performance and productivity and patient experience, and safety. There is, then, a relationship between leadership and the attitudes and behaviors of the subordinates, i.e., leaders can influence subordinates' attitudes; therefore, variables such as confidence, optimism, hope, and positive emotions add positive value to this process⁽⁴¹⁾.

Evaluating the relationship between the Burnout Characterization Scale and psychological capital, this study identified a negative association between all dimensions of the BCS with all dimensions of the PCQ-12. This result corroborates the findings in the literature, in which it is evidenced that individual coping strategies to deal with stressful work factors prevent negative reactions triggered by stress^(27,42). In previous studies, it was possible to identify similar results. There is a significant negative association of the dimensions of positive psychological capital with undesirable behaviors, such as anxiety, stress, cynicism, and desire to leave the job⁽⁴²⁻⁴³⁾, and with burnout syndrome⁽⁴⁴⁻⁴⁶⁾.

The findings of this research concerning the influence of authentic leadership and psychological capital on burnout syndrome are relevant to ratifying the idea that intrapersonal and interpersonal factors impact burnout^(32,47).

It is essential to consider investigations on the feasibility, acceptability, and effectiveness of interventions to build psychological capital as an opportunity for personal and professional growth, something that will collaborate with the health professionals involved, either for patient safety or workforce retention⁽⁴⁸⁾. In addition, it is important to provide moments of exchange between nurses with high psychological capital to share their experiences of dealing with work stressors or negative feelings to help other professionals increase their levels of psychological capital so that the possibilities of stressors are decreased⁽⁴⁹⁾.

A study conducted with nurses evaluated the influence of psychological capital on professional burnout and the desire to leave the job, establishing that psychological capital had a significant impact on lower rates of burnout and turnover⁽⁸⁾. That means that the higher the psychological capital of the individual, the lower the probability of developing burnout syndrome. In this sample stood out the dimensions "Hope" and "Optimism," where each increase of one unit in the score reduced by 24.8% and 20.0% the score "Disappointment at work," respectively.

In "Optimism", the negative events are transient, of an external cause, and specific to a given fact, and the positive events are linked to internal issues, more permanent and recurrent; Hope is related to the idea that it is possible to set goals and work to achieve them successfully⁽³²⁾. Thus, it is evident the need for leaders and organizations to work on developing those skills since this would significantly impact the performance results⁽⁵⁰⁾ and the perception of the employees' professional fulfillment.

Study limitations

The data collection occurred during the pandemic of COVID-19, a period of significant burden for health professionals. It is also noteworthy that the methodology applied does not consider personal issues inherent to human relationships and behavior.

Contributions to the field

This work intends to contribute to disseminating the subject by inspiring professionals to get to know themselves and develop

their positive psychological state and by promoting the development of authentic leadership in the nursing field since that leadership has repercussions on their subordinates' health and relationship in their jobs.

CONCLUSIONS

Regarding the association between authentic leadership and burnout syndrome, there was no evidence of a significant association in the leaders' perception. As for the subordinates' perception, we observed an association of the dimension "Emotional exhaustion" with "Balanced processing"; and "Self-awareness" and "Disappointment at work" with "Transparency in relationships," "Balanced processing," and "Self-awareness."

Considering the association between positive psychological capital and burnout syndrome in the guided team, we found a significant association of all BCS dimensions - Emotional Exhaustion, Dehumanization, and Disappointment at work - with all PCQ 12 dimensions: Self-efficacy/confidence, Hope, Resilience, and Optimism.

REFERENCES

1. Ferreira SRS, Périco LAD, Dias VRFG. The complexity of the work of nurses in Primary Health Care. *Rev Bras Enferm.* 2018;71(suppl-1):704-9. <https://doi.org/10.1590/0034-7167-2017-0471>
2. Braghetto GT, Sousa LA, Beretta D, Vendramini SHF. Difficulties and facilities of the Family Health nurse in the work process. *Cad Saude Colet.* 2019;27(4):420-6. <https://doi.org/10.1590/1414-462x201900040100>
3. Silva CCS, Lira ALBC, Feijão AR, Costa IKF, Medeiros SM. Burnout and health technologies in the context of Primary Health Care nursing. *Esc Anna Nery.* 2017;21(2):e20170031. <https://doi.org/10.5935/1414-8145.20170031>
4. Lima AS, Farah BF, Bustamante-Teixeira MT. Analysis of the prevalence of Burnout Syndrome in professionals of Primary Health Care. *Trab Educ Saude.* 2018;16(1):283-304. <https://doi.org/10.1590/1981-7746-sol00099>
5. Merces MC, Carneiro e Cordeiro TMS, Santana AIC, Lua I, Souza e Silva D, Alves MS, et al. Burnout Syndrome in nursing workers of the Primary Health Care. *Rev Baiana Enferm.* 2016;30(3):1-9. <https://doi.org/10.18471/rbe.v30i3.15645>
6. Silva MZ, Andrade ALD. Influence of Career and Psychological Capital on Aspects of Life and Work. *Psico USF* 2019;24(1):55-67. <https://doi.org/10.1590/1413-82712019240105>
7. Carrara GLR, Bernardes A, Balsanelli AP, Camelo SHH, Gabriel CS, Zanetti ACB. Use of instruments to evaluate leadership in nursing and health services. *Rev Gauch Enferm* 2017;38(3):e0060-e. <https://doi.org/10.1590/1983-1447.2017.03.2016-0060>
8. Lee HF, Chiang HY, Kuo HT. Relationship between authentic leadership and nurses' intent to leave: the mediating role of work environment and burnout. *J Nurs Manag* 2019;27(1):52-65. <https://doi.org/10.1111/jonm.12648>
9. Carvalho AGF, Cunha ICKO, Balsanelli AP, Bernardes A. Authentic leadership and the personal and professional profile of nurses. *Acta Paul Enferm* 2016;29(6):618-25. <https://doi.org/10.1590/1982-0194201600087>
10. Tamayo MR, Tróccoli BT. Construction and factorial validation of the Burnout Characterization Scale (ECB). *Estud Psicol.* 2009;14(3):213-21. <https://doi.org/10.1590/S1413-294X2009000300005>
11. Vasconcelos RMA. Adaptação cultural do Authentic Leadership Questionnaire (ALQ) para o contexto da enfermagem brasileira [Tese]. Ribeirão Preto: Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo; 2018.
12. Cervo CS, Natividade JC, Mónico LSM, Pais L, Santos NR, Hutz CS. Authentic Leadership Model: theoretical conception and validity evidences of the Authentic Leadership Questionnaire (ALQ) for Brazil. *Psychologica.* 2018;61(2):7-29. https://doi.org/10.14195/1647-8606_61-2_1
13. Cervo CS, Mónico LSM, Santos NR, Hutz CS, Pais L. Authentic Leadership Questionnaire: invariance between samples of Brazilian and Portuguese employees. *Psicol Reflex Crit.* 2016;29:40. <https://doi.org/10.1186/s41155-016-0046-4>.
14. Kamei H, Ferreira MC, Valentini F, Peres MFP, Kamei PT, Damásio BF. Psychological Capital Questionnaire - Short Version (PCQ-12): evidence of Validity of The Brazilian Version. *Psicol USF.* 2018;23(2):203-14. <https://doi.org/10.1590/1413-82712018230202>
15. Esper AJ, Cunha CJ. Liderança autêntica: uma revisão integrativa. *Navus Rev Estud Tecnol.* 2015;5(2):60-72. <https://doi.org/10.22279/navus.2015.v5n2.p60-72.254>

16. 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. <https://doi.org/10.1016/j.jbi.2008.08.010>
17. Altman, DG. *Practical statistics for medical research.* London: CRC press; 1991.
18. IBM Corp. *IBM SPSS Statistics for Windows, Version 24.0,* Armonk, NY: IBM Corp; 2016.
19. Faraway JJ. *Extending the linear model with R: generalized linear, mixed effects and nonparametric regression models.* Boca Raton, FL: Chapman & Hall/CRC; 2006.
20. Benjamini Y, Krieger AM, Yekutieli D. Adaptive linear step-up procedures that control the false discovery rate. *Biometrika.* 2006;93(3):491-507.
21. R Core Team. *R: A language and environment for statistical computing* [Internet]. 2015[cited 2021 Dec 08]. Available from: <http://www.R-project.org/>
22. Stanopoulos DM, Rigby RA. Generalized additive models for location, scale and shape (GAMLSS) in R. *J Stat Softw.* 2007;23(7). <https://doi.org/10.18637/jss.v023.i07>
23. Baldonado-Mosteiro M, Almeida MCS, Baptista PCP, Sánchez-Zaballos M, Rodríguez-Díaz FJ, Mosteiro-Díaz MP. Burnout syndrome in Brazilian and Spanish nursing workers. *Rev Latino-Am Enfermagem.* 2019;27:e3192. <https://doi.org/10.1590/1518-8345.2818.3192>
24. Guo YF, Luo YH, Lam L, Cross W, Plummer V, Zhang JP. Burnout and its association with resilience in nurses: a cross-sectional study. *J Clin Nurs.* 2018;27(1-2):441-449. <https://doi.org/10.1111/jocn.13952>
25. Ortega-Campos E, Cañadas-De la Fuente GA, Albendín-García L, Gómez-Urquiza JL, Monsalve-Reyes C, de la Fuente-Solana EI. A multicentre study of psychological variables and the prevalence of burnout among Primary Health Care Nurses. *Int J Environ Res Public Health.* 2019;16(18):3242. <https://doi.org/10.3390/ijerph16183242>
26. Shahin MA, Al-Dubai SAR, Abdoh DS, Alahmadi AS, Ali AK, Hifnawy T. Burnout among nurses working in the primary health care centers in Saudi Arabia, a multicenter study. *AIMS Public Health.* 2020;7(4):844-53. <https://doi.org/10.3934/publichealth.2020065>
27. Souza RS. *Síndrome de burnout: um estudo com guias de turismo regional em Natal - RN* [Dissertação]. Natal: Universidade Federal do Rio Grande do Norte; 2011.
28. Ruiz-Fernández MD, Pérez-García E, Ortega-Galán ÁM. Quality of life in nursing professionals: burnout, fatigue, and compassion satisfaction. *Int J Environ Res Public Health.* 2020;17(4):1253. <https://doi.org/10.3390/ijerph17041253>
29. Yuguero O, Ramon Marsal J, Esquerda M, Vivanco L, Soler-González J. Association between low empathy and high burnout among primary care physicians and nurses in Lleida, Spain. *Eur J Gen Pract.* 2017;23(1):4-10. <https://doi.org/10.1080/13814788.2016.1233173>
30. Mercedes MCD, Coelho JMF, Lua I, Silva DSE, Gomes AMT, Erdmann AL, et al. Prevalence and Factors Associated with Burnout Syndrome among Primary Health Care Nursing Professionals: a cross-sectional study. *Int J Environ Res Public Health.* 2020;17(2):474. <https://doi.org/10.3390/ijerph17020474>
31. Boamah SA, Read EA, Spence Laschinger HK. Factors influencing new graduate nurse burnout development, job satisfaction and patient care quality: a time-lagged study. *J Adv Nurs.* 2017;73(5):1182-95. <https://doi.org/10.1111/jan.13215>
32. Laschinger HK, Fida R. New nurses burnout and workplace wellbeing: the influence of authentic leadership and psychological capital. *Burnout Res.* 2014;1(1):19-28. <https://doi.org/10.1016/j.burn.2014.03.002>
33. Lourenço VP, Pérez-Nebra AR, Ferreira AI, Kohlsdorf M. The relation between presentism, burnout syndrome and ethic leadership in scholar's organizations. *Fractal Rev Psicol.* 2020;32(spe):218-26. https://doi.org/10.22409/1984-0292/v32_i-esp/40568
34. Laschinger HKS, Wong CA, Grau AL. Authentic leadership, empowerment and burnout: a comparison in new graduates and experienced nurses. *J Nurs Manag.* 2013;21(3):541-52. <https://doi.org/10.1111/j.1365-2834.2012.01375.x>
35. Campos MI, Rueda FJM. Evolution of authentic leadership construct: a literature review. *Rev Psicol Organ Trab.* 2018;18(1):291-98. <http://dx.doi.org/10.17652/rpot/2018.1.13473>
36. Maziero VG, Bernardes A, Righetti EAV, Spiri WC, Gabriel CS. Positive aspects of authentic leadership in nursing work: integrative review. *Rev Bras Enferm.* 2020;73(6):e20190118. <https://doi.org/10.1590/0034-7167-2019-0118>
37. Laschinger HKS, Fida R. A time-lagged analysis of the effect of authentic leadership on workplace bullying, burnout, and occupational turnover intentions. *Eur J Work Organ Psychol.* 2013;23(5):739-53. <https://doi.org/10.1080/1359432X.2013.804646>
38. Laschinger HKS, Grau AL. The influence of personal dispositional factors and organizational resources on workplace violence, burnout, and health outcomes in new graduate nurses: a cross-sectional study. *Int J Nurs Stud.* 2012;49(3):282-91. <https://doi.org/10.1016/j.ijnurstu.2011.09.004>
39. Laschinger HK, Borgogni L, Consiglio C, Read E. The effects of authentic leadership, six areas of worklife, and occupational coping self-efficacy on new graduate nurses' burnout and mental health: A cross-sectional study. *Int J Nurs Stud.* 2015;52(6):1080-9. <https://doi.org/10.1016/j.ijnurstu.2015.03.002>
40. American Association of Critical-Care Nurses. *AACN Standards for Establishing and Sustaining Healthy Work Environments: a journey to excellence.* *Am J Crit Care.* 2005;14(3):187-97. <https://doi.org/10.4037/ajcc2005.14.3.187>

41. Alilyyani B, Wong CA, Cummings G. Antecedents, mediators, and outcomes of authentic leadership in healthcare: a systematic review. *Int J Nurs Stud*. 2018;83:34-64. <https://doi.org/10.1016/j.ijnurstu.2018.04.001>
 42. Viseu J, Jesus SN, Rus C, Nunes H, Lobo P, Cara-Linda I. Psychological Capital and its assessment by PCQ-12 [Internet]. *ECOS*. 2012 [cited 2021 Dec 08];2(1). Available from: <http://www.periodicoshumanas.uff.br/ecos/article/viewFile/792/666>.
 43. Avey J, Reichard R, Luthans F, Mhatre K. Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. *Hum Resour Dev Q*. 2011;22(2):127-52. <https://doi.org/10.1002/hrdq.20070>
 44. Li Y, Wu Q, Li Y, Chen L, Wang X. Relationships among psychological capital, creative tendency, and job burnout among Chinese nurses. *J Adv Nurs*. 2019;75(12):3495-503. <https://doi.org/10.1111/jan.14141>
 45. Zhou J, Yang Y, Qiu X, Yang X, Pan H, Ban B, et al. Serial multiple mediation of organizational commitment and job burnout in the relationship between psychological capital and anxiety in Chinese female nurses: a cross-sectional questionnaire survey. *Int J Nurs Stud* 2018;83:75-82. <https://doi.org/10.1016/j.ijnurstu.2018.03.016>
 46. Kim S, Kweon Y. Psychological Capital Mediates the Association between Job Stress and Burnout of among Korean Psychiatric Nurses. *Healthc (Basel)*. 2020;8(3):199. <https://doi.org/10.3390/healthcare8030199>
 47. Dwyer PA, Hunter Revell SM, Sethares KA, Ayotte BJ. The influence of psychological capital, authentic leadership in preceptors, and structural empowerment on new graduate nurse burnout and turnover intent. *Appl Nurs Res*. 2019;48:37-44. <https://doi.org/10.1016/j.apnr.2019.04.005>
 48. Elliot R, Fry M. Psychological capital, well-being, and patient safety attitudes of nurses and midwives: A cross-sectional survey. *Nurs Health Sci*. 2021;23:237-44. <https://doi.org/10.1111/nhs.12808>
 49. Liu Y, Aunguroch Y, Gunawan J, Zeng D. Job stress, psychological capital, perceived social support, and occupational burnout among hospital nurses. *J Nurs Sch*. 2021;53(4):511-8. <https://doi.org/10.1111/jnu.12642>
 50. An M, Shin ES, Choi MY, Lee Y, Hwang YY, Kim M. Positive Psychological Capital Mediates the Association between Burnout and Nursing Performance Outcomes among Hospital Nurses. *Int J Environ Res Public Health*. 2020;17(16):5988. <https://doi.org/10.3390/ijerph17165988>
-