ABSTRACT

Objective: to investigate the stress level of Nursing interns in hospital units and the coping strategies adopted. Method: this is a cross-sectional and quantitative study conducted with Nursing interns working in hospital units. Data collection took place from December 2018 and July 2019 using a sociodemographic questionnaire, the instrument for the assessment of stress in Nursing students, and the adaptation to Portuguese of the Folkman and Lazarus Coping Strategies Inventory instrument. Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS) program, version 23. Results: a total of 88 interns from eight different areas participated in this study. In the stress analysis, 56% of the interns had less stress, and 44% more stress. There was an association between more stress and the gender variable (p-value=0.001). The interns reported more stress in the professional communication and professional training domains. The most frequently used coping strategies were positive reappraisal, responsibility acceptance, and social support. When adjusted by gender, a significant association was verified between more stress and the following coping strategies: confrontation (p-value=0.002), distancing (p-value=0.001), self-control (p-value=0.040), and escape-avoidance (p-value=0.019). Conclusion: the interns presented more stress related to professional communication and professional training, and there was an association between more stress and the following coping strategies: confrontation, distancing, self-control, and escape-avoidance, when adjusted by gender. The findings signal that this issue requires attention from the training institutions and encourage a reflection on the interns’ life context, insertion scenarios, and experiences.

Keywords: Internship and Residency; Occupational Stress; Stress, Psychological; Education, Nursing; Adaptation, Psychological.

RESUMO

Objetivo: investigar o nível de estresse de residentes de Enfermagem em unidades hospitalares e as estratégias de coping adotadas. Método: estudo transversal, quantitativo, realizado com enfermeiros residentes com atuação em unidades hospitalares. A coleta de dados deu-se entre dezembro de 2018 e julho de 2019, aplicando-se questionário de caracterização sociodemográfica, instrumento de avaliação do estresse em estudantes de Enfermagem e instrumento de adaptação do Inventário de Estratégias de Coping de Folkman e Lazarus para o português. Para a análise estatística utilizou-se o programa Statistical Package for Social Sciences (SPSS) versão 23. Resultados: participaram desta pesquisa 88 residentes de oito áreas diferentes. Na análise do estresse 56% tinham menos estresse e 44% mais estresse. Teve associação com mais estresse a variável sexo (p=0,001). Os residentes apresentaram mais estresse nos domínios comunicação profissional e formação profissional. As estratégias de coping mais empregadas foram as de reavaliação positiva, aceitação de responsabilidade e suporte social. Verificou-se...

How to cite this article:
INTRODUCTION

Stress is a complex event that occurs in the interaction between individuals and their inner and outer environments, having an impact on biopsychosocial aspects. Occupational stress is one of the most prevalent types among adults and can be found early in their careers, since work occupies most of their time and represents much of their social interactions, and they are not always prepared to cope with difficulties inherent to their jobs.

The International Labor Organization highlights that stress leads to many consequences for the workers’ lives, contributing to the development of both psychological and physical conditions and having an influence on the consumption of legal and illegal substances. The consequences of stress and its causal factors may affect the workers’ family and social interactions and have costs for the employers in terms of reduced productivity and increased staff turnover.

The reality of health care professionals involves dealing with others’ anguish and suffering; moreover, they experience the consequences of devaluation, low pay, and multiple employment contracts, situations that can have a negative impact on the well-being of these professionals. Immersed in this challenging environment, health care interns have to balance their practice routine with theoretical programs to develop strategies to control and deal with stress, such as guidance towards efficient and resolute actions.

This study is justified by the numerous consequences of stress on the Nursing workers and also by the importance of improving knowledge on the interns’ levels of stress and on the coping actions they use, thus providing information that enables internship programs to develop strategies to control and deal with stress, such as guidance towards efficient and resolute actions.

Considering that Nursing interns can present increased stress levels during specialization and that Nursing students tend to develop coping strategies aimed at avoiding confrontation with...
the stressor, we hypothesize that the Nursing interns working at hospitals may have high stress levels and not develop appropriate coping strategies for stress management.1,11

Therefore, this research aimed to investigate the stress level of Nursing interns at hospital units and the coping strategies adopted.

METHOD

This is a cross-sectional and quantitative study conducted with 88 first and second year Nursing interns working in hospital units and from different specialization areas, namely: Intensive Care, Nursing Service Management, Infectology, Neonatology, Obstetrics, Child’s Health, Perioperative Care, and Urgency and Emergency Care.

The Nursing internship programs last for two years and offer full-time activities. The interns’ workload totals 60 hours per week, of which 80% consists of practical activities and 20% of theoretical activities.

The inclusion criteria were being a nurse duly enrolled in one of the Nursing internship programs, and working in a high-complexity public university hospital in northern Paraná, Brazil. The exclusion criterion was the following: interns who were absent during the data collection period due to vacation, medical certificate, or leave.

Data collection was conducted from December 2018 to July 2019 using printed forms or an online platform that could be accessed both on smartphones and computers, according to the participant’s preference, and approximately 67% of the respondents answered the online questionnaire. Study invitations were sent by email, which was an important strategy to reach the greatest number of individuals, since their specialization areas have different schedules, with sometimes divergent timetables, departments, services, and cities, which made it difficult for the researchers to hold a face-to-face meeting with some interns.

After the interns accepted to participate in the study and signed the Free and Informed Consent Form (FICF), a sociodemographic characterization questionnaire was applied, as well as another two instruments: the Instrument for the Stress Assessment in Nursing Students (Avaliação do Estresse em Estudantes de Enfermagem - AEEE) and the Adaptation to Portuguese of the Folkman and Lazarus Coping Strategies Inventory.12,13

The sociodemographic characterization questionnaire was designed by the authors and included the following variables: age, gender, self-reported skin color, religion, marital status, children, monthly per capita income, monthly family income, and specialization area.

The AEEE instrument contains 30 items measured on a Likert scale. The scores for each item range from zero to three, with zero meaning absence of stress in the situation depicted in the item and three meaning high stress level in the situation. The scores for low, medium, high, and very high stress levels were calculated based on the sum of the stress intensity numbers reported in the items of each domain, namely: environment, performance of practical activities, professional communication, time management, professional training, and theoretical activity.12 For data analysis, the stress levels were dichotomized into less stress (low and medium stress) and more stress (high or very high stress).

The Folkman and Lazarus Coping Strategies Inventory is a four-point Likert questionnaire with eight dimensions: confrontation, distancing, self-control, social support, responsibility acceptance, escape-avoidance, problem solving, and positive reappraisal.13

The interpretation of the results was performed from the sum of classification scores, with zero to represent that the strategy is not used and three for the strategy being widely used. For interpretation of the results, these were classified into lesser use of the coping strategy (values up to 50% of the maximum score in each factor) and greater use of the coping strategy (values above 50% of the maximum score in each factor).

The application of the Cronbach’s alpha statistical test verified the reliability of the instruments for applying them to the population, with 0.887 for the AEEE and 0.926 for the Adaptation to Portuguese of the Folkman and Lazarus Coping Strategies Inventory.

Sample loss was estimated at approximately 3% of the population, considering the undelivered emails and the unreturned or incomplete forms.

The statistical analysis of the results was performed using the Statistical Package for Social Sciences (SPSS) program, version 23. A bivariate analysis was performed of the socioeconomic variables and coping strategies with “more stress”, and the variables with p<0,20 were included in the adjusted model. The statistical association between “more stress” and the coping strategies was analyzed using Poisson’s regression, with the Prevalence Ratio (PR) being the association measure, and the statistical significance being established by Wald’s chi-square test. The significance value adopted in the analyses performed was a p-value<0,05.

This research was approved by the Research Ethics Committee of the Universidade Estadual de Londrina, with Certificate of Presentation for Ethical Approval (Certificado de Apresentação para Apreciação Ética - CAAE): 03476918.2.0000.5231.

RESULTS

A total of 88 Nursing interns accepted to participate in this research; of these, 26% (23) were from Nursing Service Management, 12.5% (11) from Neonatology, 12.5% (11) from Perioperative Care, 12.5% (11) from Obstetrics, 10.2% (9) from Child’s Health, 10.2% (9) from Urgency and Emergency Care, 9.1% (8) from Intensive Care, and 6.8% (6) from Infectology.

The majority of the participants, 83% (73), were women; 70.5% (62) self-declared as white-skinned; 84.1% (74) had a religion; 39.8% (35) did not have a partner; and 97.7% (86) did not have any children. The mean age was 24 years old, and 59.1% (52) were aged 24 years old or younger. The mean monthly family income was R$ 5,096.14, and the mean monthly per capita income was R$ 3,330.00.
The analysis of the overall stress score of the interns showed that 56% had less stress and that 44% had more stress. The association between the socioeconomic data and stress is shown in Table 1.

Table 1 - Association between the sociodemographic variables and the prevalence of more stress in Nursing interns. Londrina, Paraná, 2020

<table>
<thead>
<tr>
<th>Sociodemographic Variable</th>
<th>More Stress N (%)</th>
<th>Gross PR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>37 (50.7)</td>
<td>1.33 (1.12-1.57)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Male</td>
<td>02 (13.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin color</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>30 (48.4)</td>
<td>1.10 (0.94-1.29)</td>
<td>0.232</td>
</tr>
<tr>
<td>Non-white</td>
<td>09 (34.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>36 (48.6)</td>
<td>1.22 (1.00-1.48)</td>
<td>0.04</td>
</tr>
<tr>
<td>No</td>
<td>03 (21.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 24 years old</td>
<td>25 (48.1)</td>
<td>1.06 (0.92-1.23)</td>
<td>0.392</td>
</tr>
<tr>
<td>≥ 25 years old</td>
<td>14 (38.9)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors, 2020.

In the study of the sociodemographic variables, a significant association was revealed between stress and gender in the bivariate analysis (PR=1.33; 95% CI=1.12-1.57; p-value=0.001), with the female gender showing prevalence of more stress compared with men; however, the religion variable (PR=1.22; 95% CI=1.00-1.48; p-value=0.04) was not considered as with any statistical association, as it presented a confidence interval equal to 1.

The stress intensity in each domain of the AEEE was also analyzed, with the results presented in Table 2. The professional communication and professional training domains stood out, reaching values of 54% and 68% of the interns, respectively.

Table 2 - Distribution of the interns according to stress intensity by domain. Londrina, Paraná, 2020

<table>
<thead>
<tr>
<th>Domain</th>
<th>Less stress n (%)</th>
<th>More stress n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance of practical activities</td>
<td>72 (63)</td>
<td>28 (25)</td>
</tr>
<tr>
<td>Professional communication</td>
<td>46 (41)</td>
<td>54 (47)</td>
</tr>
<tr>
<td>Time management</td>
<td>63 (56)</td>
<td>37 (32)</td>
</tr>
<tr>
<td>Environment</td>
<td>89 (78)</td>
<td>11 (10)</td>
</tr>
<tr>
<td>Professional training</td>
<td>32 (28)</td>
<td>68 (60)</td>
</tr>
<tr>
<td>Theoretical activities</td>
<td>90 (79)</td>
<td>10 (9)</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors, 2020.

Table 3 shows the distribution of the scores for the coping strategies used by the interns, where it can be highlighted that the most frequently used strategies was positive reappraisal (14.53%), followed by responsibility acceptance (12.61%) and by social support (10.42%).

Table 3 - Distribution of the scores of the coping factors presented by the interns. Londrina, Paraná, 2020

<table>
<thead>
<tr>
<th>Coping strategies</th>
<th>Minimum</th>
<th>Median</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escape-avoidance</td>
<td>0</td>
<td>4.00</td>
<td>6</td>
<td>3.39</td>
<td>1.841</td>
</tr>
<tr>
<td>Confrontation</td>
<td>0</td>
<td>6.00</td>
<td>11</td>
<td>6.03</td>
<td>2.942</td>
</tr>
<tr>
<td>Problem solving</td>
<td>0</td>
<td>7.00</td>
<td>12</td>
<td>6.65</td>
<td>2.622</td>
</tr>
<tr>
<td>Self-control</td>
<td>0</td>
<td>8.00</td>
<td>14</td>
<td>7.98</td>
<td>2.792</td>
</tr>
<tr>
<td>Distancing</td>
<td>1</td>
<td>8.00</td>
<td>18</td>
<td>8.23</td>
<td>3.756</td>
</tr>
<tr>
<td>Social support</td>
<td>2</td>
<td>10.50</td>
<td>17</td>
<td>10.42</td>
<td>3.362</td>
</tr>
<tr>
<td>Responsibility acceptance</td>
<td>0</td>
<td>13.00</td>
<td>21</td>
<td>12.61</td>
<td>4.279</td>
</tr>
<tr>
<td>Positive reappraisal</td>
<td>0</td>
<td>14.50</td>
<td>25</td>
<td>14.53</td>
<td>5.083</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors, 2020.

After adjustment by the gender variable, a significant association between the interns with more stress and the following coping strategies was verified: confrontation (PR=0.79; 95% CI=0.69-0.92; p-value=0.002), distancing (PR=0.81; 95% CI=0.71-0.92; p-value=0.001), self-control (PR=0.86; 95% CI=0.75-0.99; p-value=0.040), and escape-avoidance (PR=0.85; 95% CI=0.74-0.97; p-value=0.019).

**DISCUSSION**

The sociodemographic findings of this study show that the mean age of the interns interviewed was 24 years old, which was similar to the mean of 25 years old obtained in a research study conducted in 2018, but below the predominant age group in a study with interns from other health care fields (25 to 29 years old). Such finding may be explained by the fact that most of our participants are recently-graduated students who were immediately admitted to this post-graduate modality. Despite this characteristic, the bivariate analysis between age and more stress did not present statistical significance.

Considering the frequency analysis of the overall stress scores, it was found that that 44% of the interns reported more stress. This result is similar to that of a Brazilian study with multi-professional interns, in which 49% indicated high stress, but is lower than that of a study conducted in the Southeast region, where 78.9% of...
the participants reported stress signs and symptoms, and a lower percentage than that of medical interns in Saudi Arabia, with high stress (69.2%).

It is highlighted that 56% of the interns presented less stress, which means that this disorder was present in a low or medium level and that it can be related to the use of effective coping strategies or to the specialization period when some respondents answered the questionnaire. A 2016 study showed that the interns’ stress progressively increased throughout the first year, with worsening in certain phases.

Participating in a specialization program with a high workload of theoretical and practical activities demands effort and high productivity. Unlimited dedication to achieve high performance and increased appreciation conditions the individuals to go beyond the beneficial limit and makes them suffer consequences for their health and professional performance.

The assessment of the association between sociodemographic characteristics and stress presented significance for the gender variable, a result similar to that of a study which found an association between stress with only the gender and nationality variables.

Among the participants, 83% were female, which coincides with the results of a research study conducted in the South of the country with multi-professional interns and reinforces the increased active participation of women in the health care workforce. The analysis of the prevalence of stress revealed more stress among the female interns (50.7%) than among the male participants (13.3%), which can be the result of the coexistence of professional duties with attributions assigned exclusively to women by the family circle and by society.

In the analysis of the domains, more stress was signaled in the profession and its impact on their practical performance, that is, professional responsibility, which can be related to the stress they experience.

With regard to the coping factors, the most frequently used were positive reappraisal, responsibility acceptance, and social support, a result similar to that found in a study with the Nursing team in which that the main strategies used were problem solving, positive reappraisal, and social support. The fact that the problem solving strategy was not one of the most used by the interns can be related to their limited autonomy and to their own social support, characterized by the support and direct action of the field preceptor professionals in immediate problem resolution.

It is highlighted that there is no coincidence between the strategies most used by the interns and those significantly associated with more stress. In the assessment of the interns with more stress, the coping strategies with a significant association after adjustment by gender were confrontation, distancing, self-control, and escape-avoidance. Such findings suggest that these strategies minimize the occurrence of stress and that, the more they are used, the fewer are the consequences in the work environment.

However, these data are contrary to those of another study, in which confrontation was not either the most effective strategy or the most used by the Nursing workers, ranking behind problem solving and social support, both with no statistical significance in the tests herein presented. Confrontation is a strategy strictly focused on the problem and on the ability of the individual to resolve the stressors. Of the four strategies that were associated with more stress, it is the only one with this characteristic.

Distancing actions are related to withdrawing from the situation in which stress occurs. In this case, the individuals are immersed in a stressful situation and try to find a way to distance themselves from those events. Several findings signal that these actions are the most used by students who feel less identified with the profession.

Self-control actions are those in which the individual reflects on how to act and on what to say, avoiding mistaken behaviors and not letting others perceive the real situation, which is a self-protective attitude. The attitude of weighing the scenario and the conditions involving the stressful factor helps the interns to

Table 4 - Association between the coping strategies and the prevalence of more stress in Nursing interns. Londrina, Paraná, 2020

<table>
<thead>
<tr>
<th>Coping strategy</th>
<th>More stress</th>
<th>Gross PR (95% CI)</th>
<th>p-value</th>
<th>Adjusted PR* (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confrontation</td>
<td>12</td>
<td>30.8</td>
<td>0.68 (0.54-0.87)</td>
<td>0.002</td>
<td>0.79 (0.69-0.92)</td>
</tr>
<tr>
<td>Distancing</td>
<td>18</td>
<td>46.2</td>
<td>0.70 (0.56-0.86)</td>
<td>0.001</td>
<td>0.81 (0.71-0.92)</td>
</tr>
<tr>
<td>Self-control</td>
<td>27</td>
<td>69.2</td>
<td>0.83 (0.67-1.02)</td>
<td>0.07</td>
<td>0.86 (0.75-0.99)</td>
</tr>
<tr>
<td>Social support</td>
<td>26</td>
<td>66.7</td>
<td>0.92 (0.74-1.14)</td>
<td>0.46</td>
<td></td>
</tr>
<tr>
<td>Responsibility acceptance</td>
<td>31</td>
<td>79.5</td>
<td>0.86 (0.68-1.07)</td>
<td>0.18</td>
<td>0.88 (0.75-1.04)</td>
</tr>
<tr>
<td>Escape-avoidance</td>
<td>26</td>
<td>66.7</td>
<td>0.80 (0.65-0.98)</td>
<td>0.03</td>
<td>0.85 (0.74-0.97)</td>
</tr>
<tr>
<td>Problem solving</td>
<td>20</td>
<td>51.3</td>
<td>1.10 (0.89-1.36)</td>
<td>0.34</td>
<td></td>
</tr>
<tr>
<td>Positive reappraisal</td>
<td>27</td>
<td>69.2</td>
<td>0.81 (0.66-0.99)</td>
<td>0.04</td>
<td>0.88 (0.77-1.02)</td>
</tr>
</tbody>
</table>

*Adjusted by sex
Source: Elaborated by the authors, 2020.
focused strategies and the working hours, which is valid from the
a university hospital showed a correlation between the emotion-
A research study conducted with Nursing professionals working in
in a university hospital showed a correlation between the emotion-
Professional communication and professional training domains.

It is highlighted that distancing, self-control, and escape-
Professional communication and professional training domains.

Coping has a dynamic aspect, can be effective for one problem
Coping has a dynamic aspect, can be effective for one problem

It is necessary to highlight the limitations of this study, such as
the following; its cross-sectional design, which restricted knowledge of
the changes in the stress level and domains to a certain period
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It is concluded that most of the interns reported less stress,
It is concluded that most of the interns reported less stress,

between more stress and the following coping strategies:
between more stress and the following coping strategies:

The findings of this research signal important aspects
The findings of this research signal important aspects

A number of research studies aimed at investigating the stress
A number of research studies aimed at investigating the stress

REFERENCES


CONCLUSION

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It is concluded that most of the interns reported less stress,
It is concluded that most of the interns reported less stress,
Stress and coping strategies used by nursing interns


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