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Diagnoses and nursing interventions against cardiovascular risks caused by stress in the homeless population

Original Article

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RESUMO | Introdução: O estresse está relacionado às doenças cardiovasculares, que são responsáveis por 27% das mortes no Brasil. A população em situação de rua encontra-se exposta a fatores de risco necessitando avaliação e acompanhamento de saúde devido às condições de vida que levam ao estresse persistente e potencialmente fatal. Objetivo: Estabelecer diagnósticos e intervenções de enfermagem, relacionando estresse e DCV nesta população. Métodos e procedimento: Este é um estudo exploratório, transversal e quantitativo, realizado na área central de São Paulo com 119 voluntários selecionados por conveniência entre novembro de 2021 e julho de 2022, aprovado pelo CEP: 036417, CAAE:21519413.40000.5511. Resultado: 35% dos 119 entrevistados afirmam sentir muito estresse ou que isso afeta sua rotina. Valores de pressão arterial e frequência cardíaca estão acima do recomendado. A escala de Likert mostra 32% com proteção ineficaz, risco cardiovascular prejudicado e síndrome do estresse de realocação. Conclusão: Estratégias de saúde são cruciais para atender às necessidades humanas básicas da população em situação de rua, incluindo conscientização sobre riscos cardiovasculares e acesso a cuidados básicos de saúde. A implementação do processo de enfermagem pode ajudar a abordar essas necessidades.
Descritores: Estresse; Doenças Cardiovasculares; População em Situação de Rua; Diagnósticos de Enfermagem; Alostase.

ABSTRACT | Stress is related to cardiovascular diseases, which are responsible for 27% of deaths in Brazil. The homeless population is exposed to risk factors, requiring health evaluation and monitoring due to living conditions that lead to persistent and potentially fatal stress. Objective: To establish nursing diagnoses and interventions, relating stress and CVD in this population. Methods and procedure: This is an exploratory, cross-sectional, and quantitative study conducted in downtown São Paulo with 119 volunteers selected by convenience between November 2021 and July 2022, approved by CEP: 036417, CAAE:21519413.40000.5511. Result: 35% of 119 respondents report feeling high stress or that it affects their routine. Blood pressure and heart rate values are above recommended levels. The Likert scale shows 32% with ineffective protection, impaired cardiovascular risk, and relocation stress syndrome. Conclusion: Health strategies are crucial to meet the basic human needs of the homeless population, including awareness of cardiovascular risks and access to basic health care. The implementation of the nursing process can help address these needs.
Keywords: Stress; Cardiovascular diseases; Homeless Population; Nursing Diagnoses; Allostasis.

RESUMEN | El estrés está relacionado con las enfermedades cardiovasculares, que son responsables del 27% de las muertes en Brasil. A população em situação de rua encontra-se exposta a fatores de risco necessitando avaliação e acompanhamento de saúde devido às condições de vida que levam ao stress persistente e potencialmente fatal. Objetivo: Estabelecer diagnósticos e intervenciones de enfermagem, relacionando estresse e DCV nesta população. Método y procedimiento: Se trata de un estudio exploratorio, transversal y cuantitativo, realizado en el área central de São Paulo con 119 voluntarios seleccionados por conveniencia entre noviembre de 2021 y julio de 2022, aprobado por CEP: 036417, CAAE:21519413.40000.5511. Resultados: 35% de los 119 encuestados afirman sentir mucho estrés o que éste afecta su rutina. Los valores de presión arterial y frecuencia cardíaca están por encima de lo recomendado. Escala de Likert muestra 32% con protección ineficaz, riesgo cardiovascular alterado y síndrome de estrés de reubicación. Conclusión: Las estrategias de salud son cruciales para satisfacer las necesidades humanas básicas de las personas sin hogar, incluyendo la concienciación sobre los riesgos cardiovasculares y el acceso a la atención sanitaria básica. La aplicación del proceso de enfermería puede ayudar a abordar estas necesidades

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INTRODUCTION

Diseases of the cardiovascular system are the cause of 27% of deaths in Brazil, being the first cause of death in the world. With this, several health strategies were implemented and studied over the decades, objectifying the prevention of modifiable risk factors for CVD (smoking, diabetes, hypertension, sedentary lifestyle)1. However, even with changes in eating and daily habits, the rise of urbanization and social inequality contribute to stress, which is currently being recognized as an emerging risk factor and prognosis for CVD[2].

Stress is a common, everyday physiological response, essential in moments of "fight and flight", where the body recognizes a threat and thus changes its usual mechanisms for better performance, this response is called allostasis, a means of establishing balance through change. The stressors capable of interrupting homeostasis are threats recognized by the individual and evaluated according to previous experience, being affected by the individual's perception and psychological resources[2,6]. The result of the identification of the possible threat by our body, triggers hemodynamic, neuroendocrine and immunological changes, starting in the hypothalamic-pituitary-adrenal axis, which has a strong relationship with the emotional and limbic system. Stimulation of the hypothalamic-pituitary-adrenal axis increases peripheral central sympathetic activation of the autonomic nervous system, leading to vasoconstriction, elevation of blood pressure, bronchial dilation and inhibition of digestion. In stimulating the adrenal glands, we have a rapid release of adrenaline and noradrenaline, responsible for the breakdown of hepatic glycogen and skeletal muscles, with the aim of providing more energy to the body, releasing glucose into the bloodstream and increasing capillary glycemia[4].

> In view of the physiological changes brought about by the stress of changes in basic human needs, the homeless population demonstrates high vulnerability and greater risks for the development of cardiovascular diseases.

With the lack of access to adequate food, quality sleep and drinking water, homeless people represent a portion of the population that needs health assessment and monitoring, since such living conditions lead to daily and persistent stress, triggering potentially fatal outcomes[8].

OBJECTIVE

Establish diagnoses and nursing interventions, relating the stress caused by the socioeconomic condition of the homeless population to cardiovascular diseases.

METHODOLOGY

The research was based on 119 volunteers, selected for convenience, from 18 to 60 years old, living on the streets in the central region of the city of São Paulo, using an exploratory, cross-sectional and quantitative method, from November 2021 to July 2021. 2022. To assess cardiovascular risks, a structured questionnaire was associated, approved by the Institutional Ethics Committee under the protocol: 136417, CAAE: 21519413.4.0000.5511.

The interviews were carried out after signing the free and informed consent form, respecting resolution n°510/16, containing approximately 50 questions related to cardiovascular health, eating habits, self-care, sexual behavior, sociodemographic data and family history, then measurements of blood pressure (BP), heart rate (HR), measures of neck circumference, abdominal circumference, height and weight were performed. Interlocutions were carried out by scientific initiation students of the Nursing course at Universidade Nove de Julho de São Paulo, with an individual duration of approximately 30 minutes each interview.

The data were later associated with the NANDA Taxonomy (North American Nursing Association) of 2021-2023, with the objective of listing nursing diagnoses

(ND) with a focus on stress due to difficulties in accessing health services, as well as insufficient knowledge and harmful habits to health, with cardiovascular problems and risks present in the homeless population.

RESULTS AND DISCUSSIONS

Among the 119 volunteers, 82% are men, the majority of economically active age, with 26% aged between 30 and 39 years. In the female audience we have 15% of the interviewed population, the majority aged 40 to 49 years (6%) and the trans public representing 3% of this population, with a majority of 30 to 39 years (2%). The reported skin color was predominantly brown, representing 48% of this population, followed by self-reported white (26%), black (25%) and yellow (1%). With regard to education, 74% did not complete high school, and among this percentage, 4% were illiterate, 31% read and write, 23% had completed 1st grade, 1% had incomplete 1st grade and 15% had completed 2nd grade. incomplete grade. Those who completed high school represent 25% of the population, among them 21% only completed high school, 3% have incomplete higher education and 1% have completed higher education. The data can be analyzed in detail in Graph 1.

Graph 1 shows the percentage of self-reports of the homeless population regarding schooling in the city of São Paulo from November 2021 to July 2022.

The interviewees were also questioned about their time on the street, with the majority respectively having + 5 years (32%), 1 to 3 months (19%), 7 months to 1 year (11%), 1 to 2 years (11%), 4 to 6 months (9%), 3 to 5 years (9%) and up to 1 month (7%). As for self-reported stress, 37% reported little/moderate stress, 27% reported not feeling stress, 21% reported a lot of stress and 14% feel that stress disrupts their routine. The data can be better visualized in Graph 2.

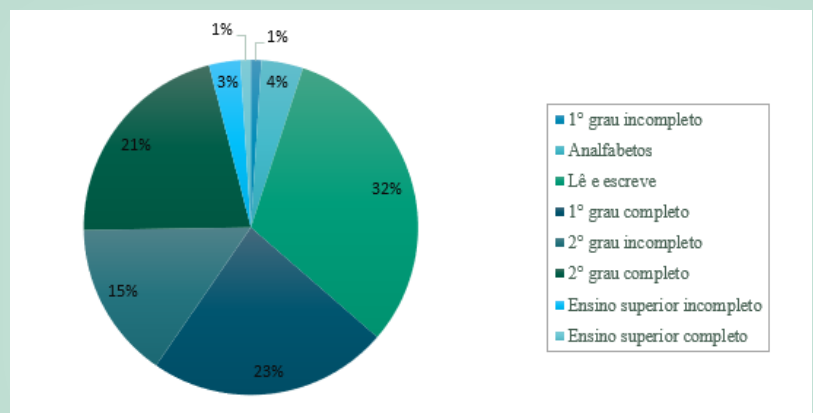**Gráfico 1 - Auto relato da escolaridade da população em situação de rua entrevistada**

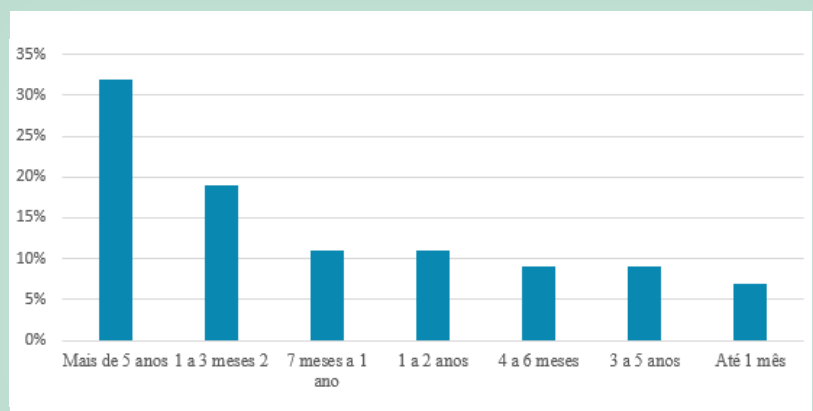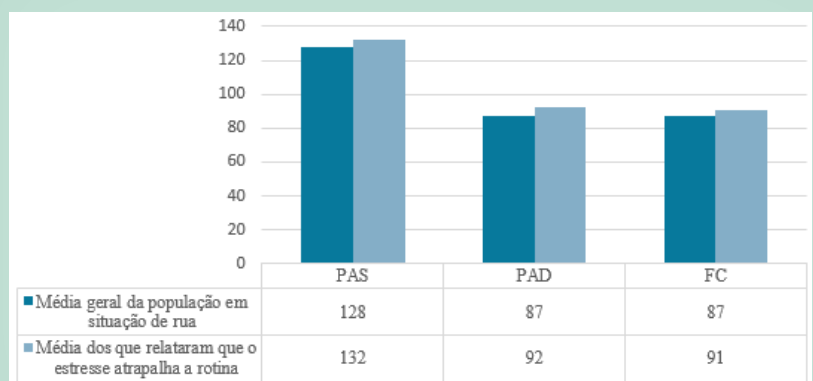**Gráfico 2 - Relação da população e o tempo em situação de rua**

Gráfico 3 - Comparativo: Média da pressão arterial da população em situação de rua e média dos que relataram que o estresse atrapalha a rotina

	PAS	PAD	FC
Média geral da população em situação de rua	128	87	87
Média dos que relataram que o estresse atrapalha a rotina	132	92	91

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Graph 2 shows, in percentage, the comparison between the population of São Paulo and the time spent on the streets from November 2021 to July 2022.

It was noted that among those who reported that stress disrupts their routine, we have an average of systolic blood pressure (SBP), diastolic blood pressure (DBP) and heart rate (HR) higher than the rest of the interviewees, showing the following data : SBP of 132 mmHg, DBP of 92 mmHG and HR of 91 bpm, with SBP and DBP tending to be higher than recommended by the current guidelines of the American Heart Association5. The interviewed population in general presented an average of SBP of 128 mmHG, DBP of 87 mmHg and HR of 87 bpm. The data can be compared in detail in Graph 3.

Graph 3 shows a comparison of the systolic and diastolic blood pressure and heart rate of the total homeless population interviewed and the homeless population who reported having their routine disrupted by stress, during the period from November 2021 to July 2022.

For a better analysis of the level of stress, a psychometric scale was used, which aimed to measure psychological stress from 1 to 10 according to the interviewee's self-report. We obtained the result of 32% who reported level 10, 27% level 5, 12% level 0, 10% level 8, 5% level 9, 5% level 6, 2% level 7, 2% level 4, 2% level 3 , 2% level 2 and 2% level 1.

In view of the results obtained, an analysis was carried out with a survey of nursing diagnoses and interventions, using the I NANDA taxonomy, relating stress and homelessness with cardiovascular risks, obtaining:

00043 – Domain 1 Class 2: Ineffective protection, characterized by maladaptive response to stress and evidenced by malnutrition and misuse of substances that aggravate the state of chronic response of the body to physical and mental stress[10].

Individuals without access to housing are more exposed to physical and mental illnesses, since housing provides physical and mental shelter. Homeless people often face challenges related to chronic physical and mental health problems, in addition to having high rates of substance abuse and generally having less access to adequate health care. Among the possible nursing interventions to remedy the vulnerability of these individuals, we can mention immunization, assistance and encouragement of self-care, inclusion in support groups and treatment for drug use for individuals who meet their basic human needs through illicit substances[11,12, 15].

00311 – Domain 4 Class 4: Risk of impaired cardiovascular function, characterized by excessive stress, poor eating habits, and substance misuse. Evidenced by emotional instability due to everyday concerns present in the lack of comfort and security in economically disadvantaged individuals[10].

Poverty conditions barriers between the individual and health services, among the reasons being the lack of educational projects and an ineffective health care network. Guidance about available health services, as well as teaching about rights as a citizen, can change the routine of homeless people and reduce their vulnerability7. The most effective means of reducing the risk of impaired cardiovascular function would be to reduce the individual's stress by providing him with the opportunity of a welcome center, comprehensive care, guiding the risks of adding salt to ready-to-eat foods, as well as replacing water with alcohol[11,12,16].

00284 - Domain 7 Class 2: Disturbed family identity syndrome, characterized by dysfunctional family processes, impaired resilience, disrupted family processes. Evidenced by excessive stress, inadequate social support, ineffective family communication and perceived social discrimination[10].

The lack of family support can induce the individual to suppress their feelings and limit their ability to ask for help6. Some studies also show that family rejection and abandonment are risk factors for drug use[17]. Abuse and dependence on alcohol and other drugs can lead to a vicious cycle of violence and family instability. Good support from the Family Health team (eSF) has a great influence on these family processes, identifying problems and providing comprehensive care, preventing abandonment due to weak family structure[11,12].

00114 – Domain 9 Class 1: Relocation stress syndrome, characterized by anxiety, fear, worry and altered sleep-wake cycle, evidenced by inadequate control over the environment and inadequate social support[10].

The constant relocation of the population in a situation due to climate change, violence or conflicts, directly influences the psychology of these individuals8. Unfortunately, this is the routine of those who live on the streets, making it difficult to manage and find effective interventions. We must recognize that current references for nursing interventions often do not match the Brazilian reality, where there is strong social inequality and the environment is not always conducive to quality care.

CONCLUSION

Based on the analyzed data, it is possible to notice the direct relationship between stress and cardiovascular alterations in the homeless population. Difficulties in accessing adequate food and concerns about local violence make stress a common form of defense. To combat these problems, it is essential that immediate actions be taken to donate food, water, hygiene kits, and above all, raise awareness about cardiovascular risk factors and their relationship with stress,

encouraging the search for basic health units. [19]. The Study Group on Nursing in Cardiology (GREECA) at the Universidade Nove de Julho (UNINOVE) has already developed similar initiatives, however, it is perceived that the satisfaction of immediate needs is not capable of providing a lasting improvement in lifestyle or supplying all the basic human needs of this population.

Although government and civil society actions prioritize satisfying immediate basic needs such as clothing, food and the night, considered essential in moments of high vulnerability, it is important to highlight that the supply of these needs is not enough to improve the lifestyle in the long term or provide opportunities for financial independence. Such actions meet only momentary desires and do not offer perspectives for long-term development [18,19].

The current public policies for the homeless population, such as the "POP Center", the "Street Consultancy" and the "Recomeço Program", aim to provide comprehensive and qualified social, medical and psychological care, as well as rehabilitation of chemical dependents. Although they are initiatives of great importance, they still have limitations that need to be overcome. It is essential to expand the number of vacancies in shelters to meet the growing demand, in addition to ensuring the qualification of the professionals involved. In addition, it is necessary to promote articulation between health, social assistance and education services, aiming at comprehensive and multidisciplinary care.

Bearing in mind the long-term objective actions, these should aim at health, work, housing and especially education. We highlighted the need for planning and implementing the nursing process in the homeless population, such as establishing support groups, health surveillance to provide treatment for drug use and educational promotion in health. The implementation of the nursing process, together with the creation of public policies aimed at the basic human needs of the homeless population, demonstrate the potential to improve this problem, reducing possible cardiovascular risks and promoting better quality of life.

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