

Environmental stressors in a cardio-intensive unit and Nursing care planning: a descriptive study

Estressores ambientais em unidade cardiointensiva e o planejamento do cuidado de enfermagem: estudo descritivo Factores ambientales estresantes en una unidad coronaria y planificación de cuidados de enfermería: estudio descriptivo

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Submission: 05/11/2021
Approved: 07/06/2021

ABSTRACT

Objective: to assess the main stressors mentioned by the patients in a cardio-intensive unit. **Method:** a descriptive and quantitative research study, carried out with 25 patients over 18 years old, lucid, oriented, literate, and diagnosed with acute coronary syndrome. A questionnaire related to the sociodemographic and clinical information and the The Environmental Stressor Questionnaire were applied. The data were analyzed using simple descriptive statistics. **Results:** there was predominance of males (16-64%), aged 60-70 years old (14-56%). Acute myocardial infarction (14-56%) was the most prevalent hospitalization cause. The "Feeling pain" statement (17-68%); followed by "Not being able to move the arms or hands due to the intravenous routes" (13-52%); "Not having control of oneself" (11-44%) and "No explanations given on the treatment" (10-40%) stood out as extremely stressful. **Conclusion:** knowing the most prevalent stressors contributes to Nursing care planning with emphasis on welcoming and assistance to the individualized needs.

DESCRIPTORS: Welcoming; Intensive Care; Cardiovascular Nursing; Psychological Stress; Planning of the assistance provided to the patient.

RESUMO

Objetivo: avaliar os principais fatores estressores apontados pelos pacientes em uma unidade cardiointensiva. **Método:** pesquisa descritiva, quantitativa, realizada com 25 pacientes maiores de 18 anos, lúcidos, orientados, alfabetizados, com diagnóstico de síndrome coronariana aguda. Aplicou-se questionário relacionado às informações sociodemográficas e clínicas e a escala *The Environmental Stressor Questionnaire*. Os dados foram analisados através de estatística descritiva simples. **Resultados:** houve predominância do sexo masculino (16-64%), com idade de 60 a 70 anos (14-56%). O infarto agudo do miocárdio (14-56%) foi a causa mais prevalente de internação. As afirmativas "sentir dor" (17-68%); seguido de "não conseguir mexer mãos ou braços devido às vias intravenosas" (13-52%); "não ter controle de si mesmo" (11-44%) e "não ter explicações sobre o tratamento" (10-40%) sobressaíram como extremamente estressantes. **Conclusão:** conhecer os estressores mais prevalentes contribui para o planejamento do cuidado de enfermagem com ênfase no acolhimento e atendimento às necessidades individualizadas.

DESCRITORES: Acolhimento; Cuidados Intensivos; Enfermagem Cardiovascular; Estresse Psicológico; Planejamento de assistência ao paciente.

RESUMEN

Objetivo: evaluar los principales factores estresantes señalados por los pacientes en una unidad coronaria. **Método:** investigación descriptiva, cuantitativa, realizada con 25 pacientes mayores de 18 años, lúcidos, orientados, alfabetizados, diagnosticados con síndrome coronario agudo. Se aplicó un cuestionario relacionado con información sociodemográfica y clínica y la escala *The Environmental Stressor Questionnaire*. Los datos se analizaron mediante estadística descriptiva simple. **Resultados:** predominó el sexo masculino (16-64%), con edades entre 60 y 70 años (14-56%). El infarto agudo de miocardio (14-56 %) fue la causa más prevalente de hospitalización. Las afirmaciones "sentir dolor" (17-68%); seguido de "no poder mover las manos o los brazos debido a las vias intravenosas" (13-52%); "No tener control de uno mismo" (11-44%) y "no recibir explicaciones sobre el tratamiento" (10-40%) se destacaron como extremadamente estresantes. **Conclusión:** conocer los factores estresantes más predominantes contribuye a la planificación de los cuidados de enfermería enfocados en la hospitalidad y satisfacción de las necesidades individuales.

DESCRIPTORES: Hospitalidad; Cuidados intensivos; Enfermería Cardiovascular; Estrés psicológico; Planificación de la atención al paciente.

INTRODUCTION

Chronic non-communicable diseases (CNCDs) include diabetes, cancer, chronic respiratory disease and cardiovascular diseases, constituting the main group of causes of death responsible for premature deaths, loss of quality of life, and economic and social adverse impacts, accounting for 63% of the global deaths⁽¹⁾. Among them, cardiovascular diseases (CVDs) stand out, characterized by a set of health problems, where the most common are systemic arterial hypertension, stroke, heart failure, arrhythmias, aortic aneurysm, myocarditis, and acute coronary syndrome (ACS)⁽²⁾.

ACS covers a group of pathologies that include unstable angina (UA), acute myocardial infarction (AMI) with ST-segment elevation (STEMI) and without elevation (STEMI), and are common causes of care in the emergency and hospitalization sectors in units specialized in cardiovascular care. Between 2004 and 2014, ACS was responsible for 1,069,653 deaths in Brazil, mainly affecting adults aged between 35 and 59 years old, an age group considered to be in the "professional maturity" and economically active phase⁽³⁾.

Several factors contribute to the development of ACS, namely: heredity, advanced age, *diabetes mellitus*, dyslipidemia, sedentary lifestyle, smoking, obesity and stress, but when an individual presents ACS requiring hospitalization, there is a recommendation for admission to continuous monitoring units, such as the Intensive Care Unit (ICU) and, when available, Cardio-Intensive Units⁽³⁾. In these

environments, due to high-complexity care, the patient is faced with complex and varied technologies, which may, in the medium and long term, constitute a stress-generating environment.

A stressor is any stimulus found in the environment, which is able to provoke various responses in the person, both of a physical and of a psychological nature. Initially, the main purpose of these responses is to adapt the individual to a situation that is new or unknown. However, when the stimulus persists, a stress situation can be triggered that is directly related to the individual's ability to adapt to the stressor⁽⁴⁻⁵⁾.

The following stand out among the factors that are considered to be stress triggers in the hospital environment: absence of natural lighting; disturbance in the sleep-wake cycle patterns; deprivation and/or restriction of contact time with family members and friends; not having control of the own body; noises, such as alarms and the team's own conversation; lack of privacy; in addition to having to undergo various clinical procedures that, despite being necessary for the treatment proposed, lead the patient to experience different discomfort situations⁽⁴⁻⁵⁾.

From this perspective, in 2010, the Environmental Stressor Questionnaire was validated in Brazil, adapted from the Intensive Care Unit Environmental Stressor Scale (ICUESS), with 50 items, for the assessment and stratification of the stressors in hospitalized patients⁽⁶⁾.

For having highly complex technological devices necessary to restore cardiovascular

patients' health, the Cardio-Intensive Unit environment can become cold and hostile, transforming hospitalization into a stressful period that may lead to a breakdown in homeostasis and cause these individuals to go through unpleasant effects and physiological changes, such as elevated blood pressure, cardiovascular dysfunction and psychological changes⁽⁴⁾.

In such context, knowing the stressors in a cardio-intensive unit may assist nurses (especially the cardiovascular Nursing team operating with intensive care) in relation to planning the assistance provided to the patient, thereby guiding the care of patients with ACS. In this logic, the nurses who work with such population may focus their interventions on the users' needs in order to contribute to the planning of a welcoming assistance and contribute for the experience of hospitalization to be less traumatic⁽⁴⁻⁵⁾. Thus, this study aimed at evaluating the main stressors mentioned by the patients during their hospitalization in a cardio-intensive unit.

METHOD

A descriptive and quantitative research study, carried out in a cardio-intensive unit of a university hospital in the city of Rio de Janeiro, from March to August 2019.

The participants were 25 patients selected in a non-probabilistic manner and for convenience. It had the following inclusion criteria: the patient had to be over 18 years old, lucid and oriented, literate, able to communicate verbally, and admitted due to acute coronary

syndrome. Patients with previous hospitalizations in a cardio-intensive unit were excluded, as well as those who, at the time of data collection, were unstable in their clinical condition, presenting, for example, uncontrollable pain, dyspnea, fatigue, drowsiness, uncontrolled high blood pressure; or under ventilation support.

After signing the Free and Informed Consent Form, the participants answered an individual and closed questionnaire. The questionnaire was administered by the main researcher, who has no fixed contract with the sector, in order not to characterize a power relationship before the patient and to minimize any answer bias, respecting the user's anonymity. The data were collected between March and April 2019.

The questionnaire had two parts: the first directed to the sociodemographic and clinical information, with six variables: age, gender, marital status, schooling, employment contract and clinical diagnosis; and the second one covering the Brazilian version of The Environmental Stressor Questionnaire⁽⁶⁾, which quantifies the stressors using a Likert-scale type, with the following categories: extremely stressful (5), very stressful (4), moderately stressful (3), not stressful (2) or does not apply (1). Consequently, scores were assigned for each environmental stressor, where what corresponds to being less stressful has lower weight, with the score increasing according to the stress level of the individual in response to the environmental factor. The environmental stressors can be seen in Figure 1.

1	Being trapped by tubes	26	Watching treatment administered in other patients
2	The nurse does not introduce herself	27	Having to stare at the ceiling details
3	Feeling that the nurse is too hasty	28	Cannot sleep
4	Being thirsty	29	Not being able to move the hands or arms due to the intravenous routes
5	Measuring blood pressure many times a day	30	Smelling unusual odors
6	Uncomfortable bed and/or pillows	31	Having lights constantly lit
7	Hearing the phone ring	32	Feeling pain
8	Being constantly examined by physicians and nurses	33	Seeing the saline drips hanging over the head
9	Having strange machines around	34	Being stuck by needles
10	Feeling that the Nursing team is more attentive to the equipment than to you	35	Not knowing where you are
11	Hearing the noise and the alarms of the equipment	36	Hearing the team speaking incomprehensible terms
12	Nurses and physicians talking very loud	37	Not having control of oneself
13	Having to use oxygen	38	Not knowing what day is today
14	Missing husband or wife	39	Being bothered
15	No explanations given on the treatment	40	No privacy
16	Hearing alarms of the cardiac monitor firing	41	Being treated by unknown physicians
17	Constantly having the Nursing team doing chores around the bed	42	Being in an environment that is too hot or too cold
18	Having tubes in the nose and/or mouth	43	Hearing people talking about you
19	Not knowing what time it is	44	Being unable to communicate
20	Hearing the groan of other patients	45	Fear of dying
21	Having men and women in the same room	46	Not knowing the length of stay in the ICU
22	Seeing family members and friends only for a few minutes	47	Being unable to exercise your role
23	Not knowing when things will happen	48	Financial worries
24	Being waked up by the Nursing team	49	Fear of AIDS
25	Unfamiliar sounds and noises	50	Being pressured to agree with the treatment

Figure 1 - Environmental stressors

Source: Adapted from Rose et al, 2019.

For data analysis, the questionnaires were coded and the results released in an *Excel*[®] spreadsheet. The data were analyzed and presented using simple descriptive statistics.

This study complied with the ethical issues and requirements of Resolution 466, dated

December 12th, 2012, of the National Health Council. The research was approved by the Research Ethics Committee, through CAAE: 04651518.2.0000.

RESULTS

Most of the participants were male (16-64%) and were aged between 60 and 70 years old (14-56%), and the most prevalent hospitalization cause was STEMI (14-56%).

Regarding marital status, 08 (32%) were married and 08 (32%) were single during the study period. The participants' mean schooling level was 7.56 years of study and 14 (56%) had some work activity (Table 1).

Table 1 - Sociodemographic characteristics of the research participants. Rio de Janeiro. RJ, Brazil, 2019 (n=25)

Variables	n	%
Gender		
Male	16	64
Female	9	36
Age		
36-45	2	8
46-55	5	20
56-60	1	4
60-70	14	56
More than 70	3	12
Marital status		
Married	8	32
Divorced	6	24
Single	8	32
Widowed	3	12
Acute Coronary Syndrome Diagnosis		
Angina	2	8
Stable Angina	2	8
Unstable Angina	2	8
Acute Myocardial Infarction	2	8
Acute Myocardial Infarction with ST-segment elevation	14	56
Acute myocardial infarction without ST-segment elevation	3	12
Employment contract		
Active	14	56
Retired	11	44

Source: Elaborated by the authors, 2021.

In relation to the stressors, the "Feeling pain" (17-68%), "Not being able to move the hands or arms due to the intravenous routes" (13-52%), "Not having control of oneself" (11-44%) and "No explanations given on the treatment" (10-40%) statements were

considered as extremely stressful by the patients admitted to the cardio-intensive unit under study.

The "Uncomfortable bed and/or pillows" (08-32%) and "Seeing family members and friends only for a few minutes" (07-28%) statements

were considered as very stressful. And "Watching treatment administered in other patients" (10-40%) and "Hearing people

talking about you" (10-40%) were reported to be moderately stressful (Table 2).

Table 2 - Stressors mentioned by the patients, according to the *Likert* scale. Rio de Janeiro. RJ, Brazil, 2019 (n=25)

Variables	n	%
Extremely stressful		
Feeling pain	17	68
Not being able to move the limbs due to the intravenous routes	13	52
Not having control of oneself	11	44
No explanations given on the treatment	10	40
Not knowing when things will happen	10	40
Cannot sleep	10	40
Being unable to exercise your role	10	40
Financial worries	9	36
Fear of AIDS	9	36
Having to stare at the ceiling details	9	36
Fear of death	9	36
Not knowing the length of stay in the ICU	9	36
Being unable to communicate	8	32
Missing husband or wife	7	28
Not knowing what time it is	7	28
Seeing family members and friends only for a few minutes	7	28
Very stressful		
Uncomfortable bed and/or pillows	8	32
Seeing family members and friends only for a few minutes	7	28
Being thirsty	6	24
Being in an environment that is too hot or too cold	6	24
Not having control of oneself	5	20
Moderately stressful		
Watching treatment administered in other patients	10	40
Hearing people talking about you	10	40
Feeling that the Nursing team is more attentive to the equipment than to you	9	36
Hearing alarms of the cardiac monitor firing	9	36
Constantly having the Nursing team doing chores around the bed	9	36
Not knowing when things will happen	9	36
Not knowing where you are	9	36
Hearing the noise and the alarms of the equipment	8	32
Hearing the groan of other patients	8	32
Being stuck by needles	8	32

Being in an environment that is too hot or too cold	8	32
Not knowing the length of stay in the ICU	8	32
Fear of AIDS	8	32
Feeling that the nurse is too hasty	7	28
Being pressured to agree with the treatment	7	28

Source: Elaborated by the authors, 2021.

DISCUSSION

According to the World Health Organization (WHO)⁽⁷⁾, in Brazil and in the world, CVDs are the leading cause of death and disability in adults, becoming a major public health problem, with several factors contributing to the development of such condition, with the possibility of highlighting gender and age among them. From this perspective, it is known that population aging is what most favors the increase in the total number of cases of CVDs and other chronic diseases, mainly in settings of countries in economic development, such as Brazil.

In 2017, there were 17.79 million deaths from cardiovascular diseases, accounting for 31.8% of all deaths. Of these deaths, it is estimated that 85% occur due to heart attack and stroke. More than three quarters of the deaths due to cardiovascular diseases occur in low- and middle-income countries⁽⁸⁾.

Among the sociodemographic characteristics, it was observed that the male gender prevailed with 64% (16 participants). Other studies confirm these findings when arguing that there is a higher risk for cardiovascular events in men, as the male gender is an important risk factor, whereas in women the risk increases during the menopause period. This is due to the fact that being female, associated with advanced age and other risk factors such as

diabetes and dyslipidemia, contributes to an increased risk for cardiovascular diseases in this population, mainly after the menopause. However, the physiological reasons for such are still not fully understood⁽⁹⁾.

The prevailing age group among the participants was that from 60 to 80 years old, with greater predominance in the men, whereas the women were older upon diagnosis, reducing the difference of this event's occurrence between the genders from the age of 70⁽¹⁰⁾. According to the Guidelines for Cardiogeriatrics⁽¹¹⁾, among Brazilian older adults, in 2013, 48.6% presented one or two chronic diseases and 29.1% had three or more. In addition, aged women have a higher chance of contracting some disease in relation to men, 81.2% and 73.1%, respectively.

These data are justified when it is understood that many CNCDs affect the health of the aged population the most, leading these individuals to greater frailty to illness. Another point that also influences these findings is the increasing proportion of this age group in the population due to the growth in life expectancy in the recent decades.

Our findings corroborate those described in the literature, whereas AMI has a higher occurrence from the sixth decade of life, constituting the main cause of death in the aged population, which corresponds to 34.2%

and 35.2% of deaths in men and in women, respectively. This points to greater need for prevention, in order to raise awareness that changes in lifestyle, tobacco and alcohol control, better diet and physical exercise exert a significant impact on reducing CVDs and contribute to longevity with autonomy and quality of life⁽¹²⁾.

The research participants' mean schooling level was 7.56 years of study, confirming the fact that the issue of formal education in Brazil has a deficit and is the result of several years of delay in severe public policies. Only 41.8% of the individuals aged 25 years old and over had 11 years of study and, considering the individuals aged between 18 and 24 years, 16.3% attend higher education. CNCDs mainly affect low-income countries and with lower schooling levels, like Brazil, since access to preventive health care and to the necessary treatments is limited, contributing to a lower life expectancy in such population⁽¹³⁾.

Schooling can significantly favor the health status of the population, as the individuals' schooling level can reveal differences regarding income and health status, showing that the more years of study, more chances of achieving higher incomes and lower chances contracting diseases, given the difference in the perception of health⁽¹⁴⁾.

As for the participants of this research, 56% (14 participants) had some work activity. It is known that work can sometimes promote health, and others, diseases; and that unbalanced situations between the organization of the prescribed work and the

real work can result in stress, promoting an increased risk for CVDs.

Regarding the stressors, the "Feeling pain" (17-68%), "Not being able to move the hands or arms due to the intravenous routes" (13-52%), "Not having control of oneself" (11-44%) and "No explanations given on the treatment" (10-40%) statements were considered as extremely stressful by the patients admitted to the cardio-intensive unit under study. "Uncomfortable bed and/or pillows" (8-32%) and "Seeing family members and friends only for a few minutes" (7-28%) were considered as very stressful and "Watching treatment administered in other patients" (10-40%) and "Hearing people talking about you" (10-40%) were reported as moderately stressful.

The "Feeling pain" statement was presented as the first factor considered as extremely stressful. Pain is constituted as an unpleasant sensory and emotional experience and is a major cause of human distress, generating countless disabilities, impaired quality of life, psychosocial and economic repercussions, and can be expressed in different ways by the individuals. The presence of pain contributes to restlessness, anxiety, insomnia, irritability, tachycardia, tachypnea and hypertension. It is up to the health professional to assess, control and relieve pain. Thus, the nurse must be trained and have theoretical knowledge regarding the effective strategies for pain management, as well as of the analgesia techniques available, action time of the drugs and their complications⁽¹⁵⁾.

The "Not being able to move the hands or arms due to the intravenous routes" statement (13-

52%) appeared as the second extremely stressful factor. Being trapped or confined to bed due to the need to be connected to circuits for intravenous therapy can contribute to negative experiences in the patient's daily life, as sensations of fear and worry in maintaining access integrity are constant. After all, thoughts such as the possibility of invasive and potentially painful procedures, such as a new puncture of the peripheral vascular access, can be highly stressful for the individual during their stay in the Cardio-Intensive Unit⁽¹⁶⁻¹⁷⁾.

Intravenous therapy is an activity widely carried out by the Nursing team in hospital settings and is also highly complex, requiring adequate training from the professionals in order to develop skills such as manual dexterity and mastery of vascular anatomy, for the procedure to be performed safely and with greater comfort for the patient⁽¹⁸⁾.

Another statement pointed out by the patients as extremely stressful was "Not having control of oneself" (11-44%). Being hospitalized can generate in the individuals some sensations that are inherent to the condition of being "ill", such as fear and anxiety, as well as thoughts of disability, dependence on the others and losing the ability to control oneself. Moments such as body hygiene in the bed, for example, can cause physical and emotional exposure, resulting in feelings of invasion to privacy and intimacy, contributing to increased stress during the hospitalization process. In this way, introducing oneself to the patient, informing what will be done and asking for permission to carry out the procedures are prerequisites for compliance with the ethical rules of the

profession and respecting those who are being cared for, since caring is an attitude that encompasses more than a moment of care, zeal and devotion. It is an accountability attitude and of respectful engagement with the other⁽¹⁸⁾. This can justify the patients' statement about "No explanations given on the treatment" (10-40%), also as extremely stressful.

Communication with the patient is essential for the health team to carry out its assistance activities in a safe and transparent manner for those who receive care, as well as it narrows the interpersonal relationships. Several human needs depend on the effective communication between the patient and the Nursing team, such as comfort, nutrition and pain relief. Thus, it is understood that communication must be used for the purpose that the patients need to consider that it is an aid element, capable and effective in which they can interact, share ideas, desires, feelings and express their help requirements⁽¹⁹⁾.

The "Uncomfortable bed and/or pillows" (8-32%) and "Seeing family members and friends only for a few minutes" (7-28%) factors were considered as very stressful. The first can be related to lack of comfort and structure in the health service due to absence of governmental investment, which the public health system for decades now. And one cannot help but think, also, in the lack of zeal of some professionals who work in this setting⁽¹⁹⁾.

In relation to "Seeing family members and friends only for a few minutes" (7-28%) being similarly regarded as very stressful, this can be correlated to the fact that, when a person is

hospitalized, they must follow the rules and routines established by the hospital, distance from their loved ones and comply with the pre-established schedule for the daily visits from the family members. For patients and family members, hospitalization in the cardio-intensive unit is a stressful and singular event, caused by factors such as risk of death, uncertainty on the treatment and recovery, fear of the unknown and a major limitation due to distancing of the family members from this setting, leading to sensations of anxiety, sadness, distress and helplessness. The intensive care unit environment leads to a breakdown of the patients' affective bonds at a time when they are weakened by the illness situation⁽²⁰⁾. Thus, planning carefully in order to turn it into a more welcoming environment, such as flexible visit schedules, virtualizing contacts with the family members reducing the distance between patient and loved ones, increasing communication with the patient, carefully listening to the care needs, reducing noise and improving the environment's night lighting, has been a challenge for the health team working in these units⁽¹⁹⁾.

The study presented limitations, since it was applied in a single setting and did not adjust the correlation of the findings with the sociodemographic variables, which points to the need for new studies.

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CONCLUSION

It was possible to evidence the following as the most stressful factors: "Feeling pain"; "Not being able to move because of the devices coupled to the body"; "Not having control of oneself" and "No explanations given on the treatment". Therefore, in order to solve or minimize these stressors, the Nursing care planning directed to this population is permeated by barriers ranging from training the professionals to structuring the environment.

Simple strategies, such as intensifying the pain management protocols in the unit, increasing qualified listening, clarifying the need for technologies, discussing the patient's treatment plans and developing autonomy to promote self-care should be part of the nurse's priorities list in the routine planning of their assistance in a cardio-intensive unit with patients with Acute Coronary Syndrome.

It is estimated that this research study contributes to the understanding that the hospital environment is a very stressful setting and, thus, nurses and health professionals must be alert to the identification of the main environmental factors that generate stress in the patients admitted to the cardio-intensive unit, uniquely and individually, confirming that planning Nursing care with interventions that may minimize these factors is indispensable to strengthen the relationships and to solidify safe and quality care.

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