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OCCUPATIONAL STRESS IN PEDIATRIC NURSES: PHYSICAL AND PSYCHOLOGICAL MANIFESTATIONS

ESTRESSE OCUPACIONAL EM ENFERMEIROS DA PEDIATRIA: MANIFESTAÇÕES FÍSICAS E PSICOLÓGICAS

ESTRÉS OCUPACIONAL EN ENFERMEROS DE PEDIATRÍA: MANIFESTACIONES FÍSICAS Y PSICOLÓGICAS

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Objective: to verify the presence of occupational stress in pediatric nurses and analyze the physical and psychological manifestations of stress. Method: quantitative, descriptive, cross-sectional study involving 22 nurses from pediatric inpatient services of a public hospital located in the city of Rio de Janeiro, Brazil. A structured instrument was used to characterize the sample; to check for the presence of stress, the Symptoms of Stress Inventory (ISS-Lipp) was used. Results: the sample mostly consisted of women, with more than one employment relationship, working in a shift system and working over 40 hours per week. The presence of stress was identified in the sample. The phases of exhaustion and resistance were the most prevalent in view of the psychological and physical manifestations verified. Conclusion: the sample revealed a high level of stress whose illness is already present, considering the manifestations in the phase of exhaustion.

Descriptors: Nursing. Pediatrics. Burnout, Professional. Mental Health.

Objetivo: verificar a presença de estresse ocupacional em enfermeiros da pediatria e analisar as manifestações físicas e psicológicas de estresse. Metodologia: estudo quantitativo, descritivo, transversal realizado com 22 enfermeiros de unidades de internação pediátrica de um hospital público situado no município do Rio de Janeiro, Brasil. Para a caracterização da amostra, utilizou-se um instrumento estruturado; na verificação de estresse, o Inventário Sintomas de Stress (ISS-Lipp). Resultados: a amostra foi composta, majoritariamente, pelo sexo feminino, com mais de um vínculo empregatício, trabalhando em regime de turnos e cumprindo carga horária acima de 40 horas semanais. Identificou-se a presença de estresse na

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amostra, sendo as fases de exaustão e resistência as mais prevalentes diante das manifestações psicológicas e físicas verificadas. Conclusão: a amostra apresentou alto nível de estresse cujo adoecimento já se faz presente, considerando-se as manifestações presentes na fase de exaustão.

Descritores: Enfermagem. Pediatria. Estresse ocupacional. Saúde Mental.

Objetivo: verificar la presencia de estrés ocupacional en enfermeros de pediatría y analizar las manifestaciones físicas y psicológicas de estrés. Metodología: estudio cuantitativo, descriptivo, transversal realizado con 22 enfermeros de unidades de internación pediátrica de un hospital público situado en el municipio de Río de Janeiro, Brasil. Para la caracterización de la muestra, se utilizó un instrumento estructurado; en la verificación de estrés, el inventario Síntomas de estrés (ISS-Lipp). Resultados: la muestra fue compuesta mayoritariamente por el sexo femenino, con más de un vínculo laboral, trabajando en régimen de turnos y cumpliendo carga horaria superior a 40 horas semanales. Se identificó la presencia de estrés en la muestra, siendo las fases de agotamiento y resistencia las más prevalentes ante las manifestaciones psicológicas y físicas verificadas. Conclusión: la muestra presentó alto nivel de estrés cuyo adolecer ya se hace presente, considerando las manifestaciones presentes en la fase de agotamiento.

Descriptores: Enfermería. Pediatría. Agotamiento Profesional. Salud Mental.

Introduction

Stress is the state of tension that causes rupture in the internal balance of the organism. In the initial phase, it is identified by a series of psychosomatic signs and symptoms, such as tachycardia, gastritis, cardiovascular changes, insomnia and others. By nature, the body always strives for balance. Therefore, to establish the previous homeostasis, a special effort or adaptive response to the stressors happens automatically. Therefore, an inappropriate adaptation of the organism for a prolonged period can contribute to the appearance of physical and psychological manifestations of stress and illness, if the individual does not intervene in some way[1].

Regarding the potentially stressful situations in nursing professionals who work in the pediatrics area, a study[2] showed that these professionals, because they take care of children with severe clinical conditions, subject to complications and death, are susceptible to the Burnout Syndrome. Research performed in an emergency room identified that the work done can offer personal satisfaction and social recognition, inspire strength and be an example of life and overcoming. In view of the difficulties to cope with the suffering of other people, however, the professionals elaborate defensive strategies, such as depersonalization, in order to keep themselves at work[3]. Other subjective factors, such as living with the child's illness, suffering or even death, the anxiety/distress of family members, as well as social issues involving children and parents are factors that can provoke occupational stress, compromising the workers' well-being and health, including the risk of becoming ill.

The repeated and prolonged exposure to stressful events leads the body to the General Adaptation Syndrome, which is divided into four phases: first, in the alarm phase, which can last only a few hours, the body prepares for a flight or fight reaction, increasing the release of adrenaline and productivity; in the second phase, resistance, if the stressor persists, the body uses all its energy to balance itself, reducing the adrenaline release and increasing corticoids, factors that make the individual more susceptible to diseases; in the third phase, of almost exhaustion, the process of illness begins and the organs with greater genetic or acquired vulnerability begin to show signs of deterioration; in the fourth stage, exhaustion, if the stressor persists, psychological disorders, such as depression, anxiety, a desire to escape from everything, difficulty in memory and irritability can occur, such as hypertension, gastritis, ulcers and lowering of the immune system[4].

Nursing workers are susceptible to stress and its consequences for health, such as the Burnout Syndrome and other problems, being a profession that, by maintaining a direct relationship with patients, is vulnerable to physical and mental exhaustion. Factors inherent to the individual and those arising from occupational hazards and occupational accidents should be considered in the genesis of stress, especially in the hospital area. Thus, any situation that may interrupt nurses' technical and relational skills compromises their health, service dynamics, productivity and the quality of care provided to people[5].

The physical and social environment of hospital work is considered difficult, dangerous and unhealthy, and institutional managers and public entities know little yet about the sickness profile of the workers who carry out their activities in hospital. There is also a great deal of research to be done on health problems due to work overload, the effort required to carry out activities and improper working conditions that generate financial costs paid by social security. In this sense, the fact that the State and its citizens bear the burden of the institutions, which foster the sickness of their workers, is undoubtedly an ethical and political issue to be discussed[6].

Considering the above and the importance of individuals and health organizations taking measures aimed at the prevention and management of stress in view of the risk of illness, as well as its repercussions for individuals' quality of life of individuals, the objectives of the study were: to verify the presence of occupational stress in pediatric nurses and to analyze the physical and psychological manifestations of stress.

Method

Quantitative, exploratory and descriptive study. The place of study was a reference pediatric hospital located in the city of Rio de Janeiro, which provides care at the secondary and tertiary levels to children and adolescents with infectious-contagious, pneumological, neurological and renal conditions, as well as orthopedic, aesthetic and oncological surgeries. From a population of 30 nurses, the sample based on convenience or spontaneous demand consisted of 22 (78.7%) professionals. Male and female workers were included in the study, tenured and/or contracted and working at pediatric inpatient units for at least one year. Nurses on vacation, health leave, maternity and other types of leave were excluded.

The project received approval from the Research Ethics Committee of the Pedro Ernesto University Hospital (CEP / HUPE) and filed under the number 1,657,963. After the invitation, scheduling and clarification about the objectives of the study, the participation was formalized by signing the Informed Consent Form (TCLE), in compliance with the precepts of National Health Council Resolution 466/12. Data were collected from August to September 2016, in the workplace, according to the participants' availability.

In the verification of stress and its manifestations, the Adult Stress Lipp Inventory (ISLL) was used, validated in Brazil, which consists of 23 multiple-choice questions that measure the degree of stress. It is based on Seyle's theory (1956/1970) and was revised by Lipp. It is composed of three pictures related to the phases of stress and respective physical (F) and psychological (P) manifestations. In the first table, 12 physical and three psychological symptoms are listed. The respondent marks F1 or P1, according to the type of symptom experienced in the last 24 hours. In the second table, 10 physical and five psychological symptoms are presented, and the symptoms experienced in the last week are indicated. In Table 3, composed of 12 psychological and 11 physical symptoms, F3 or P3 is indicated for symptoms experienced in the past month. As a result, it can be verified which stage of stress the person is in - alarm, resistance, near exhaustion and exhaustion - as well as the physical or psychological symptoms. This instrument was chosen because it is one of the most used inventories in the country for tracking stress,

a factor that permits comparisons with other studies. In the survey of the sociodemographic and labor data, a structured questionnaire elaborated by the authors was used.

After applying the instrument, all information was checked for correct completion. The responses were coded, typed and processed in an Excel® spreadsheet, which made the descriptive statistical analysis possible (absolute and relative frequency). The results are presented in tables.

Results

The sample mostly consisted of women (90.9%). The prevailing age group was between 41 and 50 years, eight were single (36.4%) and eight married (36.4%). Twenty had worked in nursing for over 14 years (90.9%) and, in the same period, 19 (83.3%) in pediatrics, considering the employment contract with the institution. Thirteen accumulated more than one employment relationship (59.1%), fourteen worked in shifts (63.3%) and thirteen had a weekly workload (59.1%) of more than 40 hours. Considering the variables of the sample, in terms of length of experience, work in pediatrics, accumulation of more than one job and age, the possibility of stress and its physical and psychological manifestations in the sample need to be considered (Table 1).

Table 1 – Sociodemographic and employment characteristics of the sample. Rio de Janeiro, RJ, Brazil – 2017 (N=22)

Variables	Categories	n	%
Sex	Female	20	90.9
	Male	2	9.1
	Total	22	100
Age range	41 to 50	11	50.0
	51 to 60	7	31.9
	Older than 60	4	18.1
	Total	22	100
Marital status	Single	08	36.4
	Married/fixed partner	5	22.7
	Divorced	8	36.4
	Widowed	1	4.5
	Total	37	100
Work shift	On duty	14	63.6
	Morning	4	18.2
	Afternoon	4	18.2
	Total	22	100
Hour load	> 40 hours per week	13	59.1
	30 hours week	9	40.9
	Total	22	100
Number of jobs	More than one job	13	59.1
	1 job	9	40.9
	Total	22	100

Source: Created by the authors.

The physical manifestations of stress (Table 2), present in the first 24 hours, refer to the alert phase, when the body prepares to cope with stressors. These can come from internal (beliefs, values and way of acting) and/or external sources (psychosocial factors related to work, family and groups they belong to). Among the physical symptoms of stress, there was a higher level of agreement in the sample regarding the resistance phase, with memory problems (68.1%), constant

physical exhaustion (50%) and constant tiredness (45.4%). In the exhaustion phase, excess gas (40.9%), changes in the sleep pattern (36.3%) and prolonged dermatological problems were observed (18.1%).

Table 2 – Physical manifestations of stress in the sample. Rio de Janeiro, RJ, Brazil – 2017. (N=22)

Variable	n	%
Symptoms in the past 24 hours		
Muscle tension	9	40.9
Dry mouth	8	36.3
Change of appetite	7	31.8
Symptoms in the past week		
Memory problems	15	68,1
Feeling of constant physical exhaustion	11	50
Constant fatigue	10	45.4
Symptoms in the past month		
Excess gas	9	40.9
Insomnia	8	36.3
Prolonged dermatological problems	4	18.1

Source: Created by the authors.

Regarding the psychological manifestations of stress in the sample (Table 3), a higher prevalence was identified in the exhaustion phase or in the last month, in which affirmative responses were evidenced as to the desire to escape from everything (50%), distress/anxiety (50%) and excessive tiredness (45.5%). In the resistance phase, excessive irritability (36.6%), emotional sensitivity (31.8%) and constant thinking about a subject (27.3%) were observed. In the alarm phase, there was a lower level of agreement, when they affirmed a sudden desire to start new projects (27.3%), sudden enthusiasm (13.3%) and a sudden increase in motivation (4.6%).

Table 3 – Psychological manifestations of stress in the sample. Rio de Janeiro, RJ, Brazil – 2017. (N=22)

Variable	n	(%)
Symptoms in the past 24 hours		
Sudden desire to start new projects	6	27.3
Sudden enthusiasm	3	13.3
Sudden increase in motivation	1	4.6
Symptoms in the past week		
Excessive irritability	8	36.4
Emotional sensitivity	7	31.8
Constantly thinking of one theme	6	27.3
Symptoms in the past month		
Desire to flee from everything	11	50
Daily distress/anxiety	11	50
Excessive fatigue	10	45.5

Source: Created by the authors.

Discussion

The sample consisted mainly of women (90.9%), in line with the survey that outlined the profile of nursing in Brazil, in which 85.1% of the professionals were women, with an increasing number of men in the area, corresponding to 14.4% of the professionals[7]. In a study carried out in the health area involving women, including nurses and nursing techniques, it is emphasized that, because of the gender issue, culturally, women have multiple roles, besides the professional activity, such as domestic chores and children's education. These are factors that can contribute to the development of feelings of helplessness and frustration in certain situations, because they are unable to fully engage in the domestic activities, child rearing and careers. Also, the accumulation of more than one employment bond or triple working day, added to the work overload, can lead them to experience psychological stress[8].

As identified in the study, a considerable part of the sample showed manifestations of physical stress, characteristic of the resistance phase, such as memory problems, feeling of physical exhaustion and constant fatigue. In addition, there are psychological symptoms of exhaustion, including the desire to escape from everything, daily distress/anxiety and excessive fatigue[9].

Regarding the occurrence of stress in nurses at a neonatal service, one study[10] showed that it is intensified by the presence of stressors in the physical and social work environment, due to the professional relationship with psychosocial risk factors, such as death and lack of human and material resources, intense work rhythm, role conflict, long hours and double employment. These factors provoke manifestations of psychological stress (distress, tension, fatigue) that affect health, as the coping strategies are not always enough to minimize the distress anxiogenic situations cause.

The prevalence of physical manifestations of stress in the resistance phase corroborates that found in other studies developed in nursing[11-12], in which it was identified that the body strives to restore the body's resistance to a level equal to that which existed before the presence of stressors. If nothing is done to relieve the tension, then the body, already without energy to deal with stressors, weakens and a number of diseases start to appear, such as colds, gastritis, gum retraction, dermatological problems and others. It is appointed that nursing workers need breaks and rest to recover from the physical and mental stress caused by work because, otherwise, they become more vulnerable to illness[11]. If the stressors persist, the person will feel increasingly exhausted, devoid of energy, depressed, with bouts of anxiety and discouragement. There is inability to concentrate and interference in memory, with impairment to accomplish daily activities[1].

The predominance of the resistance phase indicates that there are internal and/or external stressors individuals are trying to cope with to maintain their internal homeostasis. There are several ways of managing stressors, such as: eating more or less than usual, appearance of dermatological problems, changes in pressure, memory problems, reduced productivity. When these factors persist with increased intensity and frequency, the resistance is ruptured and progresses to the near exhaustion phase[1].

The distress present in the resistance phase can be physical and/or emotional, causes health damage and can lead to reduced productivity. Another relevant aspect of this phase is that it is characterized by increased production of cortisol, making the organism more susceptible to diseases[12]. It is the moment when somatizations can arise, a process in which the organism presents recurrent physical symptoms due to emotional suffering, transferring to the body what should be experienced and supported only in the mind. Resistance to stress is directly linked to some factors, such as the individual's health status, personality structure, nature, frequency and intensity of the stressor. When a new stressor overlaps, this generates imbalance and weakening of the individual, who is unable to

adapt or resist the stressor, deteriorating his mental and physical endurance, which triggers the next phase, the almost exhaustion. When nothing is done to reduce or manage the stressors, there is a greater proneness to the onset of diseases and progression to the exhaustion phase[4].

It is noted that, if the symptoms present in the resistance phase persist for a prolonged time, the individual enters the phase of near exhaustion and exhaustion, in which many types of diseases can develop, depending on the genetic inheritance. Some get ulcers, others develop hypertension, yet others will have bouts of panic, herpes, psoriasis or vitiligo, among others. It is not the stress that causes these diseases though, but it favors the triggering of those conditions the person was already prone to or, by reducing the immunological defense, opens space for opportunistic diseases to manifest themselves[1].

In this study, a significant number of nurses reported physical manifestations of exhaustion, such as excess gas (40.9%), changes in the sleep pattern (36.3%) and prolonged dermatological problems (18.1%), accompanied by other psychological manifestations, such as the desire to flee from everything (50%), daily distress/ anxiety (50%) and excessive fatigue (45.5%).

Special attention should be paid to individuals who are in the phase of near exhaustion and exhaustion, due to the drop in immunity, which leads to the emergence of serious conditions, psychophysical exhaustion and even depression[8,12-13]. In this sense, nursing research points to excessive workload as an important stressor. In several situations, due to personal or institutional needs, the nursing professional works overtime or has double or triple working hours and consequent restriction of rest and recovery time, which may lead to cognitive problems related to attention, memory and reflexes, with loss of personal and work activities[14].

It was identified that 13 (59.1%) professionals, because they had a double employment relationship, had a work load of more than 40 hours and worked in shifts, with enhanced distress, due to the fact that 99.1% were female, characterizing the triple journey, due to the activities developed at home. Nursing workers' accumulation of employment bonds can have beneficial or harmful effects on these professionals' health and quality of life. The positive side is related to the better financial contribution and, consequently, greater possibilities of investing in quality of life. On the other hand, excessive workload causes physical and mental exhaustion, as well as restricting the time for leisure, care for one's own health and family life[15].

A study[16] involving emergency service nurses pointed to night work as a relevant occupational stressor, as this kind of workday leads to a lack of sleep, vigilance problems and mood swings. The restriction of sleep also predisposes to the risk of social isolation, with repercussions for the quality of life and contact with the family or other social segments. Nighttime work in nursing entails damages for individual well-being, as it affects the sleep pattern and causes fatigue, considering that the restriction of sleep implies interference in the motor and cognitive performance and can make the professional commit errors in care practice[17].

Research on common mental disorders in health workers at a university hospital and including nursing showed that professionals working night shifts had three times more mental disorders than those who worked more than one shift. Among the nighttime professionals, 34.9%, regardless of their area of work, presented suspected Common Mental Disorder[18]. Regarding the self-evaluation of health and the presence of chronic conditions, in a study[19] involving 240 nurses from the city of Pelotas (RS), it was identified that 31.2% had some chronic disease, such as hypertension, diabetes and musculoskeletal disorders, and the self-assessed health status was bad and reasonable. Thus, long working hours, night shifts and the accumulation of more than one employment bond are examples of some work modalities that have been associated with health problems and unhealthy living habits.

In this sense, a permanent discussion is needed about the biological, psychological and social aspects involved in the manifestation of stress and about the importance of preventive measures or individual and collective stress management, through institutional programs, with the intention of developing social skills related to communication and interpersonal relationship competences. Work-related interventions are needed to reduce stressors and improve team health, as work stress exerts negative influence on these professionals' personal, family and social life[20].

Despite the limitations of the study, being performed at a single health service, whose sample does not represent the universe of nurses of the hospital organization, its development has offered valuable contributions, given the incipient nature of studies that discuss occupational stress involving nurses. As evidenced, this category is susceptible to stress, given the countless care and management activities under nursing professionals' responsibility.

Conclusion

The sample consisted mainly of women, mainly of productive age. These professionals, because they have more than one employment relationship, work in shifts and more than 40 hours a week, are vulnerable to stress and its physical and psychological manifestations.

Greater prevalence of signs and symptoms in the resistance phase was identified, when considering the level of agreement about memory problems, feelings of physical exhaustion and constant fatigue. As for the psychological manifestations, there was a greater level of agreement in the exhaustion and almost exhaustion phases in view of assertions on the desire to escape from everything, daily distress/anxiety and excessive fatigue. These data are worrisome and, considering that nursing carries out continuous care with a totally dependent clientele, it is inferred that there may be losses for the performance and quality of the service provided.

The results demonstrate the need for measures to prevent occupational stress in the collective and organizational sphere, in order to provide a safe work environment, with fundamental resources for high-quality care. It is inferred that, when adopted, these strategies do not only contribute to the group's well-being and satisfaction, but also result in improved performance and minimize the social and financial burden for the individual and the organization, given the possibility of risks of illness and absenteeism.

Collaborations:

1. conception, design, analysis and interpretation of data: Janaína Mengal Gomes Fabri, Isabele da Rosa Noronha, Laila Maria Andrade Harbache and Isabela da Rosa Noronha;

2. writing of the article and relevant critical review of the intellectual content: Janaína Mengal Gomes Fabri, Isabele da Rosa Noronha, Elias Barbosa Oliveira and Celia Caldeira Fonseca Kestenberg;

3. final approval of the version to be published: Janaína Mengal Gomes Fabri, Elias Barbosa Oliveira and Celia Caldeira Fonseca Kestenberg.

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