

## Perceived stress levels in health professionals in a multiprofessional residence in Ceará

### ARTICLE

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### Abstract

The present investigation aimed to identify the level of stress perceived by health professionals from a multidisciplinary residence at Ceará. This is a descriptive study with a quantitative approach, carried out with 181 residents in 2023. The findings showed that 98.3% of residents reported having good or regular health and 66.9% having time for leisure. However, in relation to levels of perceived stress, 70.2% of the sample presented a high level classification and 22.1% a medium level. The results highlight the high level of stress among multidisciplinary residents and the need for action to guarantee quality conditions in work and training environments.

**Keywords:** Resident Student. Professional stress. Mental Health. Professional Training.

### Niveles de estrés percibidos por profesionales de salud de una residencia multiprofesional en el Estado de Ceará

### Resumen

La presente investigación tuvo como objetivo identificar el nivel de estrés percibido por profesionales de salud de una residencia multidisciplinaria en el estado de Ceará. Se trata de un estudio descriptivo con enfoque cuantitativo que fue realizado con 181 residentes en 2023. Los hallazgos mostraron que el 98,3% de los residentes refirieron tener salud buena o regular y el 66,9% disponer de tiempo para ocio. Sin embargo, en relación con los niveles de estrés percibido, el 70,2% presentó una clasificación de nivel alto y, el 22,1%, un nivel medio. Los resultados destacan el alto nivel de estrés existente entre los residentes multidisciplinarios y la necesidad de actuar para garantizar condiciones de calidad en los entornos laborales y formativos.

**Palabras clave:** Estudiante residente. Estrés profesional. Salud Mental. Capacitación profesional.

## Níveis de estresse percebido por profissionais de saúde de uma residência multiprofissional do Ceará

### Resumo

A presente investigação teve como objetivo identificar o nível de estresse percebido em profissionais de saúde de uma residência multiprofissional do Ceará. Trata-se de um estudo descritivo com abordagem quantitativa, realizado com 181 residentes em 2023. Dentre os principais achados destaca-se que 98,3% dos residentes relataram ter uma saúde boa ou regular e 66,9% com tempo para lazer. Entretanto, em relação aos níveis de estresse percebido, 70,2% da amostra apresentou classificação de alto nível e 22,1% em médio nível. Os resultados alertam para o alto nível de estresse dos residentes multiprofissionais e a necessidade de uma ação para garantir condições de qualidade nos ambientes laborais e de formação.

**Palavras-chave:** Estudante Residente. Estresse profissional. Saúde Mental. Capacitação Profissional.

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## 1 Introduction

The Multiprofessional Health Residency Programs (RMS) are understood as a means of postgraduate training in the *lato sensu* modality of professionals to work in the Unified Health System (SUS). The creation of these programs was made possible by Law No. 11.129 of 2005 (Brasil, 2005). The coordination of these programs is carried out in collaboration between the Ministries of Health (MS) and Education (MEC) guided by the National Commission of Multiprofessional Residency in Health (CNRMS) (Brasil, 2012; Rodrigues, 2016).

These teaching programs aim to expand health care practices with a line of integrality and multidisciplinary action, deconstructing the focused medical knowledge approach (Darosci; Cabral, 2019). Likewise, their efforts are focused on generating changes in the functioning of the technical-care model by projecting assistance models in articulation with training institutions and the health system (Casanova; Batista; Moreno, 2018).

To this end, the RMS covers the categories of the health area with the exception of Medicine, among which are the following professions: Biomedicine, Biological Sciences, Physical Education, Nursing, Pharmacy, Physiotherapy, Phonoaudiology, Veterinary

Medicine, Nutrition, Dentistry, Psychology, Social Assistance and Occupational Therapy (Brasil, 2012).

Evidently, the RMS contribute to the qualification, as well as to the training of health professionals from a perspective of production of care and integrality of the subjects. That is, the production of care is developed from dialogues between health service professionals and users, from the reception in the health units to the co-responsibility of care and the promotion of autonomy in the elements that involve the care of each subject (Merhy, 2013).

However, entering a RMS program generates several changes in the way of life of health professionals due to the existence of stressors such as the extensive workload, the dual role worker-student and the reduction of time for recreational and leisure activities. Subject positions that encourage distancing from friends and family generating a scenario conducive to mental illness (Cahú *et al.*, 2014; Cavalcanti *et al.*, 2018; Vieira *et al.*, 2019).

The literature highlights the importance of RMS and how this experience is important for health work (Bernardo *et al.*, 2020). On the other hand, it is still possible to highlight the exhausting 60-hour work week, the pressure to perform training activities and stress as favorable points for residents' mental illness. In summary, the degree of demand of residency programs in health areas requires physical and mental balance on the part of the professional (Coêlho *et al.*, 2018).

Soares *et al.* (2021) emphasize that the demands of the work environment require a high level of adaptation to these stressors. Therefore, each subject reacts differently to these stimuli; while some have positive reactions to this situation, others may represent a physical or emotional exhaustion, causing a high level of suffering.

To illustrate, Lipp (2003) divides stress into three phases such as alert, resistance and finally, exhaustion. The first phase is considered positive, since it presents a shorter period of time from the moment in which the individual is able to cope with the stressful moment. Its symptoms are tachycardia, sweating and even euphoria and motivation, which tend to disappear with time. In the next phase, the body seeks to recover from the stress suffered in the initial phase; if it succeeds, it exits the stress process, otherwise it enters

the third phase. In the exhaustion phase, individuals experience emotional and physical suffering more intensely.

The study conducted by Silva and Moreira (2019) with 26 multidisciplinary residents of a program in Minas Gerais, showed that most presented some type of mental suffering, including stress symptoms at a level considered unhealthy. In addition, other psychological symptoms were identified such as excessive tiredness, desire to escape from everything, daily anguish/anxiety and questioning oneself. These actions can be a warning sign of psychological distress and general health problems. Corroborating with the above, the study conducted by Cahú *et al.* (2014), found high levels of stress in 77.8% of the sample with 45 multidisciplinary residents of Pernambuco. Fatigue, insomnia and physical exhaustion were other symptoms observed by the referred authors.

For Moreira *et al.* (2016), the volume of evidence investigating quality of life, stress and sleep in medical residents is extensive. However, the same cannot be said about the subject in the population of non-medical residents. In this regard, studies are needed that evaluate multidisciplinary residencies as a whole, from the structure of the programs in terms of the learning and working environment, as well as the quality of life of the professionals involved. It is believed that these findings will be able to contextualize the fight against the precariousness of residents' work and support proposals to improve the physical and mental health conditions of residents during their formative path.

Therefore, the objective of the research was to identify the level of perceived stress in health professionals in a multidisciplinary residency in the State of Ceará.

## 2 Methodology

This was a descriptive study, with a quantitative approach, conducted in July 2023 with health professionals from a multidisciplinary residency in the state of Ceará. The study was approved by the Human Research Ethics Committee of the School of Public Health of Ceará, by means of opinion 5.819.198 and CAAE number 65113522.4.0000.5037.

The population consisted of 335 resident professionals, divided into 12 emphases/specialties, 2 components - community (n=221) and hospital (n=114), distributed in 22 municipalities of the state. To define the sample, a sample calculation was made for a finite population with a 95% confidence interval (95% CI). The sample consisted of 181 resident professionals. The number of enrolled residents and their contact data were provided by the School of Public Health of Ceará.

Medical and uniprofessional residencies were excluded from the sample because they did not fit into the multiprofessional residency dynamics. Likewise, residents who during the period of data production were on leave for health reasons, who for some reason did not complete the questionnaire or others (maternity, bereavement, marriage, etc.) did not participate in the sample.

In order to respond to the research objective, a Google Forms form was used. The first part of this instrument consisted of the Free and Informed Consent Form (TCLE) which, after reading and acceptance by the participants, they had to check the option “I agree to participate in the research” on the form, in order to then have access to the study questions.

Next, the resident professionals who chose to participate in the research found a sociodemographic questionnaire with questions regarding gender, age, marital status, ethnicity, religion, professional category, performance components, emphasis/specialties and a topic with questions about the “Habits and general health” of the participants, which allowed to visualize an overview of the research sample. The Perceived Stress Scale - 10 (PSS-10) was used.

According to Cohen *et al.* (1983), the Perceived Stress Scale (PSS) is an instrument that measures the self-perception of stress experienced by individuals, i.e., how these individuals perceive stressful situations. Initially, the scale was composed of 14 items and validated with 10 items (Preto *et al.*, 2018).

In the 10-item version (PSS-10), the scale is composed of four items of positive items (4, 5, 7, 8) and six negative items (1, 2, 3, 6, 9, 10) that were answered using a Likert-type scale ranging from zero to four, with 0 = never, 1 = almost never, 2 = sometimes, 3 = infrequently, and 4 = very often (Cohen *et al.*, 1983). Items with positive sentences were

reverse-scored as follows: 0=4, 1=3, 2=2, 3=1 and 4=0. Sentences with negative connotation should be summed directly and the overall sum of positive and negative items can vary from zero to forty points (Machado *et al.*, 2014).

Being a general scale, the PSS can be used in different groups, from adolescents to older people, as it does not contain context- or age-specific questions. The absence of such specific questions may be the reason why this scale has been validated in different cultures (Luft *et al.*, 2007).

The collected data were tabulated in a Microsoft Excel 2016 spreadsheet for Windows, where a descriptive analysis of the data was performed using averages.

### 3 Results and Discussion

The sample was characterized by 181 health professionals of a multiprofessional residence and which are divided into 22 municipalities in the State of Ceará. Table 1 shows the sociodemographic information of the study participants where 79.0% (n=143) are women, with an average age of 27.8 years  $\pm$  3.9 (minimum age 23 and maximum 48 years), of which 54.1% (n=98) declared themselves mixed race or black, and 56.1% (n=102) were mostly Catholic. Regarding the “professional” category, of the ten who participated, 27.0% (n=49) graduated in Nursing, 13.8% (n=25) in Psychology and 13.3% (n=24) in Physiotherapy.

**Table 1. Sociodemographic profile of health professionals of a multiprofessional residence, Fortaleza - CE, 2023 (n=181).**

Variable	N	%
Gender		
Female	143	79.0%
Male	37	20.4%
Non-binary	1	0.6%
<b>Marital Status</b>		
Single	144	79.6%
Married	23	12.7%
Common-law marriage	14	7.7%
<b>Ethnicity</b>		
Mixed race	78	43.1%
White	74	40.9%



Black	20	11.0%
Indigenous	4	2.2%
Yellow	3	1.7%
Prefer not to declare	2	1.1%
<b>Religion</b>		
Catholic	102	56.1%
No Religion	30	16.6%
Evangelical	22	12.2%
Agnostic	9	5.0%
Undetermined and Multiple Belongings	7	3.9%
Christian	3	1.7%
Atheist	2	1.1%
Spiritist	2	1.1%
Umbanda	2	1.1%
Adventist	1	0.6%
Mormon	1	0.6%
<b>Professional Categories</b>		
Nursing	49	27.0%
Psychology	25	13.8%
Physical Therapy	24	13.3%
Social Services	22	12.2%
Dentistry	16	8.8%
Nutrition	16	8.8%
Physical Education	15	8.3%
Pharmacy	12	6.6%
Speech Therapy	1	0.6%
Veterinary Medicine	1	0.6%
<b>Action components</b>		
Community	126	69.6%
Hospital	55	30.4%
<b>Emphasis/Specialties</b>		
Family and Community Health	87	48.1%
Community Mental Health	27	14.9%
Cancerology	17	9.4%
Community Health	12	6.6%
Neurology and High Complexity Neurosurgery	10	5.5%
Emergency and Urgent Care	8	4.4%
Pediatrics	7	3.9%
Obstetrics and Neonatology	6	3.3%
Infectious Diseases	5	2.8%
Cardiopulmonary Care	2	1.1%

Source: Elaborated by the authors, 2024.

In addition, a questionnaire on general living habits was administered with the aim of identifying some behaviors outside the residents' work environment that could lead to a stressful living routine. Among the main findings, 51.3% (n=93) and 37.0% (n=67)

responded that they were in good or fair health respectively. 98.3% (n=178) did not use tobacco and 54.7% (n=99) did not use alcohol. A total of 79.6% (n=144) had time for leisure and 66.9% (n=121) performed some exercise, with an average of 45.2 minutes per session (Table 2).

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**Table 2. Health habits of health professionals from a multiprofessional residence, Fortaleza - CE, 2023 (n=181).**

Variable	n	%
<b>Would you say your health is?</b>		
Good	93	51.3%
Fair	67	37.0%
Poor	11	6.1%
Excellent	9	5.0%
Very bad	1	0.6%
<b>Do you habitually use tobacco?</b>		
No	178	98.3%
Yes	3	1.7%
<b>Do you usually drink alcohol?</b>		
No	99	54.7%
Yes	82	45.3%
<b>Do you usually use sleeping pills?</b>		
No	166	91.7%
Yes	15	8.3%
<b>Do you usually have time for leisure?</b>		
No	37	20.4%
Yes	144	79.6%
<b>Do you practice physical activity/exercise?</b>		
No	60	33.1%
Yes	121	66.9%

Source: Elaborated by the authors, 2024.

Chart 1 indicates the frequency and percentage of each of the ten items of the PSS-10. In the positive items corresponding to the questions (Q4, Q5, Q7 and Q8), the items with the highest scores addressed the items “Did things happen as you expected?” and “Were the aspects of your life under control?”, with a sum of 70.7% and 70.2%, respectively, representing points in their lives that are negatively affecting them.



**Chart 1. Perceived stress scale in health professionals of a multiprofessional residency, Fortaleza - CE, 2023 (n= 181).**

QUESTIONS	Never		Almost never		Sometimes		Infrequent		Very frequent	
	n	%	n	%	n	%	n	%	n	%
How often have you felt upset about something that happened unexpectedly?	0	0	10	5.5	85	47.0	22	12.2	64	35.3
How often have you felt like you couldn't control important things in your life?	2	1.1	20	11.0	83	45.9	33	18.2	43	23.8
How often have you been nervous or stressed?	0	0	12	6.6	64	35.4	30	16.6	75	41.4
How often have you been confident in your ability to cope with your personal problems?	3	1.7	14	7.7	87	48.1	45	24.9	32	17.7
How often have you felt that things happened in a way you expected?	2	1.1	23	12.7	103	56.9	35	19.3	18	9.9
How often have you believed that you could cope with all the things you had to do?	2	1.1	19	10.5	72	39.8	29	16.0	59	32.6
How often have you been able to control the irritations in your life?	0	0	11	6.1	90	49.7	46	25.4	34	18.8
How often have you felt that all aspects of your life were under control?	15	8.3	45	24.9	67	37.0	38	21.0	16	8.8
How often have you been angry about things that were out of control?	2	1.1	12	6.6	87	48.1	23	12.7	57	31.5
How often have you felt that problems had accumulated so much that you couldn't solve them?	3	1.7	40	22.1	64	35.3	34	18.8	40	22.1

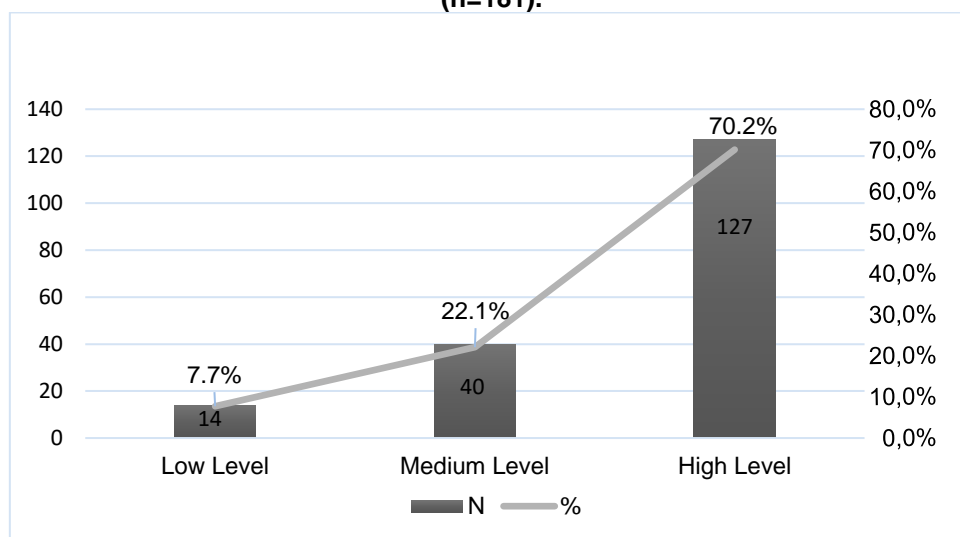
Source: Elaborated by the authors, 2024.

Regarding the negative items that make up the questions (Q1, Q2, Q3, Q6, Q9 and Q10), the items with the highest scores were: “How often have you felt upset about something that happened unexpectedly?”, “How often were you nervous or stressed?” and “How often were you angry about things that were out of control?”. When the highest-scoring responses were added together, it was found respectively: 94.5%, 93.4%, and 92.3%,

Figure 1 shows the stress scale of the health resident professionals who participated in the research, and followed the classification of the study by Galvão *et al.* (2023), who divided stress into three levels, thus classifying participants with a score  $\leq 13$  as mild stress levels, moderate from 14 to 19, and participants with scores  $\geq 20$  as high stress levels.

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**Graph 1. Stress level of health professionals in a multiprofessional residence, Fortaleza - CE, 2023 (n=181).**



Source: Elaborated by the authors, 2024.

The findings indicate that most of the residents have a high level of stress, corresponding to 70.2% (n=127) of the study participants, followed by 22.1% (n=40) in the medium level and only 7.7% (n=14) in low level of stress.

From the analysis of the socio-demographic composition of the resident health professionals, the highest representation was female, with 79% of the sample. This percentile indicates similarity with other studies such as Rocha, Casorotto and Schmitt (2018), 80.9%, Cavalcanti *et al.* (2018), 78.2%, and Guimarães and Carrasco (2020), 80.7%. This prevalence is related to the composition of health teams and the historical and cultural context in which professions and care relate to women (Santana *et al.*, 2018; Silva *et al.*, 2021).

Regarding the age of the residents, most of them are between 23 and 48 years old, with an average of 27.8 years. These residents have different characteristics, namely: recent graduates, professionals new to the labor market, with little experience and in search of qualifications in residency programs (Moreira *et al.*, 2016). The RMS experience can provide professional qualification through training and supervised experiences so that residents can work more efficiently in health services. However, RMS programs are for health professionals a timely and challenging in-service training space with extensive hours of practical and theoretical activities, where they must meet demands with a high level of complexity leaving residents vulnerable to situations that cause stress and insecurities. Therefore, it is essential to follow more closely the points related to the physical, psychological and relational health of the subjects (Moreira *et al.*, 2016; Vieira *et al.*, 2019; Silva *et al.*, 2021).

Life habits can influence health-disease processes; a fact pointed out by a sample in which it was found that 54.7% (n=99) do not consume tobacco and alcohol (79.6%; n=144) and 66.9%, (n=121) have time for leisure, time that positively influences physical and mental characteristics regarding the health of health professionals (Rocha; Casorotto; Schmitt, 2018). Corroborating this finding, a study conducted with health professionals, where 83.8% of the participants had free time in their weekly routine, 59.4% did not consume alcohol and 96.6% were non-smokers (Lua *et al.*, 2018).

In this context, the study by Vieira *et al.* (2019), shows that residents claim to have low quality of life, revealing some dissatisfaction with their day-to-day life. This same study highlights the relevance of also monitoring points of life of the referred professionals from the perspectives of interpersonal relationships, sleep, rest, access to information and physical environment in view of a quality professional performance.

In relation to the analysis of the items of the PSS-10 instrument, it was possible to observe which were the most significant items as potential stress-generating factors for resident health professionals. In other words, Silva *et al.* (2021) reinforces that questions 5 and 7 portray the lack of control over the residents' lives, feelings that are added to other

factors such as lack of self-confidence and inexperience to face the challenges of the residencies, leaving the residents vulnerable to stressful situations and illness.

Even following the individual items of the instrument, questions 1, 3 and 9, which are linked to the presence of feelings of sudden boredom, nervousness and uncontrolled anger, turned out to be significant points in the process of discomfort of these residents. In the same sense, the study by Oliveira, Morais and Quesada (2021), conducted with health professionals in a nursing home in the state of Ceará, highlighted that they experienced similar feelings such as prolonged anger, irritability without apparent cause, loss of sense of humor, daily anguish and anxiety, and difficulty in coping with complex situations (Nakamura *et al.*, 2020). This fact may be related to the requirement to perform tasks that are not the resident's responsibility, such as receiving the title of service professional, while fulfilling the role of resident professional. The lack of Physical Education professionals to supervise the work of residents, preceptors and/or service professionals could be addressed by improving salary and establishing effective linkages (Vieira *et al.*, 2023).

Regarding the classification of stress levels perceived by the residents, most of the student professionals experience high and medium stress levels. Silva *et al.* (2021) highlight that the literature is scarce on the health conditions of resident professionals, while the findings show the need to monitor these subjects more closely, confirming the initial hypothesis of the study, which believed that the stress levels perceived by these professionals would be elevated.

In addition to the points that characterize the residency process such as theoretical training and the weekly study and work load, other stressors may affect the health of these professionals such as the dismantling of the physical structures of the work environments, lack of basic material resources for work and excessive demand for care by users. Next, Campos (2019) highlights in his study that the training process of health residencies is still not clearly understood by health teams, tutors and preceptors, who often provide these residents in the territory to make up not only for the lack of professionals, but also to assign demands that are not part of the training processes such as making them responsible for specific sectors.

Another condition experienced by multiprofessional residents is moral harassment due to the demand for compliance that is transmitted to these professionals in training. In a residency program in Rio Grande do Norte, resident professionals were required to complete a weekly workload of 72 hours (60 practical hours + 12 theoretical hours), an example of cases that reach the discussion spaces of local or national Residency Forums (Rodrigues, 2016; National Forum of Health Residencies, 2023).

Although there are few studies focused on multidisciplinary residencies, those that are available have findings that corroborate those found in the present study, in which most residents have a high level of stress. According to Silva *et al.* (2021), 55.0% of the participants were in this high stress situation, while Rocha, Casorotto, and Schmitt (2018) found 78.9% of them and Oliveira, Morais, and Quesada (2021), 83.3%.

The study by Silva and Natal (2019) shows that the high level of stress among professional residents is a factor that can lead to a series of serious symptoms such as doubts about their potential, excessive fatigue, the desire to give up or run away, which can lead to a series of psychological illnesses and general health problems.

However, the study by Cavalcanti *et al.* (2018) conducted with 46 residents of a multiprofessional residency program in which different periods were compared from the beginning of the residency, the end of the first year and the end of the second year, showed that, compared to the beginning of the program, depression reached 72.5% of the resident professionals. This evidence points to the severity of this problem among residents, since the conditions were evident in the first year of residency. According to the authors of this study, the correlation between the extensive workload, combined with limited professional experience and the dual role of student-worker, may lead the multiprofessional resident to become ill.

This scenario in which the resident dedicates a large part of their weekly hours to activities involving the residency program to which they are linked, Silva *et al.* (2021) reinforce the need for these programs to encourage moments and offer support to these professionals with the objective of strengthening the bonds between subjects, improving

working conditions; actions that can positively influence their quality of life (Matos; Araújo, 2021).

## 4 Conclusions

The findings allowed the identification of worrying levels of stress among health professionals in a multidisciplinary residency program in the state of Ceará. In summary, the residents reported negative feelings such as lack of confidence in their potential, sudden and prolonged anger, among other distressing symptoms.

This scenario is a relevant argument in defense of better conditions for the community of multidisciplinary residencies, since they intervene with a fundamental role in the care of the population and collaborate with the dynamics of health services, given that these professionals contribute to the functioning of the SUS to ensure better care and the principles that support it.

In this sense, it is relevant to identify the vulnerabilities that permeate the training/work process of health resident professionals in order to establish ways of coping with situations in which these individuals experience discomfort within the residency programs. Thus, contributing to quality training in the SUS and for the SUS.

In short, it is essential to think of strategies that collaborate with the mental health of residents and favor better coping with disease processes in multidisciplinary residencies. The provision of psychotherapies, encouragement to seek them, moments of relaxation and leisure provided both by the program itself and by the residents may be options that support coping and help to reduce these stress levels.

A limitation of the study was considered to be the limited academic production related to the topic and audience in question. Another point that hindered the development of the study was related to data collection, since, in the first attempt, it was decided to collect the participants entirely online, not reaching the representative sample. Subsequently, a new collection was carried out, making the QR code available to the residents in a training and face-to-face meeting, where the sample was reached. For this



reason, as a recommendation for future studies, it is suggested to capture participants in a face-to-face manner, to more easily reach a relevant sample.

Finally, it is hoped that this work will contribute to scientific production and that it can enable and support future strategies to contribute to the health of resident health professionals in the multiprofessional setting.

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