

Adaptability, cohesion and family functionality of nurses during state of emergency by COVID-19

Adaptabilidade, coesão e funcionalidade familiar de los enfermeros durante el estado de emergencia por covid-19

Adaptabilidade, coesão e funcionalidade familiar dos enfermeiros durante o estado de emergência por Covid-19

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Abstract

Objective: To evaluate nurses' family adaptability, cohesion, and functionality during the state of emergency by COVID-19.

Materials and method: The following is an exploratory, quantitative, descriptive, and cross-sectional study. We used a snowball sample, non-probabilistic, and for convenience. For data collection, we used an instrument consisting of a socio-demographic questionnaire; a family, housing, and cohabitation characterization questionnaire; a Duvall's Family Life Cycle Assessment Scale; a Family Adaptability and Cohesion Evaluation Scale (FACES II); and Family-Scale Adaptation, Partnership, Growth, Affection, and Resolve (APGAR) that measures family function.

Results: 125 responses were obtained, being identified the following aspects as predictors of better APGAR, Cohesion, and Adaptability: better housing conditions; families with three or more members; mature families, with children or adult children; individuals teleworking and households in which more than one member is not in social isolation. Increasing age is a predictor of lower adaptability and cohesion.

Conclusions: Twenty percent of families (APGAR) have moderate or severe dysfunction; 4.8 % are classified as "extreme" families, and 39.2 % as "very balanced" (FACES II), therefore being at risk.

Descriptors: Nursing; Nurses; Family; Pandemics; COVID-19 (source: Decs, BIREME).

Resumen

Objetivo: evaluar la cohesión, adaptabilidad, y funcionalidad familiar de los enfermeros durante el tiempo de emergencia por covid-19.

Materiales y método: se trata de un estudio exploratorio, cuantitativo, descriptivo y transversal. Se utilizó una muestra de bola de nieve no probabilística y por conveniencia. Para la recolección de datos se utilizó un cuestionario sociodemográfico; un cuestionario para caracterizar la familia, la vivienda y la convivencia familiar; Escala de Evaluación del Ciclo Vital de Duvall; Escala de Adaptación y Cohesión Familiar (FACES II); y Escala de Calificación Familiar de Adaptación, Asociación, Crecimiento, Afecto y Resolución (APGAR), que evalúa la funcionalidad familiar.

Resultados: se obtuvieron 125 respuestas, y se identificaron como predictores de mejor APGAR, Cohesión y Adaptabilidad: mejores condiciones de vivienda; familias con tres o más integrantes; familias maduras, con niños o hijos adultos; quienes están en teletrabajo, y familias en las que más de un miembro no está en aislamiento social. El incremento de la edad predice peor adaptabilidad y cohesión.

Conclusiones: presentan disfunción moderada o severa 20,0 % de las familias (APGAR). 4,8 % se clasifican como familia "extrema" y 39,2 % como "muy equilibrada" (FACES II), por tanto, de riesgo.

Descriptor: Enfermería; Enfermeros; Familia; Pandemias; Covid-19 (fuente: Decs, BIREME).

Resumo

Objetivo: avaliar a coesão familiar, a adaptabilidade e a funcionalidade familiar dos enfermeiros durante o estado de emergência por Covid-19.

Materiais e método: trata-se de um estudo exploratório, quantitativo, descritivo e transversal. Utilizou-se uma amostra em bola de neve, não probabilística e por conveniência. Para a coleta de dados, foram utilizados um instrumento composto por um questionário sociodemográfico; um questionário de caracterização de família, habitação e coabitação; Escala de Avaliação do Ciclo Vital de Duvall; Escala de Adaptabilidade e Coesão Familiar (FACES II); Escala de Avaliação Familiar de Adaptação, Associação, Crescimento, Afeto e Resolução (APGAR), que avalia a funcionalidade familiar.

Resultados: obtiveram-se 125 respostas, sendo identificados como preditores de melhor APGAR, coesão e adaptabilidade: melhores condições de habitação; famílias com três ou mais membros; famílias maduras, com filhos ou filhos adultos; os que estão em teletrabalho; e agregados em que mais do que um membro não está em isolamento social. O aumento da idade é um preditor de pior adaptabilidade e coesão.

Conclusões: apresentam moderada ou acentuada disfuncção 20 % das famílias (APGAR); 4,8 % são classificadas tipo de família "extrema" e 39,2 % como "muito equilibrada" (FACES II) e, portanto, em risco.

Descriptor: Enfermagem; Enfermeiros; Família; Pandemias; Covid-19 (fonte: Decs, BIREME).

Introduction

In the critical pandemic period we are experiencing, triggered by the Coronavirus Disease 2019 (COVID-19), health professionals have been playing a relevant role. The virus has caused one of the most severe public health problems and the most comprehensive social crisis in the last decades (1). An event of this nature poses challenges to health professionals. Their safety and well-being are significant, not only to guarantee care continuity but, above all, to control contagion due to the role they play in public health education.

Psychological and social changes that affect everyone—especially health professionals—must also be taken into account. Many of these specialists have already lost their lives since the pandemic began (2, 3). They are health professionals highly likely to become ill due to the exposure they are subject to, but also due to the unavailability and inappropriate use of Personal Protective Equipment (PPE) and lack of adequate training to face the emergence of extremely infectious disease outbreaks (4-6). Their staffs are under constant pressure, so they begin to develop signs and symptoms related to increased exposure, which is most notorious among nurses (1, 5, 7). The professionals are vital to the organization and management of health interventions, often as the first and last individuals the patients see (1).

The effects of virus exposure go far beyond debility, morbidity, and mortality (8-10). Since social distancing is the most effective measure of disease control, it can further increase the mental health impact on individuals (9, 11). For health professionals, in addition to the increased work hours, lack of personnel and material, it leads to isolation from their families, affecting them physically and emotionally. Therefore, the first signs of change, such as anxiety, depression, denial, insomnia, and anger appear, affecting their clinical decision, judgment, attention, and disease understanding, also having an impact on long-term well-being (8, 10, 12).

For families, the difficulties of surviving are evident, such as keeping the balance between work, homeschooling with the children, the online work many parents started, the financial concern with income loss, increased chores, among other

problems such as gender differences, and domestic violence (13).

Despite the possibility of spreading the virus to their relatives, for health professionals, a family is still a form of comfort and a possible return to normality, constituting one supporting element (10). Thus, along with the problems found and described by all families, there is a general concern with infecting the relatives; consequently, sometimes, these professionals choose to live away from them for an indefinite period. The previous aspects potentially change the family dynamics and how their members are interconnected (9, 10), as reported. Inharmonious families experience more conflicts, disagreements, loss of affection and approval among their members (14). The reality is that all families are experiencing this phenomenon for the first time so far, in a non-normative crisis imposed throughout the world (15).

We highlight the concepts of *cohesion*, *adaptability* and *family functionality* as aspects that can show these changes. The Family Functionality Evaluation uses Family Adaptability, Partnership, Growth, Affection, and Resolve (APGAR) to evaluate each member's satisfaction with the support their family provides (16).

Cohesion is defined as the emotional bond that family members feel for each other, and *adaptability* refers to the family's ability to change its structure, roles in relationships, and rules to respond to situations or development stages (17). Family Adaptability and Cohesion Evaluation Scale II (FACES II) evaluates these concepts separately on scales and then combines the classification to obtain the family type based on these two factors. High values of cohesion and adaptability indicate balanced families, and lower values reveal extreme families (17).

According to Olson (2000) (17), there are particularities to consider about families classified at the extremes: in families named rigid, roles and little flexibility in the rules, imposed by one of its members who controls the family dynamics, are rigid; in chaotic families, members may switch roles, as these are not well-defined; in structured families, there is an adaptation to family roles and rules, which reflects a democratic leadership, with evident participation of children, according to their age (17). More recently, it has become clear that families with extreme behaviors in one

of the two dimensions function less satisfactorily (high dependency, member separation, rigidity in the application of discipline rules in response to new situations) than families balanced concerning cohesion and adaptability (19). In either case, the family dynamics of change and transition through the different classifications improve its functioning process (17).

Accordingly, it makes sense to be concerned with these professionals and the support they receive from their families and give to them. Family roles and the dynamics already assumed by the family are aspects that inevitably change (15), which means family support should play an even superior role for these professionals. Thus, given the pandemic period and the function of nurses during this process, our study objective is to evaluate nurse family adaptability, cohesion, and functionality during the state of emergency.

Materials and methods

It was an exploratory, quantitative, descriptive, and cross-sectional study. We aimed at accessing the population through snowball sampling, in a non-probabilistic way, and for convenience, with the following inclusion criteria: being a nurse in any situation and professional location, being over 18 years old, and consenting to participate in the study voluntarily.

Instruments for data collection were organized and sent by Google® forms and diffused by email and social networks, such as Facebook®, WhatsApp®, and Instagram®. The questionnaire starts with the informed consent, necessarily validated before proceeding with the remaining part (Decision of the Ethics Committee 2020/12 of Santa Maria Health School). The form required individuals to answer each question before moving on to the next one. Uncompleted questionnaires were excluded.

For the study we used a sociodemographic questionnaire (gender, age, marital status, education), which also includes, in the end, an assessment of the importance some items have for nurses in this pandemic and social isolation period; a questionnaire to characterize the family, housing and family cohabitation during the pandemic, including Duvall's Family Life Cycle Stages, Family Adaptability and Cohesion Evaluation Scale (FACES II) (17), and questions related to Adaptation, Partnership, Growth, Affection and Resolve (APGAR) (16) that measure the family function.

The Family Adaptability and Cohesion Evaluation Scale (FACES II) evaluates family cohesion and adaptability (17). FACES II is an instrument with 30 items, which uses a Likert-type scale from 1 (seldom) to 5 (almost always), measuring the individual's perceptions of adaptability, family cohesion and the general family function. It has 16 questions measuring cohesion and 14, adaptability. Cohesion results in a classification into four levels: disengaged (extremely low cohesion); separated (low/moderate cohesion); connected (moderate/high cohesion), and enmeshed (extremely high cohesion). Adaptability is based on an assessment process, leading to four levels: rigid (extremely low adaptability); structured (low/moderate adaptability); flexible (moderate/high), and chaotic (extremely high adaptability) (17). The Family Adaptability and Cohesion Evaluation Scale (FACES II) has dimensions and punctuation: cohesion can be classified as disengaged, separated, connected and enmeshed; adaptability can be classified as rigid, structured, flexible and chaotic. With the scale, it is possible to classify each of the families, considering each of the parameters that, combined, result in the categorization of families into four types: extreme, mid-range, balanced and very balanced (17).

The APGAR evaluates family function on a scale from 0 to 10: a score of 7-10 indicates "highly functional family"; a score of 4-6 corresponds to a "moderately dysfunctional family"; and a score of 0-3 refers to "severely dysfunctional family" (16). On one hand, intermediate scores on the cohesion and adaptability scales indicate more balanced family systems. On the other hand, families with extreme scores are less functional (14, 17, 18).

Data analysis was performed using the IBM SPSS® Statistics v27 software. Since the sample does not have a normal distribution, non-parametric tests were used for inferential analysis (Mann-Whitney U or Kruskal-Wallis), considering statistical significance for p values < 0.05 .

Results

In Table 1, there is a summary of the main results. There were 125 responses for the questionnaire, principally in Portuguese north (78.4 %) and central region (10.4 %). The majority is female (80.0 %). The average age is 41.01 (Standard Deviation [SD]) = 12.4), minimum 21 years old and maximum 72 years old. Most nurses are married (52.8 %), 72.8 % have a bachelor's degree, and 8.0 % are

already retired. Only a part is currently teleworking (4.8 %). A majority considers living in a “house or apartment, which, without being luxurious, is spacious and comfortable” (57.6 %); the most common household has three members (33.6 %), and 6.4 % have a one-person family. Most classify

themselves as a “married couple with children” (54.4 %), and the most predominant life cycle stage corresponds to families with children (20.8 % to “families with school-age children: oldest child: 6 to 13 years old” and 19.2 % to “families with young adults: first child leaving – last child leaving”).

Table 1. Sample characterization, mean values of family APGAR, cohesion and adaptability (N = 125)

Variables	N	%	Family APGAR			Family cohesion			Family adaptability		
			Mean	SD	p	Mean	SD	p	Mean	SD	p
Age - years (N = 125)											
21-31	25	20.0	7.8	2.3	b	58.9	12.6	b	53.6	10.1	b
32-42	47	37.6	8.1	2.2		61.5	8.6		53.0	7.9	
43-53	30	24.0	8.0	2.3		60.1	8.8		54.9	7.6	
54-64	14	11.2	8.2	2.8		60.9	10.9		59.7	7.3	
65-75	9	7.2	9.2	1.2		56.5	11.4		47.8	16.3	
Family members: (N = 125)											
1 member	8	6.4	7.3	2.7	b	48.3	6.8	b	47.1	9.9	b
2 members	28	22.4	8.6	2.1		60.7	11.8		51.7	12.7	
3 members	42	33.6	8.3	2.3		61.4	9.6		55.7	8.3	
4 members	30	24.0	8.1	2.0		60.3	8.4		55.6	6.2	
5 members	13	10.4	7.9	1.8		63.3	8.9		55.0	7.7	
6 members	2	1.6	7.0	1.4		53.5	6.4		45.0	1.4	
≥7 members	2	1.6	5.5	6.4		60.5	13.4		54.0	8.5	
Gender (N = 125)											
Male	25	20.0	8.8	1.8	b	60.7	8.8	b	54.4	7.1	b
Female	100	80.0	7.9	2.3		60.1	10.3		53.9	9.8	
Civil status (N = 125)											
Single	37	29.6	7.6	2.3	b	55.8	11.7	b	51.2	10.1	b
De facto union	14	11.2	9.0	1.6		66.6	4.8		57.7	5.4	
Married	66	52.8	8.0	2.3		60.9	9.2		54.2	9.2	
Divorced	5	4.0	10.0	0.0		64.6	6.3		59.0	7.9	
Widow	3	2.4	9.3	1.2		62.3	6.8		57.0	12.3	
Residence local (N = 125)											
North	98	78.4	8.2	2.1	b	60.8	10.1	b	55.3	8.4	b
Center	13	10.4	8.9	1.3		60.6	9.9		50.7	13.7	
Lisbon	6	4.8	6.5	3.6		55.8	9.7		48.2	9.8	
Alentejo	2	1.6	8.0	2.8		57.5	0.7		44.5	4.9	
Algarve	3	2.4	7.3	2.5		56.3	12.7		50.0	7.2	
Azores	1	0.8	10.0	0.0		51.0	0.0		44.0	0	
Madeira	2	1.6	5.5	6.4		58.5	14.8		45.5	7.8	
Schooling (N = 125)											
Bachelor's degree	4	3.2	7.7	2.4	b	59.4	10.3	b	53.1	8.0	b
Graduation	91	72.8	8.1	2.3		60.3	9.9		60.3	10.3	
Master degree	23	18.4	8.5	1.7		59.6	10.7		59.6	9.1	
Ph. D.	7	5.6	9.4	1.5		66.3	4.2		10.7	5.6	
Employment status during COVID-19 pandemic (N = 125)											
Retired	10	8.0	9.5	1.1	a	60.9	12.7	b	51.1	17.2	b
Active worker (presential)	109	87.2	7.9	2.3		59.8	9.9		53.8	8.3	
Active worker (teleworking)	6	4.8	9.3	1.6		66.3	4.7		60.3	6.0	

Variables	N	%	Family APCAR			Family cohesion			Family adaptability		
			Mean	SD	p	Mean	SD	p	Mean	SD	p
House type (N = 125)											
Luxury house or apartment, spacious, offering maximum comfort	13	10.4	8.5	1.6	b	63.7	9.6	b	53.7	7.3	b
House or apartment, which, without being luxurious, is spacious and comfortable	72	57.6	8.3	2.2		62.2	9.3		55.8	8.8	
Modest house or apartment, well and conserved, well-lit, airy, with kitchen and wc.	40	32.0	7.7	2.4		55.6	9.9		50.8	9.9	
House with kitchen and wc but degraded or with no appliances	0	0	0	0		0	0		0	0	
Housing and family cohabitation during the pandemic period (N = 125)											
All the family members are in isolation	14	11.2	9.4	1.3	a	62.4	11.3	b	53.2	15.1	b
One of the family members is not in social isolation	88	77.4	8.0	2.2		59.9	9.6		54.3	8.4	
All members of the household are not in social isolation	21	16.8	7.5	2.6		59.2	11.1		52.4	8.7	
More than one member is not in social isolation	2	1.6	9.5	0.7		70.0	0.0		62.5	3.5	
Family type (N = 125)											
Father with, at least, one child	0	0	0	0	b	0	0	b	0	0	b
Mother with, at least, one child	10	8.0	8.9	1.9		61.5	8.2		55.0	9.2	
Couple with no children (<i>de facto</i> union)	6	4.8	9.2	1.6		63.7	9.7		55.5	7.6	
Couple with children (<i>de facto</i> union)	14	11.2	8.4	1.9		64.8	6.9		57.7	6.2	
Married couple with no children	7	5.6	9.3	0.9		55.3	12.5		43.9	16.2	
Married couple with children	68	54.4	8.0	2.3		60.6	9.9		54.6	8.4	
Couple with no children with other persons	2	1.6	8.0	1.4		60.0	12.7		48.5	13.4	
Couple with children with other persons	4	3.2	6.0	2.3		62.0	14.5		50.8	13.8	
Families with two households and no children (two nucleus)	0	0	0	0		0	0		0	0	
Families with children in one household	4	3.2	7.5	2.0		55.5	10.1		55.3	3.8	
Families with children in both households	2	1.6	5.5	6.3		59.5	12.0		57.5	13.4	
Families with children in both households with other persons	0	0	0	0		0	0		0	0	
One-person families	8	6.4	7.9	2.2		51.1	9.7		49.9	9.8	
Life cycle stage (N = 125)											
Couple with no children	13	10.4	8.5	1.9	b	58.7	11.4	b	50.7	9.0	b
Families with newborn (older children - 30 months)	10	8.0	8.4	1.8		66.6	8.0		54.8	6.4	
Families with preschool children (older children: 2.5-6 years)	13	10.4	7.3	2.6		62.3	7.9		52.1	8.3	
Families with school-age children: oldest child: 6-13 years old	26	20.8	8.1	2.4		62.4	7.5		56.4	6.1	
Families with adolescent	22	17.6	7.6	2.3		58.5	10.2		52.2	9.5	
Families with young adults: first child leaving - last child leaving	24	19.2	8.3	2.5		57.9	10.5		56.3	9.4	
Middle-aged couples	15	12.0	8.8	1.7		59.5	12.5		52.7	14.3	
Aging (retired - one spouse death)	2	1.6	8.5	2.1		50.5	13.4		51.5	14.8	

Note. a. $p < 0.05$; b. $p \geq 0.05$.

Source: research database.

The family APGAR presents higher mean scores in the following cases: men (Mean= 8.8; SD= 1.8); older nurses, aged 65-75 years (Mean= 9.2; SD= 1.2); divorced (Mean= 10.0; SD= 0.0); living in the Azores (Mean= 10.0; SD= 0.0); retired (Mean= 9.5; SD= 1.1); and individuals currently teleworking (Mean= 9.3; SD= 1.6) and with a statistically significant difference in relation to nurses working on-site. Nurses with better housing conditions, families without children, and families with “middle-aged couples” present higher mean APGAR scores (Mean= 8.8; SD= 1.7). There are two to five household members, the APGAR rises, being lower in families with one member or with more than six members. Furthermore, the higher the level of education, the higher the APGAR.

Regarding the household situations during isolation, the APGAR (Mean= 9.5; SD= 0.7), cohesion (Mean= 70.0; SD= 0.0), and adaptability (Mean= 62.5; SD= 3.5) are better in those in which more than one member is not socially isolated. Concerning the APGAR, there is a statistically significant difference.

To family cohesion, the figures presenting the best mean values: men (Mean= 60.7; SD= 8.8); intermediate age groups 32-42 (Mean= 61.5; SD= 8.6), and 54-64 (Mean= 60.9; SD= 10.9); nurses in a *de facto* union and divorced (Mean= 66.6; SD= 4.8); living in the north (Mean= 60.8; SD= 9.9); those who have more education; those who are teleworking or in a similar situation (Mean= 66.3; SD= 4.7); families living in better conditions; households with more members; families in a *de facto* union, with children (Mean= 64.8; SD= 6.9); families with newborns (Mean= 66.6; SD= 8.0).

Regarding family adaptability, the following ones present better mean values: men (Mean= 54.4; SD= 7.1); nurses between 54 and 64 years old (Mean= 59.7; SD= 7.3); divorced (Mean= 59.0; SD= 7.9); living in the north (Mean= 55.3; SD= 8.4); with a bachelor's degree (Mean= 60.3; SD= 10.3); currently working (telework or similar) (Mean= 60.3; SD= 6.0); those who live at a house or apartment which is not luxurious (Mean= 55.8; SD= 8.8); families with more than three members (Mean= 55.7; SD= 8.3); families in a *de facto* union, with children (Mean= 57.7; SD= 6.2). It is also worth mentioning the total mean values concerning cohesion, 60.2 (SD= 10.0), and adaptability, 53.9 (SD= 9.3).

Respecting the family APGAR, and as shown in Table 2, a majority observes their family as “highly functional” (80.0 %), and only a percentage esteemed their family as “severely dysfunctional” (4.0 %).

Table 2. APGAR family dimension

Dimensions	N	%
Families severely dysfunctional	5	4.0
Families with moderate dysfunction	20	16.0
Highly functional families	100	80.0

Note. APGAR: Adaptability, Partnership, Growth, Affection, Resolve. Source: research database.

Regarding the score obtained on the FACES II scale (Table 3), in the family cohesion dimension, most nurses called their family “connected” (45.6%). In the family adaptability dimension, a majority (52.8 %) considered their family to be “chaotic”. And about type of family, most are categorized as “very balanced” (39.2 %) and “balanced” (35.2 %) families, with the “extreme” type associated to only 4.8 %.

Table 3. Families scores in FACES II factor dimensions

Factor	Factor dimensions	N	%
Family cohesion	Disengaged	25	20.0
	Separated	25	20.0
	Connected	57	45.6
	Enmeshed	18	14.4
Family adaptability	Rigid	7	5.6
	Structured	15	12.0
	Flexible	37	29.6
Type of family	Chaotic	66	52.8
	Extreme	6	4.8
	Mid-Range	26	20.8
	Balanced	44	35.2
	Very balanced	49	39.2

Note. FACES II: Family Adaptability and Cohesion Evaluation Scale II.

Source: research database.

With regard to the items, nurses rank crucial during this pandemic and isolation period, the options and results are: “health” (8.6 %); “protection” (8.5 %); “affection” (8.2 %); and less important, “money” (6.8 %).

Discussion

There are no Portuguese studies on nurses' families in this specific situation. High pressure at work has shown to be a factor that can aggravate the conflict between employment and family, affect job and life satisfaction and even cause damage to the professionals' physical and mental health, influencing their performance and ability to make decisions in the workplace, as studies from other countries have confirmed (3, 9, 10, 14, 20).

From the analysis of 125 nurse families, a mean value for cohesion and adaptability is slightly higher than that of another study on Chinese nurses working in hospitals (20). However, the comparison must be careful, given the cultural differences.

In the present study, 65.6 % of the families rank in the intermediate levels of cohesion (separated and connected), which are considered more functional. The most extreme levels (disengaged and enmeshed) are likely to cause more damage to their members, and we cannot ignore that 20.0 % are disengaged. Although most families are classified as functional, 20.0 % for non-functional families is worrying.

Nurses who experience more demands in their workplace and who are required to spend their emotional and physical resources tend to have more conflicts in their households (20). A functional family is related to the ability of a family to withstand stress periods, preserving the system identity and the respect for the individual differences of its members. In addition, we cannot forget Olson's theory (17), which underlines family dynamics as transitory through dimensions, so it is possible a situation in which many of the nurse families experience these dimensions due to the stress triggered by isolation. It does not mean they are necessarily dysfunctional but coping with a different stage and possibly benefiting the household.

Most families have children, and 6.4 % are single-person families. These family types are relevant because they are considered at-risk and under major pressure (1), a situation evidenced in this study through low APGAR scores and cohesion values.

Families living in better housing conditions also present better APGAR, cohesion and adaptability results. Naturally, housing is crucial factor since, with all family members at home together and still working or with school activities, there is a need for more spaces: if they do not exist, sharing is necessary, which puts the members under pressure, establishing more visible differences. In this way, family roles and spaces change and become messy, with a greater need to share domestic tasks and, in turn, increase them. Relevant economic issues can raise, stressing the family much more (13).

Most families consist of three members. This condition scored positive in APGAR, with remarkable cohesion and adaptability values. Similarly ranked more mature families, without children or with adult

children. In other studies, better adaptability values were found in families with two children (20).

Older nurses (65-75 years) score better in APGAR. However, they are not associated with more accurate cohesion and adaptability values. Adaptability is meaningful, and we know the adaptation ability to changes decreases with age (21), thus demonstrating, even more, the relevance of family in determining the mental and physical health status of this age group (22).

Adaptability is also lower in nurses with a higher education level, who may belong, as well, to the oldest and worst adaptable group, given the limitations that can characterize this age group (21). In another study, in China (20), the linear regression also showed worse adaptability in nurses with a postgraduation or a higher education level. Contradictorily, these same nurses present the best APGAR score and family cohesion values. In this case, the relationships may already be well-established and lasting, putting aside the possibilities of other bonds and emotional and affective instability.

Divorced people also have better adaptability. We believe it is related to the life cycle stage, which forced them to overcome a particular adaptative situation (divorce), so now they feel more capable of adapting to new circumstances, relativizing other difficulties.

Nurses who are currently teleworking or in a similar situation prove better APGAR, cohesion and adaptability, so those who continue working presential gave lower values, despite all the difficulties families face when they are at home in this situation (13), which clearly places nurses and their families at a higher risk level compared to other individuals.

Despite this reality, it is interesting to note that, in the family APGAR, most families are classified as highly functional. We should also highlight that nurses consider health, protection, and affectivity as the most important aspects at this stage, placing money at the last level, despite the manifest discontent and successive claims heard recently in this regard.

It seems to be a close relationship between better cohesion and good adaptability values, similarly to other studies (14). At the same time, the importance of the family role in the well-being of these professionals is confirmed through telephone conversations or image sharing (photos and videos) (23-25).

The institutional role is also mentioned (9), as there is evidence of the relationship between good leadership (by superiors) and the maintenance of nurses' good family cohesion and adaptability (by nurses who are led) (3, 20, 25). Indeed, the behaviors and adaptation strategies adopted by these professionals vary between individual protection measures and the value of family support. The way the pandemic develops makes us more aware of the family role in health professionals as a way of "thinking" about the family (12, 15).

Thus, using a convenience sample, the possibility of data generalization is limited. Most responses correspond to the north and central region of Portugal since researchers do live there as do the participants, who are mostly their contacts. The questionnaire was aimed at nurses anywhere regardless of their employment status, and we have answers from nurses belonging to different contexts, retired or teleworking, which we decided to validate and include due to the variable difference they present. Moreover, the influence of nurses' work in care providing and quality of life during the lockdown concerning family cohesion and adaptability was evidenced. Likewise, as the questionnaire is self-conducted, it may cause some bias.

Conclusion

In the study, we found that 80.0 % of the families consider themselves functional, but 20.0 % are linked with moderate or severe dysfunction, and it should be handled properly. Likewise, and regarding the FACES II score, most nurses are in intermediate (and more functional) classifications, and we should highlight families in extreme situations (4.8 % classified as extreme and 39.2 % as very balanced), which are the ones with the highest risk of stress signs.

Indeed, age is a predictor of worse adaptability and cohesion values. When all family members are not isolated, emerges a stress factor for a family represented with lower APGAR scores since the increased demand for these professionals entails less support for themselves and their families.

From the study, we were able to identify the following factors, which can improve APGAR, cohesion and adaptability: better housing conditions; families with three or more members; mature families; with children or adult children; with telework.

We propose a future study exploring the factors that affect nurses' family cohesion and adaptability given the variable workplace during the pandemic. This aspect influences the family context enormously, allowing the creation of targeted and specific personal and institutional conditions to face with this and other situations. We also propose a more customized approach and a retrospective study as soon as more professionals are available.

Conflict of interest

The authors declare that there is no conflict of interest.

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