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RESEARCH ARTICLE (ORIGINAL)

Resilience in adolescents with chronic illness: the nurses' role in its promotion

A resiliência de adolescentes com doença crónica: o papel do enfermeiro na sua promoção La resiliencia de los adolescentes con enfermedad crónica: el papel del enfermero en su promoción

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Abstract

Background: The way adolescents with chronic illness (ACI) cope with adversity is associated with their resilience potential, which is also built through the relationship established with nurses.

Objectives: To identify resilience-promoting nursing interventions in ACI; to assess resilience in ACI; and to establish an association between their level of resilience and the received interventions.

Methodology: An exploratory sequential mixed-methods study was conducted. First, a qualitative study was conducted with a focus group of 8 nurses from a pediatric hospital, resulting in a list of resilience-promoting nursing interventions (LIER). Then, a quantitative study was conducted where a questionnaire was applied to 32 ACI (including the Resilience Scale and the LIER obtained in the first study).

Results: Nurses reported several resilience-promoting nursing interventions. In a sample of 32 ACI, the level of resilience was average and higher in the adolescents with neurological diseases and in girls. A low correlation was found between the level of resilience and the nursing interventions.

Conclusion: The results should be disseminated, and increased investment should be made so that the promotion of resilience in ACI clearly results from nursing interventions.

Keywords: resilience, psychological; adolescent; chronic disease; nursing, practical

Resumo

Enquadramento: O modo como adolescentes com doença crónica (ADC) lidam com adversidades relaciona-se com o seu potencial de resiliência, construído também através da relação estabelecida com enfermeiros.

Objetivos: Identificar intervenções de enfermagem promotoras de resiliência em ADC; avaliar a resiliência de ADC; e relacionar o seu nível de resiliência com intervenções recebidas.

Metodologia: Estudo misto exploratório sequencial - um primeiro estudo qualitativo, com um grupo focal de 8 enfermeiros de um hospital pediátrico, elencando-se uma lista de intervenções de enfermagem promotoras de resiliência (LIER); e um segundo quantitativo, aplicando-se um questionário a 32 ADC (incluindo a *Resilience Scale* e a LIER obtida no primeiro estudo).

Resultados: Os enfermeiros enumeram diferentes intervenções de enfermagem promotoras de resiliência. Numa amostra de 32 ADC, o nível de resiliência é médio, superior nos do foro neurológico e nas raparigas. Verificou-se baixa correlação entre o nível de resiliência e as intervenções de enfermagem. **Conclusão:** Sugere-se a divulgação dos resultados e um investimento crescente para que a promoção da resiliência dos ADC resulte, inequivocamente, das intervenções de enfermagem.

Palavras-chave: resiliência psicológica; adolescente; doença crónica; enfermagem prática

Resumen

Marco contextual: La forma en que los adolescentes con enfermedad crónica (ADC, en portugués) se enfrentan a las adversidades está relacionada con su potencial de resiliencia, construido también a través de la relación establecida con los enfermeros.

Objetivos: Identificar las intervenciones de enfermería que promueven la resiliencia en el ADC; evaluar la resiliencia del ADC, y relacionar su nivel de resiliencia con las intervenciones recibidas.

Metodología: Estudio exploratorio secuencial mixto, se realizó un primer estudio cualitativo con un grupo focal de 8 enfermeros de un hospital pediátrico, en el que se enumera una lista de intervenciones de enfermería que promueven la resiliencia (LIER), y un segundo estudio cuantitativo, en el que se aplica un cuestionario a 32 ADC (incluida la Resilience Scale y la LIER obtenida en el primer estudio). **Resultados:** Los enfermeros enumeran diferentes intervenciones de enfermería que promueven la resiliencia. En una muestra de 32 ADC, el nivel de resiliencia es medio, más alto en neurológicos y chicas. Se observó una baja correlación entre el nivel de resiliencia y las intervenciones de enfermería. **Conclusión:** Se sugiere que se difundan los resultados y que se haga una inversión cada vez mayor para que la promoción de la resiliencia de los ADC se derive inequívocamente de las intervenciones de enfermería.

Palabras clave: resiliencia psicológica; adolescente; enfermedad crónica; enfermería práctica

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Introduction

The number of children and adolescents with chronic illness is significant and growing, although this reality is not necessarily visible to society in general (Pais & Menezes, 2010).

Adolescence is, in itself, a phase of major conflicts, adjustments, and imbalances. Thus, a chronic illness at this stage of life adds new difficulties because it involves episodes of symptom exacerbation and undesirable conditions, such as pain and fear of death, among other adversities. These and other adversities disintegrate the life of every human being, with resilience being a key factor for a good mental health (Santos et al., 2017).

Resilience is "the ability to overcome a situation that could have been traumatic, with a renewed strength; it implies a positive adaptation to the difficulties, a normal development despite the risk factors, and self-mastery after a trauma" (Felgueiras, Festas, & Vieira, 2010, p. 74). Resilience is not a fixed and stable state, but rather a journey of growth that is built through forms of affection throughout life (Bastos, 2013). However, the family and social structure, the cognitive characteristics, the type of personality, as well as the relationship established between nurses and adolescents during hospital stay can influence adolescents' resilience (Santos & Barreto, 2014).

Little research has been done in nursing to examine resilience, but child health and pediatric nurses, who are responsible for promoting the qualities, potential, and healthy development of children and adolescents, are in a privileged position to contribute to the development of healthy adults (Felgueiras et al., 2010).

Acknowledging the potential of resilience as a key factor in the healthy development of adolescents with chronic illness, it is important to inform resilience-promoting policies and practices, thus this topic was explored within the scope of child health and pediatric nursing.

In view of the above, the following objectives were established: to identify resilience-promoting nursing interventions in adolescents with chronic illness; to assess the level of resilience in adolescents with chronic illness; and to establish an association between their level of resilience and the resilience-promoting nursing interventions.

Background

Several studies have examined chronic illness in adolescence, but there is a lack of consensus about its prevalence because different methodologies and concepts of chronic illness have been used (Santos, Santos, Ferrão, & Figueiredo, 2011).

Adolescence is a developmental stage that is characterized by rapid physiological, cognitive, sociocultural, and behavioral changes, with the transition to a healthy adult life being one of the major challenges faced by adolescents (Silveira, Santos, & Pereira, 2014).

Several factors have contributed to the increasing prevalence of chronic illness in children and adolescents, particularly those associated with population increase: better healthcare services and improved access to them; survival of very preterm infants; and increased survival of several diseases. Also important are lifestyle-related health problems, such as obesity and other eating and behavioral disorders, increased consumption of tobacco, alcohol, and other substances, among others (Silveira et al., 2014).

Adolescence is a crucial stage in the consolidation of new lifestyles through habits, groups of friends, virtual and social environments. So, when chronic illness becomes a reality in the adolescent's life, it has a negative physical, psychological, and social impact, and brigs up specific hospital needs, which implies a constant adaptation, changes in routines, and development in adolescents. Moreover, as it is in this period that the need for personal affirmation and the search for independence and autonomy from the family emerges, those professionals who work with adolescents must understand what adolescence is and how resilience is processed at this stage of the life cycle, both for a healthy development of young people and for improved public health (Santos et al., 2017). Taking into account the life stage of adolescence,

resilience is usually seen as the demonstration of competence in an adverse environment, a response to risk, which may be affected by conditions of poverty, family ruptures, experience of some type of violence, experiences of illness (in the adolescent or family), and important losses. (Gonçalves & Camarneiro, 2018, p.108)

In order to transform the emotionally negative or intense experiences of adolescents with chronic illness and their families into positive and rewarding experiences, the holistic vision of nursing care should incorporate a robust body of knowledge about the characteristics of adolescent growth and development and promote activities and strategies aimed not only at their harmonious development but also at their emotional well-being, facilitating the expression of emotions (Diogo & Caeiro, 2014). Resilience is a never-ending process of inner development; it is a personal but not solitary journey. Nurses' challenge is to observe the others from a holistic perspective, encouraging the use of resources (internal and external), informing, referring, and using their professional knowledge and wisdom as the holistic beings that they also are (Bastos, 2013).

Research questions

What nursing strategies and/or interventions are identified by nurses as promoting resilience in adolescents with chronic illness during hospital stay?: 1) What are the resilience-promoting nursing interventions in adolescents with chronic illness reported by nurses of the Coimbra Pediatric Hospital (Hospital Pediatrico de Coimbra, HPC)?; 2) What is the level of resilience of adolescents with chronic illness during hospital stay?; 3) Is there an association between the level of resilience of adolescents with chronic illness during hospital stay and the nursing interventions that they received during their health-illness process?

Methodology

Given that neither a qualitative nor a quantitative approach would be enough for understanding the extent of the problem under analysis, an exploratory sequential mixed--methods study was conducted (Santos et al., 2017). Two studies were conducted: a qualitative study to identify the resilience-promoting nursing interventions in adolescents with chronic illness that were reported by nurses of the HPC and a quantitative study to assess the level of resilience of adolescents with chronic illness during hospital stay. The integration of quantitative and qualitative data was performed in the second study because it was developed based on the qualitative results obtained in the first study. This second study aimed to identify the association between the level of resilience of adolescents with chronic illness and the nursing interventions that they received during their health-illness process.

Study I: Resilience-promoting nursing interventions in adolescents with chronic illness

Based on a focus group and effective understanding of the experience of the participating nurses, this study aimed to identify a set of resilience-promoting nursing interventions. This qualitative exploratory-descriptive study was conducted based on the COnsolidated criteria for REporting Qualitative research (COREQ) Checklist. An accidental nonprobability sample was used.

The inclusion criterion were nurses of the HPC with over 5 years of professional experience with adolescents hospitalized with chronic illness. The following exclusion criteria were set out: professional experience limited to adolescents with cancer disease and nurses in leadership positions. The sample was recruited for two weeks, during which 20 nurses who meet the criteria were contacted. Then, the first eight nurses to demonstrate their willingness to participate were selected. A week later, they were informed about the date, time, and place of the focus group. Data were collected in a single session of around two and a half hours, with the presence of an observer (the study supervisor). The session was audio recorded and transcribed in full. The recording was later deleted. The data collection tool was the interview (semi-structured, with topics pre-defined by the author) using the focus group technique, in its five phases of implementation: planning, preparation, conducting, data analysis, and dissemination of results (Silva, Veloso, & Keating, 2014). The study was approved by the Ethics Committee of the Health Sciences Research Unit: Nursing of the Nursing School of Coimbra (Opinion No. 472_01-2018). Participants were informed about the study objectives, the participation rules, and the duration of the discussion in focus group, and signed an informed consent document. Data were analyzed using Bardin's content analysis technique (2016), and the list of resilience-promoting interventions (Lista de Intervenções de Enfermagem promotoras de Resiliência, LIER) was built based on the interventions that were reported by the focus group participants.

Study II: Resilience in adolescents with chronic illness

This quantitative study with a descriptive, comparative, and correlational nature results from the application of the data collection tool built based on the qualitative data obtained with the LIER scale, which was included in the questionnaire applied to the adolescents involved in the study. The accidental, nonprobability sample was composed of 32 adolescents with chronic illness who were admitted to the Department of Pediatrics of the HPC, between May and September 2018. The following inclusion criteria were established for their selection: diagnosis of chronic illness for more than 3 years; minimum of two previous hospital admissions; that adolescents gave their consent and that their parents signed the informed consent for participation in the study. Adolescents with cognitive and/or motor disabilities that prevented them from completing the questionnaire autonomously and those who did not speak Portuguese fluently were excluded from the study. Data were collected using a questionnaire divided into three parts: Sociodemographic and Clinical Data; the Portuguese version of the Resilience Scale (RS) by Wagnild and Young (Felgueiras et al., 2010); and the LIER scale (obtained from the analysis of the contents in the focus group of Study I). The LIER scale was pre--tested with five adolescents with the same characteristics of the sample. After its application, two statements were rewritten because the adolescents did not understand their meaning. The authors who were responsible for the validation of the RS to the Portuguese culture authorized the use of the scale in this study. The study obtained the favorable ethical opinion No. 0179/CES from the Ethics Committee for Health of the Coimbra Hospital and University Center.

An exploratory factor analysis was performed, and data were analyzed/processed using IBM SPSS Statistics, version 24.0.

Results

The results of both studies will be presented sequentially.

Study I: Resilience-promoting nursing interventions in adolescents with chronic illness

The sample is composed of eight HPC nurses: seven working at the Department of Pediatrics and one at the Department of Hematology-Oncology (with experience in other contexts) and aged between 31 and 45 years, with a mean of 35.25 years. In terms of gender, one was a man (12.5%) and seven were women (87.5%). The length of service ranged from 7 to 22 years, with a mean of 12.6 years. As for their academic qualifications, 75% of participants had a Postgraduate Specialization Degree in Child Health and Pediatric Nursing, and the remaining 25% of nurses did not have a postgraduate degree.

Bardin's content analysis technique (2016) was used to analyze the information collected at the interviews, in three stages: pre-analysis; exploration of the material (in the encoding process, the theme was selected as the recording unit, and the context units were used to understand the meaning of the recording unit); and treatment,

inference, and interpretation of results (emerging categories and subcategories). Six categories emerged: types of chronic illness; risk factors for resilience in adolescents with chronic illness; protective factors for resilience in adolescents with chronic illness; promotion of resilience in adolescents with chronic illness; dimensions of resilience, according to the RS; and continuity and articulation of care.

The analysis of the content of these categories resulted in

a LIER, which implied an adaptation of the statements made by the nurses to describe the nursing interventions so that the content could be easily understood by the adolescents. The list was converted into a Likert-type scale with the nursing interventions that promote each one of the dimensions of resilience included in the RS, as well as other interventions reported by the nurses and classified as *active listening* and *availability* (Table 1).

Table 1
Distribution of resilience-promoting nursing interventions and their dimensions in LIER

| Nursing interventions that promote: | Items on the list |
|-------------------------------------|------------------------------------|
| Active listening | 1, 2, 3, 4, 5 and, 6 |
| Perseverance | 7, 8, and 9 |
| Self-confidence | 10 and 11 |
| Serenity | 12, 13, 14, 15, 16, 17, 18, and 19 |
| Meaning of life | 20, 21, and 22 |
| Self-sufficiency | 23, 24, 25, and 26 |
| Availability | 27, 28, and 29 |

The total LIER score ranges from 29 to 116 points, allowing for a classification of the interventions into three groups: insufficient (29-58), sufficient (59-87), and excellent (88-116) nursing interventions.

Thus, the objective of Study I was reached, that is, to draw up a List of Resilience-Promoting Nursing Interventions in adolescents with chronic illness that could be used as data collection tool for the second study.

Study II: Resilience in adolescents with chronic illness

The study participants were 32 adolescents with chronic illness aged between 10 and 18 years, with a mean age of 15.28 years. With regard to gender, 18 (56.3%) were girls, and 14 (43.7%) were boys.

With regard to the type of disease, 13 (41%) adolescents had gastrointestinal disorders (Crohn's disease, Ulcerative Colitis, and Short Bowel Syndrome); 5 (16%) had endocrine disorders (Type I Diabetes); 5 (16%) had neurological disorders (Epilepsy and Polyneuropathies); 3 (9%) had kidney disorders (chronic kidney failure); 3 (9%)

had cardiorespiratory disease; 2 (6%) had immunological disorders; and 1 (3%) had liver disease (liver transplant). The internal consistency of the RS was analyzed based on the results obtained in this sample. The psychometric study revealed a Cronbach's alpha of 0.948 for all 25 items, rated on a Likert scale from 1 to 7. With the application of the RS (score ranges from 25 to 175 points) to the adolescents and, after the descriptive analysis of the data, the results show a mean score of total resilience of 134 points and a standard deviation of 21.47 (ranging from 92 to 168).

As regards the levels of resilience depending on the type of chronic illness (Table 2), the results show that adolescents with neurological disorders were those with the highest mean level of resilience (M = 155.77), followed by adolescents with gastrointestinal disorders and endocrine disorders and that adolescents with other types of disorders had less resilience (M = 110.86). However, the differences in the mean ranks were not statistically significant (p = 0.121).

Table 2
Levels of resilience according to the type of chronic illness using the Kruskal-Wallis test

| Type of chronic illness | N | Mean rank | M | SD | p |
|-------------------------|----|-----------|--------|-------|-------|
| Gastrointestinal | 13 | 45.05 | 148.35 | 27.73 | |
| Endocrine | 5 | 32.88 | 111.87 | 30.96 | 0.121 |
| Neurological | 5 | 50.73 | 155.77 | 26.83 | 0.121 |
| Others | 9 | 26.24 | 110.86 | 22.42 | |

Note. M = Mean; SD = Standard deviation; p = Significance level.

In relation to the levels of resilience by gender, the results show that female adolescents had a mean level of resilience of 140.72, which is higher than the mean levels found in male adolescents (127.37).

The descriptive analysis of each of the RS items revealed that the item with the highest scores was item 18 – "In an emergency, I'm someone people can generally rely on" regarding the Self-confidence dimension. Ranking second, third, and fourth were items 4 – "Keeping interested in things is important to me", 16 – "I can usually find things to laugh about", and 6 – "I feel proud that I have accomplished thing in life", which are all part of the Serenity dimension. With regard to the LIER scale, the psychometric study revealed a Cronbach's alpha of 0.937 for the 29 items

rated on a Likert scale from 1 to 4. The corrected item-total correlation ranged from 0.219 to 0.790, with the exception of item 4 – "The nurse spoke with my parents without me present", whose correlation was 0.08. None of the items were deleted because the Cronbach's alpha did not increase substantially, thus it can be concluded that this scale has a very good internal consistency (Pestana & Gageiro, 2008).

The results obtained with the LIER (score from 29 to 116 points) and the descriptive data analysis (Table 3) revealed that the majority of adolescents mentioned having received *sufficient* resilience-promoting nursing interventions (based on the classification of nursing interventions in Table 3), with a mean of 74.53.

Table 3
Descriptive scores of LIER and its dimensions

| LIER | Items | Minimum | Maximum | М | SD |
|------------------|-------------------------|---------|---------|-------|-------|
| | All | 53 | 116 | 74.53 | 12.58 |
| Perseverance | 7+8+9 | 3 | 12 | 7.79 | 2.488 |
| Self-confidence | 10+11 | 2 | 8 | 4.91 | 1.625 |
| Serenity | 12+13+14+15+16+17+18+19 | 14 | 32 | 23.72 | 4.64 |
| Meaning of life | 20+21+22 | 3 | 12 | 7.07 | 2.354 |
| Self-sufficiency | 23+24+25+26 | 4 | 16 | 7.32 | 3.318 |

Note. LIER = List of Resilience-Promoting Nursing Interventions; M = Mean; SD = Standard deviation

The descriptive analysis of each item on the LIER scale shows that the two items with the highest scores were item 3 – "The nurse kept our conversations confidential", with a mean of 3.72, and item 6 – "The nurse considered and took into account my complaints", with a mean of 3.56, both belonging to the Active listening category (this dimension is not included in the RS). Item 18 – "The nurse respected my preferences, habits, and routines", item 12 – "The nurse had a calm, open, and available attitude towards me", and item 13 – "The nurse answered my questions, even when I did not verbalize them", all belonging to the Serenity dimension ranked third, fourth, and fifth, respectively.

The item with the lowest scores was item 29 – "The nurse contacted or had a direct relationship with my school . . . or my healthcare center . . .", with a mean of 1.25, concerning the Availability category (another dimension that is not included in the RS). It should be noted that the six items with the lowest scores belonged to the Self-sufficiency dimension and the Availability category.

The correlation between RS and LIER, as well as between the items on each of the dimensions of resilience of both scales was analyzed using the Spearman's correlation coefficient (0.227), revealing that both scales have a low correlation (Pestana & Gageiro, 2008).

Discussion

The results obtained in Study II demonstrated that the levels of resilience in adolescents with chronic illness are

sufficient and higher than those found in other studies carried out in Portugal (Felgueiras et al., 2010; Gonçalves & Camarneiro, 2018). However, the differences may be due to the small size of this sample when compared to the other samples (215 and 384), but also because none of the previous studies focused on adolescents with chronic illness, but rather on adolescents in school and residential childcare settings.

Adolescents with neurological disorders had the highest level of resilience, followed by adolescents with gastrointestinal and endocrine disorders. Adolescents with other diseases had less resilience. No studies were found on the level of resilience of adolescents with other types of chronic illness to compare them with the results of this study, with the majority of the studies on this area of resilience involving cancer diseases. Then, there are cardiovascular diseases (in young adults) and diabetes, mostly in adolescents (Kim, Lim, Kim, & Park, 2018). However, regardless of the type of chronic illness, adolescents' level of resilience and ability to find meaning in their disease experience influences how they will cope with future adversities. Thus, to understand the profile of resilient adolescents with a chronic illness, it is essential to find more effective ways of intervention (Olsson et al., 2003).

In this study, girls also had a higher mean level of resilience than boys. These results are contrary to those found in another study conducted in Portugal, where boys had higher mean levels of resilience (Gonçalves & Camarneiro, 2018). However, they are consistent with another

study where adolescents with another type of chronic illness (leukemia) were more resilient (Pars & Çavusoglu, 2019). Given that the studies previously found address several health problems, a consensus with other studies could not be reached and a divergence remains over the differences of resilience potential based on the gender variable (Rozemberg, Avanci, Schenker, & Pires, 2014). The dimensions that contribute the most to these adolescents' resilience are Serenity and Self-confidence. Serenity consists of the adolescents' balanced perspective of life, accepting the several experiences and events with tranquility and self-discipline, even adverse events. Self-confidence is the adolescents' ability to believe in themselves and their potential, to recognize limitations without thinking that they are dependent on other people. It is known that adolescents with high levels of self-confidence have a realistic view of themselves and their abilities, which makes them persistent in their efforts and, consequently, more resilient (Rani, Kamboj, Malik, & Kohli, 2015). In the case of adolescents with chronic illness, and given their additional personal challenges, the support from family and friends is important to manage the complexities and challenges in their lives, but self-confidence and the formulation of long-term goals are essential to strengthen resilience and optimism, which they need for a healthy development (Ferguson & Walker, 2014).

As for the results obtained using the LIER, the items with the highest scores were those on the dimensions of Active listening and Serenity. Based on the adolescents' answers, it can be concluded that nurses emphasize the relationship and communication established with the adolescents and their families (confidentiality, respect for complaints, personal preferences and routines, availability to listen to and respond), which are specific nursing care in response to the specific needs of this stage of the life cycle (adolescence) and development. Through Active listening and Serenity, the nurse can increase resilience in adolescents with chronic illness by promoting their self- esteem and self-determination in health-related decisions (Ordem dos Enfermeiros, 2010). In addition, the approaches that focus on positive health concepts, such as resilience, are excellent guidelines for the development of effective nursing interventions aimed to promote a healthy adolescent development (Haase, 2004).

On the other hand, the items with the lowest scores among the adolescents fall under the nurses' Availability dimension, namely regarding the articulation with the adolescent's school or healthcare center and the maintenance of contact and communication after hospital discharge. In fact, resilience-promoting interventions should be integrated into the adolescents' everyday contexts (school, recreational places, and other contexts in the community) in order to mobilize the several potential resources for promoting resilience (Bastos, 2013).

Given the good level of internal consistency of the LIER scale, a more significant correlation with the RS was expected. However, some factors may have influenced this result, such as sample size and the diversity of chronic diseases under analysis. LIER can and should be improved in subsequent studies but the results obtained in this study

also give some clues as to the areas of nursing intervention that need to be developed to promote resilience, namely the promotion of adolescents' self-sufficiency and a greater availability of nurses.

The limitations of Study II include the small sample size and the diversity of chronic diseases under analysis, which may have contributed to a dispersion of the results. Limiting the research to adolescents with a single chronic illness could have led to more consistent results.

Conclusion

Using a mixed-methods approach, this study allowed for the identification of convergent and divergent aspects of quantitative and qualitative data and produce complementary and interrelated results.

Nurses can assess and optimize the factors influencing the level of resilience of adolescents with chronic illness through interventions aimed at helping them to achieve better health outcomes, overcome disease-related adverse situations, and adapt to the disease.

In Study II, the results of the LIER scale, which aims to assess resilience-promoting nursing interventions, allows concluding that its items are valid and that the instrument has good reliability and accuracy, even in a study with a small sample size. This scale should be applied in future studies involving psychometric analyses to ensure that it can be used to measure the construct under study. However, only the Cronbach's alpha was analyzed, which is not enough to ensure good reliability of the instrument. Both its construct validity and its temporal stability should be assessed.

The adolescents who participated in Study II showed mean levels of resilience but, despite the majority of them considered having received *sufficient* resilience-promoting nursing interventions, the correlation between their level of resilience and the interventions received is low. Based on these results, more consistent investment is needed in interventions that cover all dimensions of resilience so that its promotion results, unequivocally, from the nursing interventions. To this end, the promotion of resilience should be emphasized in nurses' clinical training and practice and involve changes in the workplace culture.

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