Revista Enfermería Herediana
E-ISSN: 2075-4000
2025, July-December | Volume 18, Issue 2, e7123

ORIGINAL ARTICLE

DOI: https://doi.org/10.20453/renh.v18i2.7123

Intervention for the management of stress manifestations in parents of children with autism spectrum disorder

Esther Ellumi Irene Portales Marquez[1],
Diana Carolina Ortiz Quispe[1],
Nancy Laura Salinas Escobar[1, 2],

[1] Universidad Peruana Cayetano Heredia, School of Nursing. Lima, Peru.
[2] Hospital Nacional Arzobispo Loayza. Lima, Peru.

ABSTRACT

Objective: To determine the effectiveness of an educational intervention in managing stress manifestations in parents of children with autism spectrum disorder (ASD). **Materials and methods:** Pre-experimental study conducted in Lima, Peru. The sample included 50 parents of children with ASD at a Special Basic Education Center. The validated instrument "Questionnaire on manifestations of stress in parents of children with autism" was used. Data analysis was performed using the statistical program Stata v.18.0, employing frequency distributions and the paired Student's t test. **Results:** The average stress score decreased from 38.88 before the intervention to 23.62 after the intervention. In the behavioral/physical manifestations dimension, the predominant indicators prior to the intervention were muscle tension (32.0%) and fatigue (30.0%); subsequently, appetite disturbances (8.0%) and muscle tension (6.0%) stood out. In the psychological manifestations dimension, fear and worry decreased from 72.0% and 56.0% (pre-test) to 28.0% and 18.0% (post-test), respectively. **Conclusions:** The educational intervention proved to be effective in managing manifestations of stress in parents of children with ASD.

Keywords: autism spectrum disorder; stress; parents; effectiveness of interventions.

Received: September 8, 2025
Accepted: November 26, 2025
Online: December 28, 2025

Scientific contribution:

Caring for children with autism generates significant physical and psychological stress in parents. Given the scarcity of programs for caregivers—most of which are primarily child-centered—this study evaluates the effectiveness of an educational intervention aimed at managing parental stress.

INTRODUCTION

Se estima que en América Latina existen aproximadaIt is estimated that approximately 300,000 children diagnosed with autism spectrum disorder (ASD) live in Latin America. This condition affects 1 in 94 boys and 1 in 150 girls (1). Children with this disorder often exhibit behavioral, communication, social interaction, and emotional development impairments, as well as restrictive or repetitive interests (2).

At home, families require preparation and adaptation, as receiving this type of diagnosis in a child represents a significant life change that generates uncertainty and stress (3). This situation impacts the family environment, dynamics, and financial stability. Furthermore, it may indirectly affect parents' personality traits and behavioral responses, with negative consequences for their physical health and emotional well-being (4).

The demand for care increases or causes stress due to physical, emotional, and family overload on the father, who becomes the primary caregiver. Therefore, parental stress is defined as the discomfort derived from the demands associated with performing this role, an aspect that is accentuated in parents of children with ASD (1).

To protect and promote health, nursing professionals provide holistic care to these patients and their families. To enhance both physical and psychological well-being, communication-based strategies and relaxation techniques that promote positive change are used (5).

The nursing professional seeks to deliver the care required by parents through psychosocial support, guidance, health education, accompaniment, and counseling. The objective is to enable them to perform their caregiving role effectively, maintaining physical and mental balance while fostering assertive family interactions. By equipping parents with appropriate coping tools, they may better regulate their behaviors and manage stress manifestations as they arise (6).

In that sense, educational interventions are defined as motivational, pedagogical, methodological, and evaluative actions and activities implemented over a defined period. Their purpose is to educate specific individuals or groups to achieve predetermined objectives (7).

Several studies have implemented interventions among parents of children with ASD. In Saudi Arabia, after an intervention, appropriate caregiving practices increased from 35.0% to 75.0% (8). In Egypt, after a counseling intervention, moderate stress reported by parents decreased from 57.5% to 26.0%, while the expression of intense emotional responses declined from 80% to 32.5% (9).

Similarly, in Chile, with the implementation of a program, the mean score for parents' knowledge of ASD increased from 57.71 to 88.76 points (10). In the same way, a study conducted in Peru showed that before the intervention, 54.0% of parents reported experiencing stress manifestations "almost always" and "always"; afterwards, 84.0% reported experiencing them "almost never" and "never" (11).

This highlights the importance of interventions by healthcare professionals, given the high levels of stress experienced by parents in this situation (12). However, research and public policies focused on the well-being of parents of children with autism remain limited. Within the national context, the issue lies in the scarcity of nursing-led educational interventions targeting the mental health of this population. Accordingly, the present study was conducted to determine the effectiveness of an intervention designed to manage stress manifestations in parents of children with ASD attending a Special Basic Education Center.

MATERIALS AND METHODS

This study employed a quantitative approach with a pre-experimental design. It was conducted at a Special Basic Education Center located in the district of Puente Piedra, Lima, Peru.

The study population consisted of 135 parents of children diagnosed with ASD. After the sample calculation, a result of 48 participants was obtained; however, to account for potential missing data, the sample was increased by 3.0%, resulting in a final total of 50 participants. Participants were selected using simple non-probability random sampling.

Data collection was carried out using the "Questionnaire on Manifestations of Stress in Parents of Children with Autism", developed by Chayan et al. (11) in Peru. The instrument was validated by ten experts; the binomial test yielded a significance level of 0.0087 ($p < 0.05$). Reliability was determined through a pilot test involving 17 parents, resulting in a Cronbach's alpha value of 0.878.

The questionnaire consisted of 20 indicators distributed across two subscales: behavioral/physical manifestations (fatigue or exhaustion, headaches, sleep-onset difficulties, nervous tics, overeating, decreased appetite, muscle tension, medication use, and impulsivity) and psychological manifestations (anxiety, concern regarding the child's behavior, fear about potential harm to the child, depression, difficulty making decisions related to the child's health, difficulty concentrating on other daily activities, irritability or bad mood, difficulty relaxing, concern about parental responsibility, exaltation, and loss of self-confidence. The assessment was carried out using a Likert scale from 0 to 4 points, structured as follows: 0 (never), 1 (almost never), 2 (sometimes), 3 (almost

always), and 4 (always). The educational intervention, entitled "Learning to Manage Stress," was supervised by a mental health professional and consisted of two in-person sessions lasting approximately 50 minutes each, with a frequency of once a week. The first session was conducted on the same day as the pre-test administration.

For pedagogical purposes, the sample was divided into two groups of 25 parents; both groups received the same intervention and information. Each session was structured into two approximately 25-minute segments: a theoretical component and a practical component, supported by didactic and supplementary educational materials.

Each session began with an introductory activity. The first session addressed the definition of stress, its physical manifestations, physical well-being, problem-solving strategies, and relaxation techniques. The second session focused on psychological manifestations, their classification, mental well-being, and relaxation techniques. At the end of each session, a feedback segment was conducted to address participants' questions. An informational brochure was handed out, and upon completion of the program, attendees received a healthy snack kit.

The post-test was administered seven business days after the final session under the same conditions and facilities as the pre-test. This interval was considered appropriate to identify information assimilation and retention among participants.

Data analysis was performed using STATA version 18. After analyzing normality, a paired Student's t-test was selected. A statistical significance level of 0.05 ($p < 0.05$) was considered.

The study adhered to established bioethical principles, even obtaining informed consent. These principles were observed, monitored, and approved by the Research Ethics Committee of Universidad Peruana Cayetano Heredia.

RESULTS

Table 1 presents the sociodemographic data of the study sample. 96.0% of participants were women, and the mean age was 39.

Table 1. Sociodemographic data of parents of children with autism spectrum disorder (ASD) attending a Special Basic Education Center.

General data	n	%
Sex		
Male	2	4.0
Female	48	96.0
Age		
Mean	39.0	
Standard deviation	6.5	
Minimum age	29	
Maximum age	50	

Table 2 shows that, before the intervention, the most frequent stress indicators within the behavioral/physical manifestations dimension were muscle tension (32.0%) and fatigue (30.0%). In contrast, the least frequently reported indicators were medication use (70.0%) and nervous tics (50.0%). After the intervention, the most recurrent indicators were appetite disturbances (8.0%) and muscle tension (6.0%), whereas those with the lowest incidence were medication use (80.0%), nervous tics (72.0%), and excessive food intake (72.0%).

Table 2. Stress manifestations in parents of children with autism spectrum disorder (ASD): behavioral/physical manifestations dimension

Behavioral/physical manifestations	Test	Never/Almost never		Sometimes		Almost always/Always	
		n	%	n	%	n	%
Do you experience fatigue or exhaustion, even after sleeping the necessary number of hours?	PRE	8	16.0	27	54.0	15	30.0
	POST	24	48.0	25	50.0	1	2.0
Do you experience headaches caused by the constant care your child with autism requires?	PRE	9	18.0	31	62.0	10	20.0
	POST	23	46.0	26	52.0	1	2.0
Do you have difficulty falling asleep because you are worried about your child?	PRE	13	26.0	25	50.0	12	24.0
	POST	29	58.0	21	42.0	0	0.0

PRE: pre-test measurement; POST: post-test measurement.

Table 2. *(Continuation).*

Behavioral/physical manifestations	Test	Never/Almost never		Sometimes		Almost always/Always	
		n	%	n	%	n	%
Have you experienced nervous tics or tremors (e.g., excessive blinking, lip biting, or nail biting) since your child's diagnosis?	PRE	25	50.0	16	32.0	9	18.0
	POST	36	72.0	13	26.0	1	2.0
Do you overeat because of stress?	PRE	17	34.0	23	46.0	10	20.0
	POST	36	72.0	14	28.0	0	0.0
Has your appetite decreased due to stress?	PRE	22	44.0	19	38.0	9	18.0
	POST	32	64.0	14	28.0	4	8.0
Do you experience muscle tension due to stress?	PRE	7	14.0	27	54.0	16	32.0
	POST	29	58.0	18	36.0	3	6.0
Has your use of medications (e.g., analgesics, sleep aids, tranquilizers, etc.) increased?	PRE	35	70.0	10	20.0	5	10.0
	POST	40	80.0	10	20.0	0	0.0
Do you respond impulsively toward your child?	PRE	15	30.0	30	60.0	5	10.0
	POST	31	62.0	19	38.0	0	0.0

PRE: pre-test measurement; POST: post-test measurement.

Table 3 shows that, before the intervention, the most frequent stress indicators within the psychological manifestations dimension were fear (72.0%) and worry (56.0%). In contrast, the least common were self-confidence (40.0%), decision-making ability (30.0%), and irritability (30.0%). After the intervention, the most recurrent indicators were fear (28.0%) and worry (18.0%), whereas the least frequent indicators were self-confidence (78.0%) and irritability (68.0%).

Table 3. Stress manifestations in parents of children with autism spectrum disorder (ASD): psychological manifestations dimension.

Psychological manifestations	Test	Never/Almost never		Sometimes		Almost always/Always	
		n	%	n	%	n	%
Do you feel anxious (e.g., restlessness, fear of losing control, mental blocking, "lump" in the throat)?	PRE	12	24.0	33	66.0	5	10.0
	POST	25	50.0	25	50.0	0	0.0
Are you worried about not knowing how to manage your child's behavior with autism?	PRE	6	12.0	19	38.0	25	50.0
	POST	21	42.0	23	46.0	6	12.0
Do you feel fear about what might happen to your child when you are not caring for them?	PRE	1	2.0	13	26.0	36	72.0
	POST	7	14.0	29	58.0	14	28.0
Have you felt depressed during the past two weeks due to your child's difficulties?	PRE	12	24.0	23	46.0	15	30.0
	POST	32	64.0	18	36.0	0	0.0
Do you have difficulty making decisions about your child's health?	PRE	15	30.0	24	48.0	11	22.0
	POST	32	64.0	18	36.0	0	0.0

PRE: pre-test measurement; POST: post-test measurement.

Table 3. *(Continuation).*

Psychological manifestations	Test	Never/Almost never		Sometimes		Almost always/Always	
		n	%	n	%	n	%
Do you have difficulty concentrating on daily activities unrelated to your child's care?	PRE	9	18.0	30	60.0	11	22.0
	POST	27	54.0	22	44.0	1	2.0
Do you feel irritable or in a bad mood at any time of the day without an apparent cause?	PRE	15	30.0	27	54.0	8	16.0
	POST	34	68.0	14	28.0	2	4.0
Do you have difficulty relaxing?	PRE	8	16.0	20	40.0	22	44.0
	POST	25	50.0	25	50.0	0	0.0
Are you concerned about the responsibility involved in caring for your child?	PRE	6	12.0	16	32.0	28	56.0
	POST	19	38.0	22	44.0	9	18.0
Does your child's behavior cause you to become emotionally overreactive?	PRE	8	16.0	33	66.0	9	18.0
	POST	23	46.0	26	52.0	1	2.0
Do you believe you have lost self-confidence in adequately managing your child's condition?	PRE	20	40.0	22	44.0	8	16.0
	POST	39	78.0	10	20.0	1	2.0

PRE: pre-test measurement; POST: post-test measurement.

Table 4 presents the management of stress manifestations among parents of children with ASD. The total average score before the educational intervention was 38.88, which decreased to 23.62 after the implementation of the program. This difference was statistically significant (p = 0.000).

Table 4. Management of stress manifestations in parents of children with autism spectrum disorder (ASD) attending a Special Basic Education Center

Statistic	*Pretest*	*Posttest*
Mean	38.88	23.62
SD	11,27	9,551
n	50	50

Statistical significance (p = 0.000).

Stress Manifestations	Mean	SD	95% CI of the difference	
			Lower	Upper
Pre–Post	15.26	15.29	10.9	19.6

t de Student	df	(Bilateral) Significance
7,059	49	0,000

SD: standard deviation; df: degrees of freedom.

DISCUSSION

The analysis of the results reveals a predominance of psychological manifestations before the intervention (fear at 72.0% and worry at 56.0%), compared to physical manifestations (muscle tension at 32.0% and fatigue at 30.0%). Although there is limited national and international research on similar interventions, the study by Tinoco et al. (12) in Brazil is consistent with these findings, reporting a predominance of psychological manifestations (distress at 69.0% and desire to escape at 64.0%), followed by physical manifestations (muscle tension at 58.0%). Furthermore, the statistically significant difference between pre-test and post-test scores shows the effectiveness of the intervention. This finding is consistent with the studies conducted by Hen-Karemet al. (8) in Saudi Arabia and Hend et al. (9) in Egypt, who reported significant effectiveness and emphasized the importance of the practical implementation of educational interventions to achieve positive outcomes.

These findings show the importance of addressing the needs of parents who, as primary caregivers of children with ASD, cope with stress. Montalvo et al. (13) explain that this group may experience stress, depression, and anxiety; both physical and psychological manifestations adversely affect their well-being, thereby requiring structured support measures.

This involves providing comprehensive and holistic care that enables parents to function effectively in their

caregiving role. In this regard, Periche and Pantoja (14) state that Peru faces limitations in interventions specifically designed for parents of children with ASD, in contrast to Spain, where programs such as MEJORA prioritize the well-being of the parent–child dyad.

It is necessary to analyze the psychosocial adaptability of parents, given that their coping with their children's diagnosis and situation is altered by their desire to satisfactorily meet their needs (15). Within the framework of family diversity, factors such as life transitions, stress, and anxiety may negatively impact quality of life, family structure, and overall functioning (16). La Torre et al. (17) indicate that parental stress is affected by the physical, psychological, and economic demands of children. Medina (18) states that stress levels correlate with disorder severity and the child's emotional characteristics, which increases caregiving demands.

From this perspective, the importance of nursing interventions on manifestations of stress and mental health is confirmed. As suggested by Hernández-Benites et al. (19), nursing professionals play a crucial role in involving the family, educating them about the condition, decision-making, emotional support, and relaxation techniques. Parental support and care should include analyzing stressors, focusing counseling on self-care (20). In line with this approach, Porras-Caballero et al. (21) highlight the benefits of reducing anxiety and stress in patients and caregivers to promote overall emotional and physical health.

Based on the analysis, the effectiveness of the intervention is attributed to the planning of content in clear and accessible language. The teaching methodology and the active participation and involvement of parents helped eliminate barriers between the speaker and the listener. This strategy helped to build trust among participants, encouraging them to freely express their doubts.

The applied methodology provided parents with practical tools and knowledge to identify their stress manifestations and manage them through relaxation techniques. Participants expressed strong interest and reported that most conventional interventions focus exclusively on the child, often neglecting caregiver well-being.

The main limitation of the study was the scarcity of previous research focusing on interventions by health professionals. Therefore, it is recommended that the scientific community promote further research and implementation of interventions aimed at managing stress manifestations in parents of children with ASD. In the same way, nursing professionals must safeguard the mental health of caregivers, providing them with the necessary tools to apply in their daily lives.

CONCLUSIONS

The implementation of an educational intervention significantly reduced stress levels among parents of children with ASD. At the same time, findings revealed a higher prevalence of psychological manifestations compared to physical manifestations among participants.

Conflict of interest:
The authors declare no conflict of interest.

Funding:
Self-funded.

Ethics approval:
This research study was approved by the Research Ethics Committee of Universidad Peruana Cayetano Heredia under Certificate CIEI-486-30-24.

Authorship contribution:
EEIPM, DCOQ: conceptualization, formal analysis, research, methodology, validation, visualization, project administration, writing of the original draft, writing - review & editing.
NLSE: software, formal analysis, validation, supervision, project administration, writing - review & editing.

Corresponding author:
Esther Ellumi Irene Portales Marquez
✉ esther.portales@upch.pe

REFERENCES

1. Olmedo LE, Loor MR. La ansiedad en los padres de niños/as con trastorno del espectro autista. PSIDIAL [Internet]. 2022; 1(Special issue): 15-30. Available from: https://doi.org/10.33936/psidial.v1iEspecial.4407
2. CuéntaNos. ¿Cómo afrontar la llegada de un hijo/a con discapacidad? [Internet]. CuentaNos; February 4, 2025. Available from: https://elsalvador.cuentanos.org/es/articles/17613106290461
3. Celis GC, Ochoa MG. Trastorno del espectro autista (TEA). Rev Fac Med UNAM [Internet]. 2022; 65(1): 7-20. Available from: https://www.revistafacmed.com/index.php?option=com_phocadownload&view=file&id=1480:trastorno-del-espectro-autista-tea&Itemid=79
4. Uzátegui-Gamarra R, Malvaceda-Espinoza E. Adaptación psicosocial en padres de hijos diagnosticados con trastorno del espectro autista. Psic Teor Pesq [Internet]. 2023; 39: e39230. Available from: https://doi.org/10.1590/0102.3772e39230.es
5. Stewart D, Naegle MA, Rolland EG, Hughes F, Ryan K. Directrices sobre la enfermería de salud mental 2024 [Internet].Ginebra: Consejo Internacional de Enfermeras; 2024. Available from: https://www.colegioenfermeriahuesca.org/directrices-sobre-la-enfermeria-de-salud-mental-2024/
6. Calisto C, Barría D, Muñoz M, Villa-Velásquez J. Percepciones sobre la atención de enfermería en madres de hijos con trastornos del espectro autista. Index Enf [Internet]. 2022; 31(4): 260-264. Available from: https://doi.org/10.58807/indexenferm20225388
7. Betancourt I, López AF, Furones JA, Castro MK, Lima L. Intervención educativa para el mejoramiento humano desde la cultura en los estudiantes de ciencias médicas. Edumecentro [Internet]. 2021; 13(2): 108-127. Available from: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S2077-28742021000200108
8. Keshk LI, Passam SA, Elgazzar SE. Evaluation of the educational program for mothers and its effect on knowledge and practice towards their children with autism in Qassim region. J Crit Rev. 2020; 7(3): 498-507.
9. Hend-Karem M, Ghada-Mohammed M, Rania-Abdel-Hamid Z, Hoda-Sayed M. Effect of counselling intervention on stress and expressed emotions among family caregivers of children with autism. J Med Life [Internet]. 2023; 16(11): 1646-1651. Available from: https://doi.org/10.25122/jml-2023-0261
10. Guajardo CP, Rivera EP, Figueroa CS, Alarcón EF. Programa educativo para el desarrollo de conocimientos en padres y cuidadores de niños con Trastorno del Espectro Autista mediante plataforma digital ConoceTEA. Rev Investig Logop [Internet]. 2023; 13(2): e87151. Available from: https://doi.org/10.5209/rlog.871510
11. Chayan ME, Rodríguez SM, Villegas EC. Efectividad de una intervención educativa en el conocimiento sobre autismo y el control de las manifestaciones de estrés en padres y/o madres con hijos y/o hijas con autismo en un colegio de educación básica especial 2017 [tesis de licenciatura en Internet]. Lima: Universidad Peruana Cayetano Heredia; 2018. Available from: https://hdl.handle.net/20.500.12866/3780
12. Tinoco VS, Dornela T, De Castro G, Peres T. Estresse em mães com filhos diagnosticados com autismo. Rev Psicol e Saúde [Internet]. 2022; 14(4): 35-42. Available from: https://doi.org/10.20435/pssa.v14i4.2023
13. Montalvo L, Benitez R, Rivera ES, Salcido N, Flores-Mendoza, JB, Gómez L. Caracterización psicológica de las implicaciones emocionales de padres con hijos con trastorno del espectro autista. Ciencia Latina [Internet]. 2023; 7(3): 7506-7522. Available from: https://doi.org/10.37811/cl_rcm.v7i3.6741
14. Periche KW, Pantoja LR. Estrés en padres de niños con diagnóstico de trastorno del espectro autista en una institución privada, Lima-Perú, 2022. Horiz Méd [Internet]. 2024; 24(3): e2224. Available from: https://doi.org/10.24265/horizmed.2024.v24n3.10
15. Ni' mataurahroh, Suen MW, Ningrum V, Widayat, Yuniardi MS, Hasanati N, et al. The association between parenting stress, positive reappraisal coping, and quality of life in parents with autism spectrum disorder (ASD) children: a systematic review. Healthcare [Internet]. 2021; 10(1): 52. Available from: https://doi.org/10.3390/healthcare10010052
16. Lavado-Candelario S, Muñoz-Silva A. Impacto en la familia del diagnóstico de trastorno del espectro del autismo (TEA) en un hijo/a: una revisión sistemática. Anál Modif Conduc [Internet]. 2023; 49(180): 3-53. Available from: https://doi.org/10.33776/amc.v49i180.7652
17. La Torre L, Talavera JE, Roldan L, Loayza M. Nivel de estrés y el uso de estrategias de afrontamiento de padres de niños autistas. Rev Fac Med Hum [Internet]. 2024; 24(3): 27-35. Available from: https://doi.org/10.25176/rfmh.v24i3.6606
18. Medina MB. Afrontamiento y estrés en padres con hijos que presentan trastorno del espectro autista: una revisión literaria. Rev Horiz [Internet]. 2025; 9(36): 532-547. Available from: https://doi.org/10.33996/revistahorizontes.v9i36.936
19. Hernández-Benítez R, Sánchez-Padilla ML, González-Muñoz S. Intervenciones de enfermería en niños con trastorno de espectro autista (TEA) y su familia. Educ Salud Bol Cient Inst Cienc Salud Univ Autónoma Estado Hidalgo [Internet]. 2023; 12(23): 134-138. Available from: https://repository.uaeh.edu.mx/revistas/index.php/ICSA/article/view/11145/10731
20. Montecino C, Arriagada F, Espinoza G, Geoffroy P, Hertel B, Paredes K, et al. Experiencia de padres/ madres

al cuidado de niños de 5 a 10 años con Trastorno del Espectro Autista. Rev Chil Enferm [Internet]. 2021; 3(1): 65-87. Available from: https://doi.org/10.5354/2452-5839.2021.64552

21. Porras-Caballero FC, Rosales KP, Medellín DV, Sánchez DF. Aplicación de técnicas de relajación en pacientes preoperatorios, hospitalizados y sus cuidadores. Dilemas Contemp Educ Política Valores [Internet]. 2020; 8(Special issue): 15. Available from: https://doi.org/10.46377/dilemas.v8i.2492