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ORIGINAL ARTICLE

Social impact of the “Shared smiles” FEU project in family care of pediatric cancer patients

Impacto social del proyecto FEU: “Sonrisas compartidas” en la atención a familias de pacientes oncopediátricos

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ABSTRACT

Background: a pediatric cancer diagnosis generates psycho-emotional strain on families. The “Shared Smiles” FEU Project emerged as a psychosocial intervention to mitigate this impact, focusing on emotional support, strengthening networks, and family empowerment.

Objective: to evaluate the social impact of the FEU Project: “Shared Smiles” in the care of families of pediatric cancer patients.

Methods: a prospective, longitudinal, repeated-measures descriptive study (before-after design) was conducted from November 2024 to April 2025 in Palma Soriano, Cuba. Theoretical methods applied included analysis-synthesis, historical-logical, and inductive-deductive reasoning. and empirical: self-administered questionnaires with validated instruments (GAD-7, PHQ-9, Zarit, CD-RISC, etc.) at baseline and at six months, supplemented with semi-structured interviews. The analysis used descriptive techniques (frequencies and percentages). Established ethical standards were followed.

Results: the project reduced severe anxiety and severe depression, while tripling high life satisfaction. Strong support networks increased fivefold, and high loneliness fell by 44 points. High resilience and expert knowledge emerged. The intense burden of caregiving decreased by 41 points, and isolation within networks was reduced.

Conclusions: the project's impact was evaluated, showing that families developed critical capacities: adaptive emotional management, strengthening of community ties, and technical mastery of care. This three-pronged approach alleviated the immediate burden and generated lasting psychological capital to face the challenges of pediatric cancer care.

MeSH: research design; caregiver burden; pediatrics; indicators of quality of life, students; education, medical.

RESUMEN

Fundamento: el diagnóstico oncológico pediátrico genera desgaste psicoemocional en las familias. El Proyecto FEU: “Sonrisas compartidas” surge como intervención psicosocial para mitigar este impacto, centrado en un soporte emocional, fortalecimiento de redes y empoderamiento familiar.

Objetivo: evaluar el impacto social del Proyecto FEU: “Sonrisas compartidas” en la atención a familias de pacientes oncopediátricos.

Métodos: se realizó un estudio descriptivo longitudinal prospectivo de medidas repetidas (diseño antes-después) desde noviembre 2024 a abril 2025 en Palma Soriano, Cuba. Se aplicaron métodos teóricos: análisis-síntesis, histórico-lógico e inductivo-deductivo; y empíricos: cuestionarios autoadministrados con instrumentos validados (GAD-7, PHQ-9, Zarit, CD-RISC, etc.) al inicio y a los seis meses, complementados con entrevistas semiestructuradas. El análisis utilizó técnicas descriptivas (frecuencias y porcentajes). Se cumplieron las normas éticas establecidas.

Resultados: el proyecto redujo la ansiedad grave y depresión severa, mientras triplicó la satisfacción vital alta. Se quintuplicaron las redes de apoyo sólidas y la soledad alta cayó 44 puntos. Emergió resiliencia alta y conocimiento experto. La carga intensa del cuidado disminuyó 41 puntos y el aislamiento en redes se redujo.

Conclusiones: se evaluó el impacto del proyecto donde las familias desarrollaron capacidades críticas: gestión emocional adaptativa, fortalecimiento de vínculos comunitarios y dominio técnico sobre el cuidado. Este trípode de competencias alivió la carga inmediata y generó un capital psicológico perdurable para enfrentar los desafíos de la atención oncológica pediátrica.

DeSC: proyectos de investigación; carga del cuidador; pediatría; indicadores de calidad de vida; estudiantes; educación médica.

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INTRODUCTION

A childhood cancer diagnosis represents a family catastrophe that transcends the medical realm. Families face a perfect storm: chronic emotional stress, economic instability, and fragmentation of the social fabric. While pediatric oncology advances in clinical survival rates, comprehensive psychosocial support for families remains a challenge, especially in vulnerable contexts.(1)

The community project “Shared Smiles,” developed in the municipality of Palma Soriano, has the fundamental purpose of contributing to the improvement of the quality of life of children with pediatric oncology through activities that provide emotional support, therapeutic recreation, and assistance to their families. It also serves as a training ground for medical students, who strengthen their knowledge in pediatric oncology, develop skills to address highly sensitive social situations, and consolidate ethical values such as empathy, responsibility, and respect.

“Shared Smiles” promotes sensitivity within the university and local community to the needs of patients, while also stimulating research and scientific learning about pediatric cancer among its members and the student community. It originated at the “Julio Trigo López” Medical Sciences Branch in Palma Soriano in 2012. Recent evidence underscores that family well-being is a key predictor of treatment adherence and quality of life for children, making initiatives like this one essential components of comprehensive cancer care.(1)

Historically, healthcare systems concentrated resources on the pediatric patient, relegating the family to the role of passive companion. The conception of cancer as an exclusively medical experience ignored its broader dimension. Only in recent decades have models such as Family-Centered Care (FCC) recognized the family as a unit of care.(2)

In Latin America, although state initiatives exist, the coverage and systematization of family support are heterogeneous and insufficient. Community projects emerge in this void, embodying the evolution toward a comprehensive paradigm where psychosocial, logistical, and educational support for families is recognized as an inseparable part of the healing process. Their operation from the academic sphere adds unique value, combining social intervention with sensitive professional training.(2)

Families of children with cancer face a multidimensional burden (emotional, economic, social) that compromises their health, stability, and caregiving capacity, and this burden is exacerbated in resource-scarce environments. Studies quantify this reality: more than 60% of families experience financial catastrophe, more than 70% report clinically significant anxiety/depression, and many suffer social isolation and job loss.(3)

Although support interventions exist, a critical evidence gap persists: How specifically do social projects focused on mitigating this burden and strengthening family resilience during pediatric cancer treatment impact families? This study aims to evaluate the social impact of the FEU project: “Shared Smiles” on the care of families of pediatric cancer patients.

METHODS

A prospective, longitudinal, repeated-measures descriptive study (before-after design) was conducted between November 2024 and April 2025 in Palma Soriano, Santiago de Cuba, to evaluate the project's impact. The cohort included 17 families of pediatric cancer patients who participated voluntarily; a non-probabilistic purposive sampling method was used to select a sample of 61 family members.

The theoretical methods employed included analysis-synthesis for processing the scientific information and constructing the theoretical framework; and historical-logical analysis for studying the evolution of psychosocial support for cancer families and the inductive-deductive method for the analysis and interpretation of the results.

Empirical methods: two instruments were applied: a self-administered questionnaire at baseline and another at six months, during the period November 2024–April 2025. The same validated psychometric instruments were used at both time points to ensure data comparability. Additionally, in the post-intervention phase, semi-structured interviews were conducted with a subsample of participants to gain a qualitative understanding of their experiences and perceptions, complementing the quantitative data. It is worth noting that, although semi-structured interviews typically require larger samples to reach saturation, in this study they were used as a complementary method, not as the primary data source.

The following instruments, validated in Spanish and adapted to the local context, were used for data collection, along with their respective cut-off points:

- Anxiety: GAD-7 Scale (α=0.89). Cut-off points: Minimal (0-4), Mild (5-9), Moderate (10-14), Severe (15-21)(4)

- Depression: PHQ-9 Scale (α=0.86). Cut-off points: Minimal (0-4), Mild (5-9), Moderate (10-14), Severe (15-27)(4)
- Loneliness: UCLA Scale (α=0.91). Cut-off points: Low (≤20), Medium (21-25), High (26-40)
- Resilience: CD-RISC-10 Scale (α=0.85). Cut-off points: Low (percentile <34), Medium (percentile 34-66), High (percentile >66)(5)
- Caregiver burden: Zarit Burden Interview (α=0.90). Cut-off points: Mild or absent (≤46), Moderate (47-55), Severe (≥56)(5)
- Family cohesion: FACES III scale (α=0.88). Standardized scores: Low (<40), Medium (40-60), High (>60)(5)
- Disease knowledge: Ad-hoc 20-item test. Cut-off points: Low (≤10 correct answers), Medium (11-15 correct answers), High (≥16 correct answers)

The statistical analysis combined descriptive techniques (frequencies, percentages) for the categorical variables.

Throughout the research process, the statutes established in the Cuban ethical guidelines for health sciences research and the bioethical principles of the Declaration of Helsinki were followed.

RESULTS AND DISCUSSION

Table 1, regarding the distribution of respondents according to emotional well-being, shows a reduction in severe anxiety (from 67.21% to 19.67%) and severe depressive symptoms (from 47.54% to 13.11%); high life satisfaction tripled (from 0% to 32.79%), evidence of an overall improvement in mental health. The greatest qualitative leap occurred in the most vulnerable emotional stratum.

Table 1. Distribution of family members of pediatric oncology patients according to emotional well-being. Palma Soriano. Santiago de Cuba. November 2024-April 2025

Variables	**Categories**	**Before (n=61)**		**after (n=61)**	
		No.	%	No.	%
Anxiety level	Severe	41	67,21	12	19,67
	Moderate	15	24,59	18	29,51
	Mild	5	8,20	26	42,62
	Minimal	0	0	5	8,20
Depressive Symtoms	Severe	29	47,54	8	13,11
	Moderate	24	39,34	19	31,15
	Mild	8	13,11	31	50,82
	Mínimal	0	0	3	4,92
Vital satisfaction	Low	38	62,30	9	14,75
	Medium	23	37,70	32	52,46
	High	0	0	20	32,79

Source: questionnaire

Table 2, showing the distribution of respondents according to perceived social support, reveals that strong support networks increased fivefold (from 6.56% to 39.34%, with more than four people) and institutional isolation was eliminated (from 86.89% who lacked access to resources to only 9.84%). High levels of loneliness fell by 44.2 percentage points (from 55.74% to 11.48%), demonstrating that the project successfully built functional community networks.

Table 2. Distribution of relatives of pediatric cancer patients according to perceived social support. Palma Soriano. Santiago de Cuba. November 2024-April 2025

Variables	**Categories**	**Before (n=61)**		**after (n=61)**	
		No.	%	No.	%
Active support Networks (people)	0 a 1	39	63,93	8	13,11
	2 a 3	18	29,51	29	47,54
	Más de 4	4	6,56	24	39,34
Frequencies of support (times/month)	0	53	86,89	6	9,84
	1 a 2	8	13,11	38	62,30
	Más de 3	0	0	17	27,87
Perception of loneliness	High	34	55,74	7	11,48
	Medium	22	36,07	25	40,98
	Low	5	8,20	29	47,54

Source: questionnaire

Table 3, which shows the distribution of surveyed people according to coping strategies, reveals that high resilience emerged in 23% of families (initially 0%), and adaptive strategies became more widespread (from 70.49% at a low level to only 18.03%). Seeking professional help became more common: 85.25% never sought it, compared to 57.38% who now do so regularly (1+ sessions/quarter).

Table 3. Distribution of family members of pediatric cancer patients according to coping strategies. Palma Soriano, Santiago de Cuba. November 2024–April 2025

Variables	**Categories**	**Before (n=61)**		**After (n=61)**	
		No.	%	No.	%
Uso of adaptive strategies	Low	43	70,49	11	18,03
	Medium	18	29,51	39	63,93
	High	0	0	11	18,03
Resilience self-perception	Low	47	77,05	14	22,95
	Medium	14	22,95	33	54,10
	High	0	0	14	22,95
Seeking profesional help (sessions//third month)	0	52	85,25	19	31,15
	1 a 3	9	14,75	35	57,38
	More than 4	0	0	7	11,48

Source: questionnaire.

Table 4, regarding the distribution of respondents according to family quality of life, shows that the heavy care burden decreased by 41 percentage points (from 54.10% to 13.11%), while high family cohesion tripled (from 4.92% to 19.67%). The most visible change was in shared activities: 80.33% dedicated 0 hours/week compared to 52.46% who now share ≥1 hour (24.59% share more than 4 hours).

Table 4. Distribution of family members of pediatric oncology patients according to family quality of life. Palma Soriano, Santiago de Cuba. November 2024–April 2025

Variables	**Categorías**	**Antes (n=61)**		**Después (n=61)**	
		No.	**%**	**No.**	**%**
Family cohesion	Low	36	59,02	10	16,39
	Medium	22	36,07	39	63,93
	High	3	4,92	12	19,67
Time spent on joint activities (hours/week)	0	49	80,33	14	22,95
	1 to 3	12	19,67	32	52,46
	More than 4	0	0	15	24,59
Caregiving burden perception	Intense	33	54,10	8	13,11
	Moderate	23	37,70	28	45,90
	Mild	5	8,20	25	40,98

Source: questionnaire.

Table 5 shows the distribution of respondents according to knowledge and empowerment. It reveals that a high level of knowledge about the disease emerged in 22.59% of families (compared to an initial 0%), and high self-efficacy in caregiving reached 1 in 4 families (from 0% to 24.59%). Participation in support networks was the most significant improvement: 93.44% did not belong to any groups, and subsequently only 29.51% remained isolated.

Table 5. Distribution of family members of pediatric cancer patients according to knowledge and empowerment. Palma Soriano. Santiago de Cuba. November 2024-April 2025

Variables	**Categories**	**Before (n=61)**		**After (n=61)**	
		No.	%	No.	%
Illness knowledge	Low	47	77,05	9	14,75
	Medium	14	22,95	38	62,30
	High	0	0	14	22,95
Participation in network supports (groups)	0	57	93,44	18	29,51
	1 to 2	4	6,56	35	57,38
	More than 3	0	0	8	13,11
Care self-efficacy Care	Low	44	72,13	7	11,48
	Medium	17	27,87	39	63,93
	High	0	0	15	24,59

Source: questionnaire.

The diagnosis and treatment of childhood cancer is a disruptive experience that extends beyond the patient, profoundly impacting family dynamics. The emotional, economic, and social burden faced by primary caregivers demands comprehensive interventions that strengthen their psychosocial resources.

The results show a drastic reduction in severe anxiety and severe depressive symptoms, along with an increase in high life satisfaction. These findings coincide with those of Pérez Garduño et al.,(6) who reported 45% reductions in anxiety among caregivers after psychoeducational interventions. However, the persistence of moderate anxiety suggests the need for continuous reinforcement, as these authors advise, with long-term follow-up. The improvement in life satisfaction surpasses that observed by Teheran Barranco et al.(7) in similar programs, possibly due to the ludic component integrated into the project.

A significant increase in support networks and a reduction in high levels of loneliness were recorded. These data reflect the findings of Martín Talavera et al. (8), where participation in networks reduced loneliness by 38%. The frequency of monthly support showed a notable improvement, surpassing the aforementioned study, which achieved a 25% increase. The correlation between tangible support and a decrease in loneliness corroborates the research of Pinzón Corredor et al.(9) on the buffering role of stress in oncology contexts.

The use of adaptive strategies improved substantially, with a parallel increase in high resilience. These results coincide with those of Pinzón Corredor et al.(9), who linked structured interventions with 30% increases in resilience.

The demand for professional help showed relevant changes, although still below that reported by Vera Torres et al. (10) in specialized programs (15% of non-users). This gap suggests cultural barriers to seeking professional support, an aspect highlighted by that study in Latin American populations.

Family cohesion improved markedly, accompanied by an increase in joint activities. These changes surpass those reported by Alhambra Borrás et al.(11), who reported a 25% improvement in cohesion. The reduction in perceived burden was similarly consistent; they associated practical support with a 40% decrease in burden. The correlation between shared time and cohesion reinforces Bronfenbrenner's ecological model applied to pediatric oncology, as reported by Cajo Riofrio et al.(12)

Knowledge about the disease showed significant progress, along with greater participation in support networks. These data coincide with those of Verdaguer et al.(13), where health education increased knowledge by 60%.

Self-efficacy in caregiving showed substantial improvements, exceeding the 35% reported by Leal Jofré et al.(14) in their applied self-efficacy model. The increase in group participation demonstrates the success of the community component, a critical factor according to the WHO for the sustainability of interventions, present in the study by Zela Bravo.(15)

Scientific Contribution

This research provides robust empirical evidence on the effectiveness of a community-based psychosocial intervention, the FEU project: “Shared Smiles,” in mitigating the multidimensional impact of childhood cancer on families. Its overall contribution lies in validating a comprehensive action model that combines emotional support, strengthening community networks, and educational empowerment, demonstrating that this tripartite approach is effective in reducing the burden of care, improving mental health, and building family resilience in vulnerable contexts.

CONCLUSIONS

The FEU project: “Shared Smiles” achieved a transformative impact on the families of pediatric cancer patients. It significantly reduced emotional distress and caregiver burden, fostered the development of resilience and adaptive coping strategies, and strengthened social support networks and family cohesion. It empowered caregivers by providing them with relevant knowledge and greater self-efficacy, thus building sustainable psychosocial resources that extend beyond the initial intervention.

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Declaration of Interests

The authors declare no conflict of interest.

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