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The Interplay Between Child and Parental Emotional Symptoms: Insights From Super Skills for Life Programme

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ABSTRACT

Research has extensively examined the influence of parental well-being on children's emotional health, yet fewer studies have explored the reciprocal impact of children's emotional health on parents. This study aimed to identify factors associated with parental emotional symptoms and assess the effectiveness of the Super Skills for Life (SSL) programme—delivered in traditional and computerized formats—in improving parental emotional outcomes and satisfaction. A total of 102 Spanish-speaking children aged 8–12 years exhibiting subclinical levels of anxiety and/or depression participated in this randomized effectiveness clinical trial (ClinicalTrials.gov ID: NCT05574491). Participants were randomly assigned to either the traditional ($n = 53$) or computerized ($n = 49$) SSL format. Both interventions were delivered individually in a clinical setting under therapist supervision. Parental emotional symptoms and satisfaction, along with children's emotional symptoms, were assessed through self-reported measures. Higher parental emotional symptoms were associated with greater child emotional symptoms and lower parental satisfaction, particularly satisfaction with oneself as a parent. Gender differences were observed, with women reporting higher levels of anxiety. Both SSL formats significantly improved parental satisfaction and mental health outcomes, with no significant differences between the two intervention groups. Findings suggest that SSL not only benefits children's emotional health but also enhances parental well-being through direct support (therapist guidance and written resources) and indirect mechanisms (child symptom improvement). The programme's flexibility and effectiveness make it a valuable intervention for supporting both children and parents in clinical settings.

1 | Introduction

Emotional symptoms, including sadness, depression, anxiety, fears, social withdrawal and somatic complaints (Gage 2013; Willner et al. 2016), are common among children and can significantly impact their development and well-being. If untreated, these symptoms can lead to impairments in academic performance, social interactions and family dynamics, which pose public health concerns and limit children's long-term well-being (Aguilar-Yamuza et al. 2023; Luijten et al. 2021). In Europe, studies indicate that one in five children aged 6–12 years old experience emotional problems (Husky et al. 2018).

1.1 | The Bidirectional Relationship Between Child and Parental Mental Health

The impact of these symptoms extends beyond the individual child, affecting family dynamics and parental well-being.

Extensive research has explored the effects of parental psychopathology on child mental health, demonstrating that both maternal and paternal depression and anxiety are linked to child internalizing and externalizing problems (Brown et al. 2015; Gross et al. 2008; Hughes and Gullone 2010; Leijdesdorff et al. 2017; Wickersham et al. 2020). However, fewer studies have examined the reciprocal impact of children's emotional problems on parental mental health, despite growing evidence that parents of children with psychiatric disorders are more likely to experience emotional distress than the general population (Hughes and Gullone 2010). Longitudinal studies, such as the British Child and Adolescent Mental Health Surveys, suggest that parents of children with anxiety and depression are at greater risk of experiencing poor mental health over time (Wilkinson et al. 2021). Caring for a child with these problems can affect parent's self-esteem and perception of parenting competence, leading to reduced parental satisfaction and increased emotional symptomatology (Hughes and Gullone 2010).

1.2 | Super Skills for Life Programme

Given this bidirectional relationship, improving child mental health could positively influence parental mental health (Wilkinson et al. 2021). However, to the best of our knowledge, few child-focused interventions explicitly evaluate whether improvements in children's emotional functioning lead to corresponding improvements in parental well-being. Given the established influence of parental mental health on child outcomes, enhancing parental well-being through child-focused interventions could reciprocally strengthen treatment benefits. Specifically, improved parental emotional health may foster more positive family dynamics, reduce family stress and ultimately sustain the children's improvements over time.

Super Skills for Life (SSL) programme, a transdiagnostic cognitive-behavioural therapy (CBT)-based intervention for children aged 6–12 years, has demonstrated effectiveness in reducing emotional symptoms (Essau et al. 2019). SSL has been evaluated in different formats—individual (Melero et al. 2021), group (Orgilés, Fernández-Martínez, et al. 2019) and self-applied (Orgilés, Morales, et al. 2023)—and is used as both a preventive and treatment intervention (Diego-Castaño et al. 2023). The eight-session programme targets socio-emotional skills through emotional education, cognitive restructuring, relaxation, social skills training and problem-solving, incorporating techniques such as video-feedback with cognitive preparation and behavioural activation.

A computerized version of SSL was developed to enhance accessibility for families facing barriers to attending in-person sessions (Bornheimer et al. 2018). A randomized controlled trial showed that the self-applied format, with parents as co-therapists, was effective but had attrition issues (Orgilés, Morales, et al. 2023). To address this, a therapist-supervised computerized version was introduced. This format was expected to enhance adherence while remaining cost-effective. A comparative effectiveness trial assessed the individual traditional face-to-face SSL against this novel version for children aged 8–12 years. Findings showed that both modalities reduced emotional symptoms (Galán-Luque et al. 2024a) and improved self-concept, cognitive emotion regulation strategies and social competence (Galán-Luque et al. 2024b).

1.3 | Study Aims and Hypotheses

Despite SSL's promising outcomes for children, little attention has been given to its effects on parental well-being. The current study sought to fill this gap by examining how SSL affects parental emotional symptoms and satisfaction. Specifically, the study aimed to (1) identify variables explaining parental symptomatology using demographic, parental satisfaction and child symptomatology variables and (2) assess and compare pre–post changes in parental satisfaction and symptomatology across intervention groups.

2 | Method

2.1 | Sample

Participants were drawn from a comparative effectiveness trial evaluating the traditional and computerized individual SSL formats for children aged 8–12 years with emotional symptoms (i.e., anxiety and depression) (Galán-Luque et al. 2024a, 2024b). The inclusion criteria required children to (a) be aged 8–12 years, (b) exhibit elevated anxiety and/or depressive symptoms, (c) not be receiving concurrent pharmacological or psychological treatment and (d) not have a neurodevelopmental disorder. Thresholds for elevated symptoms were as follows: children needed a score of greater than or equal to 25 on the Spence Children's Anxiety Scale—Parent Version (SCAS-P; Spence 1998), indicating elevated anxiety levels (Spence 2021), or a score of greater than or equal to 20 on the Mood and Feelings Questionnaire—Parent Version (MFQ-P; Angold et al. 1995), reflecting subclinical levels of depression (Daviss et al. 2006; Kent et al. 1997).

Out of 200 initial assessments, 109 children met the inclusion criteria and were randomly assigned to either the traditional ($n = 54$) or computerized ($n = 55$) intervention group. Four children discontinued the computerized intervention due to reported reasons such as scheduling conflicts that prevented attendance and children's perception that the programme was not age appropriate. A more detailed discussion on attrition rates and their implications is provided in Galán-Luque et al. (2024a). Additionally, three families did not complete the posttest evaluation, resulting in a final sample of 102 parent–child dyads (55.88% girls). Figure 1 presents the CONSORT flow diagram.

2.2 | Measures

2.2.1 | Socio-Demographic Variables

Parents provided information on their child's age, sex, number of siblings and family demographics, including parental age, marital status, education level, employment status and household income.

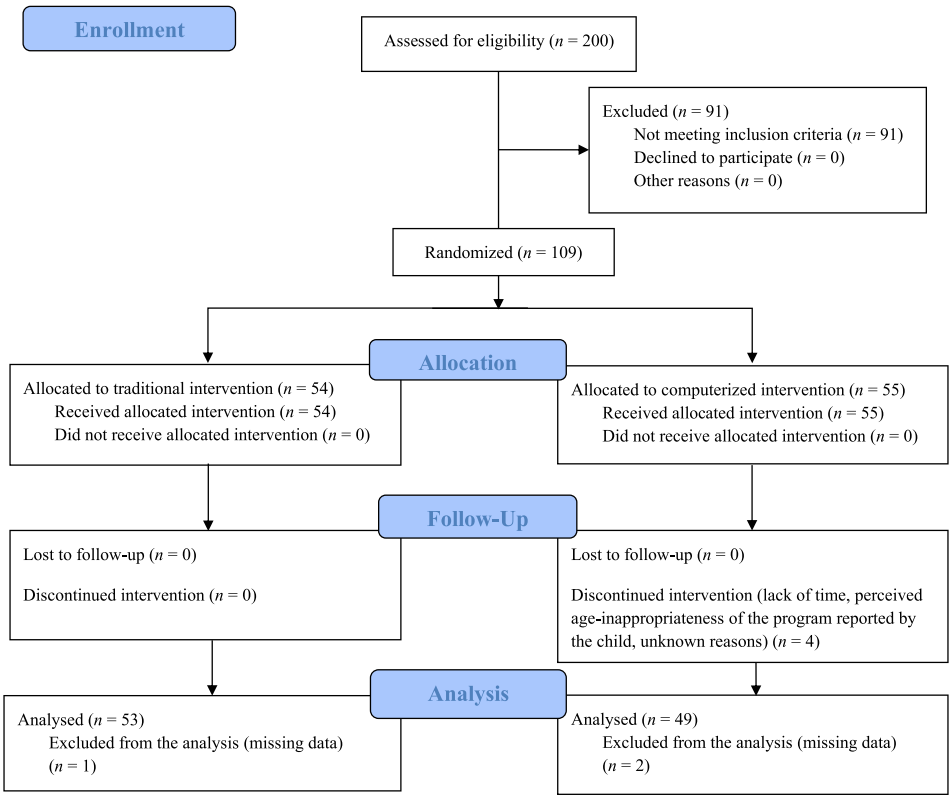

FIGURE 1 | Flow diagram of participants.

2.2.2 | Children's Emotional Symptoms

2.2.2.1 | SCAS-P (Spence 1998). The SCAS-P (38 items) assesses common anxiety disorders in children as reported by their parents. Items are rated on a 4-point Likert scale, with higher scores indicating greater symptoms. The Spanish version of the SCAS-P has shown strong reliability and satisfactory validity (Orgilés, Rodríguez-Menchón, et al. 2019). In our sample, the ordinal α was 0.91.

2.2.2.2 | MFQ-P (Angold et al. 1995). The MFQ-P (34 items) assesses depressive symptoms in children as reported by their parents. Items are rated on a 3-point Likert scale, with higher scores indicating more severe symptoms. Previous research has shown good psychometric properties of the MFQ-P (Daviss et al. 2006; Fernández-Martínez et al. 2020). In our sample, the ordinal α coefficient was 0.93.

2.2.2.3 | Child Anxiety Life Interference Scale—Parent Version (CALIS-P; Lyneham et al. 2013). The CALIS-P (16 items) measures the impact of anxiety on academic, social and home/family daily functioning in children as reported by their parents. Items are rated on a 5-point Likert-type scale, with higher scores indicating more severe impairment. The scale comprises three subscales: outside home, inside home and interference on parent life. The Spanish version of the CALIS-P has demonstrated excellent internal consistency coefficients (Orgilés, Melero, et al. 2022). In our sample, the ordinal α ranged from 0.77 to 0.92.

2.2.3 | Parental Emotional Symptoms and Satisfaction

2.2.3.1 | Depression, Anxiety, Stress Scale—21 (DASS-21; Lovibond and Lovibond 1995). The DASS-21 (21 items) measures depression, anxiety and stress and serves as a general indicator of emotional symptoms. Items are rated on a 4-point Likert scale, with higher scores indicating greater symptoms. The Spanish version of the DASS-21 has demonstrated strong reliability and satisfactory validity (Bados et al. 2005). In our sample, the ordinal α coefficients ranged from 0.88 to 0.96.

2.2.3.2 | Kansas Parental Satisfaction Scale (KPS; James et al. 1985). The KPS (three items) measures parental satisfaction. The items are statements concerning satisfaction with the behaviour of children, satisfaction with oneself as a parent and satisfaction with the relationship with their children. The statements are rated on a 7-point Likert scale, with higher scores indicating greater satisfaction in these dimensions. The scale has demonstrated good internal consistency, concurrent validity and test–retest reliability (James et al. 1985). In our sample, the ordinal α coefficient was 0.86.

2.3 | Procedure

The comparative efficacy randomized trial was registered in ClinicalTrials.gov (NCT05574491) and received ethical approval from the authors' institution and the regional Institute of Health and Biomedical Research. Parents were informed about the study

through schools, social media and direct contact with the research team. Interested parents completed an online eligibility form.

After programme completion, parents and children participated in a posttest evaluation. Each family received a detailed report summarizing changes observed in their child.

Eligible children were randomly assigned to either the traditional or computerized intervention group using simple randomization generated by an Excel file. The allocation sequence was concealed from both participants and researchers to ensure unbiased assignment. Children completed a pretest questionnaire before the first session. Families did not receive compensation for participation. The interventions were conducted in a clinical setting at the authors' institution, with children attending two sessions per week. Psychologists affiliated with the institution facilitated the sessions after undergoing structured training and weekly supervision to maintain protocol adherence.

The SSL programme, consisting of eight one-on-one sessions, develops skills in emotional regulation, cognitive restructuring, behavioural activation, social skills, relaxation and problem-solving (Galán-Luque et al. 2024b). Both traditional and computerized formats share identical content but differ in delivery (Galán-Luque et al. 2024a). In the traditional format (Melero et al. 2021), 60-min sessions include structured exercises such as writing tasks, games, readings and therapist-led role-playing, using a workbook with explanations and activities. The computerized format, adapted from the self-applied SSL (Orgilés, Morales, et al. 2023), delivers the content via a digital platform in 45-min therapist-supervised sessions. After each session, children completed a hometask to practice skills and received a handout summarizing session content. Parents received printed guidelines on managing children's difficulties (e.g., exam anxiety and modifying irrational thoughts). Upon programme completion, parents and children completed a posttest evaluation, and each family received a report summarizing observed changes.

2.4 | Statistical Analyses

All statistical analyses were conducted using RStudio version 2024.4.1.748 (R Core Team 2018) and JASP version 0.19.0 (JASP Team 2024), with a significance level set at $p < 0.05$. Only participants who completed all measures were included in the analyses. The internal consistency of the measures was assessed using the ordinal alpha coefficient. Descriptive statistics and equivalence analyses for socio-demographic and main outcome variables between intervention groups were conducted. Attrition analyses are detailed in published studies with this sample (Galán-Luque et al. 2024a). Chi-square tests and Mann–Whitney *U* tests were used to compare categorical and nonparametric continuous variables.

For Aim 1, the full sample was analysed without differentiating between intervention groups. Correlations between parental emotional symptoms (depression, anxiety and stress) and socio-demographic variables, parental satisfaction and children's symptomatology were assessed using Pearson's r or Spearman's ρ, as appropriate. Associations involving categorical variables were analysed using the Mann–Whitney *U* test, ANOVA *F* test or Kruskal–Wallis *H* test. Multiple linear regression analyses were conducted to identify factors associated with parental emotional symptoms, using backward elimination to retain only significant predictors. Additionally, structural equation modelling (SEM) was initially conducted to validate the regression model and explore latent structures related to parental emotional symptoms. However, due to sample size limitations and the consistency of SEM results with regression findings, it was excluded from the main manuscript for clarity. The full SEM analysis is available in the Supporting Information (Figure S2).

For Aim 2, within-group comparisons were conducted using Student's *t* tests for paired samples or the Wilcoxon signed-rank test, as appropriate. Differences in short-term intervention effects between groups were assessed using generalized estimating equations (GEE), adjusting for baseline outcome measures. GEE was chosen for its robustness in handling correlated responses, making it particularly suitable for longitudinal and repeated measures data in clinical trials (Liang and Zeger 1986). Each outcome variable was tested independently, with subjects as the unit of randomization. An exchangeable working correlation structure was specified in all GEE models to account for within-subject correlation over time. Effect sizes were calculated using Cohen's *d* for parametric comparisons and matched rank biserial correlation (r_b) for nonparametric comparisons, with interpretation thresholds as follows: small ($d = 0.20–0.49$; $r_b = 0.10–0.29$), medium ($d = 0.50–0.79$; $r_b = 0.30–0.49$) and large ($d \geq 0.80$; $r_b \geq 0.50$).

3 | Results

3.1 | Socio-Demographics and Baseline Equivalence

Table 1 shows the socio-demographic characteristics and baseline outcomes according to intervention condition. Mean age of children was 9.56 (SD = 1.45). They had an average of one sibling. Most respondents were mothers, aged between 35 and 54 years, married, with at least secondary education and were actively working. Household income was distributed across low-to-middle income brackets, with the majority earning between 1000 and 4999 euros per month.

3.2 | Associations Between Parental Emotional Symptoms and Study Variables

Multiple linear regression models identified key factors associated with parental emotional symptoms. Only variables that showed a significant correlation with each outcome measure (anxiety, depression, stress and total DASS-21 scores) were included in the models. Table 2 presents the correlation analyses between parental emotional symptoms, demographic variables, parental satisfaction and children's symptomatology, while Table 3 reports the results of the multiple linear regression models.

The final model for overall parental emotional symptoms (DASS-21 total score) explained 32.1% of the variance (F(4,

TABLE 1 | Baseline socio-demographic and outcome variables by intervention group.

	Traditional ($n=53$)		Computerized ($n=49$)		Total ($N=102$)			
	n	**%**	***n***	**%**	***n***	**%**	χ^2	***p***
Socio-demographics								
Gender								
Male	23	43.40	22	44.90	45	44.12	0.023	0.879
Female	30	56.60	27	55.10	57	55.88		
Respondent								
Father	12	22.64	5	10.20	17	16.67	2.836	0.092
Mother	41	77.36	44	89.80	85	83.33		
Parental marital status								
Married/partnered	39	73.59	40	81.63	79	77.45	1.143	0.562
Separated/divorced	8	15.09	6	12.25	14	13.73		
Single/widowed	6	11.32	3	6.12	9	8.82		
Parent age								
25–34 years	3	5.88	2	4.35	6	5.88	2.795	0.424
35–44 years	25	49.02	28	60.87	55	53.92		
45–54 years	21	41.18	16	34.78	39	38.24		
55–65 years	2	3.92	0	0.00	2	1.96		
Educational level								
Primary education	5	9.43	6	12.25	11	10.78	2.513	0.473
Secondary education	23	43.40	14	28.57	37	36.28		
Higher education	19	35.85	21	42.86	40	39.22		
Masters' or PhD	6	11.32	8	16.33	14	13.73		
Employment status								
Full time	33	62.26	27	55.10	60	58.82	9.96	0.019
Part-time	2	3.77	12	24.49	14	13.73		
Self-employed	8	15.09	5	10.20	13	12.75		
Nonworking	10	18.87	5	10.20	15	14.71		
Family monthly income								
Up to 999 euros	7	13.21	2	4.08	9	8.82	5.095	0.404
1000–1999 euros	11	20.76	11	22.45	22	21.57		
2000–2999 euros	13	24.53	17	34.69	30	29.41		
3000–4999 euros	14	26.42	14	28.57	28	27.45		
5000 euros or more	1	1.89	2	4.08	3	2.94		
Prefer not to answer	7	13.21	3	6.12	10	9.80		

96) = 12.800; $p < 0.001$), with lower satisfaction with oneself as a parent, children's depression and children's anxiety life interference on parent life emerging as significant correlates. The model for parental depression explained 21.3% of the variance ($F(3, 97) = 10.033$; $p < 0.001$), with lower parental satisfaction and children's anxiety life interference on parent life as significant correlated. The model for parental anxiety explained 30.4% of the variance ($F(3, 96) = 15.397$; $p < 0.001$), where lower parental satisfaction and children's anxiety life interference on parent life were significant correlates. Additionally, being female was

TABLE 2 | Correlations between parental mental health and study variables.

	General mental health (DASS-21 total score)		Depression (DASS-21 depression subscale)		Anxiety (DASS-21 depression subscale)		Stress (DASS-21 depression subscale)	
	M (SD)	*r*/*ρ*, *U*, *F*/*H*	M (SD)	*r*/*ρ*, *U*, *F*/*H*	M (SD)	*r*/*ρ*, *U*, *F*/*H*	M (SD)	*r*/*ρ*, *U*, *F*/*H*
Socio-demographic variables								
Age	—	$\rho = -0.183$	—	$\rho = -0.153$	—	$\rho = -0.110$	—	$r = -0.192$
Siblings	—	$\rho = -0.107$	—	$\rho = 0.046$	—	$\rho = 0.107$	—	$r = 0.057$
Gender								
Male	16.156 (11.275)	$U = 1312.500$	4.556 (4.570)	$U = 1334.000$	3.511 (3.565)	$U = 1363.000$	8.089 (4.316)	$U = 1285.500$
Female	16.298 (12.139)		4.386 (4.467)		3.649 (3.998)		8.263 (5.111)	
Respondent								
Father	12.706 (9.054)	$U = 591.500$	3.412 (3.658)	$U = 612.500$	2.000 (2.550)	$U = 501.500$*	7.294 (4.074)	$U = 624.000$
Mother	16.941 (12.091)		4.671 (4.630)		3.906 (3.933)		8.365 (4.882)	
Parental marital status								
Married/partnered	15.709 (11.806)	$F(2, 99) = 68.025$	4.063 (4.235)	$F(2, 99) = 37.866$	3.557 (3.882)	$F(2, 99) = 2.221$	8.089 (5.000)	$F(2, 99) = 1.715$
Separated/divorced	17.000 (11.878)		5.071 (5.210)		3.357 (3.973)		8.571 (3.756)	
Single/widowed	19.667 (11.203)		7.000 (5.123)		4.222 (2.949)		8.444 (4.275)	
Parent age								
25–34 years	20.000 (13.431)	$F(3, 98) = 199.825$	5.333 (6.802)	$H(3) = 6.322$	5.167 (2.994)	$H(3) = 5.887$	9.500 (4.764)	$F(3, 98) = 13.709$
35–44 years	17.018 (12.260)		4.709 (4.197)		4.055 (4.138)		8.255 (5.222)	
45–54 years	13.949 (12.260)		3.615 (4.351)		2.615 (3.314)		7.718 (4.155)	
55–65 years	28.000 (1.414)		11.500 (0.707)		5.000 (0.000)		11.500 (0.707)	
Educational level								
Primary education	16.364 (12.069)	$F(3, 98) = 124.530$	4.273 (4.756)	$H(3) = 7.932$*	3.250 (3.521)	$H(3) = 5.989$	8.625 (4.876)	$F(3, 98) = 11.393$
Secondary education	17.919 (11.887)		5.270 (4.401)		2.000 (3.508)		6.929 (4.411)	
Higher education	16.175 (11.250)		4.300 (4.140)		4.455 (4.156)		7.636 (4.610)	

(Continues)

TABLE 2 | (Continued)

	General mental health (DASS-21 total score)		Depression (DASS-21 depression subscale)		Anxiety (DASS-21 depression subscale)		Stress (DASS-21 depression subscale)	
	M (SD)	***r*/ρ, *U*, *F*/*H***	**M (SD)**	***r*/ρ, *U*, *F*/*H***	**M (SD)**	***r*/ρ, *U*, *F*/*H***	**M (SD)**	***r*/ρ, *U*, *F*/*H***
Masters' or PhD	11.857 (12.384)		2.929 (5.456)		4.297 (3.985)		8.351 (4.877)	
Employment status								
Full time	15.717 (11.474)	$F(3, 98) = 101.553$	4.150 (4.321)	$F(3, 98) = 9.203$	3.167 (3.906)	$H(3) = 8.527$*	8.400 (4.774)	$F(3, 98) = 11.900$
Part-time	19.500 (10.747)		5.429 (3.777)		5.357 (3.692)		8.714 (4.304)	
Self-employed	13.385 (10.813)		4.077 (4.368)		2.615 (2.987)		6.692 (4.498)	
Non-working	17.733 (14.315)		5.133 (5.939)		4.467 (3.701)		8.133 (5.475)	
Family monthly income								
Up to 999 euros	23.778 (9.859)	$F(5, 96) = 175.905$	6.444 (5.003)	$H(5) = 5.166$	6.889 (2.759)	$H(5) = 11.750$*	10.444 (3.167)	$F(5, 96) = 11.855$
1000–1999 euros	18.045 (11.902)		5.864 (5.102)		3.773 (3.518)		8.409 (4.768)	
2000–2999 euros	16.200 (13.423)		4.133 (4.932)		4.000 (4.579)		8.067 (5.258)	
3000–4999 euros	13.250 (10.476)		3.214 (3.107)		2.429 (3.225)		7.607 (5.028)	
5000 euros or more	13.333 (12.342)		3.667 (6.351)		1.667 (2.887)		8.000 (4.359)	
Prefer not to answer	14.800 (8.954)		4.300 (3.593)		2.800 (2.781)		7.700 (4.001)	
Parent satisfaction								
Children behaviour	—	$\rho = -0.225$*	—	$\rho = -0.077$	—	$\rho = -0.186$	—	$r = -0.239$*
Self as a parent	—	$r = -0.318$**	—	$\rho = -0.234$*	—	$r = -0.294$**	—	$r = -0.308$**
Parent–child relationship	—	$\rho = -0.271$**	—	$\rho = -0.214$*	—	$\rho = -0.183$	—	$\rho = -0.272$**
Child's symptoms								
Depression (MFQ-P)	—	$\rho = 0.384$***	—	$\rho = 0.328$***	—	$r = 0.281$**	—	$\rho = 0.372$***
Anxiety (SCAS-P)	—	$\rho = 0.178$	—	$\rho = 0.110$	—	$\rho = 0.181$	—	$\rho = 0.169$

(Continues)

TABLE 2 | (Continued)

	General mental health (DASS-21 total score)		Depression (DASS-21 depression subscale)		Anxiety (DASS-21 depression subscale)		Stress (DASS-21 depression subscale)	
	M (SD)	*r*/*ρ*, *U*, *F*/*H*	M (SD)	*r*/*ρ*, *U*, *F*/*H*	M (SD)	*r*/*ρ*, *U*, *F*/*H*	M (SD)	*r*/*ρ*, *U*, *F*/*H*
Anxiety interference (CALIS-P total score)	—	$\rho = 0.398^{***}$	—	$\rho = 0.261^{**}$	—	$\rho = 0.321^{***}$	—	$r = 0.398^{***}$
Outside home	—	$\rho = 0.203^{*}$	—	$\rho = 0.095$	—	$\rho = 0.143$	—	$\rho = 0.224^{*}$
Inside home	—	$r = 0.308^{**}$	—	$\rho = 0.178$	—	$\rho = 0.257^{**}$	—	$r = 0.361^{***}$
Parent life	—	$r = 0.419^{***}$	—	$\rho = 0.351^{***}$	—	$\rho = 0.388^{***}$	—	$r = 0.443^{***}$

Note: r/ρ = Pearson's r or Spearman's ρ correlation coefficients, as appropriate; U = Mann–Whitney U test statistic; F/H = ANOVA F test or Kruskal–Wallis H test statistic, as appropriate; DASS-21 = Depression Anxiety Stress—Short Form; MFQ-P = Mood and Feelings Questionnaire—Parent version; SCAS-P = Spence's Children Anxiety Scale—Parent version.

$^{*}p < 0.05$.
$^{**}p < 0.01$.
$^{***}p < 0.001$.

associated with higher parental anxiety. Finally, the model for parental stress explained 27.3% of the variance ($F(5, 96) = 8.596$; $p < 0.001$). Lower satisfaction with oneself as a parent and children's anxiety life interference outside the home and on parent life were significantly related to parental stress.

3.3 | Preliminary Results on the Benefits of SSL Programme on Parental Outcomes

Table 4 presents pretest and posttest means and standard deviations for all parent outcomes across both intervention groups. It also includes the results of Student's t tests and Wilcoxon signed-rank tests, with p values and effect sizes. The traditional SSL programme demonstrated significant improvements in six out of seven parental satisfaction and mental health outcomes, with medium to very large effect sizes. The computer-led SSL programme showed significant improvements across all seven parent outcome measures, also with medium to very large effect sizes. GEE were used to examine differences in intervention effects between groups. No significant differences were found between the traditional and computerized SSL programmes in any parent outcome (p values ranging from 0.282 to 0.745). The full results are available in the Supporting Information (Table S5).

4 | Discussion

This study examined the relationship between parental well-being and children's emotional symptoms, along with a preliminary analysis of the effects of the SSL programme on parental outcomes. The findings highlight the associations between children's mental health and parental emotional well-being and suggest that the intervention may positively impact parents' mental health as well. Notably, this is the first study to examine the effectiveness of SSL on parental variables.

The results revealed significant associations between parental emotional symptoms, parental satisfaction and children's symptomatology. Higher parental emotional symptoms were related to lower satisfaction with oneself as a parent and greater child depression and anxiety-related interference in parental life. These findings reinforce the relationship between children's emotional symptoms and parental well-being, aligning with previous research (Wilkinson et al. 2021). Among parental satisfaction measures, self-satisfaction as a parent emerged as the strongest correlate of parental emotional symptoms, consistent with prior studies highlighting the role of parenting self-esteem in parental mental health (Hughes and Gullone 2010). This suggests that perceptions of parenting competence may play a central role in parental emotional well-being, beyond general parent–child interactions or child behaviour.

Despite initial correlations between socio-economic variables and parental emotional symptoms, these relationships did not hold in regression models, except for gender as a predictor of parental anxiety. The bivariate analysis indicated that women, parents with part-time jobs and those with lower incomes reported higher anxiety, while parents with higher education had lower depression levels. However, socio-economic status did not emerge as a significant predictor in the final regression or

TABLE 3 | Multiple linear regression models for factors associated with parental mental health.

					95% CI	
	β	SE	*t*	*p* value	*LL*	*UL*
General mental health (DASS-21 total score)						
Constant	17.685	4.034	4.384	< 0.001	9.677	25.693
Parent satisfaction						
Self as a parent	−2.417	0.726	−3.330	0.001	−3.858	−0.976
Children symptoms						
Depression (MFQ-P total score)	0.289	0.120	2.397	0.018	0.050	0.528
AI Outside home (CALIS-P outside home interference subscale)	−0.556	0.281	−1.977	0.051	−1.114	0.002
AI Parent life (CALIS-P parent life interference subscale)	0.845	0.210	4.029	< 0.001	0.429	1.262
Depression (DASS-21 depression subscale)						
Constant	4.922	1.624	3.030	0.003	1.698	8.146
Parent satisfaction						
Self as a parent	−0.813	0.292	−2.787	0.006	−1.392	−0.234
Children symptoms						
Depression (MFQ-P total score)	0.077	0.044	1.757	0.082	−0.010	0.163
AI Parent life (CALIS-P parent life interference subscale)	0.188	0.076	2.463	0.016	0.036	0.339
Anxiety (DASS-21 anxiety subscale)						
Constant	3.836	1.352	2.837	0.006	1.152	6.521
Socio-demographics						
Sex	2.105	0.807	2.607	0.011	0.502	3.707
Parent satisfaction						
Self as a parent	−0.964	0.234	−4.114	< 0.001	−1.429	−0.499
Children symptoms						
AI Parent life (CALIS-P parent life interference subscale)	0.231	0.053	4.382	< 0.001	0.126	0.336
Stress (DASS-21 stress subscale)						
Constant	7.080	1.885	3.755	< 0.001	3.338	10.823
Parent satisfaction						
Self as a parent	−0.761	0.313	−2.428	0.017	−1.383	−0.139
Children symptoms						
Depression (MFQ-P total score)	0.089	0.052	1.716	0.089	−0.014	0.192
AI Outside home (CALIS-P outside home interference subscale)	−0.285	0.131	−2.185	0.031	−0.544	−0.026
AI Inside home (CALIS-P inside home interference subscale)	0.288	0.155	1.856	0.066	−0.020	0.596
AI Parent life (CALIS-P parent life interference subscale)	0.301	0.094	3.196	0.002	0.114	0.488

Note: Sex (1 = man; 2 = woman). DASS-21 = Depression Anxiety Stress—Short Form; MFQ-P = Mood and Feelings Questionnaire—Parent version; CALIS-P = Child Anxiety Life Interference Scale—Parent version. CI = confidence interval; LL = lower limit; UP = upper limit; SE = standard error.

TABLE 4 | Pretest and posttest means, standard deviations, *t* test and Wilcoxon-test results, statistical significance and effect sizes by treatment condition.

	Traditional programme ($n = 53$)				
	Pre M (SD)	**Post M (SD)**	**t^a/z^b**	***p* value**	**Effect size (CI)**
Parent satisfaction					
Children behaviour	4.642 (1.558)	5.358 (1.374)	−3.001[b]	0.002	−0.574 (−0.773 to −0.271)
Self as a parent	4.358 (1.374)	5.000 (1.074)	−3.254[b]	< 0.001	−0.659 (−0.830 to −0.375)
Parent–child relationship	4.925 (1.530)	5.302 (1.310)	−1.934[b]	0.051	−0.426 (−0.710 to −0.023)
Parent symptomatology					
Emotional symptoms (DASS-21 total score)	17.019 (11.786)	10.811 (8.814)	4.506[a]	< 0.001	0.619 (0.322–0.911)
Depression	4.792 (4.307)	2.925 (3.339)	3.222[a]	0.002	0.443 (0.158–0.723)
Anxiety	3.811 (3.898)	1.849 (2.597)	3.475[b]	< 0.001	0.638 (0.376–0.806)
Stress	8.415 (5.017)	6.038 (4.142)	4.729[a]	< 0.001	0.650 (0.350–0.944)
	Computerized programme ($n = 49$)				
	Pre M (SD)	Post M (SD)	t^a/z^b	*p* value	Effect size (CI)
Parent satisfaction					
Children behaviour	4.592 (1.457)	5.592 (0.956)	−3.806[b]	< 0.001	−0.809 (−0.912 to −0.609)
Self as a parent	4.571 (1.258)	5.245 (0.990)	−3.017[b]	0.002	−0.653 (−0.835 to −0.342)
Parent–child relationship	5.224 (1.141)	5.551 (1.022)	−1.934[b]	0.046	−0.426 (−0.710 to −0.023)
Parent symptomatology					
Emotional symptoms (DASS-21 total score)	16.71 (10.51)	6.12 (7.10)	3.778[b]	< 0.001	0.633 (0.395–0.791)
Depression	37.43 (11.52)	24.65 (13.00)	2.734[b]	0.006	0.490 (0.183–0.710)
Anxiety	4.14 (3.80)	1.51 (2.27)	3.300[b]	< 0.001	0.669 (0.389–0.835)
Stress	8.02 (3.03)	5.92 (3.36)	3.944[a]	< 0.001	0.563 (0.259–0.863)

Note: M = mean; SD = standard deviation; t/z = Student's *t* test or Wilcoxon test, as appropriate ([a]Student *t* test; [b]Wilcoxon test); DASS-21 = Depression Anxiety Stress Scale—Short Form; CI = Confidence Interval. For the Student *t* test, effect size is given by Cohen's *d* (95% CI in brackets). For the Wilcoxon test, effect size is given by the matched rank biserial correlation (95% CI in brackets).

structural equation models. This is consistent with findings by Wilkinson et al. (2021), who found that socio-economic status did not moderate the parent–child emotional health relationship. The lack of significance in these studies may be due to limited variability in socio-economic status within the sample, constraining the ability to detect its effects. Conversely, being female remained a significant predictor of parental anxiety, supporting extensive research indicating that mothers are at greater risk for anxiety disorders (McLean et al. 2011).

The pre–post intervention analysis demonstrated that both traditional and computerized SSL led to significant improvements in parental satisfaction and mental health outcomes, with no significant differences between the two formats in GEE analyses, suggesting equivalent effectiveness of both interventions. We interpret these findings in light of the following considerations. First, SSL appears to improve parental emotional symptoms and satisfaction through both direct and indirect mechanisms. Directly, SSL provides written guidelines and therapist support, equipping parents with strategies to help their children, such as regulating emotions, restructuring negative thoughts and applying relaxation techniques. Many parents reported that these resources helped them communicate mental health concepts more effectively to their children. Additionally, therapist guidance may have alleviated parental stress related to managing their child's emotional difficulties, a well-documented contributor to parental mental health struggles (Bailey et al. 2007; Yatchmenoff et al. 1998). Indirectly, by reducing children's emotional symptoms, SSL may have triggered a cascading positive effect on parental well-being, further reinforcing the bidirectional nature of emotional health in families. Informal parent feedback during SSL studies supports this interpretation, with

many parents reporting that their own emotional state improved as their child's symptoms decreased. Second, the equivalent effects of both SSL formats in improving parental satisfaction and mental health outcomes may be attributed to their shared core strategies for supporting parents. Despite differences in delivery modality, both interventions provide structured guidance, practical tools and therapist oversight, ensuring that parents receive consistent support across formats.

4.1 | Implications for Practice

These findings hold important implications for clinical practice. Given that both SSL formats effectively improved parental mental health and satisfaction, mental health professionals can integrate SSL interventions into therapy settings not only to address children's emotional symptoms but also to support parents. The availability of both traditional and computerized versions provides flexibility, allowing interventions to be tailored to family needs and clinical contexts (see Galán-Luque et al. 2024a, for a discussion on selecting intervention formats). Furthermore, the results underscore the importance of assessing parental mental health when children present emotional difficulties, as well as the need to provide support to parents in managing these challenges. Finally, findings highlight the gender-specific patterns in anxiety, emphasizing the need for mental health services to consider the heightened vulnerability of women to anxiety disorders.

4.2 | Limitations

This study has several limitations that should be considered when interpreting the findings. While the sample size was sufficient for the analyses conducted, the specific geographic region and demographic characteristics may limit the generalizability of the results. Additionally, we did not control for whether parents were receiving therapeutic interventions for themselves, as the primary focus of the randomized effectiveness trial was on children's emotional symptoms. This study was prompted by researchers' observations of parent feedback, making it necessary for future research to address this limitation by including larger samples and controlling for parental treatment status.

5 | Conclusion

This study highlights the bidirectional relationship between children's emotional symptoms and parental well-being, emphasizing parental satisfaction, particularly self-satisfaction as a parent, as a key factor in parental emotional health. Although initial correlations suggested socio-economic influences, only gender predicted parental anxiety, aligning with prior research. Both traditional and computerized SSL formats effectively improved parental satisfaction and reduced emotional symptoms, with no significant differences between them. These findings support SSL as a flexible intervention benefiting both children and parents, emphasizing the need to assess parental mental health and provide targeted support, particularly for mothers, in clinical settings.

Ethics Statement

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical approval was obtained from the Ethics Committee for Research with the Department of Health of Alicante—General Hospital (Ref: CEIm: 2022-013) and the Ethics and Research Integrity Committee of the Vice-Rectorate for Research at Miguel Hernández University of Elche (Ref: DPS.MOA.01.22 PROV). Written informed consent was obtained from parents or legal guardians, and assent was provided by all participating children prior to their inclusion in the study.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data supporting the findings of this study are not publicly available due to confidentiality and ethical restrictions but may be provided by the corresponding author upon reasonable request and subject to institutional approval.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.