ARTICLES

Promoting Mental Health at Schools - PROMEHS: impact of curriculum implementation in Portugal*[1,2]

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Abstract

Despite evidence of the positive impact of school-based mental health promotion interventions, there remains a need for robust studies, particularly to evaluate newly developed programs, in order to promote the adoption of best practices and identify

effective intervention strategies. This study aimed to evaluate the impact of implementing the PROMEHS curriculum in Portugal in a school setting, using a sample of children and adolescents (N=1,764). A longitudinal quasi-experimental design was adopted with an experimental group and a waitlist control group, assessed at the pre- and post-test phases of implementation. Data were collected from teachers, parents/guardians, and students using a set of instruments: the Strengths and Difficulties Questionnaire (SDQ), the Social-Emotional Skills (SSIS-SEL Brief Scales), Academic Competence, Resilience (CD-RISC10), and PROMEHS impact. The results indicate a significant impact on students' socioemotional competencies and academic outcomes, as well as a reduction in difficulties, according to teacher assessments. No statistically significant results were found in the assessments of parents/guardians or the students. However, the evaluation of the program impact across all three informant sources was highly positive. Overall, the findings demonstrate the effectiveness of PROMEHS in promoting students' socioemotional development and highlight the importance of this type of program in Portuguese schools.

Keywords

Mental Health – Socioemotional Competencies – Resilience – Behavioral problems – School-based interventions.

Introduction

The World Health Organization defines mental health as an integral part of overall health and well-being, involving the ability to function, cope with stress, and thrive in multiple life contexts (WHO, 2022). Considering the crucial role of mental health in personal and community development, it is essential that interventions address the determinants of mental health, which include a complex and interconnected set of individual attributes, as well as social, cultural, economic, and political factors that, together, can protect or compromise mental health (WHO, 2021).

Current risks to the population's mental health include economic and social inequalities, public health emergencies (notably the impact of Covid-19), and humanitarian crises (such as conflicts and forced displacement). These mental health risks can manifest at any stage of life and are particularly harmful during sensitive periods of development, such as childhood and adolescence (WHO, 2022).

Although most children and adolescents progress through these developmental stages without major difficulties, approximately 20% experience mental health problems (Solmi *et al.*, 2022). The World Health Organization (WHO, 2022) estimates a prevalence of 8% in children (aged 5-9) and 14% in adolescents (aged 10-19), highlighting the increase in mental health problems in recent years. A meta-analysis of 29 studies including 80,879 young people reported a global prevalence of 23.8% for depressive symptoms and 18% for anxiety symptoms during the COVID-19 pandemic, rates significantly higher than pre-pandemic levels (Racine *et al.*, 2021).

This growing trend justifies the adoption of interventions to promote mental health and prevent problems (Corcoran *et al.*, 2018; Unicef, 2021; WHO, 2022), by fostering protective factors and building resilience as children and adolescents face challenges. Recent literature identifies multiple protective factors, both internal and external (Cefai *et al.*, 2021). Internal factors include mental flexibility, self-regulation, problem-solving competencies, self-esteem, and self-efficacy. External factors include positive and supportive relationships and the presence of significant adults in key life contexts. Therefore, interventions should focus on these factors to promote mental health and prevent problems through intersectoral approaches (involving health, education, and other sectors) designed for individuals, specific groups, or populations. In this regard, providing opportunities for youth to develop socioemotional competencies, acquire knowledge about healthy behaviors and lifestyles, and establish positive relationships within the family, with peers, and in the broader community is essential, highlighting the importance of implementing such programs in schools (Corcoran *et al.*, 2018; WHO, 2022).

School as a setting for mental health interventions

Children and adolescents bring with them their life story, resources, but also personal, social, and contextual vulnerabilities when they enter school. Many accumulate adverse experiences throughout their lives, which increase the likelihood of developing mental health problems (Briggs *et al.*, 2021). Failure to identify risk factors may result in negative outcomes, such as academic failure and school dropout, or later difficulties, such as interpersonal conflicts and challenges transitioning into adulthood (Gueldner *et al.*, 2020).

Currently, mental health prevention and promotion initiatives targeting children and adolescents are prioritized in natural settings, with schools standing out as a key ecological context. One of the main advantages of schools is that they provide an effective environment for promoting mental health and preventing related problems. Schools reach nearly all children and adolescents for a considerable part of the day—during a critical developmental stage when their personalities and socioemotional competencies are still forming (Cefai *et al.*, 2021)—and offer a setting where students are well known by teachers and other education professionals (Cefai *et al.*, 2021).

The WHO and UNESCO guidelines recommend developing structures, functions, and agents to promote mental health and well-being through strategies such as assessing students' needs, identifying available resources and systems, establishing teams to implement school-based mental health programs, and building partnerships with public policy and the community (WHO, 2021). This set of actions involves addressing individual needs, fostering socioemotional well-being and mitigating risk factors (Khan, 2016).

Focusing on prevention, socioemotional competencies development, and the promotion of resilience in schools has proven to be an effective approach to supporting mental health (Cefai *et al.*, 2021). Studies indicate that resilience-enhancing factors reduce the risk of mental health problems following adverse childhood experiences (Fritz *et al.*, 2018). A systematic review by Fritz and colleagues (2018), which included 22 studies conducted mostly in the United States but also in Europe, the Middle East, Asia, and

Oceania, highlighted the systemic nature of resilience and emphasized the importance of examining and promoting resilience factors at different levels (individual, e.g., self-esteem and emotional regulation; family, e.g., family cohesion and support; and community, e.g., social support) to prevent the onset of mental health problems after adverse childhood experiences. Data from Portugal suggest that competencies such as problem-solving and self-efficacy are central protective factors for maintaining well-being in contexts of accumulated risk (Simões *et al.*, 2015). There is also evidence of a positive association between the development of socioemotional competencies through school-based intervention programs and higher levels of well-being up to age 18 and into adulthood (Taylor *et al.*, 2017).

It is also worth noting that teachers are fundamental to the success of these programs in schools (Cefai *et al.*, 2021), as they play a central role in implementing mental health interventions and supporting students with needs in this area, while also participating in intersectoral and transdisciplinary teams. Adequate preparation in mental health promotion—both during pre-service education and continuing professional development—is essential, as teachers must be equipped to implement such actions in the classroom and at school and to adopt a relational, collaborative, and student-centered pedagogy.

Evidence-based school programs for promoting children's and adolescents' mental health

The available scientific evidence on mental health prevention and promotion in schools indicates the existence of programs with positive, stable, and lasting effects on the healthy development and well-being of children, adolescents, families, and communities, often delivered at relatively low cost (Weare & Nind, 2011). Several meta-analyses highlight the beneficial outcomes of these interventions, including improvements in socioemotional competencies, prosocial behaviors, positive attitudes, self-image, well-being, and academic performance, as well as reductions in internalizing and externalizing problems (Taylor *et al.*, 2017; Wigelsworth *et al.*, 2022).

Recent studies identify a set of effective, feasible, appropriate, and accessible interventions in the school context (Cefai *et al.*, 2022; Zbukvic *et al.*, 2023), showing that the most successful initiatives for promoting mental health in schools are based on a Whole School Approach, implemented continuously and sequentially across educational levels (Cefai *et al.*, 2021). Research also shows that the socioemotional competencies promoted through Social Emotional Learning (SEL) foster the positive development of students from diverse family backgrounds and geographic contexts (Taylor *et al.*, 2017), although their impact is greater when interventions are adapted to specific contexts or cultures, reinforcing that SEL is not a one-size-fits-all approach (Wigelsworth *et al.*, 2016). A recent review examining studies published between 2000 and 2021 identified 22 strategies for improving fidelity or adoption of universal school-based mental health promotion programs. The strategies with the strongest evidence included monitoring, feedback, principal involvement, teacher and staff commitment, and ongoing supervision during implementation (Baffsky *et al.*, 2023).

Despite the promising results reported in the previous studies, it is essential to conduct rigorous evaluations of new intervention programs to guide future practices, identify effective strategies, and promote the adoption of best practices.

PROMEHS Project

PROMEHS (Promoting Mental Health at Schools) is a universal curriculum designed to promote mental health, socioemotional competencies, and resilience among students and teachers from preschool through high school (ages 3-18). Based on a whole-school approach, it was developed by a consortium of European countries (Croatia, Greece, Italy, Latvia, Malta, Portugal, and Romania) and is the first curriculum created collaboratively by researchers, scientific institutions, and policymakers to foster cooperation among research, practice, and policy (Cavioni *et al.*, 2020; Grazzani *et al.*, 2021; Simões *et al.*, 2020).

PROMEHS was developed according to the following principles: i) promotion and prevention; ii) evidence-based practice; iii) whole-school approach; iv) SAFE approach; v) cross-cutting approach; vi) inclusive approach; vii) quality training and supervision for teachers; viii) active family involvement; and ix) sustainability.

The curriculum was developed according to a theoretical model comprising two promotion domains—Socioemotional Learning and Resilience—and one prevention domain—Behavioral, Social, and Emotional Problems. Each domain consists of several themes, each with two to six objectives. To support implementation, seven manuals/handbooks were created, proposing activities to be applied systematically and over the long-term. Four of these (two teacher manuals, for preschool/elementary and middle/high school, and two student activity handbooks for the same levels) include structured activities that teachers and students can carry out at school as part of the regular curriculum and at home with relevant individuals (family members or others). These materials can be adapted to the needs and characteristics of the school community, as they are culturally sensitive. The remaining three manuals provide guidelines for promoting mental health among teachers, parents, and policymakers (Grazzani *et al.*, 2021; Simões *et al.*, 2020). An impact evaluation study of the program, which included 7,789 students (along with their teachers and parents/guardians) from preschool to high school in six countries, found that participants in the experimental group reported greater improvements in socioemotional competencies and resilience, as well as reductions in internalizing and externalizing symptoms, compared to the control group (Cefai *et al.*, 2022).

A comparative analysis of a Portuguese sample examined different implementation methods (i.e., online, in-person, and e-learning) and found that the program's impact was consistent across delivery modes (Santos *et al.*, 2022). Another study evaluating the program's impact on 687 teachers who completed the training and implemented it with their students found increases in socioemotional competencies, resilience, and self-efficacy (Cavioni *et al.*, 2023). Drawing on international evidence on mental health promotion programs in general, and PROMEHS in particular, this study aimed to evaluate the impact of implementing PROMEHS in Portugal in the school context with a large sample of children and adolescents.

Method

Study design

Two groups were formed to assess the impact of PROMEHS: an experimental group (ExpG) and a waitlist control group (WaitG), assessed at two points in time (pre- and post-test). The curriculum's impact on students was evaluated using three informant sources: teachers, parents/guardians, and the students themselves, who provided self-assessments from age 8 onward.

Fifty-two school clusters (groupings of schools under a single administration) and independent schools were invited to participate, of which 31 were selected. After the teachers had been selected, consent forms were sent to the students' parents/guardians. These forms were collected by the teachers and kept at the schools to protect participants' confidentiality. Each student was assigned an identification code to ensure anonymity, and this code was used by all three informant sources, whether data were collected online or on paper. In the online format, a link was sent to the teachers, who then shared it with the students' parents/guardians and subsequently with the students. In the paper format, students and parents/guardians with limited Internet access or technology difficulties completed the paper assessment, which was collected by the research team, and manually entered into an electronic file. The students' self-assessments were initially planned to be conducted in the classroom; however, due to the COVID-19 lockdown in January 2021, some students completed them at home. The pre-test was conducted between December 2020 and mid-February 2021, and the post-test took place between late May 2021 and mid-July 2021.

A teacher training workshop and curriculum implementation were carried out after the initial assessment in the experimental group. The workshop, accredited by the Scientific-Pedagogical Center for Continuing Education (*Centro Científico-Pedagógico de Formação Contínua*), comprised 50 hours: 25 hours of synchronous training (15 hours of initial training and 10 hours of supervision), and 25 hours of independent work, aimed at preparing teachers to implement PROMEHS. From the activities available in the teacher's workbook, each teacher selected and implemented at least twelve activities from the curriculum, distributed equally across the three topics. For each activity implemented in the classroom, students completed the corresponding content in the student workbook at home. During the curriculum implementation, the research team held three meetings with the parents/guardians of the students in the experimental group. The waitlist control group participated in both assessments, and after the post-test, the teachers received the training workshop and implemented PROMEHS[9]. Due to the COVID-19 lockdown in effect at the time, the training and part of the curriculum implementation were conducted online.

Participants

As part of the pilot study, four age groups were defined for curriculum implementation: preschool (ages 4-5); elementary school (ages 8-9); middle school (ages 11-12); and high school (age 15). Teachers assessed 1,764 students; parents/guardians assessed 1,611; and

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[9]- See Simões *et al.* (2020) for further details on the procedure and its steps.

students completed 1,623 self-assessments. After excluding cases with missing data at one assessment point, teachers assessed 1,463 students ($n_{Experimental}$=933; $n_{Waitlist}$=534), parents/guardians assessed 834 ($n_{Experimental}$=484; $n_{Waitlist}$=350), and students completed 1,089 self-assessments ($n_{Experimental}$=692; $n_{Waitlist}$=396).

Assessment measures

As noted in the section on evidence-based programs promoting mental health in children and adolescents in schools, the implementation of these programs leads to significant gains in socioemotional competencies, prosocial behaviors, resilience, and academic performance, as well as reductions in internalizing and externalizing problems. Therefore, the evaluation of the curriculum implementation focused on these dimensions, using several assessment measures: the SDQ (to assess internalizing and externalizing problems and prosocial behavior), the SSIS-SEL (to assess socioemotional competencies), the CD-RISC10 (to assess resilience), and an academic competence assessment scale. All instruments were administered before and after curriculum implementation (pre- and post-test) in both groups, consistent with the study design (experimental and waitlist control groups).

An internal consistency analysis, estimated using Cronbach's alpha, was performed for each scale. Very low alpha values ($\alpha \leq .50$) are common in scales with a small number of items (<10) (Pallant, 2011). According to Pallant, in such cases it is more appropriate to present the mean inter-item correlation (MIIC). Thus, for scales with a small number of items (SDQ – five items; SSIS-SEL – four items), the MIIC was calculated—expected to range between .20 and .40 (Pallant, 2011)—whenever the Cronbach's alpha indicated weak or very weak reliability ($\alpha \leq .69$). The scales used are presented in detail below.

Strengths and Difficulties Questionnaire - SDQ (Goodman, 2001)

The SDQ assesses the behavioral and emotional difficulties of children and adolescents. It consists of 25 items organized into five scales (each with five items). Four scales address difficulties (emotional symptoms, behavioral problems, hyperactivity, and peer relationship problems) and one addresses strengths (prosocial behavior). Responses are given on a three-point Likert scale, from 0 (not true) to 2 (very true). Higher scores indicate a greater incidence of problems in the case of the difficulties scale and greater prosocial behavior for the strengths scale. The present study also applied a three-scale model (Goodman *et al.*, 2010): internalizing problems (emotional symptoms and peer relationship problems); externalizing problems (hyperactivity and behavioral problems); and prosocial behavior. This instrument was completed by teachers, parents/guardians, and students aged 11 and older. Internal consistency in the teacher assessments was good for hyperactivity, prosocial behavior, internalizing, externalizing problems, and total difficulties ($.80 < \alpha < .87$), acceptable for the emotional symptoms scale ($\alpha \geq .77$), and weak for the behavioral problems and peer relationship problems scales ($.61 < \alpha < .68$). For the scales with weak internal consistency, the MIIC values were within the expected range ($.24 < MIIC < .32$).

In the parent/guardian assessments, the hyperactivity, internalizing and externalizing problems, and total difficulties scales showed acceptable consistency ($.70 < \alpha < .77$). The emotional symptoms and prosocial behavior scales showed weak reliability ($.64 < \alpha < .68$), while the peer relationship problems and behavior problems scales showed very weak reliability ($\alpha < .60$). For the scales with weak internal consistency, the mean inter-item correlation (MIC) values were within the expected range ($.26 < MIC < .39$), but for the scales with very weak internal consistency, these values were slightly below the expected range ($.18 < MIC < .19$).

In the student assessments, the total difficulties scale showed good internal consistency at both assessment times ($\alpha \geq .80$). The internalizing and externalizing problems scales showed acceptable consistency ($.70 < \alpha < .74$), while the emotional symptoms, hyperactivity, and prosocial behavior scales showed weak consistency ($.66 < \alpha < .69$). However, the MIIC values for these scales were within the expected range ($.27 < MIIC < .33$). The peer relationship problems and behavior problems scales showed very weak consistency ($\alpha < .60$). For most of these scales, the MIIC values were below the expected range ($.14 < MIIC < .19$), except for the behavioral problems scale at the final assessment time ($MIIC = .20$).

Socioemotional competencies [Social Skills Improvement System – Social Emotional Learning Edition, Brief Scales (SSIS-SEL Brief Scales; Anthony et al., 2022a, 2022b; Elliot et al., 2020)]

The SSIS-SEL Brief Scales assess children's and adolescents' socioemotional competencies, specifically self-awareness, self-regulation, social awareness, interpersonal relationships, and responsible decision-making. The instrument consists of 20 items organized into five scales (four items each), each corresponding to a socioemotional competencies domain. Responses are rated on a four-point Likert scale from 1 (never) to 4 (almost always), with higher scores indicating higher skill levels. The instrument was completed by teachers, parents/guardians, and students aged 8 and older at both assessment times. Internal consistency in the teacher assessments was good for all scales ($\alpha \geq .80$), except for the interpersonal relationships scale, which showed acceptable consistency ($\alpha \geq .77$). In the parent/guardian assessments, the social awareness and responsible decision-making scales showed acceptable consistency ($.72 < \alpha < .78$), while the remaining scales showed weak consistency ($.62 < \alpha < .69$). The MIIC values for these scales were within the expected range ($.27 < MIIC < .36$).

In the student assessments, the social awareness scale presented an acceptable consistency ($\alpha \geq .71$). The responsible decision-making and self-regulation scales showed weak consistency ($.61 < \alpha < .68$), while the self-awareness and interpersonal relationships scales showed very weak consistency ($\alpha < .60$). The MIIC values for these scales were within the expected range ($.22 < MIIC < .34$).

Academic Competence

This scale consists of three items assessing academic motivation, engagement in the learning process, and academic achievement, rated on a five-point Likert scale from 0 (very poor) to 4 (excellent). Higher scores indicate more positive academic outcomes across the three items. This instrument was completed exclusively by teachers.

Resilience [Connor-Davidson Resilience Scale – CD-RISC10 (Connor; Davidson, 2003)]

This 10-item scale assesses the ability to cope with adversity. Items are rated on a five-point Likert scale from 0 (not true) to 4 (almost always true). Higher scores indicate greater resilience. Students aged 11 and older completed this instrument, and the scale showed good internal consistency ($\alpha \geq .82$).

The questionnaire assessing the impact of PROMEHS was completed only by the experimental group after curriculum implementation. It measured participants' perceptions of improvement, the usefulness of the manuals and meetings held during implementation, and overall satisfaction with the curriculum. These components are described in more detail below.

PROMEHS' impact

The questionnaire was developed to assess perceived improvement in the various domains addressed by the PROMEHS curriculum. Teachers and parents/guardians were asked about their perceptions of students' improvement in each of the PROMEHS subdomains: self-awareness, self-regulation, social awareness, interpersonal relationships, responsible decision-making, coping with psychosocial challenges, coping with traumatic experiences, managing internalizing problems, managing externalizing problems, and avoiding risk behaviors). The ten-item scale was rated on a five-point Likert scale from 0 (I do not know) to 4 (very much).

Usefulness (of the PROMEHS manuals and meetings with parents/guardians)

The usefulness of the parent manual and the student activity handbook was evaluated by both parents/guardians and students, with the latter evaluating only the student activity handbook. Items were scored on a six-point Likert scale from 0 (I do not know/I did not use) to 5 (extremely useful).

Satisfaction with PROMEHS

Students in the experimental group rated their satisfaction with PROMEHS on a single item ("I liked PROMEHS"), using a five-point scale from 0 (completely disagree) to 4 (completely agree).

Data analysis

Data were analyzed using IBM SPSS (Version 29.0). Cases with missing assessments at one time point were removed using listwise deletion, as missing data accounted for less than 2% across all sources and time points. According to Hair and colleagues (2014), missing data below 5% are not considered significantly problematic.

To compare the two groups across the study variables at both time points, repeated-measures ANOVAs were conducted with multiple assessment sources [General Linear Model: Group (experimental, waitlist) x Time Point (baseline, final assessment)]. The significance level was set at .05 (two-tailed). Because the groups assessed by teachers and students differed in size, with the ratio between the experimental and waitlist groups exceeding 1.5, a more restrictive significance level of .01 was applied (Blanca *et al.*, 2018). Pillai's Trace is reported, as it is robust to violations of homogeneity in the variance-covariance matrix (Mertler *et al.*, 2021). Where an interaction effect was found, the main effects were not interpreted.

Data analysis included all scales except the peer relationship problems and behavioral problems scales, as evaluated by parents/guardians and students, because their reliability values were below the acceptable threshold ($\alpha \leq .70$) and their MIIC values fell outside the recommended range (.20<MIIC<.40).

Prior to conducting repeated-measures ANOVAs for the study variables across the different assessment sources, independent-samples t tests were performed to verify the equivalence between the experimental and waitlist groups at baseline. For variables in which statistically significant baseline differences were found, analyses of covariance (ANCOVAs) were conducted to compare the final values of the dependent variable between groups, adjusting for initial group differences, as an alternative to repeated-measures ANOVAs.

Results

Comparison between groups at baseline

The independent-samples t tests revealed statistically significant differences between the groups at baseline (see Table 1), particularly in the teacher assessments.

In the teacher assessments of socioemotional competencies, differences were found between the experimental and waitlist groups in self-awareness [$t(1675)=-2.55$, $p=.011$], self-regulation [$t(1391.23)=-3.46$, $p<.001$], interpersonal relationships [$t(1354.56)=-2.39$, $p=.017$] and responsible decision-making [$t(1353.10)=-2.33$, $p=.020$], with the waitlist group presenting slightly higher values (see means and standard deviations in Table 1). In the domain of strengths and difficulties, differences were found in hyperactivity [$t(1333.22)=3.38$, $p<.001$] and externalizing problems [$t(1354.16)=2.97$, $p=.003$], with the experimental group showing higher levels of both. In the academic competence, no differences were observed between the groups at baseline.

No statistically significant differences were found between the experimental and waitlist groups in parent/guardian assessments across the study variables in the assessed domains. In the student assessments, statistically significant differences were observed only in the strengths and difficulties domain, specifically in prosocial behavior [$t(848)=2.84$, $p=.005$], with the experimental group presenting higher values than the waitlist group.

Table 1 – Means and standard deviations of study variables at baseline by group and source, with independent-samples t tests

Dependent variable	Teachers					Parents/Guardians					Students				
	ExpG baseline		WaitG baseline			ExpG baseline		WaitG baseline			ExpG baseline		WaitG baseline		
	M	SD	M	SD	t test	M	SD	M	SD	t test	M	SD	M	SD	t test
Self-awareness	11.84	2.47	12.16	2.32	$t(1675)=-2.553, p=.011$	12.54	1.92	12.59	1.86	$t(1333)=0.170, p=.865$	12.61	2.00	12.70	2.09	$t(1003.754)=-0.866, p=.386$
Self-regulation	11.91	2.75	12.40	2.33	$t(1391.229)=-3.464, p<.001$	11.64	2.16	11.63	2.10	$t(1330)=-0.816, p=.415$	11.70	2.30	11.55	2.23	$t(1072.292)=0.990, p=.322$
Social awareness	12.80	2.49	12.84	2.13	$t(1379.071)=0.061, p=.951$	13.42	1.93	13.69	1.97	$t(1333)=-1.749, p=.081$	13.47	2.14	13.39	2.18	$t(1027.827)=0.967, p=.334$
Interpersonal relationships	12.92	2.27	13.30	1.96	$t(1354.563)=-2.387, p=.017$	13.07	1.87	13.23	1.89	$t(1331)=-0.631, p=.528$	13.78	1.67	13.79	1.77	$t(987.486)=-0.374, p=.708$
Responsible decision-making	13.04	2.55	13.42	2.20	$t(1353.098)=-2.333, p=.020$	13.30	1.96	13.37	2.01	$t(1331)=-0.281, p=.778$	13.26	2.09	13.23	2.05	$t(1054.323)=0.225, p=.822$
Emotional symptoms	2.29	2.23	2.43	2.24	$t(1683)=-1.882, p=.060$	2.68	1.96	2.83	2.13	$t(1337)=-0.525, p=.600$	4.19	2.23	4.15	2.26	$t(847)=0.116, p=.907$
Behavioral problems	1.43	1.77	1.28	1.54	$t(1372.975)=1.570, p=.117$										
Hyperactivity	3.64	2.95	3.13	2.68	$t(1333.220)=3.382, p<.001$	4.23	2.47	4.35	2.54	$t(1340)=0.572, p=.567$	4.25	2.28	4.48	2.41	$t(847)=-0.992, p=.322$
Peer relationship problems	1.67	1.74	1.49	1.76	$t(1683)=1.626, p=.104$										
Prosocial behavior	7.69	2.40	7.57	2.23	$t(1683)=1.463, p=.144$	8.51	1.58	8.53	1.65	$t(1339)=0.090, p=.928$	8.40	1.63	7.97	1.80	$t(848)=2.843, p=.005$
Internalizing problems	3.97	3.43	3.91	3.37	$t(1682)=-0.381, p=.703$	4.41	3.09	4.45	3.18	$t(1335)=-0.384, p=.701$	6.31	3.12	6.18	3.32	$t(847)=-0.200, p=.841$
Externalizing problems	5.08	4.33	4.40	3.83	$t(1354.155)=2.970, p=.003$	6.22	3.48	6.30	3.52	$t(1337)=1.001, p=.317$	6.29	3.48	6.45	3.45	$t(844)=0.467, p=.641$
Total difficulties	9.03	6.15	8.32	5.69	$t(1682)=1.776, p=.078$	10.66	5.42	10.77	5.48	$t(1333)=0.432, p=.666$	12.61	5.47	12.65	5.62	$t(843)=0.120, p=.905$
Resilience											34.90	6.98	35.56	6.95	$t(844)=-1.1475, p=.141$
Academic motivation	3.74	.99	3.79	.97	$t(1681)=-1.041, p=.298$										
Engagement in the learning process	3.71	.99	3.75	.95	$t(1681)=-0.959, p=.338$										
Academic achievement	3.62	.94	3.63	.94	$t(1681)=-0.396, p=.692$										

Source: Authors' data.

Group differences between assessment points

Strengths and difficulties

The results of the ANOVA based on the teacher assessments showed a significant interaction effect (Group x Time) for all scales of the Strengths and Difficulties Questionnaire, except for the Emotional Symptoms Scale (see Table 2). In the experimental group, significant mean differences (M_{dif}, $p<.01$) between the initial and final assessments indicated decreases in difficulties−behavioral problems ($M_{dif}=-.12$), peer relationship problems ($M_{dif}=-.41$), internalizing problems ($M_{dif}=-.75$) and total difficulties ($M_{dif}=-1.16$)− as well as an increase in strengths, specifically prosocial behavior ($M_{dif}=.27$). In contrast, in the waitlist group, difficulties increased in peer relationship problems ($M_{dif}=.22$, $p<.001$) or were maintained ($p>.01$) in behavioral problems ($M_{dif}=.10$), internalizing problems ($M_{dif}=.18$), and total difficulties ($M_{dif}=.14$). Additionally, prosocial behavior decreased in this group ($M_{dif}=-.21$, $p<.01$).

In addition to these interactions, some main effects were also found. For the Emotional Symptoms scale, a significant time effect was identified ($M_{baseline}=2.36$, $M_{Final}=2.09$), indicating higher levels of emotional symptoms at baseline compared to the final assessment. For all significant interactions and main effects in the teacher assessments, effect sizes were small ($.00<\eta_p^2<.04$).

No significant interactions were found in the parent/guardian assessments for any of the Strengths and Difficulties Questionnaire scales. However, some main effects of time were observed, specifically for hyperactivity, internalizing problems, externalizing problems, and total difficulties. In all cases, baseline means were higher than those at the final assessment (see Tables 2 and 3). The effect sizes across these analyses were small ($.00<\eta_p^2<.02$).

Table 2 – Results of the repeated-measures ANOVA by source and variable

Dependent variable	Teachers	Parents/Guardians	Students
Self-awareness		Group: $F(1, 812)=.15$, $p=.699$, $\eta_p^2=.00$ Time: $F(1, 812)=9.52$, $p=.002$, $\eta_p^2=.01$ Group x Time: $F(1, 812)=.01$, $p=.928$, $\eta_p^2=.00$	Group: $F(1, 1069)=.22$, $p=.640$, $\eta_p^2=.00$ Time: $F(1, 1069)=.88$, $p=.349$, $\eta_p^2=.00$ Group x Time: $F(1, 1069)=4.62$, $p=.032$, $\eta_p^2=.00$
Self-regulation		Group: $F(1, 814)=.05$, $p=.822$, $\eta_p^2=.00$ Time: $F(1, 814)=20.59$, $p<.001$, $\eta_p^2=.03$ Group x Time: $F(1, 814)=.08$, $p=.785$, $\eta_p^2=.00$	Group: $F(1, 1069)=1.24$, $p=.266$, $\eta_p^2=.00$ Time: $F(1, 1069)=7.56$, $p=.006$, $\eta_p^2=.01$ Group x Time: $F(1, 1069)=0.35$, $p=.852$, $\eta_p^2=.00$
Social awareness	Group: $F(1, 1436)=1.75$, $p=.186$, $\eta_p^2=.00$ Time: $F(1, 1436)=21.14$, $p<.001$, $\eta_p^2=.02$ Group x Time: $F(1, 1436)=12.94$, $p<.001$, $\eta_p^2=.01$	Group: $F(1, 815)=2.55$, $p=.111$, $\eta_p^2=.00$ Time: $F(1, 815)=.12$, $p=.730$, $\eta_p^2=.00$ Group x Time: $F(1, 815)=1.21$, $p=.272$, $\eta_p^2=.00$	Group: $F(1, 1063)=1.28$, $p=.259$, $\eta_p^2=.00$ Time: $F(1, 1063)=.00$, $p=.980$, $\eta_p^2=.00$ Group x Time: $F(1, 1063)=.48$, $p=.490$, $\eta_p^2=.00$
Interpersonal relationships		Group: $F(1, 814)=.41$, $p=.524$, $\eta_p^2=.00$ Time: $F(1, 814)=.00$, $p=.964$, $\eta_p^2=.00$ Group x Time: $F(1, 814)=1.83$, $p=.176$, $\eta_p^2=.00$	Group: $F(1, 1058)=.63$, $p=.428$, $\eta_p^2=.00$ Time: $F(1, 1058)=5.42$, $p=.020$, $\eta_p^2=.01$ Group x Time: $F(1, 1058)=2.23$, $p=.136$, $\eta_p^2=.00$
Responsible decision-making		Group: $F(1, 814)=.36$, $p=.551$, $\eta_p^2=.00$ Time: $F(1, 814)=3.73$, $p=.054$, $\eta_p^2=.01$ Group x Time: $F(1, 814)=.00$, $p=.956$, $\eta_p^2=.00$	Group: $F(1, 1067)=.31$, $p=.578$, $\eta_p^2=.00$ Time: $F(1, 1067)=.68$, $p=.411$, $\eta_p^2=.01$ Group x Time: $F(1, 1067)=.34$, $p=.560$, $\eta_p^2=.00$
Emotional symptoms	Group: $F(1, 1459)=3.96$, $p=.047$, $\eta_p^2=.00$ Time: $F(1, 1459)=24.18$, $p<.001$, $\eta_p^2=.02$ Group x Time: $F(1, 1459)=1.78$, $p=.182$, $\eta_p^2=.00$	Group: $F(1, 815)=1.18$, $p=.278$, $\eta_p^2=.00$ Time: $F(1, 815)=5.89$, $p=.015$, $\eta_p^2=.01$ Group x Time: $F(1, 815)=.05$, $p=.833$, $\eta_p^2=.00$	Group: $F(1, 555)=.16$, $p=.686$, $\eta_p^2=.00$ Time: $F(1, 555)=2.81$, $p=.094$, $\eta_p^2=.01$ Group x Time: $F(1, 555)=.09$, $p=.770$, $\eta_p^2=.00$
Behavioral problems	Group: $F(1, 1444)=.27$, $p=.602$, $\eta_p^2=.00$ Time: $F(1, 1444)=.08$, $p=.782$, $\eta_p^2=.00$ Group x Time: $F(1, 1444)=9.09$, $p=.003$, $\eta_p^2=.01$		
Hyperactivity		Group: $F(1, 819)=.10$, $p=.748$, $\eta_p^2=.00$ Time: $F(1, 819)=20.45$, $p<.001$, $\eta_p^2=.02$ Group x Time: $F(1, 819)=1.19$, $p=.275$, $\eta_p^2=.00$	Group: $F(1, 558)=.12$, $p=.727$, $\eta_p^2=.00$ Time: $F(1, 558)=3.26$, $p=.072$, $\eta_p^2=.01$ Group x Time: $F(1, 558)=2.29$, $p=.039$, $\eta_p^2=.01$
Peer relationship problems	Group: $F(1, 1445)=2.33$, $p=.127$, $\eta_p^2=.00$ Time: $F(1, 1445)=4.92$, $p=.027$, $\eta_p^2=.00$ Group x Time: $F(1, 1445)=55.66$, $p<.001$, $\eta_p^2=.04$		
Prosocial behavior	Group: $F(1, 1450)=9.40$, $p=.002$, $\eta_p^2=.01$ Time: $F(1, 1450)=.31$, $p=.576$, $\eta_p^2=.00$ Group x Time: $F(1, 1450)=20.03$, $p<.001$, $\eta_p^2=.01$	Group: $F(1, 818)=.06$, $p=.807$, $\eta_p^2=.00$ Time: $F(1, 818)=1.19$, $p=.276$, $\eta_p^2=.00$ Group x Time: $F(1, 818)=.04$, $p=.843$, $\eta_p^2=.00$	
Internalizing problems	Group: $F(1, 1438)=3.77$, $p=.052$, $\eta_p^2=.00$ Time: $F(1, 1438)=21.14$, $p<.001$, $\eta_p^2=.02$ Group x Time: $F(1, 1438)=12.94$, $p<.001$, $\eta_p^2=.01$	Group: $F(1, 807)=.01$, $p=.920$, $\eta_p^2=.00$ Time: $F(1, 807)=7.22$, $p=.007$, $\eta_p^2=.01$ Group x Time: $F(1, 807)=.07$, $p=.795$, $\eta_p^2=.00$	Group: $F(1, 548)=.93$, $p=.335$, $\eta_p^2=.00$ Time: $F(1, 548)=8.54$, $p=.004$, $\eta_p^2=.02$ Group x Time: $F(1, 548)=.71$, $p=.400$, $\eta_p^2=.00$
Externalizing problems		Group: $F(1, 814)=.05$, $p=.822$, $\eta_p^2=.00$ Time: $F(1, 814)=20.59$, $p<.001$, $\eta_p^2=.03$ Group x Time: $F(1, 814)=.08$, $p=.785$, $\eta_p^2=.00$	Group: $F(1, 554)=.06$, $p=.804$, $\eta_p^2=.00$ Time: $F(1, 554)=1.28$, $p=.272$, $\eta_p^2=.00$ Group x Time: $F(1, 554)=3.26$, $p=.072$, $\eta_p^2=.01$
Total difficulties	Group: $F(1, 1431)=3.30$, $p=.069$, $\eta_p^2=.00$ Time: $F(1, 1431)=22.00$, $p<.001$, $\eta_p^2=.02$ Group x Time: $F(1, 1431)=22.23$, $p<.001$, $\eta_p^2=.02$	Group: $F(1, 813)=.00$, $p=.999$, $\eta_p^2=.00$ Time: $F(1, 813)=19.04$, $p<.001$, $\eta_p^2=.02$ Group x Time: $F(1, 813)=.66$, $p=.416$, $\eta_p^2=.00$	Group: $F(1, 542)=.40$, $p=.529$, $\eta_p^2=.00$ Time: $F(1, 542)=6.05$, $p=.014$, $\eta_p^2=.01$ Group x Time: $F(1, 542)=2.18$, $p=.140$, $\eta_p^2=.00$
Resilience			Group: $F(1, 551)=.44$, $p=.508$, $\eta_p^2=.00$ Time: $F(1, 551)=3.34$, $p=.068$, $\eta_p^2=.01$ Group x Time: $F(1, 551)=1.01$, $p=.314$, $\eta_p^2=.00$
Academic motivation	Group: $F(1, 1461)=.02$, $p=.892$, $\eta_p^2=.00$ Time: $F(1, 1461)=3.26$, $p=.071$, $\eta_p^2=.00$ Group x Time: $F(1, 1461)=4.84$, $p=.028$, $\eta_p^2=.00$		
Engagement in the learning process	Group: $F(1, 1462)=.00$, $p=.985$, $\eta_p^2=.00$ Time: $F(1, 1462)=4.67$, $p=.031$, $\eta_p^2=.00$ Group x Time: $F(1, 1462)=6.07$, $p=.014$, $\eta_p^2=.00$		
Academic achievement	Group: $F(1, 1461)=1.36$, $p=.244$, $\eta_p^2=.00$ Time: $F(1, 1461)=24.33$, $p<.001$, $\eta_p^2=.02$ Group x Time: $F(1, 1461)=13.27$, $p<.001$, $\eta_p^2=.01$		

Source: Authors' data

Table 3 – Means and standard deviations of study variables, by group and source

Dependent variable	Teachers								Parents/Guardians								Students							
	ExpG Baseline		ExpG Final		WaitG Baseline		WaitG Final		ExpG Baseline		ExpG Final		WaitG Baseline		WaitG Final		ExpG Baseline		ExpG Final		WaitG Baseline		WaitG Final	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Self-awareness	11.84	2.47	12.53	2.32	12.16	2.32	12.09	2.30	12.54	1.92	12.76	1.84	12.59	1.86	12.80	1.89	12.61	2.00	12.69	2.03	12.70	2.09	12.50	2.04
Self-regulation	11.91	2.75	12.23	2.74	12.40	2.33	12.18	2.42	11.64	2.16	11.97	2.10	11.63	2.10	11.92	2.06	11.70	2.30	11.89	2.23	11.55	2.23	11.76	2.20
Social awareness	12.80	2.49	13.24	2.32	12.84	2.13	12.89	2.31	13.42	1.93	13.52	1.94	13.69	1.97	13.64	1.79	13.47	2.14	13.52	2.18	13.39	2.18	13.34	2.11
Interpersonal relationships	12.92	2.27	13.43	2.23	13.30	1.96	13.23	2.02	13.07	1.87	13.16	1.77	13.23	1.89	13.14	1.82	13.78	1.67	13.73	1.80	13.79	1.77	13.57	1.79
Responsible decision-making	13.04	2.55	13.48	2.46	13.42	2.20	13.38	2.30	13.30	1.96	13.43	1.87	13.37	2.01	13.49	1.90	13.26	2.09	13.35	2.09	13.23	2.05	13.24	1.96
Emotional symptoms	2.29	2.23	1.94	2.17	2.43	2.24	2.23	2.16	2.68	1.96	2.53	1.99	2.83	2.13	2.66	2.07	4.19	2.23	4.38	2.38	4.15	2.26	4.28	2.36
Behavioral problems	1.43	1.77	1.31	1.74	1.28	1.54	1.38	1.62	2.01	1.46	1.92	1.43	1.95	1.45	1.86	1.46	2.06	1.66	2.11	1.74	1.97	1.58	1.89	1.72
Hyperactivity	3.64	2.95	3.36	2.90	3.13	2.68	3.22	2.69	4.23	2.47	3.99	2.33	4.35	2.54	3.97	2.50	4.25	2.28	4.57	2.28	4.48	2.41	4.46	2.44
Peer relationship problems	1.67	1.74	1.27	1.66	1.49	1.76	1.71	1.73	1.72	1.63	1.64	1.68	1.63	1.65	1.52	1.54	2.10	1.64	2.45	1.92	2.02	1.59	2.19	1.79
Prosocial behavior	7.69	2.40	7.95	2.29	7.57	2.23	7.36	2.39	8.51	1.58	8.56	1.60	8.53	1.65	8.60	1.57	8.40	1.63	8.12	1.86	7.97	1.80	7.93	1.80
Internalizing problems	3.97	3.43	3.22	3.29	3.91	3.37	3.92	3.38	4.41	3.09	4.17	3.13	4.45	3.18	4.16	3.04	6.31	3.12	6.84	3.48	6.18	3.32	6.47	3.62
Externalizing problems	5.08	4.33	4.68	4.26	4.40	3.83	4.58	3.87	6.22	3.48	5.89	3.27	6.30	3.52	5.81	3.53	6.29	3.48	6.66	3.46	6.45	3.45	6.36	3.65
Total difficulties	9.03	6.15	7.88	6.05	8.32	5.69	8.46	5.92	10.66	5.42	10.05	5.14	10.77	5.48	9.96	5.51	12.61	5.47	13.48	5.99	12.65	5.62	12.86	6.27
Resilience																	34.90	6.98	34.66	7.38	35.56	6.95	34.74	7.66
Academic motivation	3.74	.99	3.82	1.01	3.79	.97	3.78	1.01																
Engagement in the learning process	3.71	.99	3.79	1.02	3.75	.95	3.75	.99																
Academic achievement	3.62	.94	3.77	.98	3.63	.94	3.65	.97																

Source: Authors' data.

The students' self-assessments revealed no significant interactions (p>.01; see Table 2). However, a main effect of time was observed for the internalizing problems scale, indicating an increase in difficulties. The effect size for time was small ($\eta_p^{2=.02}$).

In the scales that showed significant baseline differences, the ANCOVA results revealed a significant group effect for hyperactivity and externalizing problems assessed by teachers, after controlling for baseline values [hyperactivity: $F(1, 1454)=6.65$, $p=.010$, $\eta_p^2=.005$; externalizing problems: $F(1, 1432)=9.63$, $p=.002$, $\eta_p^2= .007$]. The experimental group presented lower adjusted means at the final assessment for both hyperactivity (M=3.12, SE=0.06) and externalizing problems (M=4.49, SE=0.08) compared to the waitlist group (hyperactivity: M=3.47, SE=0.08; externalizing problems M=4.92, SE=0.11). For prosocial behavior assessed by students, the ANCOVA results did not reveal significant differences [$F(1, 560)=0.06$, $p=.815$, $\eta_p^2=.000$; experimental group: M=8.03, SE=0.09; waitlist group: M=8.06, SE=0.11)].

Socioemotional competencies

The ANOVA results based on the teacher assessments showed a significant interaction effect (Group x Time) for the social awareness scale (Table 2). In the experimental group, a significant mean difference (M_{dif}) was found between baseline and final assessments (p<.001), indicating an increase in social awareness ($M_{dif}=.44$). In contrast, no significant changes were found in the waitlist group across the two assessment points. The effect size for time was small ($\eta_p^2=.02$).

For the remaining socioemotional competencies, the ANCOVA results revealed a significant group effect after controlling for baseline values [self-awareness: $F(1, 1449)=44.34$, p<.001, $\eta_p^2=.030$; self-regulation: $F(1, 1442)=20.54$, $p<.001$, $\eta_p^2=.014$; interpersonal relationships: $F(1, 1449)=24.15$, $p<.001$, $\eta_p^2=.016$; responsible decision-making: $F(1, 1450)=13.35$, $p<.001$, $\eta_p^2=.009$]. The experimental group showed higher adjusted means at the final assessment for all competencies (self-awareness: M=12.61, SE=0.06; self-regulation: M=12.37, SE=0.06; interpersonal relationships: M=13.52, SE=0.05; responsible decision-making: M=13.57, SE=0.06) compared to the waitlist group (self-awareness: M=11.96, SE=0.08; self-regulation: M=11.94, SE=0.08; interpersonal relationships: M=13.08, SE=0.07; responsible decision-making: M=13.22, SE=0.08).

No significant interactions were found for any of the socioemotional competencies questionnaire scales in the parent/guardian assessments. However, two main effects of time (self-awareness and self-regulation) were observed (see Table 2), with baseline means lower than those at the final assessment (see Table 3). Across these analyses, the effect size for time was small (.01<η_p^2<.03).

A main effect of time was found for self-regulation in the students' self-assessments, indicating an increase in self-regulation from baseline to the final assessment ($\eta_p^2=.01$) (see Table 2 and 3).

Academic competence

The analysis of academic competence variables (assessed only by teachers) revealed a single significant interaction (Group x Time) for academic performance (see Table 2). In the experimental group, a significant mean difference (M_{dif}=.15 $p<.001$) was found between the baseline and final assessment, indicating an improvement in academic performance, whereas no significant changes were observed in the waitlist group (M_{dif} =-.02, p=.35). The effect size for time was small (η_p^2=.01).

Resilience

The analysis of resilience (assessed by students) revealed no significant interactions or main effects (see Table 2).

Perceptions of the impact of PROMEHS

The results regarding the curriculum's impact are presented in Table 4. The domain showing the greatest improvements was socioemotional competencies. Across all sources and domains (except for self-regulation in the student assessments), over 90% reported at least slight gains. In resilience and in competencies such as recognizing and managing emotional, behavioral, and social problems, improvements were also substantial, with 68% to 84% reporting gains across all three sources.

Regarding the usefulness of the PROMEHS curriculum materials, 78.5% of students and 81.1% of parents/guardians considered the activity handbooks useful, while 76.2% of parents/guardians also rated the parent manual as useful.

Regarding satisfaction with PROMEHS, 91.5% of students agreed with the statement "I liked PROMEHS," while 44.1% of parents/guardians considered the meetings useful.

Table 4 – Perceptions of the impact of PROMEHS by source

	Teachers						Parents/Guardians						Students					
	Do not know	Not at all	A little	Quite a lot	Very much	TOTAL*	Do not know	Not at all	A little	Quite a lot	Very much	TOTAL*	Do not know	Not at all	A little	Quite a lot	Very much	TOTAL*
Socioemotional Competencies																		
Self-awareness	4.4%	1.8%	31.4%	44.41%	18.0%	**93.8%**	5.8%	2.5%	36.7%	42.6%	12.5%	**91.7%**	5.9%	2.7%	25.8%	37.5%	28.1%	**91.4%**
Self-regulation	2.8%	3.2%	36.6%	41.1%	16.2%	**94.0%**	4.7%	3.3%	43.0%	36.3%	12.7%	**92.0%**	6.8%	3.9%	26.0%	37.5%	25.8%	**89.3%**
Social awareness	4.6%	2.6%	34.7%	38.2%	19.8%	**92.8%**	5.0%	2.8%	30.3%	45.9%	15.9%	**92.2%**	5.5%	3.1%	22.1%	37.0%	32.3%	**91.4%**
Interpersonal relationships	3.0%	3.0%	35.0%	39.8%	19.1%	**94.0%**	4.2%	3.3%	31.8%	44.2%	16.5%	**92.5%**	5.0%	3.0%	17.9%	37.0%	37.1%	**92.0%**
Responsible decision-making	4.2%	3.8%	34.0%	38.0%	20.0%	**92.0%**	4.1%	3.4%	30.9%	42.0%	19.5%	**93.8%**	4.7%	4.1%	19.0%	34.4%	37.9%	**91.2%**
Resilience																		
Coping with psychosocial difficulties	15.0%	5.5%	33.7%	31.7%	14.1%	**79.5%**	12.4%	5.0%	38.0%	34.0%	10.6%	**82.6%**	7.4%	8.2%	24.8%	28.1%	31.5%	**84.4%**
Dealing with traumatic events	24.7%	5.9%	31.4%	25.0%	12.9%	**69.4%**	21.4%	8.4%	34.7%	24.7%	10.8%	**70.2%**	15.1%	11.4%	26.9%	25.5%	21.1%	**73.5%**
Emotional, social, and behavioral problems																		
Dealing with internalizing problems	16.5%	4.2%	37.0%	28.6%	14.1%	**79.3%**	24.0%	8.2%	36.4%	22.6%	8.9%	**67.8%**	11.1%	8.8%	25.5%	29.1%	25.6%	**80.1%**
Dealing with externalizing problems	16.1%	4.2%	37.0%	28.6%	14.1%	**79.7%**	19.2%	8.2%	39.6%	24.3%	8.8%	**72.6%**	11.4%	9.0%	24.2%	27.4%	28.0%	**79.6%**
Dealing with risk behaviors	23.5%	5.0%	29.8%	28.7%	13.0%	**71.5%**	18.8%	9.2%	35.8%	26.1%	10.0%	**72.0%**	13.7%	8.4%	18.5%	27.6%	31.9%	**77.9%**

Source: Authors' data.
* Values represent the sum of the response options "A little", "Quite a lot" and "Very much".

Discussion

This study aimed to evaluate the impact of the PROMEHS curriculum based on various sources. Results from teacher assessments revealed significant changes in the experimental group for most variables analyzed: a significant decrease in difficulties (except for emotional symptoms) and an increase in competencies, particularly socioemotional competencies. In contrast, in the waitlist control group, significant increases or maintenance of difficulties were observed, while competencies, including socioemotional competencies, either decreased (notably prosocial behavior and self-regulation) or showed no significant changes. These results suggest that PROMEHS had a positive impact on reducing difficulties and enhancing socioemotional competencies among students exposed to the curriculum. Teacher assessments also indicated an improvement in academic performance in the experimental group, while the waitlist group showed stable results in this domain. The findings are consistent with meta-analyses (Taylor *et al.*, 2017; Wigelsworth *et al.*, 2022), which report positive outcomes for this type of program across multiple domains. Despite the positive and significant results observed in the experimental group, the effect sizes were small across all domains analyzed, aligning with findings from other studies on the impact of similar programs (Cefai *et al.*, 2021; Cipriano *et al.*, 2023). However, as some authors (Domitrovich *et al.*, 2017; Jones *et al.*, 2017) note, even small effects are meaningful, particularly in skill acquisition, the creation of positive learning environments, and the promotion of future behavioral changes, especially in relation to improved academic performance and mental health. These results are further supported by qualitative data collected in this study. Teachers' testimonies illustrate skill acquisition and behavioral changes, as shown in the following examples:

> After some time, I realized that the children had learned to identify, express, and name emotions, as well as to understand why they felt a certain way. [...] They also learned to observe others, recognize what they were feeling and why, and, more importantly, how they could contribute to others' well-being and to the well-being of everyone, because we all matter (Preschool Teacher).

> Throughout the different sessions, through a holistic and participatory approach, the students became calmer, more collaborative, and more attentive to others, embracing values of mutual support, compassion, and empathy–both within their class group and toward other students in the school (Elementary School Teacher).

> The dynamics created by the activities showed that the students became much more aware of their emotions, more focused on their goals, and developed strong bonds of friendship within the class. They often help one another and show concern for each other's well-being. Overall, they are also more focused, and some have even regained progress in their learning (Middle School Teacher).

> Their demeanor, appearance, and way of communicating with each other (High School Teacher).

Some of the testimonies also point to a transfer of competencies beyond the classroom, particularly during recess, extracurricular activities, and in the family context:

> In addition to the sessions, these behaviors were also observed during recess and lunchtime. The most striking, for me, occurred during the field trip to Lisbon. We shared the bus with a class from another school in the cluster. On the way back to our school, after the other class left, a student on the bus said, "Teacher, there was a boy with cancer. Bone cancer. He was sad. To make him feel better and to make sure he wasn't alone, I told him I once broke a bone jumping on the trampoline. He laughed a lot and told me we were friends. Can I write him a letter?" His classmates and the other adults on the bus applauded. I said yes. Another student added, "It's so good to be empathetic! Long live PROMEHS!" And the return trip—about 15 km from the other school, where the boy with cancer stayed—suddenly felt much shorter (Elementary School Teacher).

> When I started the project, still during the lockdown and with distance learning, I had some doubts about whether parents would truly embrace the project and work with their children. I was pleasantly surprised, as the opposite proved true. From the very first session, there was a growing interest from both parents and children (Preschool Teacher).

> Parents also shared some situations with me. For example, at home, a student's mother told her that she had to clear the table, while her father told her she had to go to do her homework. The student responded, "We have to come to an agreement on what's best for me! You have to come to an agreement. I learned this today with PROMEHS." The mother approached me, surprised and visibly pleased by this behavioral change, which was happening not only in the student but also within the family, where PROMEHS activities were also being implemented (Elementary School Teacher).

Studies investigating the impact of these programs have also shown that they are cost-effective, that the benefits tend to persist in the medium term (6 to 18 months), and that they are applicable across diverse social, economic, and cultural contexts (Cipriano *et al.*, 2023; Domitrovich *et al.*, 2017). However, one of the key factors influencing their effectiveness is the dosage of the intervention. Programs with lower dosages have been found to produce significantly smaller effects, even when of high quality (Shi & Cheung, 2024). The limited dosage adopted in this study may also have contributed to the small effects observed, as the PROMEHS pilot included only 12 sessions, compared with the full curriculum of 56 sessions for preschool and elementary school students and 68 sessions for middle and high school students. Some teachers' testimonies highlight this issue, such as the following example: "The time elapsed was not enough to clearly observe the development of competencies" (Middle School Teacher).

As Weare (2015) states, it is essential to invest in social and emotional education and to regard the time and space devoted to this component not as *a luxury* or an *optional element*, but as a fundamental part of the educational process, preparing children and adolescents to face the challenges of both the present and the future.

The parent/guardian assessments indicate no significant differences in the pattern of change over time between the groups. However, a main effect of time was found, demonstrating

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that, overall, both groups reduced problems over time (hyperactivity, internalizing problems, externalizing problems, and total difficulties) and improved some competencies (self-awareness and self-regulation). It is possible that the timing of PROMEHS implementation–starting between late 2020 (4th quarter) and early 2021 (1st quarter), when the pandemic worsened and a second lockdown was imposed, and ending between mid-2021 (2nd quarter) and late 2021 (3rd quarter), when infections and deaths declined and restrictions were eased–had an impact on students' behavior and, consequently, on parents' perceptions. Nevertheless, some longitudinal studies have reported that internalizing problems, such as anxiety and depression, continued to increase even after lockdown measures were relaxed and in-person classes resumed (Larsen *et al.*, 2023; Shoshani & Kor, 2022). Additionally, a study assessing teachers' perceptions of students after the pandemic reported an increase in peer relationship problems and maladaptive behaviors in the classroom, particularly disregard for rules (Spadafora *et al.*, 2024).

Similar to the parent/guardian assessments, student assessments revealed a time effect for certain difficulties (peer relationship problems and internalizing problems), as well as for self-regulation; in other words, time significantly influenced both groups. For self-regulation, the students' results align with those of their parents/guardians, indicating an improvement in this competence. However, unlike the parent/guardian assessments, students' perception suggested that problems had increased.

Divergent perceptions between different informant sources (teachers, parents, and students) regarding the social and emotional competencies and behavioral problems, as well as differences in their perception of program impact in this area, have been widely reported in previous studies. Overall, teacher assessments tend to show significant improvements in reducing problems, fostering skill acquisition, and enhancing the teacher-student relationship (Blair *et al.*, 2018; Caldarella *et al.*, 2009; Low *et al.*, 2019). It is possible that, due to their direct and systematic contact with students, teachers have a more detailed perspective on changes, as they observe students' behaviors and relationships over time. The value teachers place on these competencies and their relevance in the school context, as well as their involvement in program implementation, may also influence their perception of positive outcomes (Cramer *et al.*, 2021; Martínez-Saura *et al.*, 2024). By contrast, parents/guardians and students may not perceive changes as clearly or immediately, or may rely on different criteria and contexts as the basis for assessment, leading to divergent perceptions (Martinsone *et al.*, 2022; Neuenschwander *et al.*, 2024). In daily life, the family context may offer fewer opportunities to observe these behaviors and competencies, which parents may not always recognize.

As previously mentioned, the pandemic may also have exacerbated these discrepancies, as changes in routines and contexts during this period may have affected the perceptions of all stakeholders. Major impacts of the pandemic included confinement measures, school closures, and social distancing, which greatly limited students' social lives and opportunities for interaction, particularly at developmental stages when peers play a central role (Kail & Cavanaugh, 2018). This increase in problems may be rooted in the difficulty of forming close relationships (for example, the peer relationship problems subscale includes items such as: "*I am almost always alone*" or "*I have at least one*

good friend") and the resulting impact on emotional well-being. Furthermore, student assessments revealed no statistically significant interactions or main effects for resilience.

Although the results from the parents/guardians and students did not reveal significant interactions, a trend toward improvement in socioemotional competencies was clearly observed in the curriculum impact assessment conducted with the experimental group (teachers, parents/guardians, and students). Regarding skill acquisition in the core curriculum themes (socioemotional competencies, resilience, and prevention of emotional, social, and behavioral problems), the assessments of the experimental group by teachers, parents/guardians, and students indicated very positive results. More than two-thirds of participants reported gains across all topics and sources, with socioemotional competencies representing the domain with the highest reported gains. This may be related to the greater number of sessions implemented in the socioemotional competencies area. In this regard, student satisfaction with the program was also high, with over 90% reporting that they enjoyed PROMEHS. These results are reinforced by student testimonials collected during the final PROMEHS assessment:

> I really enjoyed participating in the PROMEHS project, as I learned a lot of useful information... This project helped me deal with challenges and boost my self-esteem (Middle school student).

> PROMEHS helped me deal with anxiety, and it changed my way of thinking and dealing with problems (Middle School student).

In this context, it is noteworthy that the manuals were evaluated as useful by the majority of students and parents/guardians, which likely contributed to overall satisfaction with PROMEHS and its positive impact. Research in this field has shown that high-quality programs involve theoretical and practical training on content and strategies, supervision, and support materials (e.g., manuals, lesson plans) (O'Conner *et al.*, 2017). The involvement of schools−particularly of teachers and staff−observed throughout the program's implementation and evaluation process is also cited as a fundamental factor (Baffsky *et al.*, 2023).

A final aspect worth highlighting concerns the participation of parents/guardians in the sessions held throughout the curriculum implementation. Approximately half of the participants found the meetings useful, which raises questions about the format and content of the sessions and how they could be improved in future editions. This also suggests the need for greater parental participation, as only half attended the meetings. In this context, the CAPE (Connect, Attend, Participate, and Enact) parental engagement model (Piotrowska et al., 2017) and some systematized strategies could help achieve a greater impact.

Regarding limitations, it is worth noting that the instruments used in this study have some reliability issues (as some subscales of the SSIS-SEL and SDQ exhibit weak internal consistency), so the results in these domains should be interpreted with caution. However, the reliability estimates obtained in the current study are comparable to those reported in other studies. Furthermore, the mean inter-item correlation (MIIC)−a more appropriate measure for scales with a reduced number of items−showed acceptable values for most

scales with lower Cronbach's alpha values. The peer relationship problems and behavioral problems scales, which had values below acceptable limits (as assessed by students and their parents/guardians) were not subject to further analysis due to reliability issues.

Another limitation may be related to the baseline assessment being conducted before and during the lockdown, which may have influenced the perceptions of the different informant sources. In terms of evaluation, the lack of qualitative data collection from parents represents another limitation, particularly for understanding the program's impact from their perspective and for further exploring the discrepancies between the different informant sources.

Despite these constraints, it is noteworthy that the study included two large samples of participants with different educational levels, from urban and rural areas in different regions of Portugal, and that assessments were conducted at two different time points by three informant sources. This latter aspect is highlighted in the literature as a recommended practice both in the assessment of socioemotional competencies (Martinez-Yarza *et al.*, 2023) and in internalizing and externalizing problems (Romano *et al.*, 2018). Future studies evaluating the program's impact are recommended, since the extraordinary context imposed by COVID-19 at the time of the pilot study may have influenced the results.

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