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Psychological First Aid Education for Children in Portuguese Schools

Dissertação apresentada à Universidade Católica Portuguesa para obtenção do grau de mestre em Psicologia

- Especialização em Psicologia Clínica e da Saúde –

Bianca Gomes da Silva

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Trabalho efetuado sob a orientação de

Professora Doutora Patrícia Oliveira-Silva

Professora Doutora Diana Cristina Rodrigues Pereira

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Abstract

This study investigated the effectiveness of the Primeiros Socorros Psicológicos para Heróis (PSP-H) program, designed to equip children with Psychological First Aid (PFA) skills. We explored whether the PSP-H program affected children's empathy and psychological well-being in a quantitative study with 110 participants (aged 9-11). The study employed the Empathy Assessment Scale (EAS) and Kidscreen-10 questionnaire for pre-test and post-test assessments. While the program showed potential based on its theoretical foundation, we found no statistically significant changes in overall empathy or psychological well-being scores. Several explanations are explored, including intervention duration, measurement limitations, and contextual factors. The study highlights the potential of PFA programs in primary education and offers direction for future research, including extended intervention periods, combining quantitative and qualitative methods, considering the role of contextual variables, and exploring gender differences. Further research is needed to determine the program's long-term impact.

Keywords: psychological first aid (PFA), empathy, children, mental health, well-being, PSP-H program

Resumo

Este estudo investigou a eficácia do programa Primeiros Socorros Psicológicos para Heróis (PSP-H), desenhado para equipar crianças com habilidades de Primeiros Socorros Psicológicos (PSP). Exploramos se o programa PSP-H afetava a empatia e o bem-estar psicológico das crianças através de um estudo quantitativo com 110 participantes (de 9 a 11 anos). O estudo utilizou a Escala de Avaliação da Empatia (EAS) e o questionário Kidscreen-10 para avaliações pré-teste e pós-teste. Apesar do programa apresentar potencial com base na sua fundamentação teórica, não encontrámos alterações estatisticamente significativas gerais de empatia ou bem-estar psicológico. São exploradas várias explicações, incluindo a duração da intervenção, limitações da medição e fatores contextuais. O estudo destaca o potencial dos programas de PSP no ensino básico e oferece uma direção para pesquisas futuras, incluindo períodos de intervenção prolongados, combinação de métodos quantitativos e qualitativos, consideração de variáveis contextuais e exploração das diferenças de género. É necessária mais pesquisa para determinar o impacto a longo prazo do programa.

Palavras-chave: primeiros socorros psicológicos (PSP), empatia, crianças, saúde mental, bem-estar, programa PSP-H

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Introduction

The increasing recognition of the importance of mental health and emotional well-being in children has led to the development of various programs aimed at equipping young individuals with the necessary skills to cope with stress and adversity (World Health Organization, 2004). Most of these programs focus on creating a supportive environment where children learn how to express their emotions in a healthy way, learn about the importance and how to protect their mental health, and learn when and how to seek help when needed (Greenberg et al., 2003).

In response to a school's need for a program that empower students to support one another actively, the educational initiative *Primeiros Socorros Psicológicos para Heróis* (PSP-H) or Psychological First Aid for Heroes, was born. This program's development involved collaboration between the school that identified this need, the Heroic Imagination Project (HIP), that was founded by psychologist Philip Zimbardo, believes heroism can be taught and aims to cultivate altruistic and pro-social behaviors, promoting the idea that everyone is a "hero in waiting," capable of performing heroic acts (Heroic Imagination project, n.d), and the Faculty of Education and Psychology at *Universidade Católica Portuguesa – Porto*. This project is highly relevant as it equips children with essential skills to provide psychological first aid.

While the application of Psychological First Aid (PFA) to adults is well-documented (Everly & Mitcgell, 2008), there are few examples of PFA programs designed specifically for children. Considering that children are particularly vulnerable in crisis situations and often lack the coping mechanisms needed to deal with stress and trauma effectively (Hobfoll et al., 2007), a validated PFA for children is highly needed. This gap in support underscores the significance of the PSP-H program, which aims to equip children with age-appropriate PFA skills. The PSP-H program aims to equip 4th graders with both PFA skills and prosocial behaviors. This initiative recognizes the natural human desire to help others after difficult experiences. PFA provides strategies to address emotional, cognitive, and physiological needs in the aftermath of critical events, emphasizing the importance of fostering a sense of security, calmness, and social connection during such times (World Health Organization, 2017). PFA can be delivered not only by professionals but also by family, friends, and neighbors (World Health Organization, 2017).

Empathy is a core component of the PSP-H program. This is a multifaceted concept involving both cognitive and affective dimensions. Cognitive empathy involves understanding

another person's experience intellectually, while affective empathy involves sharing at a certain degree and responding to another's emotions. Developing these skills in children is crucial as it facilitates interpersonal communication, promotes prosocial behaviors, and helps build healthier, more positive relationships (Xu et al., 2022) Additionally, empathy is linked to better emotional regulation, conflict resolution, and overall psychological well-being (Xu et al., 2022) .

The PSP-H program's focus on PFA and empathy, but it also aims to address the broader goal of enhancing children's psychological well-being. Psychological well-being in children is related to the development of emotional regulation, which is the ability to express, manage and understand emotions in a healthy way (Cole et al., 2018); social skills, which is the ability to maintain positive relationship with others, and communicate effectively (Greenberg et al., 2003); resilience, which is the capacity to adapt to challenges and life setbacks (Masten & Powell, 2003); and self-esteem, which is a sense of self-worth and competence (Baumeister & Leary, 1995). Children with high psychological well-being are better equipped to cope with stressful situations, to adapt to unexpected changes, and to maintain a positive perspective on their experiences (Keyes, 2020). It is emphasized that enabling children to understand and manage their emotions, besides training the empathic competencies that form the basis of the PSP-H program, forms a foundation for mental health and resilience.

This dissertation aims to empirically test the effectiveness of the PSP-H program in fostering empathy and psychological well-being among 9-11 years old children. Validating and sharing this type of program is crucial for schools, communities, and families, since they play an essential role in implementing it and ensuring that mental health is a core component of overall children’s development. By doing so, we are contributing to a reality where mental health becomes an integral part of the holistic growth of individuals.

Theoretical Framework

Psychological First Aid (PFA) is a humane, evidence-based approach to supporting people in the immediate aftermath of a crisis or traumatic event (World Health Organization, 2016). It focuses on providing basic human care, promoting a sense of safety and calm, and helping people connect with resources for further support. Traditionally, PFA programs have been aimed at adults, particularly those likely to be first responders in emergencies, such as firefighters, paramedics, and social workers (Everly & Mitchell, 2008). However, the need for PFA extends beyond these professionals. PFA is a humanitarian approach that provides immediate assistance to people who were affected by any critical event. Its main objective is to reduce the initial distress (World Health Organization, 2017). Anyone witnessing a traumatic event or experiencing personal crisis can benefit from the support and guidance it provides. While PFA programs share core principles, there can be variations in their content and delivery. Some programs may be tailored for specific contexts, like natural disasters or terrorist attacks, while others focus on broader applications in daily life (Hobfoll et al., 2007).

Psychological Fist Aid in Children: Effects on Empathy and Psychological Well-being

Most PFA programs are designed for adults and there seems to be a scarcity of well-documented PFA programs specifically designed for children. This is where the PSP-H stands out by recognizing the vulnerability of children in crisis situations, aiming to equip 9–11-year-olds with age-appropriate PFA skills (Nuttall & Kana, 2017). The program can refine children's ability to recognize, comprehend, and interpret the emotions of others, both verbally and nonverbally ((Xu et al., 2022). By fostering emotional understanding, children can step into others' shoes, empathize with their joys and sorrows, and develop the capacity to respond compassionately and supportively (Decety & Lamm, 2006). Enhanced empathy facilitates interpersonal communication, enabling children to express themselves clearly, listen attentively, and build healthier, more positive relationships ((Xu et al., 2022).

Indeed, promoting empathy skills in children is a crucial social-emotional skill that plays a vital role in human relationships and prosocial behavior. Specifically, empathy is a multifaceted concept encompassing the ability to understand and share the feelings of others. It can be broken down into two key components. One is the cognitive empathy that involves the intellectual understanding of another person's emotional state. It focuses on recognizing and comprehending what someone else might be thinking or feeling in a particular situation (Decety & Lamm, 2006). This component relies on cognitive abilities such as theory of mind,

which is the ability to understand that others have their own thoughts, feelings, and beliefs that may be different from our own. Imagine witnessing a friend crying. Cognitive empathy involves recognizing that your friend is sad and attempting to understand the reason behind their sadness. You might ask them what's wrong or try to recall a similar experience you had to understand their perspective. Other is affective empathy which is the emotional response or feeling that arises in us as a result of perceiving another person's emotions (Singer & Lamm. 2009). It involves sharing the emotions of others, experiencing a similar feeling state due to their emotional experience. This can range from compassion and concern to mirroring their sadness or joy. Continuing with the previous example, affective empathy would involve feeling sad yourself upon seeing your friend cry. You might feel a sense of concern for their well-being and a desire to comfort them. These two components of empathy work together to create a full understanding of another person's emotional state. Cognitive empathy allows us to understand the situation and the other person's perspective, while affective empathy allows us to connect with their emotions on a deeper level (Guastella & Pollak, 2008).

Empathy is a complex process involving multiple brain regions. The anterior Cingulate Cortex (ACC) is involved in processing emotional information, self-referential processing, and conflict resolution, all of which contribute to empathy (Fan et al., 2016). The insula is involved in processing bodily sensations, emotions, and self-awareness, which are essential for understanding and sharing the feelings of others (Singer et al., 2004). The amygdala plays a role in processing emotional information, particularly fear and anger, which can contribute to empathy responses (Adolphs, 2009). The mirror Neuron System (MNS) is a network of neurons that activate when observing others' actions, suggesting that it may be involved in understanding and imitating others' emotions (Rizzolatti & Craighero, 2004). Understanding these neural underpinnings of empathy in children, particularly in the 9-11 age range, can provide valuable insights into its development and potential interventions to enhance empathy (Decety & Lamm, 2006).

During the 9-11 age range, children experience significant advancements in their ability to understand and respond to the emotions of others. The brain regions involved in empathy, such as the ACC, insula, and amygdala, continue to mature during this period, allowing for more sophisticated emotional processing and empathy responses (Blakemore & Mills, 2014). Increased social interactions and exposure to diverse perspectives provide opportunities for children to practice empathy and develop a deeper understanding of human emotions (Xu et al., 2022)). Improved language skills enable children to better express and

understand emotions, both verbally and nonverbally, facilitating empathy (Kramer, H. J., & Lagattuta, K. H 2022).

Several studies have investigated the neural foundations of empathy development in 9–11-years-old**.** For example, Singer et al. (2006) study used functional magnetic resonance imaging (fMRI) to examine brain activity in children while they observed videos showing others in pain or neutral situations. The findings suggest that the ACC and insula are engaged when children empathize with the pain of others. In another study by Park et al. (2021) using the electroencephalogram (EEG), the authors found increased synchronization of brain activity between children and the person expressing sadness compared to a neutral expression, suggesting that children's brains were mirroring the emotional state of the person they were observing. Also, in a study of Singer et al. (2004) using functional near-infrared spectroscopy (fNIRS), the authors found that 9–11-year-olds showed increased activation in the MNS when observing actions performed by others compared to static images. This finding suggests that the MNS may be involved in understanding and imitating the actions of others, potentially contributing to empathy development. These studies provide evidence that the brain regions involved in empathy are actively engaged during childhood, supporting the notion that empathy development is a dynamic process.

PFA programs directed to children such as the PSP-H can assist in the development of the theory of mind, the ability to understand that others have their own thoughts, feelings, and beliefs different from our own (Decety & Lamm, 2006). The PSP-H activities can stimulate the development of critical thinking skills, such as analysis, reflection, and decision-making, essential for learning and life in general (Elias et al., 1986). The program can contribute to enhancing children's verbal and nonverbal communication, enabling them to express themselves more clearly, assertively, and effectively (Xu et al., 2022).

This type of program can also teach children conflict resolution techniques, such as assertive communication, negotiation, and problem-solving, promoting a more peaceful and collaborative school environment (Elias et al., 1986). By developing empathy and emotional intelligence, children may become more inclined to engage in prosocial behaviors, such as helping others, sharing, and collaborating, contributing to a more positive and supportive school environment (Eisenberg et al., 2009). The PSP-H can contribute to preventing bullying and aggressive behaviors by promoting mutual understanding, respect, and empathy among children (Elias et al., 1986).

Thus, as suggested Xu et al., (2022), this type of program can help children identify, understand, and manage their own emotions, developing emotional self-awareness. By

understanding their emotions, children can learn to regulate them in a healthy manner, avoiding impulsive reactions and developing self-control. The PSP-H can promote children's adaptability and resilience, helping them cope with challenging situations and overcome emotional obstacles constructively.

Besides empathy skills, the effects of PFA programs in children could also extend to other outcomes such as psychological wellbeing. Psychological well-being refers to a state of optimal mental health characterized by positive emotions, a sense of competence, and healthy social relationships. In children aged 8-10, they are developing the ability to identify, understand, and manage their emotions in healthy ways. They can express their feelings verbally and nonverbally, and begin to utilize coping mechanisms to deal with frustration, sadness, or anger (National Institute of Mental Health, 2019). Children in this age group are increasingly self-aware and develop a sense of self-worth based on their accomplishments and social interactions. They are more confident in their abilities and can handle constructive criticism (National Alliance on Mental Illness, 2023). Children aged 9-11 typically demonstrate a generally optimistic outlook on life. They are curious, enthusiastic, and eager to learn and explore new experiences (American Psychological Association, 2023).

Children are developing the ability to bounce back from setbacks and challenges. They can learn from their mistakes and maintain a positive attitude despite facing difficulties (National Institute of Mental Health, 2019). Children in this age group may still experience emotional outbursts, particularly when frustrated or upset. However, they are increasingly able to calm themselves down and regulate their emotions with support. Social interactions can sometimes be complex, with disagreements and arguments arising among friends. However, children are developing conflict resolution skills and can learn to work through these issues with guidance. While children may experience occasional anxiety or sadness, their overall mood should be positive. They should be enthusiastic about participating in activities and engaging with others.

The Current Study

The PSP-H holds immense potential to positively impact children in the 8-10 age range. While further research comparing PSP-H with potential future child-oriented programs is needed, its focus on empowering young people with PFA knowledge and skills is a significant step forward. Equipping children with basic PFA skills can empower them to navigate difficult situations, provide support to their peers, and ultimately foster a more resilient community. Nonetheless, the effects of PFA programs such as the PSP-H on mental

health and psychological wellbeing in children is still an underexplored topic. The current study aims to address this gap by exploring the effects of PSP-H in children aged 8-10 (4th graders) in empathy and psychological wellbeing.

The decision to target 4th graders for the PSP-H program is not by chance and likely stems from a well-considered analysis of their developmental stage. Piaget's theory of cognitive development suggests that children enter the Concrete Operational Stage around the ages of 7-11 (Piaget, 1952). This stage is marked by significant advancements in logical thinking, problem-solving, and the ability to understand abstract concepts. These cognitive skills are crucial for grasping the principles and techniques of PFA. During the 4th grade, children exhibit an enhanced capacity for empathy, allowing them to better understand and share the feelings of others (National Center for PTSD, 2020). This newfound empathy aligns perfectly with the core values of PFA, which emphasizes compassion and support for those experiencing distress (National Center for PTSD, 2020). Furthermore, 4th graders are better equipped to manage their own emotions, making them less susceptible to emotional overwhelm in challenging situations (National Center for PTSD, 2020). This emotional self-regulation is essential for providing effective PFA to others.

By the 4th grade, children's social circles expand beyond family, forming stronger peer relationships (Mok et al., 2018). This increased social interaction provides fertile ground for practicing prosocial behaviors, such as cooperation, conflict resolution, and helping others – all key aspects of the PSP-H program. Additionally, 4th graders begin to develop a stronger sense of community, recognizing their role and responsibilities within a group. This emerging sense of community aligns with the program's goal of fostering a supportive and connected environment.

The 4th grade often marks the transition to middle school, a period of significant social and academic changes (Furrer & Hughes, 2020). Equipping children with PFA skills and prosocial behaviors during this crucial time can empower them to navigate the challenges and opportunities that lie ahead. While research specifically examining 4th grade as the optimal time for PFA training is limited, studies suggest that children between the ages of 8 and 12 are developmentally ready to acquire and apply these skills effectively (National Child Traumatic Stress Network, 2020).

The choice of 4th graders for the PSP-H program appears to be a well-informed decision based on their cognitive, emotional, and social development (Crosnoe, 2017). This developmental stage makes them receptive to the program's teachings and more likely to

benefit from its implementation. The 4th grade also represents a critical transition period where these skills can be particularly valuable.

Method

This is a quantitative study, as it allows for a systemic and objective investigation of the relationship of the variables and provides valuable empirical evidence. The main objective of this study is to is to investigate the potential benefits of the Program PSP-H on empathy and psychological wellbeing. In other words, the current study is guided by the following general question: How does the PSP-H intervention affect children's empathy and psychological well-being, and what influence does gender have on these outcomes? Based on this general objective, the following specific questions and objectives are proposed:

1. How do children's empathy scores change from pre-test to post-test following the intervention? Accordingly, we aim to measure changes in children's empathy scores on a pre-test and post-test assessment.
2. What changes are observed in children's psychological well-being scores from pre-test to post-test after the intervention? We intend to evaluate changes in children's psychological well-being using a pre-test and post-test assessment.
3. Does gender influence the changes in empathy scores following the PSP-H intervention? We aim to investigate the relationship between gender and changes in empathy scores following a PSP-H intervention.
4. Does gender play a role in how the PSP-H program affects in children's psychological well-being? Here, we will explore the gender influence concerning the effect of PSP-H on psychological well-being.

Participants

The target population for this study are children aged 9-11 years old. For this non-probabilistic sampling study, we have recruited 110 participants who are students from the school group of Vila Nova de Gaia, Portugal. The selection of schools was made based on the existing protocol between the Portuguese Red Cross and the Vila Nova de Gaia City Council. The study included all 4th graders from the schools participating in the PSP-H program. There were no specific exclusion criteria. To be included, students simply needed to be enrolled in the 4th grade and have participated in most of the program sessions. Written informed consent was obtained from both the children and their guardians through a form.

The final sample participating in the current study was composed of 58 male students (52.3%) and 52 female students (46.8%). The average age in the sample was 9.15 years (*SD* = 0.387), ranging from 9 to 11 years.

Instruments

To assess empathy, the Empathy Assessment Scale (EAS) was used, which was adapted for the Portuguese population by Veiga and Santos (2011), based on the Questionnaire to Assess Affective and Cognitive Empathy in Children (QACEC) by Zoll and Enz (2010). The EAS is a multidimensional scale that assesses the cognitive and affective dimensions of empathy in children aged 8 to 14 years. It is a self-report instrument composed of 20 items, which are randomly distributed across the cognitive and affective dimensions. Students are asked to indicate the response with which they most identify for each item presented, according to a 5-point Likert scale (1- Strongly disagree; 2- Disagree somewhat; 3- Neither disagree nor agree; 4- Agree somewhat; 5- Strongly agree).

Regarding the psychometric qualities, the Portuguese version (Veiga & Santos, 2011) presents an alpha coefficient of 0.86 for the total scale, and in this study, the QACEC presented an alpha coefficient of 0.84 for the total scale, which indicates a good index of internal consistency.

The subscales of empathy (affective empathy and cognitive empathy) are determined by summing the respective items: affective empathy included items 1, 3, 5, 8, 9, 11, 14, 16, 18, 19; and cognitive empathy included items 2, 4, 6, 7, 10, 12, 13, 15, 17, 20. Higher scores on the EAS indicate a higher level of empathy. Specifically, higher cognitive empathy scores suggest better understanding of other´s perspectives and emotions, while higher affective empathy scores indicate a greater ability to share and respond to other´s emotional experiences.

To assess psychological well-being, the Kidscreen-10 questionnaire was used, adapted for the Portuguese population by Gaspar and Matos (2008), based on the original Kidscreen-52 by Ravens-Sieberer et al. (2005). It is a brief but comprehensive instrument that evaluates various dimensions of health-related quality of life in children and adolescents aged 8 to 18 years. The Kidscreen-10 is a self-report instrument composed of 10 items, which cover aspects such as physical well-being, psychological well-being, autonomy, parent relations, social support, and school environment. Students are asked to indicate their

frequency or intensity of feelings and experiences for each item on a 5-point Likert scale (1- Never; 2- Seldom; 3- Sometimes; 4- Often; 5- Always).

Regarding the psychometric qualities, the Portuguese version (Gaspar & Matos, 2008) presents an alpha coefficient of 0.82 for the total scale, and in this study, the Kidscreen-10 presented an alpha coefficient of 0.81 for the total scale, which indicates a good index of internal consistency.

A low score on this instrument reflects feelings of unhappiness, dissatisfaction, and inadequacy in relation to various life contexts of children and adolescents, namely, family, peer group, and school. A high score indicates a sense of happiness, perception of adequacy, and satisfaction with their contexts.

Another instrument included in the program addresses resilience, based on the work of Bonanno (2021). This instrument consists of six items, each answered on a 5-point Likert scale, designed to measure various aspects of resilience. Although the scale has been part of the program to measure participant´s resilience, it will not be used for analysis because it is still undergoing validation. This ongoing validation process ensures that the scale will provide reliable and valid results for future research applications.

Procedure

Data Collection Procedure

Data collection was carried out during the PSP-H Program, a partnership between HIP, the Portuguese Red Cross, and the Soares dos Reis school cluster. Once ethical and deontological issues were addressed, the program commenced between October and May of the 2023/2024 academic year at three schools within the Soares dos Reis school cluster.

Five group sessions were conducted during school hours, each lasting 45 minutes. In the first session, the QACEC, KIDSCREEN-10, and resilience questionnaires were distributed for all participants to complete before the program began. In all classes, the instructions for completing the instrument were presented clearly and consistently. After the five PSP-H sessions, the questionnaires were administered again to assess the program's effects. More details regarding the PSP-H sessions are summarized in Table 1.

Data Analysis Plan

The data analysis for this study was conducted using IBM SPSS version 28 – Statistical Package for the Social Sciences. The analysis was structured in several steps to address both descriptive and inferential aspects of the data.

First, descriptive statistics were employed to characterize the study sample. This included calculating measures of central tendency and dispersion to summarize the data set (Martins, 2011). Relative frequencies for gender and age were also analyzed. Thus, the descriptive analysis of the results was based on analyses concerning gender, age, well-being and affective and cognitive empathy.

Table 1.

Description of the Sessions Included in the PSP-H Program

	Topics Covered	**Activity**
Session 1	What is a Hero?	**Pre-Test:** Administer a pre-test assessment to measure participants' baseline levels of well-being, empathy, and resilience. **Rules:** Establish clear guidelines. **Hero Drawing:** Encourage participants to create a drawing of their personal hero. **Heroic Imagination Project:** Introduce participants to HIP. **Hero Training - Daily Heroic Acts:** Introduce the concept of "Hero of the Day" which is a weekly challenge to document acts of kindness, bravery, or helpfulness.
Session 2	Critical Event and Stress Reaction	**Critical Events:** Discuss the nature of critical events and their potential impact on individuals, including physical, emotional, cognitive, and behavioral responses. **Stress Reactions:** Explore common stress reactions to critical events

		Hero Training
Session 3	PSP-H	**Psychological First Aid:** Introduce the concept of psychological first aid (Look, Listen and Link) **LOOK:** Observe and assess the situation; approach calmly and introduce yourself; and let the person know that you are there to help. **LISTEN:** Actively listen; use nonverbal cues to show empathy; if necessary, use calming techniques. **LINK:** Provide reassurance and support; share relevant information; and encourage seeking further help if necessary. **Hero Training**
Session 4	PSP-H Training	**Role Play:** Engage participants in a variety of role-playing exercises that simulate different scenarios (e.g., discussion with a friend, lost their backpack, or parents divorced) involving stress, conflict, and decision-making, where the three steps of PFA can be applied in practice. **Hero Training**
Session 5	Resilience	**Resilience:** Discuss the concept of resilience and its importance in overcoming adversity. **Positive Self-Talk:** Introduce positive self-talk and sentences to encourage resilience. **Post-Test:** Administer the post-test assessment to measure participants'

		progress in terms of well-being, empathy, and resilience.

Note. PSP-H = Primeiros Socorros Psicológicos para Heróis

Inferential statistics were then applied to answer the specific research questions. A paired samples *t*-test was conducted to measure changes in children's empathy scores from pre-test to post-test. To evaluate gender differences in changes in empathy scores, an independent samples *t*-test was performed using the difference score between post- and pre-test.

For changes in psychological well-being, a paired samples *t*-test was also used to compare pre-test and post-test scores. An independent samples *t*-test, also using the difference between post- and pre-test scores, was conducted to examine gender differences in psychological well-being changes.

Results

The descriptive statistics regarding the scores obtained in the pre- and post-test assessment are presented in Table 2.

Table 2.

Descriptive Statistics of the EAS and Kidscreen-10 Scores in the Pre- and Pos-test Assessment

		Pre-test *M* (*SD*)	Post-test *M* (*SD*)	Difference *M* (*SD*)
Empathy	Total (*N* = 85)	87.48 (11.56)	88.81 (12.29)	1.33 (10.46)
	Male (*n* = 51)	86.55 (13.13)	88.33 (10.98)	1.65 (11.19)
	Female (*n* = 34)	88.54 (8.85)	89.83 (12.64)	0.85 (9.40)
Psychological wellbeing	Total (*N* = 93)	44.24 (4.63)	44.31 (5.74)	0.08 (4.01)
	Male (*n* = 53)	44.30 (5.03)	44.20 (6.04)	- 0.21 (4.46)
	Female (*n* = 40)	44.26 (4.40)	44.50 (5.31)	0.45 (3.36)

Note. EAS = Empathy Assessment Scale.

A paired samples *t*-test was conducted to compare children's empathy scores before and after the PSP-H intervention, revealing that there was no statistically significant change in empathy scores from pre-test to post-test following the intervention, $t(84) = -1.17$, $p = .245$. The correlation between pre-test and post-test scores was 0.62 ($p < .001$). The effect size, Cohen's d_z, was 0.13, indicating a small effect size and a negligible change in empathy scores.

An independent samples *t*-test was conducted to compare the changes in empathy scores from pre- to post-test assessments between boys and girls. The equality of variances was verified via Levene's Test, $F = 0.68$, $p = .413$. No statistically significant differences were observed between boys and girls regarding the change in empathy scores, $t(83) = -0.34$, $p = .734$. The effect size, Cohen's *d*, was 0.08, indicating a small effect size and a negligible difference between genders.

Regarding the psychological well-being scores, a paired samples *t*-test was also conducted. No statistically significant change in psychological well-being scores from pre-test to post-test following the intervention was observed, $t(92) = -0.18$, $p = .857$. The effect size, Cohen's d_z , was 0.02, indicating a very small effect size and a negligible change in well-being scores.

An independent samples t-test was conducted to compare the changes in psychological well-being scores between boys and girls. The equality of variances was verified via Levene's Test, $F = 0.02$, $p = .883$. The results indicated that there was no statistically significant difference in the change of psychological well-being scores between boys and girls, $t(91) = 0.78$, $p = .437$. The effect size, Cohen's *d*, was 0.16, showing a small effect size and a negligible difference between genders.

Discussion

The main goal of this study was to explore the effectiveness of the *Primeiros Socorros Psicológicos para Heróis* (PSP-H) program in fostering empathy and psychological well-being among 4th graders. The PSP-H program was designed to equip children aged 9-11 with PFA skills and promote prosocial behaviors.

Despite the strong theoretical foundations and carefully structured intervention (see Table 1 for details), the results revealed that the PSP-H intervention did not result in statistically significant changes in children's empathy or psychological well-being scores from pre-test to post-test. Additionally, gender did not significantly influence these changes. The effect sizes

for all comparisons were small, indicating negligible practical significance. The lack of significant findings can be explained in several ways. First, the sessions' intensity and duration may have been insufficient to cause measurable change during the study. Though these sessions were carefully designed to provide children with ample practice to acquire PFA skills, they may not have been of sufficient length or frequency to fully and firmly embed these skills into children's behavior and cognition. Future studies should consider the possibility of more extended intervention periods to see if significant effects are accumulated over time.

It is also important to emphasize that there was no control group in this study, and the inclusion of a control group could be essential in evaluating the effectiveness of interventions. Without a control group, it's difficult to isolate the impact of the specific intervention from other external factors that might influence the results. In this study involving children, an active control group could be implemented. This group wouldn't receive the full intervention but would participate in activities like psychoeducation on empathy and psychological first aid. By acknowledging these limitations, we pave the way for more rigorous studies in the future.

Also, while the instruments used were validated and reliable, they might not fully detect subtle changes in empathy competencies and psychological well-being at this age. The Empathy Assessment Scale (EAS) and Kidscreen-10 questionnaire offered broad measures, but incorporating additional qualitative methods, such as conducting focus groups or other types of observational studies, could provide more knowledge about how children internalize and apply PFA skills in real-life situations. Future studies should consider combining quantitative and qualitative methodologies to achieve a deeper evaluation of the impacts related with the program.

Another important consideration is the context in which this study was conducted. The intervention and data collection took place within a specific school setting in Vila Nova de Gaia, Portugal, which may have unique social and cultural dynamics influencing the program's implementation and outcomes. For instance, children's responses to PFA training could be shaped by their prior experiences with stress and trauma, support systems at home, and the existing school climate (Gubbels et al., 2018; Lopes et al., 2020). Although this study did not focus on these contextual variables, it is recommended that future research explore these factors to tailor the PSP-H program more effectively to different settings. An important consideration is that the children participating in the PSP-H program of the current study are 4th graders of 2023/2024, some of whom had previously been exposed to the program as 3rd graders in the 2022/2023 academic year. The PSP-H program was extended to 3rd graders in the 2022/2023 academic year to test its efficacy among younger students. Consequently, many of the current

4th graders had prior exposure to the program, which could have directly influenced the results. A significant difference in outcomes might have been observed if this was their first contact with the PSP-H program, indicating a potential carryover effect from their initial exposure Finally, although the role of gender in empathy and psychological well-being is very scrutinized in the literature (Carlson et al., 2020), this study found no significant gender differences in response to the PSP-H intervention. Again, it is possible that gender-related effects might emerge over a longer period or in different developmental stages. Previous research suggests that girls and boys might express empathy and psychological well-being differently (Lai et al., 2019) and these differences could influence how they respond to interventions. In summary, future studies should explore these dynamics further, possibly incorporating gender-specific strategies to enhance program effectiveness and other potential factors that may impact the effectiveness of the PSP-H intervention on children's empathy and well-being.

Conclusion

While the current study did not find significant changes in empathy and psychological well-being among children following the PSP-H intervention, it highlights the potential and feasibility of implementing PFA programs in primary education. This approach is highly relevant to bringing PFA training to young children, addressing a critical gap in current educational and psychological support mechanisms. The lessons learned from this study can guide future research and program development, ensuring that subsequent uses of the PSP-H program or similar initiatives can more effectively offer the basis for developing emotional and social competencies essential for children's holistic development. By refining these programs and continuing to explore their impacts, the research community can contribute to building a more resilient and compassionate future generation.

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