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ChatGPT involvement: When did the first philosophers who dealt with emotions live?

Vienna, 20th of October 2024

Abstract

As stated by the World Health Organization WHO, the concept of mental health may be viewed as equally important as physical health, thus playing a crucial role in the overall well-being of individuals, societies and countries at large. Given the limited accessibility of prompt mental health interventions and support, along with the sparse mental health literacy in certain populations, European policymakers have called for preventive mental health intervention programs especially designed for children. The present work aims at fostering awareness and educating the subsequent generations from various backgrounds on coping and resilience. The COMET4Kids project is a comprehensive, evidence-based early intervention program for primary school children aiming at fostering resilience and mental health, following a co-development approach. The workshops were designed to fit age-appropriate needs, as well as the children's cognitive level of development, while educating and simultaneously assessing the children's prior knowledge of relevant concepts in a qualitative manner. Avoidant coping is often referred to as significant predictor of poorer health outcomes, relational difficulties, and even susceptibility to addiction. The primary focus of the present work will be on emotional awareness in order to promote healthier ways of coping, which are associated with greater quality of life, healthier interpersonal relationships and overall functioning.

Keywords: Coping, emotion regulation, resilience promotion, mental health literacy, children, public health

Abstract (German)

Laut Weltgesundheitsorganisation (WHO) kann das Konzept der psychischen Gesundheit als gleichermaßen bedeutsam wie die körperliche Gesundheit angesehen werden. Somit spielt mentale Gesundheit eine maßgebliche Rolle hinsichtlich des Wohlbefindens einzelner Individuen und Gesellschaften. Angesichts der eingeschränkten Verfügbarkeit psychotherapeutischer Unterstützung, sowie des zum Teil mangelnden Wissensrepertoires bezüglich psychischer Gesundheit in vereinzelter Bevölkerungsgruppen, hat die Europäische Kommission verstärkt zur Konzeption präventiver Programme für psychische Gesundheit aufgerufen, die speziell auf kindliche Bedürfnisse zugeschnitten sind. Die vorliegende Arbeit hat einen psychoedukativen und explorativen Charakter. Das COMET4Kids-Projekt ist ein umfassendes, evidenzbasiertes Interventionsprogramm für Grundschulkindern, das darauf abzielt, Resilienz und psychische Gesundheit zu fördern und einem Co-Entwicklungsansatz folgt. Die Workshops wurden so konzipiert, dass sie altersgerechten Bedürfnissen, sowie dem kognitiven Entwicklungsstand der Kinder entsprechen, während sie gleichzeitig die Kinder über relevante Konzepte aufklären und simultan ihren Wissensstand zum Thema Coping und Resilienz erheben. Durchgeführt wurden diese an verschiedenen Grundschulen Wiens, sowie an einer Ganztagschule der Pädagogischen Hochschule Niederösterreich. Vermeidende Bewältigungsstrategien werden häufig als signifikanter Prädiktor für schlechtere Gesundheit, Schwierigkeiten in zwischenmenschlichen Beziehungen und sogar als prädisponierender Faktor für Suchterkrankungen angesehen. Der primäre Fokus liegt auf emotionalem Bewusstsein, um gesündere Bewältigungsstrategien zu fördern, die mit einer höheren Lebensqualität, einer gesünderen Beziehungsgestaltung und einer besseren allgemeinen Anpassungsfähigkeit verbunden sind.

Keywords: Resilienz, Emotionsregulation, Psychologie des Kinder- und Jugendalters, psychische Gesundheit

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1. Introduction

Among the various normative life events, there are certain phases in childhood which potentially cause a considerable amount of stress to the individual, highlighting the need for additional support in order to buffer against the effects of adverse experiences (Nygaard et al., 2023). The transition from primary school to secondary school marks one of the most crucial episodes of childhood and may have negative short- and long-term consequences (West et al., 2010; van Rens et al., 2018) due to the amount of discontinuity and radical changes in status (Blyth et al., 1983), as well as the various changes on a physical, mental and emotional level (Negri & Susman, 2011). Indicating a potential threat to children's sense of belonging, the quality and stability of friendships during this particular period of life has been shown to greatly affect mental health (Ng-Knight et al., 2019; Lester et al., 2013) and has been associated with increases in loneliness, anxiety and depression (Evans et al., 2018; Ng-Knight et al. 2019). In this light, poor mental health, along with low self-esteem, is linked to school drop-out (Lawrence et al., 2023) and delinquency (Barrett et al., 2014). Furthermore, in terms of the relative position among fellow students, the ranking of a pupil's academic performance may change drastically when transitioning to new school environments, which is referred to as "top-dog" phenomenon, alluding to switching from the "top-dog" position in one school, to "bottom dog" in the new context and may cause various disruptions in children (Blyth et al., 1983), depending on the reputation and standards of the school. By adapting to new contexts with larger number of peers and new implicit behavioral social norms (van Rens et al., 2018), the process of transiting to secondary school can cause considerable amounts of stress. Children face various new challenges such as navigating expectations (e.g., new school subjects, increased demands regarding academic performance, new procedures and rules), forming new teacher-student relationships (e.g., with unfamiliar and multiple teachers), and peer relationships (Juvonen, 2007; Lohaus et al., 2004), while being faced with increased pressure for social acceptance (Ng-Knight et al., 2019; Lawrence et al., 2023). Accompanied with the potential onset of puberty, the timing of the school transition may cause additional problems (Seifert & Schulz, 2007), such as increased risk for depression, body dissatisfaction and substance abuse (Short & Rosenthal, 2008), whereas successfully navigating this transition was associated with increased well-being, mental health and academic success (Waters et al., 2012; Ng-Knight et al., 2019).

Mental health literacy has been found to be a reliable predictor for mental well-being during adolescence (Bjørnsen et al., 2019). Despite its wide-ranging impact, mental health services are generally overstretched (Simkiss et al., 2020). The general supply situation is found to be poorly equipped in terms of accessibility (Fliedl, Ecker & Karwautz, 2020) along with individuals facing long waiting lists (Edbrooke-Childs & Deighton, 2020), accompanied by a shortage of trained clinicians, fueled by pandemic of the present decade (Gates & Mohiuddin, 2022; Hoffmann et al., 2023). Suicide marks the second most leading cause of death in adolescents in the USA (Hoffmann et al, 2023) and even in western Europe (Clark, 2020). Scholars are advocating further development of preventive care, emphasizing the need for a holistic approach within home and school-contexts (Lawrence et al. 2023). In the world health report of 2001, the World Health Organization WHO states that mental health may be regarded as equally important as physical health and plays a crucial role in the overall well-being of individuals, societies and countries at large (World Health Organization, 2001). According to state-of-the art research in neuroscience and behavioral research, mental illness is a result of the complex interplay between disposing biological, social and psychological factors. “While there is still much to be learned, we already have the knowledge and power to reduce the burden of mental and behavioral disorders worldwide.” (World health organization, 2001, p. 1).

Considering its huge economic, societal and individual implications, the COMET4Kids constitutes a project of utmost importance (Lawrence et al, 2023).

In order to support children during this transition phase from primary to secondary school in a way which is tailored to the children's needs of that particular age range (i.e., 9-11 years), the following work aims at investigating the following questions: Which aspects of coping and resilience should be incorporated and addressed by the intervention program? What is children's actual level of knowledge regarding coping and emotion regulation?

2. State of the art

‘Mental health literacy’ is a construct which was originally derived from the concept of ‘health literacy’, which was primarily a subject to the field of health care (Kutscher et al., 2016). Health literacy (HL) mainly focused on the ability to understand and effectively apply medical information, aiming for better adherence of medical treatments (Kutscher et al., 2016). Therefore, mental health literacy may be seen as an extension of previous constructs

(Kutscher et al., 2015). Based on the theoretical framework provided by Jorm et al. (1997), who first conceptualized mental health literacy (MHL), the term encompasses the recognition of psychological distress, the knowledge of risk factors and potential causes, as well as knowledge about the maintenance of mental health. Moreover, the concept also comprises attitudes towards help-seeking behavior, covering not only knowledge and beliefs about self and professional help availability, but also scripts how to in fact seek help. Noteworthy, one of its major advantages is its wide-ranging impact: MHL is not limited to supporting oneself, but it can also support others (Jorm, 2012).

In the light of mental health literacy in children, coping and resilience will be explicitly highlighted and further investigated by the present work. Many scholars have highlighted the role of coping in academic and social functioning, adjustment to stressful events, internalizing and externalizing behavior, well-being, competence, and resilience (Zimmer-Gembeck & Skinner, 2011). “Resilience is defined as the capacity of a system to adapt successfully to challenges that threaten the function, survival, or future development of the system.” (Masten & Barnes, 2018, p. 1). Therefore, resilience should be viewed as a multisystemic phenomenon with mutually influencing systems, incessantly affecting one another. Among these are the following: biological, psychological, social, and ecological systems (Ungar et al., 2019). Noteworthy, findings suggest that being embedded in socially supportive systems is equally important as self-concept and cognitive strategies (Ungar et al., 2019). The accessibility and availability of resources in relational terms thus play a crucial role in regaining, maintaining and fostering mental wellbeing, along with strategies on a mental, emotional and behavioral level. Resilience theory offers a resource-oriented approach that examines how protective factors interplay and influence the effects of adversity on the individual. Three different models of resilience theory had been proposed and statistically evaluated: the compensatory, the protective and the challenge model (Zimmerman et al., 2013). Each represents different modes of action in terms of risk and protective factors. Firstly, protective factors supposedly counteract risk factors. Secondly, protective factors moderate the negative effects of negative outcomes. Thirdly, challenges act as catalyst, helping individuals in terms of future exposure to adversity.

Ultimately, resilience training aims at fostering self-worth and self-efficiency, while simultaneously increasing the child’s ability to seek support: “The multitude of existing mental health promotion programs highlights the need to establish what specific elements

and evaluations contribute to successful programming.” (Fenwick-Smith, Dahlberg & Thompson, 2018, p. 3).

In the course of a systematic review of resilience-focused mental health promotion programs conducted in primary schools, 475 articles were assessed, yielding 11 reports on evaluations of 7 school-based mental health promotion programs (Fenwick-Smith, Dahlberg & Thompson, 2018). In addition, the systematic review focused on programs conducted exclusively with primary school children (aged 5–12 years), with regard to supporting evidence, suggesting that the earlier the implementation of mental health promotion and resilience programming, the greater the positive effect (Greenberg et al., 2001; Durlack & Wells, 1997).

The central aspects of these intervention programs were skill trainings, mainly addressing problem solving, building and maintaining interpersonal relationships, and realistic goal setting (Fenwick-Smith, Dahlberg & Thompson, 2018), which were linked to substantial enhancement of individual’s functioning and well-being. The latter can particularly help to buffer against the effects of potential risk factors, in conjunction with resilience. Regarding resilience programs, it has been suggested that goal setting may play an essential role in fostering beliefs in the future (Catalano et al., 2004). Therefore, hope and optimism about possible future outcomes are more likely to be internalized leading to increases in motivation and appreciation of life (Prothrow-Stith, 2002). Positive future expectations have been shown to predict better social and emotional adjustment in school, as well as a stronger internal locus of control, simultaneously acting as a protective factor in reducing the detrimental effects of stress on self-rated competence (Wyman et. al, 1993). Locus of control emerged as a valuable resource which affected adaptation in the face of adversity (Leontopoulou, 2006).

Regarding the previously mentioned protective factors, Fenwick-Smith et al. (2018) not only refer to external and thus interpersonal protective factors (e.g., healthy family and social relationships), but also highlight the importance of internal factors, such as coping skills (e.g., help-seeking behavior). Another aspect marked as individual asset is assigning meaning to events, or also known as ‘cognitive reframing’ (Hodgson et al., 1996).

Resilience theory claims that all children, regardless of exposure to risk factors or current mental health status, can benefit from support in the development of effective and mentally healthy resilience skills (Catalano et al., 2004). In that regard, it would be interesting to know how mentally sound coping skills can be distinguished from unhealthy ones, for instance if

they differ in the mode of approximation (avoidant vs. confrontational) and if certain coping skills in childhood are linked to maladaptive behaviors of escapism in later adulthood (e.g., excessive working, substance abuse). Current findings imply a potential link between avoidant coping and substance abuse (Min et al., 2007) and the development of somatoform disorders (Lind, Delmar & Nielsen, 2014). Longitudinal studies could yield insightful results.

2.1 Definition of coping

The concept of coping has been extensively researched over the past five decades, raising the question of why certain individuals may be better equipped to cope than others, thereby yielding promising possibilities for intervention (Folkman & Moskowitz, 2004).

The history of research on coping can be mainly traced back to Richard Lazarus' work *Psychological Stress and the Coping Process*, which was published in 1966 (Folkman & Moskowitz, 2004). In the sixties of the last century, coping has been primarily examined in light of the framework of ego-psychology and the concept of defense, as elaborated by Vaillant (1998) and Haan (2013), highlighting a rather deflective nature. This approach mainly focused on pathology and largely revolved around the evaluation of unconscious processes (Folkman & Moskowitz, 2004). Offering a new methodology, Lazarus developed a contextual approach to coping and stress which paved the way for a more differentiated understanding of the given concepts (Folkman & Moskowitz, 2004). Subsequently, Lazarus & Folkman (1984) defined coping as cognitive and behavioral efforts used in order to manage internal and external demands of subjectively perceived stress-invoking situations. In the following decades, this definition has become widely accepted (Tennen et al., 2000). This new multi-layer approach highlighted the role of a troubled person-environment relationship and gave rise to an age-dependent examination, comparing coping in childhood and in adolescence (Murphy & Morarity, 1976).

Across the lifespan, different coping strategies are acquired in childhood, adolescence and adulthood (Aldwin, 2009). Therefore, it is crucial to explore children's early experiences of stress and coping in order to offer age-appropriate support (Cheetham-Blake et al., 2019). Recent mental health research has indicated that MHL education needs to be developmentally appropriate and "tailored in its application across the life span" (Kutcher, Wei & Coniglio, 2016, p. 155). Concerning age shifts, two kinds of age trends were observed by Zimmer-Gembeck & Skinner (2011). One age trend refers to increased coping capacities, as seen in support-seeking (from dependence on adults to more self-reliance), problem-solving (from

instrumental action to planful problem-solving), and distraction (adding cognitive strategies to behavioral strategies), the other reflecting improvements in discernment and applying different coping strategies with regard to their efficacy in face of specific kinds of stressors.

Figure 1

Development of coping across the lifespan

Table 2. Examples of developmentally-graded members of coping families

Age period	Coping family and ways of coping				
	Problem-solving	Comforting	Distraction	Escape	Information-seeking
Infancy (birth–18 months)	Effort Repetition Practice	Appeals to caregiver Proximity seeking Physical self-soothing (e.g., sucking, stroking)	Gaze at attractive objects Distracted by caregiver	Gaze aversion Signal to caregiver	Social referencing Observation
Preschool (ages 2–5)	Instrumental actions Request instrumental aid	Self-comfort with behaviours (e.g., get blanket) Seeks comfort	Behavioural distraction (doing something else)	Leave situation (behavioural withdrawal)	Ask for information
Middle childhood (ages 6–9)	Strategizing Alternative mental means Repair	Self-comfort through verbal reassurance	Cognitive distraction (thinking about something else)	Mental withdrawal	Learn from others' experiences Social comparison
Early adolescence (ages 10–14)	Planning Self-regulated learning (studying, rehearsal)	Think about positive future situations	Plan distracting activities	Avoid potentially negative situation	Independent pursuit of information (e.g., reading)
Middle and late adolescence (ages 14–22)	Prevention Coordination of multiple activities	Larger perspective Downward social comparison	Meditation, guided relaxation	Decide which situations to participate in	Integration of information from multiple sources

Explanatory note. Figure taken from Zimmer-Gembeck & Skinner (2011)

Dijkstra & Homan (2016) implied that coping strategies representing direct “action,” by facing the stressor and/or its related emotions, to be more successful in preventing adverse effects of stress than avoidant types of coping, which indicate diverting from the stressor and/or its related emotions. To evaluate the effectiveness of several coping strategies in terms of well-being, two types of coping strategies were contrasted: the engaged vs. disengaged coping. Engaged coping (i.e., active confronting, reassuring thoughts) was associated with enhanced psychological well-being, whereas disengaged coping (i.e., passive reaction pattern, palliative reaction¹, avoidance) was not (Dijkstra & Homan, 2016). Avoidant coping was even found to be predominantly associated with poor health outcomes (Folkman & Moskowitz, 2004). Within the scope of a mediation analysis, seeking social support only revealed a positive indirect effect on psychological well-being via perceived control, but no significant main effect on well-being was found. Nevertheless, the mean age of the sample was 35.20 years (SD = 12.65; range 15–75), indicating limited transferability to our present target group of 9-11 years (Dijkstra & Homan, 2016).

¹ “I tried to think of things that were not related to the problem” being one of the items

Regarding the coping efficacy in children aged 8 – 11 years, research has suggested a significant positive relation between active coping and coping efficacy (Thorne et al. 2013). Among the examined coping strategies were active coping, distraction, avoidance, and seeking support. The latter yielded no moderating effects on other coping strategies. Interestingly, none of the other coping strategies yielded significant relations with coping efficacy, except for active coping. These four factors were also confirmed by confirmatory factor analyses and compiled into The Children's Coping Strategies Checklist—Revised1 (CCSC-R1; Program for Prevention Research, 1999) which is based on the Children's Coping Strategies Checklist (CCSC; Ayers et al., 1996). The CCSC was assessed in fourth-through sixth grade children. Within the scope of a validation study of the Dutch version of the Coping Strategies Checklist for Children (CCSC-R1) performed in the Netherlands, the objective was to replicate the 4-factor coping model. A novel 5-factor model in which positive cognitive restructuring was a distinct coping dimension methodically outperformed the 4-factor model in which positive cognitive restructuring was part of direct problem solving (De Boo, 2009). Moreover, the 5-factor model displayed robustness across age groups, while the 10 corresponding subscales exhibited consistent patterns across gender. Yet, significant gender differences were found for the subscales “support for feelings,” “distracting actions” and “wishful thinking,” with girls scoring higher than boys. Noteworthy, pro-social behavior correlated positively with all five coping dimensions, indicating the strongest correlations with the coping dimensions direct problem solving and positive cognitive restructuring. Socially inadequate behavior only correlated significantly with avoidance coping (De Boo, 2009).

Given that perceived control and coping efficacy were found to be influential factors regarding successful coping (Dijkstra & Homan, 2016; Thorne, 2013), these represent aspects worth incorporating within the course of the intervention program in order to address the children's loci of control.

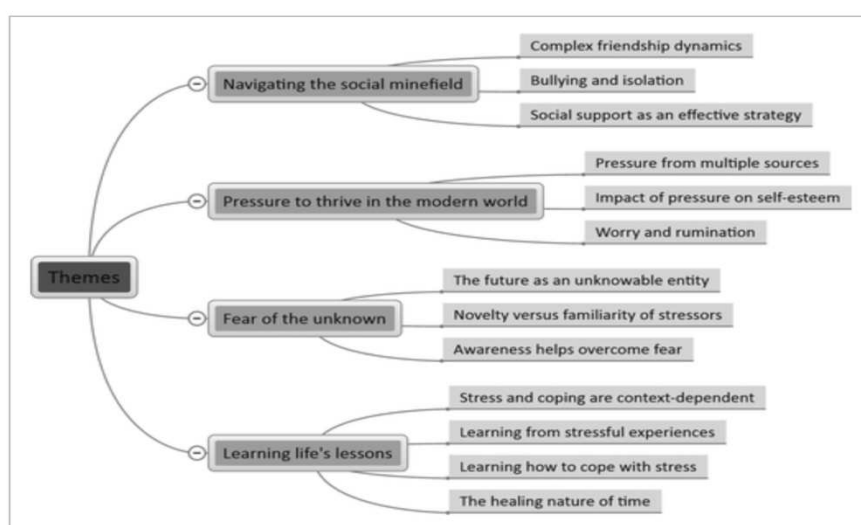
2.2 Qualitative research on MHL

Addressing stressful life events, adversity and coping, dyadic interviews had been conducted between parents and children aged 7 to 11 years in the course of a qualitative study by Cheetham-Blake et al. (2019). Common themes emerging from the data were: 1) navigating the social minefield, 2) pressure to thrive in the modern world, 3) fear of the unknown and 4) learning life's lessons. Being marked one of the most beneficial coping mechanisms, social

relationships simultaneously represent a potential cause for major stress experiences in children. The second topic entails pressure from multiple sources (including school, extracurricular activities, pressure from self and others). The influence of pressure was shown to be moderated by the child's coping resources. The third component highlighted the difficulty of coping with novel situations and stressors, and how awareness (e.g., gathering information about the stressor) can help mitigating this fear. The fourth theme comprises important lessons that can be drawn from stressful experiences and from the utilization of copings strategies. The authors marked the person-context-dependent nature of stress and coping as being of particular importance (Cheetham-Blake et al., 2019; Lazarus & Folkman, 1984). Therefore, the effectiveness of different coping strategies is not only situational, but also person dependent.

Figure 2

Common themes in 7 – 11-year-olds' lives.



Explanatory note. Results of the performed thematic analysis. Figure taken from Cheetham-Blake et al. (2019)

Based on the conceptual framework of the three-factor model, encompassing problem-focused coping, emotion-focused coping, and avoidant coping (Lazarus & Folkman, 1984; Spirito et al., 1988; Turner-Cobb & Steptoe, 1998), the following coping strategies had been qualitatively assessed. Frequently reported by the sample were problem-focused coping skills (e.g., problem-solving, cognitive restructuring) and social support. In terms of the latter,

feeling listened to, understood, and receiving reassurance were marked as the most important factors underlying successful soothing or co-regulation through seeking support. Rather expressive, emotion-focused coping strategies were contrasted, covering blaming others, crying, screaming, destroying objects, fighting, and violence towards oneself, as stated by both parents and children. Avoidance coping strategies were also commonly reported, including finding distractions, trying to forget the problem, dealing with problems alone, keeping quiet, leaving stressful situations, and blaming oneself. On a short-term level, “distractions were found to be particularly helpful” (Cheetham-Blake et al., 2019).

One novel aspect of the study was covered by the emphasis of the natural impermanence of feelings. Referred to as the “healing nature of time”, the awareness of trajectories of emotions may help children recover from stressful experiences and was found to be remarkably helpful. One possible underlying mode of action might be established by letting go of stressful experiences, thus fostering resilience.

In the course of another qualitative study by Wong et al. (2020) following an exploratory approach, thematic analyses were performed in order to evaluate primary school children’s (7–11 years) perspectives on of their Emotional Literacy Support Assistant (ELSA). Being mainly administered by educational psychologists (EPs), the training is typically undertaken by school teaching assistants. Semi-structured interviews were conducted with 12 key stage 2 participants, which are characterized by a minimum of one month’s ongoing ELSA support. Four key topics were identified: positive relationships, unique qualities, facilitates skill development, and positive impact. The training consists of five full-day sessions addressing six core areas of competence: 1) emotional awareness, 2) self-esteem, 3) anger management, 4) social and communication skills, 5) friendship zones, and 6) therapeutic stories (Wong et al., 2020). Regarding “facilitating skill development”, three sub-themes emerged: "practical resources," "emotional literacy" and "explicit teaching of strategies". ELSAs employ a wide range of practical resources to engage children and scaffold their emotional literacy skills, including playing games, cooking, gardening, and craft activities, such as making worry dolls and memory boxes. Furthermore, children receive individual support, which is tailored to their specific needs and issues. One boy explained how crafting a model volcano with his ELSA helped him to better understand his feelings of anger. Similarly, the children indicated how their ELSA enabled and empowered them to regulate their emotions and thus helped them manage their behavior more efficiently. According to the authors, all children of the

sample reported that ELSA support made a meaningful difference in their lives (Wong et al., 2020).

In the discussion part, different research paradigms had been suggested. Focus groups actively involving the children might generate more vibrant ideas as compared to individual and dyadic interviews, since a discourse may enable the children to discuss their ideas and opinions jointly.

2.3 Thermography

The aim to understand emotions has intrigued humans for thousands of years and can be traced back to 384–322 BC (Kristjánsson et al., 2016). Somatic perception, as well as bodily awareness, are two of the fundamental pillars of the human emotional experience (Herman et al., 2022). In that regard, interoception may be viewed as foundation of emotional awareness (Kanbara & Fukunaga, 2016). Interoception entails the sensitivity and awareness of bodily processes, including afferent signaling, central processing, as well as the mental representation of internal bodily signals (Critchley & Garfinkel, 2017). Its neural basis is substantially linked to the Anterior Insular Cortex (AIC) (Gu et al., 2013). Since it is considered a skill, people differ in their abilities to recognize and label their emotions (Herman et al., 2022). Interestingly, across several languages there have been found certain idioms regarding the concept of emotions, depicting sufficiently adequate localizations of emotions in the body and showing intercultural similarities: “a lump in the throat”, to be “heartbroken”, or getting “cold feet” - humans have contemplated emotions for thousands of years.

William James, who is regarded as the founder of experimental psychology, laid the foundation for experimental designs, assessing heat and psychological activity in 1890 with the opening statement: “Brain-activity seems accompanied by a local disengagement of heat” (James, 2007). In the third chapter of his book “Principles of Psychology” he outlines the so-called “Cerebral Thermometry”. Citing Doctor J.S. Lombard, who first assessed thermometric observations, claimed: “changes in delicate thermometers and electric piles placed against the scalp in human beings, and found that any intellectual effort, such as computing, composing, reciting poetry silently or aloud, and specially that emotional excitement such as an anger fit, caused a general rise of temperature” (Lombard, 1879, pp. 99–100). Since then, thermography is increasingly used in the field of psychology and research, with mapping emotions being explicitly examined in the last 5 years.

With the advances in science and technology, a new branch of research emerged, which is referred to as thermography. Apart from physiological analyses, including heart rate, galvanic skin response, or respiratory rate (Meiselman, 2016), imaging techniques allow for the mapping of emotions in the body by depicting thermal activity in terms of colors (Clay-Warner & Robinson, 2015; Marqués-Sánchez et al., 2020). Certain emotions cause increases in blood flow in the subcutaneous area and are thus associated with blood perfusion changes (Salazar-López et al., 2015). Therefore, thermal imaging (TI) constitutes a non-invasive, contact-free and low-noise method to depict physiological activity (Topalidou et al., 2017; Clay-Warner & Robinson, 2015; Salazar-López et al., 2015). Given that all objects above the absolute zero temperature (0 K) emit infrared radiation, TI depicts thermal activity, therefore not submitting the participant to any form of radiation (Cruz-Albarran et al., 2017). Concerning the transferability of TI results to the present project, a huge disadvantage may be the local restriction of TI's regions of interests, which are mainly limited to the facial area of the participants, *inter alia*: forehead, periorbital eyes, cheeks, nose and upper lips (Aristizabal-Tique et al., 2023).

A promising alternative approach may be covered by the emBODY tool. The bespoke tool constitutes a topographical self-report method of graphic visualization, which is not limited to the face. Those self-report assessment tools fall into the recently developed category of *bodily sensation mapping* (BSM), where participants are asked to localize their felt emotions by drawing them into a schematic mannequin-silhouette (Hartmann et al., 2023). The implemented paper-pencil-version in the present study resembles BSM techniques proposed by scholars (Nummenmaa et al., 2014). The procedure follows a self-reflective approach: Participants are asked to highlight the areas in the body where particular emotions are felt the most. A child friendly version (i.e., paper-pencil coloring) was administered within the course of the workshops performed in March and May 2024.

The basic emotions (i.e., grief, happiness, anger, fear, disgust, surprise) elicit distinct and discernible bodily sensations and were shown to be consistent across various cultures (Nummenmaa et al., 2014). Children possess representations of emotions based on *sensory*, *visceral*, and *kinesthetic sensations*, even before they can verbally label these experiences (Bucci, 1997). The first awareness of emotions is acquired in early childhood (Saarni, Mumme & Campos, 1998).

2.4 Emotional literacy

In the field of psychotherapy and counselling, it has been suggested that the concept of emotional literacy, in combination with expressive methods can facilitate ‘emotional healing’ (Pearson & Wilson, 2008). Combining Jungian and Rogerian paradigms, the stance of Carl Gustav Jung has been adopted in the light of the so-called Expressive Therapies (ET). According to Jung, the innate and natural self-healing mechanisms in the human psyche can be awakened and fostered by directly addressing emotions (Allan & Brown, 1993; Greenberg, 2004). Moreover, ET incorporates the enhancement of somatic awareness, which plays an integral part in expressive, emotion-focused therapies (Leijssen, 2006; Eiden, 2014).

“ET enhances the capacity to supportively decrease a client’s psychological proximity to, and associated tolerance of, the emotional charge around, a distressing experience. [...] In ET, emotional healing and self-regeneration may take place when activated emotions can be brought to awareness and processed, when the emotional charge attached to past events is reduced, and the client experiences a sense of moving forward with increased freedom from negative life patterns.” (Pearson & Wilson, 2008, p. 4).

2.5 Research gap

Among the most leading causes for diseases worldwide are particularly mental health problems, as stated by the WHO (Kessler et al., 2009). As most psychological disorders manifest during late childhood and adolescence (Kieling et al., 2011), the concept of mental health literacy is viewed as the foundation for well-being, reduction of stigma and prevention of mental illnesses (Simkiss et al., 2020). Being a precursory requirement to building mental health literacy, emotional awareness can be seen as a prerequisite (Nixon, 2016; Killick, 2005).

Shifting from a pathology-centered perspective mainly combating illness (Jorm et al., 1997) to promoting positive mental health outcomes (Kutcher et al., 2016), current developments incorporate a more salutogenetic stance (Bale et al., 2018; Kutcher et al., 2016). In line with the WHO’s definition of mental health being “more than the absence of mental illness” (Wei, McGrath, Hayden & Kutcher, 2015; World Health Organization, 2013), positive mental health strives towards self-actualization and flourishing, focusing on the promotion of well-being, realizing one’s own potential and being well-equipped to cope with stressors of everyday life (World Health Organization, 2013). These objectives substantially guided our development of the COMET4Kids project.

Mental health care in Austria and the DACH-Region mostly entails curative approaches, often neglecting preventive care (Simkiss et al., 2020), as well as socio-economic status (SES), ability levels and culture dependent phenomena. There is a great demand for wide-reach preventive care (Stiehl et al. 2023) in low-resource settings (Bale et al., 2018), with regard to the often-neglected mental health needs of children from lower SES areas (Kieling et al., 2011), calling for more inclusiveness and generalizability (Bale et al., 2018). Preventive care, which particularly addresses social abilities, self-esteem and confidence, as well as mental and behavioral skills, is seen as crucial step in order to prevent dysfunctional or risky behavior (Lawrence et al., 2023). To date, research has paid little attention to improving MHL targeting primary school children below the age of 12 years (Francis-Oliviero et al., 2023), since most of MHL research mainly addressed adult populations. There is sparse evidence concerning effectiveness (Bale et al., 2018) due to the lack of validated measures and the absence of a robust study design, resulting in a relative absence of psychometric properties (e.g., randomized controlled trials [RCT] or mixed methods) (Riebschläger et al., 2019). “Worldwide, there does not exist any school-based MHL intervention addressed to children aged 9-11 years and whose effectiveness has been demonstrated under rigorous scientific conditions.” (Francis-Oliviero et al., 2023, p. 9). Following the call to involve both parents, teachers, as well as social workers and school counselors, the given project follows an integrative approach, to pave the way for more favorable future outcomes for our current society (van Rens et al., 2018; Lawrence et al., 2023).

Following a co-development-approach, the mental health literacy program is characterized by its iterative approach, involving not only the children, but also other public stakeholders (i.e., teachers) in the process. As indicated by systematic literature reviews, positive relationships between all stakeholders involved (i.e., schools, teachers, parents, children) can help to buffer against the negative effects of the challenges presented by the school transition (van Rens et al., 2018). The aim of the project is to develop implementation strategies and to reassess them continuously and simultaneously. This process is referred to as a “participatory development process” involving both children and teachers, in order to tailor the intervention to the needs and capabilities of the specific age group. Furthermore, experts of various fields of psychology will be consulted and involved in the program development, merging knowledge of educational psychologists, clinical and affective psychologists, as well as findings of evaluation and transfer research. To grasp the concept of mental health literacy

and to adequately depict the effects of the MHL intervention, a multi-method approach will be adopted in the subsequent evaluation phase, combining non-verbal behavioral assessments, verbal methods (i.e., self-reports), focus groups and ESM (=experience sampling methods). Focus groups will be conducted with the children in order to assess the acceptance and feasibility of the content, as well as to evaluate its impact on MHL knowledge. Moreover, experimental methods such as VR will be incorporated. During the MHL workshops, child-appropriate stimuli and interactive methods will be administered, including brainstorming with sticky notes, cooperative storytelling, group discussions, individual letters and play.

Incorporating both qualitative and quantitative measurements, the following measures will be administered: the Knowledge and Attitudes to Mental Health Scales (KAMHS), Spence Children's Anxiety Scale - Short Version (SCAS-S), Measure of Adolescent Wellbeing (EPOCH), Loneliness Scale and the Emotion Awareness Questionnaire (EAQ).

2.6 Research aims

Embedded in the larger context of the COMET4Kids program, which addresses six different dimensions of mental health literacy, the present aim is to focus on one particular facet of the given construct. Based on the six-factor model of Bale (2020), mental health literacy constitutes: recognizing changes in mental health, help-seeking actions, knowledge about supports available, mental health influences, attitudes, as well as coping & resilience. The latter will be of special importance for the present work. Therefore, one of the main objectives was to assess the current state of the children's understanding of emotions and coping strategies, as well as their predominant use of coping strategies before the comprehensive education sessions take place.

2.7 Research questions

Paying special attention to the acquisition and utilization of coping strategies, the following work aims at assessing children's emotional awareness, conceptually and locally, as well as gaining understanding of the children's way of coping with specific emotions. Following an explorative approach, the following research questions may be derived in an iterative manner:

- 1) What do fourth grader children know about the concept of emotions regarding its causes and purposes?

- 2) In which situations do children feel anger, fear and grief respectively?
- 3) Where do they feel the particular emotion of anger, fear and grief in the body?
- 4) How do they cope when they are angry, fearful and sad?

2.8 Hypotheses

Based on the literature on coping in children of our specific age group, qualitative research on mental health literacy in primary school children, as well as imaging techniques such as digital infrared thermal imaging (DITI) referred to as Thermography, the following hypotheses may be derived from the third and fourth research question:

- 1) According to thermography literature, children will likely locate fear in the upper torso and near the head, anger in the limbs and grief in the chest, near the heart area.
- 2) Based on the cognitive and emotional level of development, children will likely name behavioral and mental withdrawal, seeking support and venting in terms of emotion regulation.

3. Methods

3.1 Methodology

3.1.1 Sample

The given sample constitutes children aged 8 to 12, with a mean of approximately 10 years ($M = 10.85$). The total sample entails 119 participants ($n = 119$), whereof 116 gave informed consent ($n = 116$) yielding a sample size of 200 pupils. With respect to not all the workshops being analyzed for the given research questions, the two schools which were included in the analyses were one primary school based in Vienna, 10th district ($n = 76$) and one primary school in Baden, Lower Austria ($n = 43$). The latter is part of the college of education of Lower Austria (i.e., teacher training college), incorporating a pedagogical approach. Furthermore, the primary school in Baden is an all-day school, providing more extensive support compared to regular primary schools.

The gender distribution illustrated some skewedness towards the male participants, along with the majority of children identifying as male ($w = 56$, $m = 61$).

3.1.2 Acquisition of test subjects

The subjects were acquired via convenience sampling (e.g., networking events, social media) by the research team, where various schools in Vienna were targeted. Hence, a multitude of socio-economic statuses were incorporated (i.e., college of education Lower Austria Baden), thus covering diverse backgrounds. Moreover, the schools did not only vary in size, but also in location (i.e., including rural areas and urban regions). The parents of the participating children gave legally informed consent, whereas the children themselves gave assent (i.e., child or minor assent).

Prior to the co-development phase, ethical approval was obtained from the ethics committee at the University of Vienna (EK-Nr. 00825). Special attention was paid to the non-evocation of potentially triggering memories in the children. In this regard, the prompts were selected carefully and did *not* allude to specific events (e.g., “How did you feel when your parents divorced?”). The free recall without event-specific priming enabled children to come up with their own individual ideas and experiences. Furthermore, the endeavor to not cause any mental or emotional harm, was further incorporated within the development of the virtual reality (VR) workshops. The incorporation of virtual reality, accompanied by physiological measures, aims at assessing the children's emotional literacy and awareness. In order to facilitate empathizing and putting oneself in the position of somebody experiencing certain events at hand, virtual reality snippets were prepared to enable a multi-sensory experience. The selection of scenes was tailored to the attempt to provide the least harm, whilst allowing the mental training and preparing for similar future events. Likewise, the protection of the children as required by the ethical approval was also implemented during the data analysis phase, by grant anonymity and privacy. Within the course of the data analyses, all names were either removed or disguised by assigning neutral codes to the subjects (e.g., ID03).

3.1.3 Stimuli

The implementation of the workshops took place in five Austrian primary schools, covering 13 different school classes (i.e., including all parallel classes). The research workshops had a standardized, fixed duration for two hours and were implemented from October 2023 until May 2024.

3.1.4 Procedure

For the following analyses, two workshop series are explicitly examined. The first workshop series was conducted in March 2024 in the 10th district of Vienna. The general outline covered not only the basic emotions, such as sadness, anger, fear and happiness, but also arousal-related states, inter alia: overexcitement, relaxation, boredom. Moreover, complex emotions were assessed as well, such as curiosity, loneliness, connectedness (i.e., “feeling well when being together”), insecurity and bravery. The objective was to present dichotomous pairs of states, in order for the children to grasp the concepts more easily. The sequence of questions asked was standardized and posed in equal order. Firstly, children were asked to state situations when they would feel the particular emotion/state. Secondly, they were asked to assign a color to this particular feeling or state, which was not included in the following analysis. Thirdly, they were asked to depict where they would feel the respective emotion/state in the body, by implementing a similar graphic task as the emBODY tool, incorporating a paper-pencil-version. The transcription of the visual data was conducted by manually transferring the data to excel sheets, which were further analyzed by the qualitative analysis software tool MAXQDA.

Focusing on the last workshop series, which were conducted in May 2024, the workshop outline will be elaborated in the following section.

Implemented in a town near Vienna with approximately 25.000 citizens, emotion regulation and emotional awareness were addressed in two different school classes (i.e., 4A, 4B). Noteworthy, Baden in Lower Austria is a renowned spa town and health resort.

The module “Strategies for different emotions” started with the introductory question: “Why do we have feelings?”. Subsequently, three emotions were addressed in detail: fear, grief and anger. Each emotion was covered by: firstly, collecting ideas on why we have the particular emotion (e.g. “Why are we sad?”). Secondly, by collecting corresponding emotion regulation strategies. The data collection was implemented by the researchers using sticky notes to record individual statements in small group settings. Due to time constraints, no question examining the role of anger was administered in the second class (i.e., 4B), the data on emotion regulation strategies addressing anger were analyzed, nonetheless.

3.2. Statistical Analyses

3.2.1 Analytic approach

The present work follows an analytic approach which is based on framework analysis (FA), a tool which was developed for qualitative research in the 80ies of the last century (Richie & Lewis, 2003). First conceptualized for large-scale policy research, FA is nowadays considered a widely used method in the field of clinical & health psychology research and ranks among the gold standards of qualitative data analysis. More specifically, the chosen application of FA in the present study is referred to as deductive framework analysis, where a set of pre-existing codes is conceptualized in advance and subsequently assigned to the data. In that regard, the given method constitutes a top-down approach. This procedure is limited to the fourth research question as well as its hypothesis, which both address coping strategies. Therefore, a pre-existing set of labels was used to code the data and cluster them into coping families, which are derived from the literature.

Moreover, there will be sections where its counterpart, inductive framework analysis (i.e. bottom-up, data-driven), will be applied to assign codes to the data. Inductive framework analysis is often referred to as reflexive thematic analysis, the terms may be used interchangeably. Line-by-line coding was implemented in an inductive, data-driven manner, in order to extract as much information as possible. The selection of the chosen analysis will depend on the particular hypotheses, which will be explicitly highlighted.

3.2.2 Qualitative data analysis

The data were analyzed by using the qualitative analysis software MAXQDA with the 2022.8 version, which was released September 12th, 2023. The software was predominantly used for the coding process and for data visualization tools.

Implementing a mix of deductive and inductive coding, the qualitative analysis derived the following categories from the literature: 1) Emotion-Focused Coping (i.e., venting, expressing emotions verbally or physically) 2) Avoidant Coping (i.e., mental withdrawal, distraction by performing different activities) 3) Cognitive Coping (i.e., self-talk, self-soothing, cognitive restructuring) and 4) Social Support (i.e., talking to loved ones, talk therapy, talking to inanimate objects or pets). The following three categories were enriched with one subcode in each case, yielding three different inductive subcodes. The subcode for Avoidant Coping was termed “spatial withdrawal”, the subcode for Cognitive Coping was

labelled “positive self-talk” and the emerging subcode for Emotion-focused coping was “physical/somatic soothing”.

In essence, the inductive coding process regarding the purpose of emotions was derived by existing literature in the field of emotion psychology. The independent assignment to codes is listed in the appendix.

In terms of emotion-evoking situations, the inductive code “victim of abuse” constitutes both emotional abuse (e.g., name-calling, yelling, insulting, deliberately being ignored) as well as physical abuse (e.g., being beaten, being physically hurt).

The given percentages were all calculated relative to the sample size of the particular workshop series.

4. Results

The explorative findings presented in the following section are structured iteratively. The sequence resembles the structure of the research questions.

4.1 Purpose of emotions

In terms of the children’s understanding of the purpose of emotions in general, relatively few answers emerged. Within the course of the module “Strategies for different emotion”, the question regarding the general purpose of emotion was posed only once, during a workshop conducted in May.

Following an inductive coding process, 50% of the children’s answers referred to the *genetic make-up*, adopting a rather evolutionary biology stance. 25% of the statements were addressing the *signaling function* of emotions, the other 25% revolved around *boundaries* and *needs*.

4.1.1 Purpose of anger

Within the course of the workshops conducted in May, the most frequently emerging themes were boundaries, signaling function and protection.

Regarding the aim of anger, the majority of the pupils linked the purpose of anger to *boundaries*, accounting for 71,43% of the statements. *Protection* was mentioned in 28,57% of the cases, whereas *signaling function* accounts for 14,28% of the given answers.

4.1.2 Purpose of sadness

The purpose of sadness was mostly linked to *mourning a connection* or *loss*. Within the course of the workshops performed in May, the children correctly assigned meaning to feelings of sadness. When asked to possible reasons for experiencing sadness, 40% accounted *loss* as one of the purposes of grief. Other 40% of the sample showed a rather philosophical understanding of grief, incorporating a meta-perspective. The children stated, that grief would serve a role of promoting *contrast*: “Otherwise everything would be always joyful. One has to be sad from time to time too”. Twenty percent of the sample were coded as “different answer”, since a valid response was given, but not necessarily a proper answer to the actual question (e.g., “Sometimes we are simply sad.”).

4.1.3 Purpose of fear

The purpose of fear was mainly attributed to *protection*, despite many answers simply reflecting bodily sensations. In addition to the description of nervous system responses, children drew comparisons between animal and human behavior by referring to animals’ fear responses.

Protection constitutes 35,71% of the statements. 21,42% of the answers referred to observed animal behavior (e.g., “some animals get rid of their tail”, “some animals feign death”), when being asked “Why do we have fear?”. In terms of these statements, the inductive codes assigned mainly addressed the nervous system responses, such as *freeze* (i.e., 21,42%) or *flight* (i.e., 14,28%).

4.2 Emotion-evoking situations

4.2.1 Anger-inducing situations

In the course of the workshops implemented in Vienna in March 2024, the most frequently mentioned situations of the children of all three parallel classes were: *Being annoyed* (17,91%), *losing a competition* (16,41%) and *frustration/unmet needs* (11,94%). Followed by *gossip* (10,44%), *school* and *relationship rupture* were stated equally often (i.e., 7,46%). Put together, the three inductive codes *loved ones being insulted* (8,95%), *being insulted* (4,48%) and *witnessing verbal abuse* (1,5%) constitute one overarching category, which was termed *emotional abuse*. *Emotional abuse* encompasses 14,93% of all anger inducing situations stated.

The following inductive codes were all mentioned in 1,5% of the cases respectively, inter alia: *Betrayal*, *unfairness*, *abandonment*, *bullying*, *jealousy* and *poor school performance*.

4.2.2 Sadness-evoking situations

The most frequently stated situations which induce feelings of grief were: *being abused* (16,9%), *loss* (15,49%) and *bullying* (11,26%). The first code, initially termed “victim of abuse” constitutes both *emotional abuse* and *physical abuse*, the former accounting for 75% of the mentioned abuse.

Poor sports performance was reported in 11,26% of the statements, closely followed by *loneliness* who entails 9,85% of the given answers. There were less frequent statements, such as: *exclusion* (4,22%), *relationship rupture* (4,22%), *being criticized* (2,81%), *missed opportunities* (2,81%). *Witnessing fights*, *frustration/unmet needs* and *school* share the same occurrences within the dataset of grief evoking situations (i.e., 1,4% respectively).

4.2.3 Fear-inducing situations

Situations which cause children to feel scared the most, were *horror movies* (15%), *school* (10%) and *being alone* (8,33%). The code *home alone* differs from the latter in terms of the specification of being at home. Being *home alone* was mentioned in 6,66% of the fear-related statements. Likewise, the mere imagination or the memory of *being pursued* was among the most frequent stated fear-inducing situations, also comprising 6,66%. *Nighttime*, *scary videogames* and *new schools* were each mentioned in 5% of the given responses, followed by *war*, *falling* and *specific phobias*, accounting for 3,33% each.

The code *victim of abuse* was assigned in 5% of the cases, whereas 3,33% of the children reported being scared in response to *emotional abuse*.

Lastly, some less frequent allegations were: *fear of heights*, *nightmares*, *thunder*, *being criticized*, *scary stories*, *flickering lights* and *darkness* accounting for 1,66% respectively.

4.3 Localization of emotions in the body

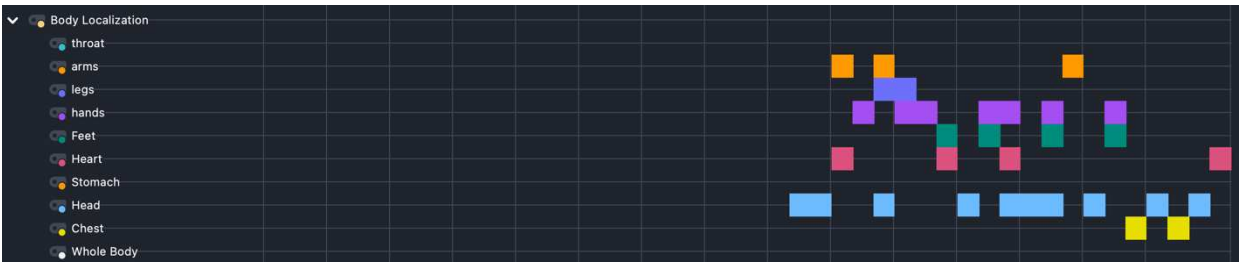
4.3.1 Localization of anger

In terms of anger, more than one third of the children localized anger in the head, accounting for 39,51% of the total statements. Followed by the hands, which accounts for 13,58%. In addition, there was an observable trend, that the most frequently named areas revolved around the upper body, encompassing the heart (11,11%) and the arms (8,64%). Followed

by the feet (7,4%) and the legs (6,17%), the stomach and the chest were stated equally often (i.e., 3,7% respectively). Anger was located in the throat only once (1,23%). Furthermore, the statement of feeling the emotion in the “whole body”, accounts for 4,93%. This may be regarded as counter evidence in the light of the first hypothesis.

Figure 3

Localization of anger in the body



Explanatory note. Showing a depiction of the MAXQDA output. Figure legend on the left. The colored squares represent the relative frequencies of allegations.

Figure 4

Frequencies of topographical anger sensations in the body



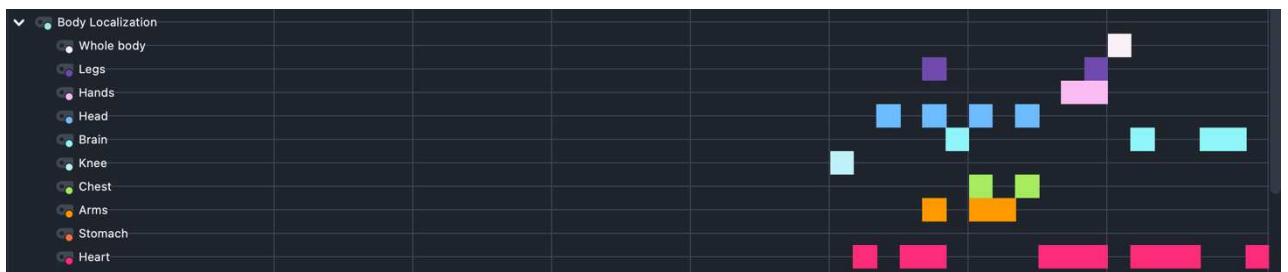
Explanatory note. Showing a depiction of the MAXQDA output. The numbers represent the absolute frequencies of allegations. The size is proportional to the statement occurrence rate.

4.3.2 Localization of sadness

With respect to grief, 50% of the children located sadness in the heart area, followed by 13,3% extending onto the chest area. Moreover, the stomach was mentioned in 10% of the cases. The head accounts for 8,3% of the statements, along with the brain (5%). Sharing an equal proportion, the throat covers 5% of the given areas, whereas the legs were mentioned in 3,3% of the children's utterances. The "whole body" was listed in 3,7% of the given answers. In this light, the given statements are in line with the proposed hypothesis.

Figure 5

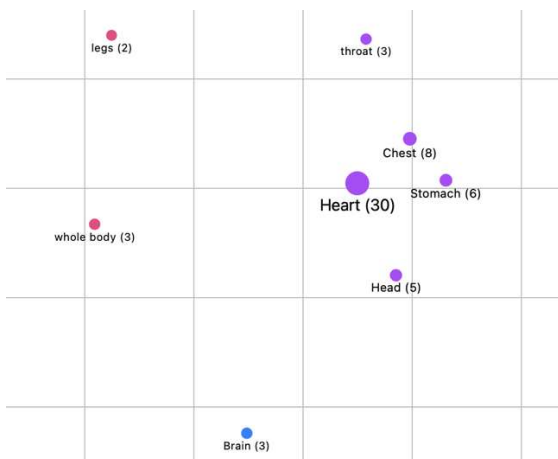
Localization of grief in the body



Explanatory note. Showing a depiction of the MAXQDA output. Figure legend on the left. The colored squares represent the relative frequencies of allegations.

Figure 6

Frequencies of topographical grief sensations in the body



Explanatory note. Showing a depiction of the MAXQDA output. The numbers represent the absolute frequencies of allegations. The size is proportional to the statement occurrence rate.

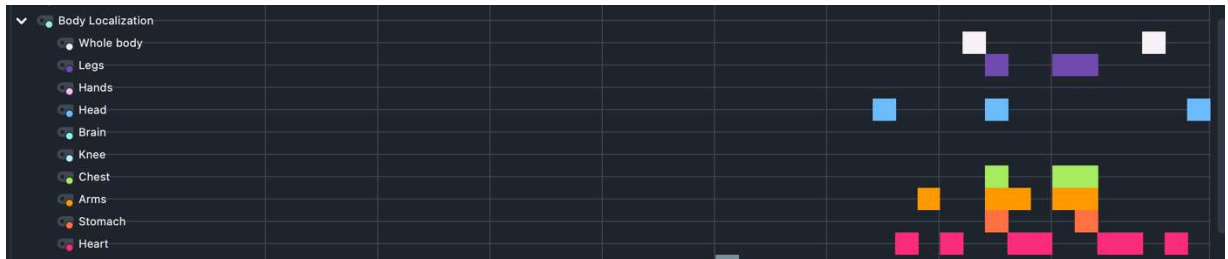
4.3.3 Localization of fear

Pertaining to fear, the relative majority of the children located fear in the heart, accounting for 26,32% of the total statements. Followed by the arms (14,47%), the legs and the head, sharing an equal proportion of 10,57%. Furthermore, 9,21% of the children feel the emotion of fear in the head area, whereas the chest was mentioned in 7,89% of the cases. A relatively small percentage was covered by the hands (2,63%) and the knees (1,32%).

In comparison to the other emotions, fear seemed to illicit the largest “whole body” response in the given sample (10,53%), thus partly confirming the first hypothesis.

Figure 7

Localization of fear in the body



Explanatory note. Showing a depiction of the MAXQDA output. Figure legend on the left. The colored squares represent the relative frequencies of allegations.

Figure 8

Frequencies of topographical fear sensations in the body



Explanatory note. Showing a depiction of the MAXQDA output. The numbers represent the absolute frequencies of allegations. The size is proportional to the statement occurrence rate.

4.4 Emotion regulation strategies

4.4.1 Anger Strategies

There was a clear, observable pattern within the datasets. Children rather reported emotion-focused coping when they experienced anger, including cathartic strategies (e.g., retaliation, destroying objects, screaming) than in case of sadness. Across all samples, *emotion-focused coping* accounts for 40,54% of the given statements, followed by *social support*, which entails 21,62% of the stated anger strategies. Among social support, one quarter incorporated inanimate objects (e.g., “talking about it to a wall”), and pets accounted for one quarter as well (e.g., “I explain it to my dog”). *Avoidant coping*, such as distracting activities, account for 18,91% of the children’s answers, with *cognitive coping* representing 8,1% of the total statements. One example for cognitive coping in case of anger would be: “When I think about something funny, it makes me laugh. Then it does not feel so bad anymore”. Alarmingly, one third of the cognitive strategies entailed self-invalidation, for instance: “I think of it being useless, because nobody actually cares when I am angry”.

Spatial withdrawal was mentioned in 8,1% of the statements, whereas *retaliation* constitutes 2,7% of anger strategies.

4.4.2 Sadness strategies

When feeling sad, children in the given samples mainly reported sticking to *Avoidant Coping* strategies, such as: “drawing, horse-riding, reading, playing with friends, sports or sleeping”, which accounts for 52,4% of the total statements. Only 9,1% out of the given answers referred to using *Social Support* as a resource when feeling sad, of which one third constitutes “cuddling with pets” and two thirds were addressing human support by loved ones. Emotion-focused coping, such as crying was reported twice only, among 22 differing statements which entails 9,1% of the given answers. In the parallel class, emotion-focused coping was not stated once.

4.4.3 Fear Strategies

In order to calm the hyperactive nervous system (i.e., flight response), children already reported applying *physical and somatic soothing activities* (e.g., “breathing techniques, finger practices, relaxation techniques, yoga”), which account for 31,8% of the emotion regulation strategies children named. Showing a sophisticated understanding of emotion

regulation, this became only apparent in terms of fear strategies, not when faced with anger (i.e., fight response).

Likewise, 31,8% of the statements addressing fear indicated *social support* being a valuable resource. *Avoidant coping* only accounts for 9,1% of the given answers, whereas *Cognitive Strategies* entail 13,6% of the children's answers. *Spatial withdrawal* shares the same proportion of answers as Avoidant Coping, covering 9,1% of the statements. Remaining statements were not entirely answering the question, still giving valuable insight into the children's thought processes and inner worlds, such as: "Why am I feeling afraid right now? Why was I feeling like this?"

All things considered, the evidence supports the second hypothesis that children will most frequently name venting, social support and mental withdrawal in terms of emotion regulation (I.e., coping strategies).

5. Discussion

A remarkable pattern found in the data encompasses the high proportion of grief in response to being abused within the context of listing emotion-evoking situations. In one particular parallel class, the statements of abuse-related grief reached a share of 42,86% out of the total statements in this specific school class. Due to the conceptualization of the workshops, it remains unclear, if the children of one particular class are in fact more often exposed to abuse than the other parallel classes, or if it was simply a matter of group dynamics. Since terms were easily primed within the course of group works, children could have simply expressed their approval by reciting inputs of fellow students.

Another discovery worth mentioning is that children reported feeling sadness as a response to being falsely accused of something. Guilt-inducing actions, which were not committed in the first place, leave a feeling of remorse and unfairness, which children label as 'sadness'

Interestingly, children of the given sample often stated that talking to inanimate objects would help them to regulate their emotions. Apparently, at the age of 9-12 some children did not differentiate in terms of effectiveness of social support, whether they are talking to a human, or an object, or a pet respectively. Within the scope of attachment theory (Bowlby, 1979), this phenomenon has been termed "transitional objects" (Winnicott, 2016). Following an innate, biological need for social interaction (e.g., smiling, holding, touching), these behaviors are not limited to primary attachment figures, but can be substituted by

supplemental figures as well (Bowlby, 1979; Triebenbacher et al., 1998). Transitional objects can range from blankets to cuddly toys, which describe objects children form strong attachments to (Winnicott, 2016). Winnicott claims that these objects can represent the "good enough" mother, adapting to the child's individual needs (Winnicott, 2016). Transitional objects serve a compensatory role and were shown to reduce anxiety, promote exploration and play, and even facilitate separation from parents (Passman et al., 1975). These transitional objects were found to be needed and appreciated especially in the face of stressful events, which in turn may require coping (Lookabaugh & Fu, 1992). Research has indicated significant parallels between the functions of inanimate transitional objects and pets as "companion animals" (Triebenbacher et al., 1998).

Within the human-animal relationship, common attachment behaviors such as proximity-seeking, initiating interaction, expression of affection, and thinking about the object of attachment are displayed, thus shaping the interactions, similar to human relationships (Triebenbacher et al., 1998). Research suggests that pets offer emotional support, affection, and unconditional love, therefore playing an important role in children's emotional development and well-being, similar to transitional objects (Walsh, 2009; Wilkes, 2009) and can even buffer against disruptive life events and difficult transitions (Pachana et al., 2011). It has been suggested that the emotional attachment and need for proximity between children and pets is fairly identical to human attachment, while being "less conflicted than human relationships" (Robin et al. 2016). In the course of a qualitative study with a similar aged sample (i.e., 3 – 11 years), 88% of the children indicated that their pets would know if they are sad, sick or upset, signifying a form of emotional attunement (Triebenbacher et al., 1998), which could potentially mitigate poor human attachment experiences. Delivering a promising future indication, it could yield interesting results to examine the exact age when this tendency shifts towards a preference for human relationships in the course of mixed methods cross-sequential studies, to foster developmental understanding regarding the patterns of the duration, intensity, stability of attachment relationships

Among the children's statements, poor school performance was mentioned exclusively as a sadness-evoking situation, in both schools, whereas poor sports performance was commonly mentioned as an anger-inducing situation.

The distinction between poor school vs. poor sports performance is worth highlighting and will be elaborated by referring to the attribution theories of Heider & Weiner (Weiner, 1985).

Regarding the common bias in adults, some react to academic failure with anger, as a response to external attribution (e.g., “I only failed because the exam was too hard!”). Interestingly, the children seemed to solely perform internal attribution and trace it back to their own abilities. This may account for the feelings of sadness children report, when facing poor academic performances. It would be an interesting future implication to conduct longitudinal studies to examine at what age the shift happens to more external attributions.

In some cases, the children did not answer the question, but still gave valuable answers and insights. Regarding the bespoke patterns, the latter might be explained by theories of social psychologist, Daryl Bem. It became evident, that children had difficulties assigning meaning to emotions, especially in terms of purpose. Fear yielded the most heterogeneous answers, oftentimes neglecting the initial question. A large proportion of answers was describing the physiological effects of the emotion, how fear becomes perceptible in the body. Not knowing the bidirectional relation between physiological responses and emotions, children struggled to explain (i.e., understand) the function of fear. Yet, they correctly referred to flight or freeze responses.

Daryl Bem's self-perception theory (1972) claims that individuals may derive their own attitudes from behavioral self-observation. Behavior offers the basis for deductive reasoning (e.g. “I buy flowers quite often; therefore, I must like them”). Notably, his research mainly addressed attitude formation in adults. The author postulates that the theory is not limited to attitudes, but is also applicable to emotions, and other internal states, by inferring them from observations of their own overt behavior and/ or the circumstances in which this behavior occurs (Bem, 1972).

The pattern of stating bodily responses instead of the purpose of fear, might signify a rudimentary precursor to this style of deductive reasoning in children.

Regarding emotion regulation strategies, children already reported applying physical and somatic soothing activities (e.g., “breathing techniques, finger practices, relaxation techniques, yoga”) to calm the hyperactive nervous system (i.e., fight) when feeling afraid. Therefore, children of the present sample seemed well-equipped to handle feelings of fear and physical discomfort without the aid of additional psychoeducation.

Moreover, children showed a tendency towards emotion-focused coping when experiencing anger, including the predominant use of venting/cathartic methods (e.g., retaliation,

destroying objects, screaming), but this became only apparent in terms of anger, not in terms of grief. Alarming, in one particular sample “crying” (i.e., emotion-focused coping) was not stated once, when asked to list strategies to cope with sadness. In terms of feeling sad, children mainly reported sticking to avoidant coping strategies, laying the foundation for emotional dysfunction in adulthood.

The location of the primary school where the Coping Strategy workshops were implemented, is not only a renowned spa town, but also not an all-day school. More specifically, the primary school in Baden is part of the college of education of Lower Austria (i.e., teacher training college), incorporating a pedagogical approach. Therefore, the college of education facilitates evidence-based implementation practices in terms of personal development and school development consulting (i.e., teaching, organization, teams). As an all-day school, it certainly provides extensive personal and educational support. All things considered; this may lead to children who are more emotionally aware than the average schools of the present sample. In terms of language comprehension, correct spelling and higher order cognitive functions, there have been major differences between the primary school of Baden and all other schools which participated in the present project. Therefore, the school context may systematically influence the data.

Depending on the school’s location, different patterns of emotional awareness in the children were able to be identified. Refraining from retracing allegations to particular participants, there were context-dependent differences between multiple schools, illustrating differences on higher-order levels in terms of a multilevel perspective.

Throughout all datasets, the pupils of this particular school showed the most differentiated understanding of emotions (i.e., anger as a response to boundary violations). The bespoke community of Baden yielded the most fruitful data in terms of children’s cognitive level of development, emotional awareness and understanding of coping strategies. This may be due to the relative importance of health and well-being in the light of Baden being a spa town. A possible explanation might be the higher levels of awareness in the general population, linked to the importance of physical and potentially mental health as well. Children might be confronted with health- and wellness-related topics from a young age.

Another aspect regarding the individual support the children receive in school contexts (Blyth et al., 1984), smaller class sizes enabling individual encouragement can certainly be beneficial compared to fast-paced, potentially impersonal school contexts in capital cities. Moreover,

the primary school of Baden follows a whole-day service offering “additional options”, as stated in their website. Incorporating a pedagogical stance, the school pays special attention to evidence-based teaching practices, along with continuous evaluation of effectiveness.

The children of Viennese urban schools, which simultaneously depicted lower levels of average SES, showed a less differentiated level of understanding of emotions. Interestingly, they reported feelings of sadness more often in response to boundary violations, violence, and unfairness. This could potentially be interpreted as a genuine expression of primary emotions, untouched by socialization. Emotion psychology theories which refer to anger as a “cover-up” or “secondary emotion” (Paivio et al., 1999) may support this assumption.

5.1 Strengths

In the field of mental health intervention and prevention programs in children, there is scarce research on primary school children specifically. Moreover, a feasibility section was incorporated in the present project, to address the oftentimes lacking evaluation methods in current research. Furthermore, the results of those intervention programs largely depend on not only the context of implementation, but also the education system. Depending on the country, the years spent in primary school may vary, affecting the occurrence and the timing of various developmental tasks (e.g., school transitions) and thus limiting comparability among differing countries.

In this light, the COMET4Kids may be considered a pioneer research project in the field of European and particularly German-speaking primary school interventions addressing mental health literacy.

Noteworthy, the modes of knowledge transfer, as well as their sequence, were thoughtfully determined. More specifically: the modes of recall alternated between free recall and cue recall via prompting, delivering more accurate results and simultaneously giving the children rough indications, if needed. The bespoke sequence constitutes three steps, firstly educating the children on a specific topic and building awareness. Secondly, the memory recall is implemented. Thirdly, their memory recognition is tested.

Regarding the predominance of quantitative research, it has been suggested that relying solely on written administration may result in limited validity (Bale et al., 2018). With respect to the child’s performance in multiple choice formats, the children’s success may largely depend on their reading and writing abilities, thus limiting the reach of the given measure.

Especially regarding pupils of lower income areas, with some children being descendants of refugee families, there were some cases in our present sample where children did not speak German. Indicating a trend, there were some pupils that showed significant delays in linguistic development. Therefore, it has been suggested to implement open-ended questions about their understanding of mental health, highlighting the importance of qualitative research in this field (Bale, 2018).

Regarding the data collection, the modes of participation were also alternated. With respect to qualitative research, it can be beneficial to allow for various modes of contribution. Whereas working in small groups may enable a feeling of safety and familiarity, working with sticky notes may facilitate sharing more personal input and unfiltered ideas, which can be equally advantageous and disadvantageous, as explored in the following sections.

5.2 Limitations

There might have been multiple external factors in terms of the sample and the implementation of the workshops that may have led to partly ambiguous results, which will be elaborated and assessed hereinafter.

Firstly, due to the large age differences within the same primary school classes, ranging from 8 to 12 years, it is worth considering different levels of cognitive and emotional development among the fourth graders in our sample, which may have yielded scattering results. Regarding the usage of coping strategies, it has been indicated that there will be a shift in developmental stages and primarily used coping strategies between the ages of 9 and 10, which marks the transition from “middle childhood” (6-9) to “early adulthood (10-14)”.

In this light, another possibility worth exploring constitutes the influences of the socioeconomic status on cognitive abilities, as well as emotional intelligence. Recent findings suggest that higher socioeconomic status and favorable family environment facilitate higher levels of emotional intelligence (Naushad et al., 2022) and even lower the risk of school drop-out (Song et al., 2012). Children of higher SES displayed greater emotional intelligence in comparison to Middle SES and Low SES students. However, the middle SES students did not differ from low SES students in their emotional intelligence (Naushad et al., 2022), yielding a disproportionate division of the dichotomic moderator SES (i.e. high vs. middle and low).

Therefore, there might be delays in development due to the lack of nurture due to time constraints. This may account for the lack of time parents spend with their kids, in order to provide financial security for the family. Most of the schools in our sample stem from districts in Vienna, which may cover the lower bounds of socioeconomic statuses.

Concerning mental health literacy, the gaining of understanding, as well as the acquisition of emotional intelligence mostly relies on observational learning, modeling, imitation (Lawrence et al., 2023) and interpersonal exchange of information (Martinez-Pons, 1998). The former will inevitably fall short, if the parent is covering more or longer shifts, respectively (Kuo et al., 2024). A possible explanation could be that the parent needs to work harder and/or longer to compensate for lower salaries, or has to recover from physically exhausting blue-collar jobs. A study on primary children conducted in China, which compared rural and urban regions, found that in terms of SES, the parenting style had a mediating effect between family socioeconomic status and emotional intelligence, indicating regional differences (Liu & Wu, 2022). Interestingly, the authors found that in lower SES regions, emotional intelligence was significantly positively correlated with the parents' emotional warmth and understanding parenting styles, whereas in regions of higher SES, only the emotional warmth and understanding of the father had a mediating effect (Liu & Wu, 2022; Apsley et al., 2020). Further examined by scholars, the two determinants of parenting styles having the most impact on emotional intelligence and resilience were found to be *concern* (i.e., how caring the parent is perceived to be) and *control* (i.e., harshness and coercive control) (Kuo et al., 2024). Findings suggest that children's emotional, behavioral and cognitive development is largely dependent on education, especially family education, which depends on the parenting style of parents (Kuo et al., 2024). Emotional intelligence in pre-school children was found to be largely dependent on the parenting style (Farrell, 2015).

Secondly, besides the remarkable differences in understanding and comprehension, there was an observable trend in the majority of children, which accounts for difficulties with figurative meaning. During the co-development phase of the workshop, our aim was to transform latent constructs such as “resilience” and “coping” into child friendly language, in order to make these concepts tangible for children in the fourth grade. For instance, the aim was to convey the meaning of resilience by referring to “bravery” in difficult situations. Therefore, an illustration of “little helpers”, which attended to the displayed person in a difficult situation, was chosen. Bravery was intended to be depicted by the little helper wearing a super-hero

cape, illustrated by proud, confident mimic (i.e. smirk, one lifted eyebrow) and gestures which portray strength (i.e. muscle flex). During the implementation, several content-related issues arose from relying on the literal meaning of illustrations (e.g. “What is this? A bean?”). The development of sophisticated figurative language understanding is said to occur around age 10 (Chabohun et al., 2021). There might have been challenges with *visual literacy*, defined as “the ability to interpret images as well as to generate images for communicating ideas and concepts” (Stokes, 2002). Difficulties with visual literacy may be explained by the predominant use of one particular brain hemisphere, due to troubles utilizing a learning style which is incompatible with their natural abilities. Consequently, instructional materials and teaching styles should be tailored to the children’s cognitive styles for greater learning effects (Stokes, 2002). Children with limited domain knowledge may view graphics which allude to incomprehensible information as excess complication, if the link to the concepts are not entirely obvious (Chanlin, 1997). In conclusion, there might have been issues with mentally emphasizing with the children on the researcher’s side, in terms of perception, reasoning and cognition.

Likewise, another predicament of explaining difficult constructs such as “resilience”, “wellbeing” and “coping” to children, is the inevitableness of suggestive questions. In order to narrow the scope, explicit cues were used in the questions to ensure common ground among children and researchers. This limits the validity of the results, because many of the answers were mere repetitions of what was initially stated to the children, or dichotomous answers (i.e., yes/no). Therefore, it might not be plausible to test for feasibility and understanding in children using the words “Do you understand this? Does this make sense?”. Possible reasons for children simply agreeing and saying “yes” might be the gradual loss of concentration or “Ego depletion” (Baumeister, Vohs & Tice, 2007). This process entails the decline of cognitive resources, which is also dependent on the time of day. In line with this, social desirability might also play an important role, because it is outright simple to guess the desired outcome, which in turn leads to demand characteristics. Another possibility can be drawn from the data, where a high proportion of children in our sample indicated that they viewed school as an aversive duty and that they look forward to the end of the school day. In this light, answering “yes” may be an attempt to shorten the teaching unit and transit quicker into the playful part, since group games were administered occasionally. Those games aimed at labelling emotions as well as their correct attribution and combined elements of Chinese whispers and pantomime.

Given the freedom and flexibility which qualitative research allows for, another limitation of the present study is the ambiguity of some of the children's statements. In the light of the brevity of their expressions, some are semantically unclear and yield very different results, depending on the perspective of the interpreter. An additional round of clarification (e.g. "What do you mean by this?") was not feasible due to time constraints and, in turn, broadens the scope of interpretative freedom during the coding process.

Despite the collectively growing awareness on gender stereotypes, some remnants of the past's socialization implications are still perceptible. There has been extensive research on societal norms influencing the upbringing of female vs. male children, in terms of affect and behavior. For instance, until societal shifts began to happen within the last two decades, the notion which was mostly agreed upon was that females and males should be rewarded and punished differently for the same types of emotional display and expression, resulting in a double standard in terms of communicating and showing emotions. Luckily, the paradigm is currently shifting towards a more emotionally aware, gender-neutral view on emotions and behavior, paving the way for psychologically sounder subsequent generations.

Nevertheless, some of these remnants became apparent in terms of verbal remarks which some boys made. On a meta-level, a decreased motivation and participation was observable in some male participants. Additionally, some of those even stated that they rarely express emotions or cope with their feelings because "boys don't cry" or "boys don't show emotions". This illustrates one of the lamentable and outdated maxims of our society and my account for limited emotional awareness and thus mental health literacy. Unfortunately, these allegations were not frequent enough in order to be properly analyzed, nor were they presented in written form. But implementing the workshops in-situ, this aspect is something worth considering in the given sample.

Another phenomenon, which might have led to futile data, were certain group dynamics that arose from the context. During the small group work, the teachers intentionally tried to split friend groups, which were known to often cause turmoil or loudness, in order to deliver more reliable results. Therefore, an artificial group allocation was set up. This initiative may be considered fruitless, considering the oftentimes redundant answers the children gave, in order to be considered "funny" or "cool" in front of their classmates. Without direct interference (i.e., directly asking the children, calling them by their name, wanting to know their

viewpoint) some of them would mentally disengage and either get lost in private conversations or just daydream and zone out.

The same dynamic became apparent in large groups when group work was implemented at the blackboard in the front. Small sticky notes were distributed to ensure individual participation of the students. When asked to list resilience factors, in one particular workshop in April 2024 a specific dynamic developed, reminding of Group-polarization in accordance with Festinger's theory of social comparison (1954). To display group membership and status by portraying desirable qualities (i.e., being funny, being sporty), children wrote wisecracking answers onto the sticky notes (e.g. "Kebap", "old bananas") and tried to jump as high as they possibly can and attach it to the top of the blackboard. It became evident, that the children gradually tried to outdo each other and to trump the other classmates in terms of jumping abilities and wittiness.

Along with this, another group-related issue may be considered the priming of ideas. Working in small groups always enables some children to set heuristic anchors and simultaneously prime other fellow students in terms of ideas. One of the possibilities that arose from this set-up is imitation and overtrumping. If one child mentions that he or she experiences comfort by turning to their pet, other ones might agree and state the same, even if it is not necessarily true that their cat also has a soothing effect on them.

Dynamics like these partly delivered unserviceable evidence and need to be taken into consideration.

Apart from that, the children might have given futile answers due to not being informed in terms of the purpose of the data collection. Some might have enjoyed the free time in school, where no performance demands are imposed on them (e.g. "I will not get any grade for this anyways"). This assumption may be supported by the inane statements, lacking in substance, accompanied by poorly readable handwriting. If the children were reminded, that their answers will be needed in the further process and therefore asking them to write legibly, the children visibly reacted with embarrassment, shock and willingness to make an effort.

A fundamental shortcoming of the present study is the inconsistency of the assessment of demographic variables, as well as inconsistent general implementation. Due to missing workshop modules in different classes, this may account for limited comparability. For instance, the question "why are we angry?" was only posed in one single parallel class,

resulting in limited data volume. Furthermore, some scientific questions could not be posed, such as examining the role of sex and gender in terms of potential differences in emotional awareness, localization of emotions in the body and application of coping strategies.

5.3 Recommendations & future implications

Having highlighted the importance of bodily and somatic awareness in terms of mental health literacy, a promising future indication would be to incorporate mindfulness-based meditation techniques in the course of mental health literacy trainings, in order to foster interoception (Fischer et al., 2017; Gibson et al., 2017). Suitable techniques, aiming at raising bodily awareness are for instance meditation practices referred to as ‘Body scan’. Certain psychological conditions which are linked to trauma cause the individuals to either temporarily, or chronically lose connection to their bodies, inter alia, dissociative symptoms, depersonalization/derealization, PTSD, CPTSD to name a few. Part of the healing process is to get back in touch with their bodies to regain the ability to feel emotions.

Another aspect worth mentioning is the limited implementation of bodily awareness within the context of the present project, given the age of the sample. In terms of raising awareness, the focus was on the mere localization of emotions in the body, which is reductionistic by nature. As stated by fellow scholars, the perception of emotions in the body can be experienced not only as constriction or expansion, but also as perceived energy oscillations within the body (Pearson & Wilson, 2008). Regarding the children’s comprehension difficulties that became evident within the course of the COMET4Kids project, further elements which could potentially hinder understanding were intentionally omitted, to ensure age-appropriate contents and implementation. Nonetheless, a more differentiated labelling and localization of emotions in their felt sense could yield promising future results in terms of greater bodily awareness and thus fostering intrapersonal emotional intelligence.

As elaborated above, the value of early interventions is not to be underestimated. The incorporation of mindfulness approaches in child education was found to be beneficial in many ways (Burke et al., 2010). Fostering emotional awareness, accompanied by the implementation of body scan meditations, could potentially raise somatic awareness and, in turn, emotional awareness (Hanley et al., 2017).

6. Conclusion

In the course of the given project, it became evident that learning experiences in childhood, such as observational learning, imitation and socialization lay the foundation for various maladaptive coping strategies and their predominant use in adulthood. There was a clear observable trend that in most cases, children revert to avoidant coping and had little to no knowledge about emotion focused coping, which entails presence with and acceptance of one's own emotions. As indicated by literature, there are multiple associations between avoidant coping and dysfunctional outcomes in adulthood, covering health impairing behavior, poorer relationships and even predisposing addiction. Therefore, it is crucial to educate children on health promoting ways of coping, such as engaged coping (i.e., emotion-focused coping), rather than disengaged coping, potentially accompanied by mindfulness approaches. Undoubtedly, it would be beneficial to expand the children's skillsets of physical and somatic soothing activities onto other emotions, especially anger. Instead of venting, harming other people or objects, the act of physical soothing (e.g., breathing techniques) could be added to enhance anger management in children, similar to the 4th module of an Emotional Literacy Support Assistant (ELSA) training, as proposed by Wong et al. (2020). Furthermore, a promising approach is incorporated in the field of *expressive therapies* (ET), which specifically aim at cultivating bodily awareness in order to foster emotional literacy (Pearson & Wilson, 2008). In this light, emotional literacy is considered a core *inner-life skill* (ILS) which promotes personal growth and healing (Pearson, 2004). One of the overarching goals of ET is to promote neural plasticity through the integration of the left and right hemisphere, which can be achieved by engaging the subconscious and bodily aspects of felt emotions. In practical terms, this can be attained by using techniques that incorporate the somatosensory level (e.g., images, metaphors, symbols), as well as drawing attention to bodily sensations, thereby accessing potentially repressed memories (Van der Kolk, 1994). Neural plasticity can therefore facilitate mental and emotional flexibility, hence changing potentially dysfunctional or harmful behavioral patterns. "Supporting clients to connect to self, tune in, and attach value to intrapersonal awareness, may create new neural pathways and assist reversal of tendencies towards defensive dissociation" (Pearson & Wilson, 2008, p. 10).

All things considered, this could foster a future generation of emotionally sounder, more empathetic posterity, which would treat themselves and other people with more kindness.

Appendix

Code 	Semantic description
Poor school performance	receiving bad grades, subjectively or objectively
Poor sports performance	scoring low in sports games
Frustration/unmet needs	if something prevents the achievement of a material or immaterial goal
Missed opportunities/unmet needs	if a rewarding action is prohibited or not feasible
Annoying	using the literal word “annoyed”
Being provoked	using the literal word “provoked” and/or teased
Loneliness	including the words: “alone” and/or “lonely”
Loss	including the death of loved ones, pets, or loss of belongings
Abandonment	being left by a significant other
Somebody being mean	being poorly treated by others
Horror movies	Watching a horror movie alone, or together with others
Scary stories	fear-inducing stories
Anticipatory loss	“I’m afraid that X will happen”
Illness/Injury	If loved ones get actually harmed, or the mere thought of harm
Hearing noises	Hearing noises at night
Darkness	being alone in the dark
victim of abuse - physical abuse - emotional abuse (i.e., verbal abuse)	- being beaten, or physically harmed - being yelled at, insulted, not being listened to and/or ignored, being belittled or ridiculed, threatened, name-calling and derogatory language
Mobbing	using the literal word “mobbing” (i.e., German) or being harassed, bullied
Exclusion	Being excluded or ostracized
Witnessing fights	Witnessing loved ones argue
Relationship rupture - betrayal - being lied to	Being involved in a dispute or fight, or if the bond got fractured - Being deceived or betrayed - Broken trust
Jealousy	Feeling jealous due to an actual or imagined loss of connection

Gossip	Being talked about behind one's back especially in a negative way, if somebody spreads false information or lies about oneself
Unfairness	using the literal word "unfair"
Being criticized	Being berated by adults
Losing a competition	Losing in a virtual or real-life game
School	Having homework assignments or the mere act of being in school
New School	Adapting to new school with unfamiliar contexts
Longing	Missing the deceased, or loved ones
Being pursued	Being followed by someone or something (e.g., police)
Home alone	Being by oneself at home
Being alone	Being somewhere in public and nobody else being there
Thunder	Hearing the sound of thunder
Scary videogames	Playing fear-inducing games
Being kidnapped	Being abducted or kidnapped
People believing lies	The fear that people will believe false information about oneself
Anticipatory fear	"I am afraid that x will happen to me"

Anticipatory fear	"I am afraid that x will happen to me"
War	Having thoughts about war in the world
Falling	Falling down from an high altitude
Fear of heights	Vertigo, experiencing the fear of high altitude
Flickering lights	Unstable lights
Nighttime	At night
Nightmares	Fear-inducing imagery in dreams
Hearing screams	Hearing the sound of somebody screaming
Specific phobias	Experiencing fear associated with a specific object, situation, or concept, which is highly individual

Table 2. Examples of developmentally-graded members of coping families

Age period	Coping family and ways of coping				
	Problem-solving	Comforting	Distraction	Escape	Information-seeking
Infancy (birth–18 months)	Effort Repetition Practice	Appeals to caregiver Proximity seeking Physical self-soothing (e.g., sucking, stroking)	Gaze at attractive objects Distracted by caregiver	Gaze aversion Signal to caregiver	Social referencing Observation
Preschool (ages 2–5)	Instrumental actions Request instrumental aid	Self-comfort with behaviours (e.g., get blanket) Seeks comfort	Behavioural distraction (doing something else)	Leave situation (behavioural withdrawal)	Ask for information
Middle childhood (ages 6–9)	Strategizing Alternative mental means Repair	Self-comfort through verbal reassurance	Cognitive distraction (thinking about something else)	Mental withdrawal	Learn from others' experiences Social comparison
Early adolescence (ages 10–14)	Planning Self-regulated learning (studying, rehearsal)	Think about positive future situations	Plan distracting activities	Avoid potentially negative situation	Independent pursuit of information (e.g., reading)
Middle and late adolescence (ages 14–22)	Prevention Coordination of multiple activities	Larger perspective Downward social comparison	Meditation, guided relaxation	Decide which situations to participate in	Integration of information from multiple sources

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Topic	Questions
1. About you (rapport building)	Could you tell me a bit about yourself and your family? Prompts: Who do you live with? Has this changed since you were little? What kind of things do you like doing at the weekend? What subjects do you like at school? What are your hobbies/things you like doing? <i>Complete 'about you' scale</i>
2. Stressful life events and daily hassles	For stressful life events: You mentioned that (<i>type of event</i>) happened. Could you describe what happened? How did you/your family feel about (<i>the event</i>)? Prompts: Length of the event? Coping: Could you describe how you coped with (<i>the event</i>)? For example, what did you do to make yourself feel better? How do you think (<i>your child</i>) coped with (<i>the event</i>)? Comparisons: Could you compare what you felt like before (<i>the event</i>) and how you feel now? For example, compare how you felt about school/relationships with friends/family before and after. Could you compare your feelings/behaviour before and after (<i>the event</i>)? Effect on present life: Could you compare how you/your child deals with new challenges or problems before and after (<i>the event</i>)? Could you describe how you/your child reacts if they are reminded of (<i>the event</i>)?

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