

Investigating Psychological Well-being of Primary School Students: Instrument Characteristics and Preliminary Results

Indagare il benessere psicologico degli alunni della scuola primaria: caratteristiche dello strumento e risultati preliminari

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Credit author statement

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Abstract

There are many factors that influence the well-being, prosocial conduct, empathy, connection with nature, life satisfaction, pro-environmental attitudes and actions, awareness and emotional regulation of elementary school students. This paper presents an initial analysis of an instrument designed to investigate a child's overall well-being through these factors, all of which relate to a positive relationship with self, others and school. The questionnaire was constructed by selecting items from already validated scales for the analysis of each of the above variables. The study was conducted in 14 primary schools in Lazio (N=433) with outdoor education experience, in order to investigate the possible influence of this specific educational practice on well-being. The results of the exploratory factor analysis have shown that we can hypothesize with a very good degree of confidence a construct of child well-being consisting of four dimensions: Caring For Others, Feeling Good About Yourself, Enjoyment Of Nature and Handling Emotions. Finally, ANOVA analyses have been conducted showing significant differences between males and females in the first three dimensions while no significant differences were found in relation to the experience of outdoor education teaching practices.

Keywords: Instrument Characteristics; Primary School Children; Quantitative Study; Well-Being; Connection To Nature.

Riassunto

Sono molti i fattori che influenzano il benessere, la condotta prosociale, l'empatia, il legame con la natura, la soddisfazione di vita, gli atteggiamenti e le azioni a favore dell'ambiente, la consapevolezza e la regolazione emotiva degli studenti delle scuole elementari. In questo studio presentiamo una prima analisi di uno strumento mirato ad indagare il benessere complessivo del bambino attraverso questi fattori, tutti connessi a una relazione positiva con se stessi, gli altri e la scuola. Il questionario è stato costruito selezionando gli item da scale già validate per l'analisi di ciascuna delle precedenti variabili. Lo studio è stato effettuato su 14 scuole primarie del Lazio (N=433) con esperienza di outdoor education, al fine di indagare l'eventuale influenza di questa specifica pratica educativa sul benessere. I risultati dell'analisi fattoriale esplorativa hanno mostrato che possiamo ipotizzare con un buon grado di fiducia un costrutto di benessere del bambino composto da quattro dimensioni: Attenzione verso l'altro, Stare bene con se stessi, Connessione con la natura e Gestione delle emozioni. Infine, sono state condotte delle analisi ANOVA che evidenziano differenze significative fra maschi e femmine nelle prime tre dimensioni mentre non risultano differenze significative in relazione all'esperienza di pratiche didattiche di outdoor education.

Parole chiave: Caratteristiche Strumenti di Rilevazione; Alunni di Scuola Primaria; Studio Quantitativo; Benessere; Connessione con la Natura.

1. Introduction

This study aimed to examine the relationship between several variables related to a positive relationship with self, others, and school: subjective well-being, prosociality, empathy, connection with nature, student life satisfaction, pro-environmental attitudes and behaviors, mindfulness, and emotional regulation (Zahn-Waxler, 1992; Thompson, 1994; Diener et al., 1999; Kollmuss & Agyeman, 2002; Wells & Evans, 2003; Caprara et al., 2005; Burke, 2010).

The literature on the variables related to well-being, prosocial behavior, empathy, connection with nature, life satisfaction, pro-environmental attitudes and behaviors, mindfulness, and emotional regulation in elementary school children is extensive. According to a study by Diener et al. (1999), subjective well-being in elementary school children is positively related to positive emotions, resilience, self-esteem, academic achievement, and strong relationships with peers and family members. Eisenberg and Lennon (1983) found that prosocial behavior in elementary school children is linked to empathy, emotional regulation, a sense of morality, and support from parents and peers. Additionally, empathy in elementary school children is associated with emotional regulation, prosocial behavior, and support from parents and peers (Eisenberg & Lennon, 1983). A connection with nature in elementary school children is related to environmental attitudes, behavior, life satisfaction, and subjective well-being, according to a study by Talbot and Kaplan (2003). Diener et al. (1999) also found that life satisfaction in elementary school children is positively related to positive emotions, resilience, self-esteem, academic achievement, and strong relationships with peers and family members. Schultz (2000) found that pro-environmental attitudes and behaviors in elementary school children are linked to a connection with nature, environmental knowledge, and environmental values. Mindfulness in elementary school children is associated with emotional regulation, resilience, and subjective well-being, according to a study by Burke, Kristeller, and Akincigil (2010). Finally, Eisenberg and Lennon (1983) found that emotional regulation in elementary school children is related to prosocial behavior, empathy, resilience, and subjective well-being. The literature highlights well-being, prosocial behavior, empathy, and related factors in elementary school children, yet a robust theoretical framework is crucial for justifying the study's instrument administration to grade 4 primary school pupils. This framework, rooted in developmental psychology and educational theory, integrates Piaget's stages of cognitive development (1965; 2013), Vygotsky's socio-cultural theory (1967), and Bronfenbrenner's ecological systems theory (1979), offering insights into cognitive, social-emotional, and ecological influences on children. Emphasizing the unique developmental characteristics of grade 4 primary school pupils, including cognitive abilities, social interactions, and emerging moral reasoning, further underscores the significance of this study. However, before investigating the effect of different educational approaches on these latent variables, we wanted to question the validity of grouping these variables into a single instrument, as was done in the study conducted by Pirchio et al. (2021). Instead of adopting a pre-existing instrument, we chose to use exploratory factor analysis (EFA) to ensure the validity and reliability of the shortened scale. EFA can help assess how respondents understand the statements in a questionnaire and lead to the construction of a more suitable and valid questionnaire by refining the items to better capture the construct of interest based on the respondents' interpretations.

The use of a few items from validated scales to construct a shorter questionnaire is a common practice known as scale reduction or item response theory. It is justified by the idea that a small number of items can still provide accurate and reliable information about the underlying construct of interest. However, this practice has been criticized by some researchers, including Nunnally (1978), Streiner (2003), and Brennan (2001), who raised concerns about the potential loss of important information and the difficulty in interpreting the results. By using EFA, we aimed to address these concerns and ensure the validity and reliability of the shortened scale. This work serves as a crucial starting point for advancing the studies on the impact of specific teaching-pedagogical proposals on the variables being considered.

2. Materials and Methods

2.1 Research design

The survey was conducted on a sample of elementary school grade 4 pupils. Pupils were observed and administered an anonymous paper-based questionnaire. Two meetings with pupils were held in each class. The first meeting was aimed at familiarizing the students with the researchers who would later administer the questionnaire and at observing the students during the lessons. Observations were recorded using semi-structured forms, taking into account the environment (indoor or outdoor) and recording some behaviors and attitudes of both pupils and teachers. The second meeting was aimed at administering the questionnaire.

A paper-based questionnaire consisting of 41 statements was administered by pairs of students from the Faculty of Primary Education Sciences of the Sapienza University of Rome, specifically prepared to provide support to the pupils, for example, in case some of the statement terms were not clear enough for them.

The collected data were transferred into an SPSS file. Two pupils who did not respond to 11 and 15 questions respectively were removed. In the rest of the sample, 433 pupils, the missing responses, 0,2% of the total, were replaced with values close to the mean of the responses given for the statement. The SPSS file was then used for analyses.

This paper will present the results of the analysis of the data collected through the questionnaire.

2.2 Research tool

The instrument used in this study is partially adapted from the questionnaire used in Pirchio et al. (2021) and was assembled by selecting items from 9 different instruments all related to the well-being construct: the original scales measuring subjective well-being (adapted from Topp et al., 2015), prosociality (adapted from Caprara et al., 2005), empathy (adapted from Di Giunta et al., 2010), connection to nature (adapted from Cheng & Monroe, 2010), student life satisfaction (adapted from Huebner et al., 2012), pro-environmental attitudes and behaviors (adapted from Musser & Malkus, 1994), mindfulness (adapted from Ristallo et al., 2016 and Veneziano & Voci, 2015a and 2015b), and emotional regulation (adapted from Gullone & Taffe, 2011) in elementary school children. It should be noted that for mindfulness, items were extracted from two different instruments with similar purposes.

In order to obtain an instrument suitable for pupils in the last grades of elementary school. The existing scales were translated or adapted and, when necessary, the language was simplified and statements shortened. For clarity purpose, we chose to keep the original version of the items in English since it would have been difficult to pick up the small differences introduced in the translation. In addition the scales were almost always modified, by reducing the steps and, for prosociality, by adjusting the descriptors as well.

Below is the list of the items selected from each scale to make up the questionnaire, in the order in which they were presented to the pupils. For each original scale, Cronbach's alpha at validation, the total number of items and, when possible, the type of scale originally used for estimation and the one used in this study are also reported.

The well-being scale, the WHO-5, Well-Being Index (Topp et al., 2015) was taken in its entirety and is one of the most widely used questionnaires to estimate subjective psychological well-being. In its original version, it is a 6-point Likert scale ranging in frequency from At no time (0) to All of the time (5), for which the value of Cronbach's alpha varies, in the many different validations by language and target population, from .45 to .89. For this study we used a similar but 4-point scale from At no time (1) to All of the time (4). The items are:

- WB1. I have felt cheerful and in good spirits.
- WB2. I have felt calm and relaxed.

- WB3. I have felt active and vigorous.
- WB4. I woke up feeling fresh and rested.
- WB5. My daily life has been filled with things that interest me.

From the 16-item self-report scale for assessing prosociality by Caprara, Steca, Zelli and Capanna (2005), 4 items were selected and adapted. In this scale, prosociality is the «construct for which, beyond its common-sense meaning—the set of voluntary actions one can take to help, care for, assist, or comfort others.» For each item on prosociality, participants indicated on a 5-point Likert scale whether the statement was never/almost never true (coded as 1), occasionally true (coded as 2), sometimes true (coded as 3), often true (coded as 4) and almost always/always true (coded as 5). The original study had $\alpha = .91$. For this study we used a 3-point frequency scale, Never (1), Few times (2) and Many times (3). The selected items are:

- PS1. I try to help others.
- PS2. I try to console those who are sad.
- PS3. I easily lend money or other things.
- PS4. I spend time with those friends who feel lonely.

The PESE Scale (Perceived Empathic Self-Efficacy) is designed to assess individuals' perceived capability to experience emotion from another's perspective, to respond emotionally and compassionately to others' distress and misfortune, and to be sensitive to how one's actions affect others' feelings (Bandura et al., 2003; Caprara, Gerbino, & Delle Fratte, 2001). PESE has been shown to be positively correlated with empathy, sympathy, perspective taking, and prosociality (Bandura et al., 2003), and negatively related to delinquent conduct (Bandura et al., 2003). Cronbach's alpha for the PESE scale in the Italian sample was .78 (Di Giunta et al., 2010). The selected items are:

- EM1. How well can you recognize when someone wants comfort and emotional support, even if (s)he does not overtly exhibit it?
- EM2. How well can you recognize when a companion needs your help?
- EM3. How well can you recognize when a person is experiencing depression?

The Connection to Nature scale (CNS; Cheng and Monroe, 2010) measures children's affective attitude towards the natural environment. The scale has four dimensions: Enjoyment of nature, Empathy for creatures, Sense of oneness and Sense of responsibility. The scale consists of 24 items and has a Cronbach's alpha of .87. The scale was adapted into Italian by Pirchio et al. in 2021. The following 9 items were selected from this scale, the first 5 of which relate to the enjoyment of nature dimension, the sixth and seventh to the Empathy for creatures dimension, and the last two to the Sense of oneness dimension:

- CN1. I like to hear different sounds in nature.
- CN2. When I feel sad, I like to go outside and enjoy nature.
- CN3. Being in the natural environment makes me feel peaceful.
- CN4. I like to garden.
- CN5. Collecting rocks and shells is fun.
- CN6. I like to see wild animals living in a clean environment.
- CN7. Taking care of animals is important to me.
- CN8. Humans are part of natural world.
- CN9. People cannot live without plants and animals.

From the CNS scale onward, we always used a 4-point Likert scale of agreement from strongly disagree (1) to strongly agree (4), modifying the original scales when necessary. We then included 7 items assessing student life satisfaction, taken from the shortened version of the Multidimensional Student Life Satisfaction Scale (Huebner et al., 2012), which measures youth life satisfaction in five domains: family, friends, school, self and living environment. The scale consists of 30 items and the individual domains have good internal

consistency with Cronbach's alpha values between .71 and .91. The MSLSS uses a 6-point Likert scale with response options ranging from 10 strongly disagree to 60 strongly agree. The selected items are from the School (ST2, ST3, ST4), Living Environment (ST6 and ST7) and Self (ST1 and ST5) domains:

- ST1. There are lots of things I can do well.
- ST2. I like being in school.
- ST3. School is interesting.
- ST4. I enjoy school activities.
- ST5. I like to try new things.
- ST6. I like where I live.
- ST7. There are lots of fun things to do where I live.

The Children's attitudes towards the environment scale (Musser and Malkus, 1994) consists of 25 items that reflect children's knowledge of environmental issues. In the original version of the scale "[...] each item [...] describes two different groups of children. For example, one item reads «Some children turn the lights off when they leave a room, but other children leave the lights on». When the scale is administered, children are first instructed to choose which of the two groups of children described in the statements they are most like. Under each statement there are two boxes (one large, one small) for marking answers. Children check the larger box if they think they are a lot like the children described in the statement. They check the smaller box if they believe that they are only a little like the children described in the statement". The internal-consistency reliability of the scale (Cronbach's alpha) ranged from .70 to .85.

- PE1. Some kids like to leave the water running when they brush their teeth.
- PE2. [...] but other kids think we should recycle.
- PE3. Some kids think outdoor lights should be turned off at night because they use electricity.
- PE4. Some kids worry about air pollution.

Regarding Mindfulness, we referred to two scales: the Italian version of the Child and Adolescent Mindfulness Measure (I-CAMM; Ristallo et al., 2016) and the Italian adaptation of the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R; Veneziani & Voci, 2015a and 2015b).

The I-CAMM scale consists of 10 items divided into two dimensions, 2 items refer to the factor Accepting without judgment "entails nonjudgmental awareness and openness to experiencing a full range of internal events", the other 8 items refer to the Acting with awareness factor "refers to present centered awareness and full engagement in one's current activity". Overall, the 10-item version of the CAMM is used to assess present-moment awareness and nonjudgmental, nonavoidant responses to thoughts and feelings. For this scale, the Cronbach's alpha, which expresses the internal consistency of the total score, is 0.78. Items are self-rated on a 5-point ordinal scale (0 = never, 4 = always). High scores indicate good mindfulness skills. Where appropriate, items were recoded, so that higher scores indicated higher levels of mindfulness. Three items were extracted from this scale, among which MF3 which is related to the Accepting without judgment factor:

- MR1. I think about things that happened in the past instead of thinking about things that are happening right now (reverse scored).
- MR2. At school, I walk from class to class without noticing what I'm doing (reverse scored).
- MF3. I push away thoughts that I don't like.

The Cognitive and Affective Mindfulness Scale-Revised (CAMS-R; Feldman et al., 2007) consists of 12 items aiming to detect a broad conceptualization of mindfulness. "The CAMS-R presents some advantages compared to other scales assessing dispositional mindfulness (Bergomi et al., 2013). First, although it converges in a single total score of mindfulness, it covers all the aspects of this construct: Attention, Present focus, Awareness, and Acceptance.". Respondents rated the items on a 4-point response scale: 1 = Rarely/Non at all, 2 = Sometimes, 3 = Often, 4 = Almost always. The CAMS-R Italian version showed an acceptable level of internal reliability since Cronbach's alpha was .76. Three items were extracted

from this scale, two pertinent to the Attention dimension (MF4 and MF6) and one to the Acceptance dimension (MF5):

- MF4. It is easy for me to concentrate on what I am doing.
- MF5. I can accept things I cannot change.
- MF6. I am able to pay close attention to one thing for a long period of time.

Finally, for emotional regulation we used the Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CA; Gullone & Taffe, 2011). The ERQ-CA scale “is a valid age-appropriate measure for investigating the use of 2 specific strategies of ER (Emotion Regulation, ndr) during the childhood and adolescence developmental periods.”. The scale comprises 10 items assessing the emotion regulation strategies of Reappraisal (6 items, $\alpha = .83$) and Suppression (4 items $\alpha = .75$). Items are rated on a 5-point Likert-type response scale. Higher scores on each scale indicate greater use of the corresponding strategy. Three items, all related to the strategy of Suppression, have been extracted:

- MR7. I keep my feelings to myself (reversely scored).
- MR8. When I am feeling happy, I am careful not to show it (reversely scored).
- MR9. When I am feeling bad (e.g., sad, angry, or worried) I am careful not to show it (reversely scored).

2.3 Research sample

The research was conducted on a convenience sample consisting of 433 fourth graders (primary school) attending 14 schools in the Lazio region, mostly in the city of Rome but in different parts of the city. Furthermore, the sample is gender-balanced (Figure 1). Table 1 summarises the sample distribution by the school and the number of class groups.

School	Male	Female	Frequency	Percentage Frequency	Number of class groups
1	12	7	19	4.4	1
2	18	19	37	8.5	2
3	11	7	18	4.2	1
4	42	41	83	19.2	5
5	7	12	19	4.4	1
6	12	7	19	4.4	1
7	10	6	16	3.7	1
8	23	23	46	10.6	3
9	7	8	15	3.5	1
10	15	8	23	5.3	2
11	34	28	62	14.3	4
12	8	2	10	2.3	1
13	22	33	55	12.7	3
14	5	6	11	2.5	1
Total	226	207	433	100.0	27

Table 1: Sample Distribution by the School and Number of Class Groups

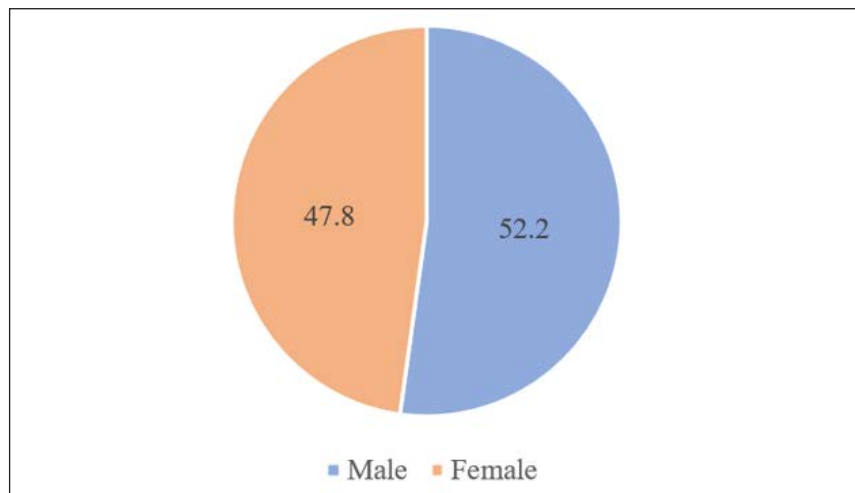


Figure 1: Sample Distribution by Gender

3. Results

A number of analyses were performed on the data: factor analysis as well as the ones aiming at understanding if the data could be explained by a model with a theoretically founded construct. Factor analyses were performed using MPlus v 8.7. (Muthén, 1983), using a WLSMV estimator for categorical or ordinal variables and the goemin rotation. As outlined in paragraph 3.2., an exploratory factor analysis was performed first aiming at verifying the original model consisting of eight factors, corresponding to eight scales from which the statements that form the questionnaire had been taken. The result was not satisfactory as the obtained factors did not correspond to the ones of the model. In addition, many of the items (12 out of 41) had cross-loadings while one item had loadings lower than .200 on all the extracted factors. Even the original scale analysis results demonstrated low values of Cronbach's Alpha, from .408 to .595 for six out of eight scales, with values near .670 for the two remaining scales: Connection to Nature and Students' Life Satisfaction.

At this point, new analyses were performed aiming at identifying an underlying model. Both exploratory factor analysis and scale analysis were performed to eliminate one by one the items that had significant loading problems or whose removal could improve the scale reliability. A four-factor model was reached by combining original items to describe the elements that allow each of us to feel good about him/herself or to be happy. As already demonstrated by a number of research projects, taking care of oneself or having numerous harmonious social relationships (Caring for Others), feeling good about oneself and being happy with own life (Feeling Good About Yourself), spending time in nature / outdoors (Enjoyment of Nature), knowing how to handle own emotions (Handling Emotions), influence not only our mood but also our long-term happiness (Topp et al., 2014). As we can see from Table 2, all scales have high loadings, equal to or higher than .400, and at least one marker item in the factor. The abundance of fit index RMSEA (Root Means Square Error of Approximation, Steiger & Lind, 1980; Steiger, 1990) equals to 0.3 with a 95% confidence interval from .02 to .04 and indicates a small error of approximation (Hu & Bentler, 1999). In the same way, the SRMSR (Standardized Root Mean Square Residual) index at .04 shows an excellent value (Hattie, 1985; McDonald, 1981; Hu & Bentler, 1999). The scree test and the parallel analysis (Figures 2 and 3, respectively) confirm that the four-factor model was a wise choice considering the available data.

Item	Caring For Others	Feeling Good About Yourself	Enjoyment Of Nature	Handling Emotions
PS1	.72			
PS4	.69			
PS2	.65			
EM2	.56			
EM1	.52			
EM3	.32			
ST3		.77		
ST2		.75		
ST4		.63		
MF4		.57		
MF6		.47		
WB5		.41		
WB4		.39		
WB2		.32		
ST7		.29		
CN1			.69	
CN4			.58	
CN6			.53	
CN7			.48	
CN2			.43	
CN3			.42	
MR9				.52
MR7				.47
MR8				.47
MR2				.45
MR1				.39

Table 2. EFA Loadings

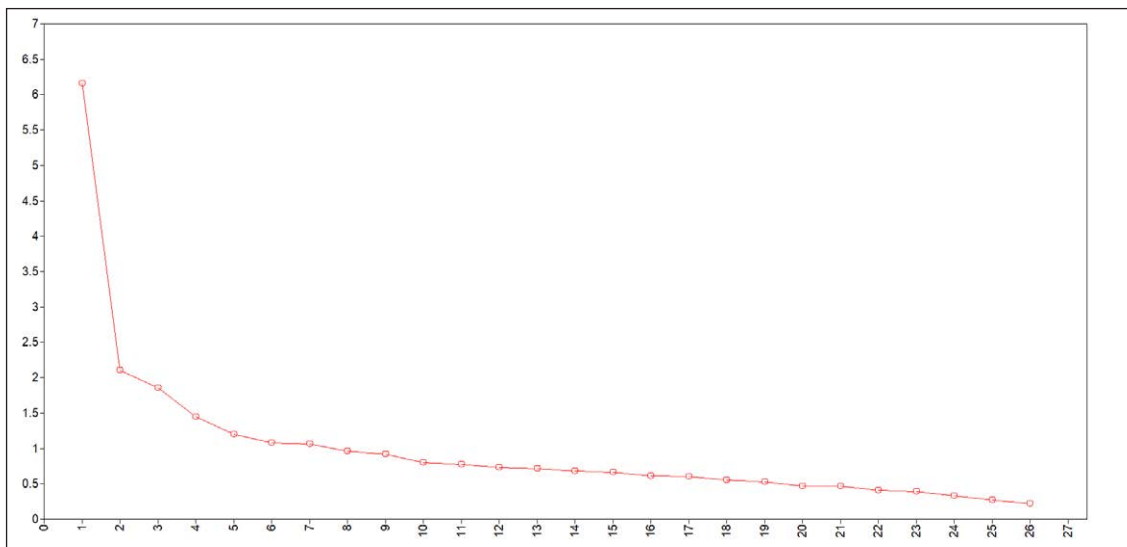


Figure 2: Scree test

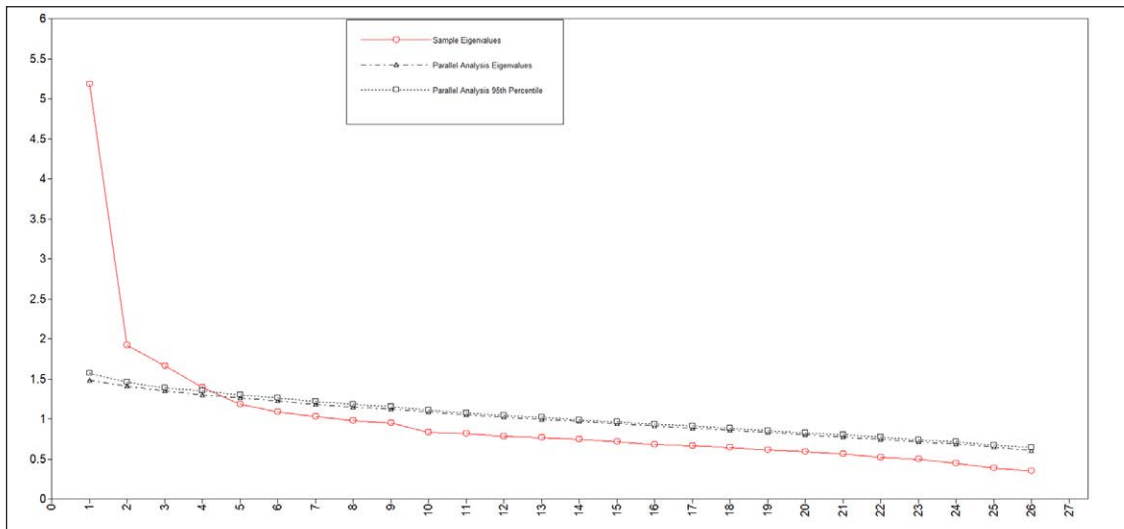


Figure 3: Parallel analysis

The choice not to use chi-square, as a goodness-of-fit test was because, unlike RMSEA, it is sensitive to sample size (as large samples with over 200 participants often have statistically significant chi-square values) and to the non-normality of the input variables.

The scale analysis, shown in Table 3, confirms the obtained results.

Factor	Cronbach's Alpha	N. of items
Caring For Others	.719	6
Feeling Good About Yourself	.744	9
Enjoyment Of Nature	.718	6
Handling Emotions	.472	5

Table 3: Reliability

We can see that the Cronbach's Alpha value is above .700 for all the scales except for Handling Emotions, but it is still a fair value for a pilot study (Nunnally & Bernstein, 1994). It is clear that the Handling Emotions scale requires a more in-depth study, which, even if it does have a factorial structure with more than acceptable loadings, still does not have a satisfactory value of Cronbach's Alpha. We can presume that this is a result of the choice to adapt only three out of 10 items of the Emotion Regulation Questionnaire for Children and Adolescents, all belonging to the Suppression actor, while the Reappraisal factor, concerning the strategies adopted to deal with discomfort and negative emotions, was left out (Gullone & Taffe, 2011).

Finally, a t-test for independent samples was performed with presumed equal variances to compare the scale means with the pupils' gender. Table 4 summarises the obtained results, with 226 males and 207 females in the sample. As we can see, there are statistically significant differences in favor of female pupils, on the Caring for Others and Enjoyment of Nature scales, while for the other two scales, the null hypothesis of equal means can be accepted even though it does require further analyses because the Feeling Good About Yourself scale confidence interval does not contain zero.

Scale	t	df	Sign.	Mean Difference (Male -Female)	SE of Mean difference	95% Conf. int.	
						Lower	Upper
Caring For Others	-4.029	431	.000	-.193	.048	-.287	-.099
Enjoyment Of Nature	-3.999	431	.000	-.208	.052	-.311	-.106
Feeling Good About Yourself	-2.390	431	.017	-.116	.049	-.212	-.021
Handling Emotions	-0.093	431	.926	-.005	.059	-.121	.110

Table 4: Independent Sample t-Test between Means of the Scales

The effect size of the differences measured as Cohen's D is generally medium and varies between .498 and .542.

A similar test was conducted to compare averages with respect to the use of outdoor education practices but no significant difference was found. This result would also merit further investigation considering that many studies attest to the benefits of contact with nature on children's general well-being and physical and cognitive development (Bagot et al., 2015; Collado & Staats, 2016; Pirchio et al., 2021).

4. Discussion

The fact that the EFA identified a model that differed from the initial one and comprised only four factors consisting of items from different instruments seems to confirm Nunnally's (1978), Steiner's (2003) and Brennan's (2001) misgivings about the risks involved in constructing instruments by using items from different complex and articulated scales. In particular, while the majority of scales demonstrated quite satisfactory internal consistency, the Handling Emotions scale showed a lower Cronbach's Alpha, indicating a potential area for further refinement. The decision to adapt only three items from the Emotion Regulation Questionnaire for Children and Adolescents might have contributed to this result. Future studies could delve deeper into this aspect to enhance the reliability of the scale. The observed gender differences in Caring for Others and Enjoyment of Nature scales raise intriguing questions about how societal expectations and individual preferences might influence well-being in elementary school children. Further exploration into these differences could provide valuable insights into tailoring interventions to meet the diverse needs of both genders. The identified factors offer valuable insights for educational practitioners and policymakers. Strategies focusing on fostering prosocial behavior, self-esteem, a connection with nature, and emotional regulation may contribute to the overall well-being of elementary school children. Implementing educational approaches that target these factors could potentially enhance the holistic development of students.

While the present study contributes to the understanding of well-being in elementary school children, certain limitations should be acknowledged. The convenience sample from the Lazio region may limit the generalizability of the findings. Future research could replicate the study with a more diverse and representative sample. Additionally, longitudinal studies could provide insights into the stability and developmental trajectories of the identified well-being factors. In conclusion, this study sheds light on the intricate relationship between various factors and the overall well-being of elementary school children. The derived four-factor model offers a refined perspective, emphasizing the importance of considering multiple dimensions when assessing and promoting children's well-being. As educators and researchers continue to explore these facets, there is potential for the development of targeted interventions that positively impact the lives of young students.

5. Conclusions

This study aimed to reach a four-factor model that describes the elements that contribute to an individual's overall well-being and happiness. Results indicate that the combination of caring for oneself and others, feeling good about oneself, enjoying nature, and handling emotions have a significant impact on an individual's long-term happiness. The obtained four-factor model was found to have high loadings and a low

error of approximation as indicated by the abundance of fit index RMSEA and SRMSR. The Cronbach's Alpha values for the scales were above .700, except for the Handling Emotions scale, which requires further study. A t-test for independent samples was performed to compare the scale means between male and female pupils, and results showed statistically significant differences in favor of female pupils in the Caring for Others and Enjoyment of Nature scales.

The results of this study align with the findings of recent research projects that have demonstrated the impact of caring for oneself and others, feeling good about oneself, enjoying nature, and handling emotions on overall well-being and happiness (e. g. Baumeister & Leary, 1995; Lyubomirsky & Lepper, 1999; Gross, 2002; Park, 2010).

The factor analysis results in a clearer and more consistent construct by identifying four distinct factors, offering a deeper insight into the connection between the items and the underlying concept. While further studies may be needed to enhance the reliability and validity of the scale, the construct as a whole, as identified through factor analysis, is more dependable than the initial collection of items from different studies.

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