

RESEARCH ARTICLE

Emotional Arousal and Regulation: Further Evidence of the Validity of the “How I Feel” Questionnaire for Use With School-Age Children

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ABSTRACT

BACKGROUND: The ability to understand and manage emotional experience is critical to children’s health. This study confirmed the validity of the How I Feel (HIF) Questionnaire, a measure of children’s emotional arousal and regulation, exploring its associations with measures of emotional and social functioning.

METHODS: The sample was comprised of 1379 Italian students (aged 8 to 12 years) who attended schools interested in the study aims. Participants completed the 30-item HIF scale, and measures of emotional self-efficacy and social desirability (SD). Factor structures were assessed using confirmatory factor analysis. Invariance by age and gender, internal consistency, temporal stability, and concurrent validity were also tested.

RESULTS: A 3-factor model was identified: frequency and intensity of (1) positive emotion - PE (8 items, $\alpha = .82$), (2) negative emotion - NE (12 items, $\alpha = .86$), and (3) positive and negative control - EC (10 items, $\alpha = .77$). This factor structure was invariant across age and gender groups. The HIF displayed moderate longitudinal stability over a 15-month period and a low SD effect. Positive emotion was positively associated with acceptance and visibility, and negatively with social withdrawal.

CONCLUSIONS: The HIF is a reliable and valid measure for research and school intervention promoting students’ emotional and mental health.

Keywords: emotional health; child and adolescent health; instruments; youth social functioning.

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Schools often intervene to support emotional health in childhood and early adolescence, and to prevent and mitigate related academic and social problems (eg, academic learning difficulties, substance abuse, bullying, and conduct issues).¹⁻⁵ The rationale for these interventions lies in the reported association between emotional health and factors related to school life, such as academic success, quality of peer relationships, and school connectedness.^{5,6} A closely related issue is the need to measure the effectiveness of school-based educational interventions by developing

and validating specific instruments and programs for the use of researchers and school practitioners.⁷ To date, programs targeting children’s emotional health have mainly been aimed at enhancing their emotional competence, in terms of socioemotional skills such as managing their own emotional arousal, and regulating their own and others’ emotions.⁸ Both these abilities are crucial for interacting and shaping relationships with others.^{9,10} Ultimately, students who are emotionally healthy are equipped for coping with difficult situations, given their ability

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1 to handle the demands of school and build positive
2 relationships.

3 Over the past 2 decades, there has been a dramatic
4 increase in research on emotional competence and
5 health, and particularly on emotion regulation.¹¹⁻¹⁶
6 According to Eisenberg et al, emotional arousal refers
7 to the degree to which an individual experiences
8 emotion in terms of intensity and frequency, whereas
9 regulation or control refers to attempts to change
10 or maintain one's level of emotional arousal. More
11 precisely, emotion regulation may be defined as the
12 process of initiating, maintaining, modulating, or
13 changing the occurrence, intensity, or duration of
14 emotional arousal.¹⁷ Regulatory processes are strongly
15 related to individual differences in emotionality, such
16 as frequency, intensity, and valence of personal
17 emotional experience; furthermore regulation and
18 emotionality, both independently and jointly, predict
19 quality of social functioning.¹⁷

20 In this regard, Eisenberg et al.¹⁷ showed that a high
21 level of emotion regulation and moderately high level
22 of behavior regulation are positively associated with
23 social competence, even in individuals who are prone
24 to intense emotions. In contrast, low levels of emotion
25 and behavior regulation and high negative emotionality,
26 especially when these factors co-occur, are likely to
27 predict externalized problem behaviors and poor social
28 competence. In addition, low levels of emotion regulation
29 and high levels of behavioral control, associated
30 with high emotional intensity, predict poor social competence
31 and internalized problems. Most of the empirical data support
32 the view that emotionality (usually negative emotionality)
33 and regulation, either alone or in combination, are associated
34 in predictable ways with both social competence and problem
35 behavior.¹⁷ For instance, emotional regulation in school-age
36 children is positively related to peer-rated social competence
37 (eg, dealing effectively with conflictual situations with
38 peers, adopting socially appropriate behaviors), cooperativeness,
39 kindness, low levels of externalizing problems, and academic
40 achievement.¹⁸⁻²¹ The ability to modulate emotional arousal
41 contributes to psychological wellbeing and acts as a protective
42 factor, while limited ability or inability to do so are among
43 the symptoms of a number of clinical conditions, including
44 borderline personality disorder and eating disorders.²²⁻²⁴

45 To evaluate children's emotional arousal and regulation,
46 Walden et al.^{19,25} developed and validated the How I Feel
47 Questionnaire (HIF) with a sample of African American,
48 Caucasian, and Asian students. How I Feel Questionnaire
49 is a self-report measure for children and preadolescents
50 (aged 8 to 12 years), whose concurrent validity was established
51 via measures of behavioral control, positive and negative
52 affect, happiness/cooperation, and coping with anger and
53 sadness. The HIF gives access to information about personal
54 emotion arousal and regulation that may

1 be used to test for associations with other personality
2 traits, emotional skills, and overt behaviors. This information
3 is also of key importance given that impaired emotional
4 regulation predicts low levels of social preference and
5 rejection by school peer groups,^{26,27} both of which are
6 serious risk factors for children's emotional health. Indeed,
7 being accepted into a peer group provides a greater sense
8 of belonging and a stronger feeling of security as well as
9 providing opportunities for self-expression and personality
10 development, whereas rejected and neglected children report
11 more emotional problems, and greater symptoms of depression
12 and anxiety than their peers.^{19,28-35}

13 Although evidence about the validity of HIF has been
14 advanced previously, in this study we aimed to strengthen
15 the psychometrics of HIF by confirming its factor structures
16 in a large sample of boys and girls in middle childhood and
17 adolescence. In addition, we investigated its correlations
18 with both self-reported and, for the first time, peer-estimated
19 measures of children's emotionality, emotional regulation,
20 and social functioning. We consider the latter aspect to be
21 crucial, and as far as we know, to date, no study has
22 directly investigated the associations between HIF and peer-
23 estimated indicators of children's emotional functioning and
24 positions within peer group.

25 Furthermore, we aimed to extend the variety of the
26 original sample by administering the questionnaire to non-
27 English-speaking children (specifically, Italian), and therefore,
28 to provide initial evidence for the cross-cultural validity of
29 HIF. Finally, given that Walden et al identified reliance on
30 a single reporter as a limitation of their study, the current
31 research was designed to draw data from multiple sources.

32 Thus, one of the research aims was to evaluate the construct
33 validity of the HIF; original factor structures were examined
34 via confirmatory factor analyses (CFAs) with subsequent
35 assessment of invariance by age and sex; the analyses of
36 invariance were required to provide evidence that the
37 constructs under study were defined by the same items
38 across sex and age groups. Separate analyses were
39 conducted to test for age and sex differences in mean
40 HIF scores. Internal consistency (ie, how strongly
41 correlated with one another were items belonging to the
42 same factor) and temporal stability (ie, how stable were
43 scores for each factor after an interval of 15 months) were
44 also assessed. In addition, given the self-report nature
45 of the instrument, a possible social desirability (SD)
46 effect on children's compilation of the HIF subscales was
47 controlled by measuring the correlation between scores on
48 the HIF subscales and the SD questionnaire.

49 A second research aim was to test the concurrent
50 validity between HIF and both self-reported and peer-
51 estimated measures of emotionality and emotion regulation;
52 this was a critical step in assessing whether self-perceptions
53 of emotional functioning as measured

1 by HIF subscales were also correlated with peer-
2 reported measures of similar constructs. Working on
3 the assumption that personal emotional characteristics
4 are related to the position occupied within one's
5 social network, we explored the associations between
6 HIF scores and children's social status (as assessed via
7 continuous peer nomination scores for acceptance,
8 visibility and social withdrawal); we hypothesized
9 that children with low levels of positive emotionality,
10 high levels of negative emotionality, or low levels of
11 emotional regulation would be less popular and more
12 prone to social withdrawal than peers with high levels
13 of positive, or low levels of negative, emotionality.

14 METHODS

15 Participants

16 Participants were 1379 children (680 boys) ranging
17 in age from 8 to 12 years (mean age = 10.90 years;
18 SD = 1.35), and recruited among a convenience sam-
19 ple of 15 schools (9 primary schools and 6 secondary
20 schools) in northern and central Italy. All the contacted
21 schools chose to participate in the study on the basis of
22 their interest in the research project. Written parental
23 consent was obtained for 90% of the students in the
24 grades involved in the study. Finally, 82% of the stu-
25 dents consented to take part in the anonymous study.

26 The primary school subsample consisted of 744
27 children, attending third (N = 128), fourth (N = 251),
28 fifth (N = 365) grades, while the middle school
29 group consisted of 635 preadolescents, attending first
30 (N = 319) and second (N = 316) grades. Participants
31 were all native Italian speakers and they did not have
32 learning disabilities, psychiatric diagnoses, or mental
33 injuries. They came from Italian families of the lower-
34 (40.48%), medium- (49.57%), and higher- (9.95%)
35 middle-classes. SES was assessed via parental levels of
36 education and occupation. Concurrent validity and
37 temporal stability were examined in 106 children
38 (52 boys), who also completed the HIF a second
39 time 15 months after the first compilation. At Time
40 1, these students were attending the sixth grade
41 (mean age = 11.51 years; SD = 0.39); at Time 2, they
42 were attending the seventh grade (mean age = 12.73;
43 SD = 0.33).

44 Instruments and Procedure

45 A pilot phase was conducted with 50 primary
46 and middle school students aged between 8 and 12
47 years, to assess both the comprehensibility of the
48 items contained in the administered measures, and
49 that of the Likert scale answer format. In addition,
50 this exploratory phase served to develop a standard
51 procedure for the administration of the questionnaires,
52 which was followed by the different test administrators
53 at the participating schools. All instruments were in

1 written format and were administered in the classroom
2 in counterbalanced order. In addition, the HIF was
3 readministered to a smaller sample 15 months later.

4 **How I Feel.** The HIF²⁵ is a multidimensional self-
5 report scale originally devised by Walden et al to
6 assess the emotional arousal and regulation of children
7 between 8 and 12 years of age. It takes about
8 15 minutes to complete, and consists of 30 items
9 concerning the frequency, intensity and control of
10 happiness, excitement, sadness, fear, and anger. The
11 Italian version of the HIF was obtained via a back-
12 translation procedure.

13 Children are asked to rate on a 5-point scale (1 = *not*
14 *at all true of me*, 2 = *a little true of me*, 3 = *somewhat*
15 *true of me*, 4 = *pretty true of me*, 5 = *very true of me*) the
16 extent to which the statements described their emotion
17 experience over the previous 3 months. Previous factor
18 analysis indicated a 3-factor structure, comprising
19 positive emotion (PE; $\alpha = .87$), negative emotion (NE;
20 $\alpha = .89$), and emotion control (EC; $\alpha = .84$). Following
21 Walden et al, we use the term control interchangeably
22 with regulation in the current paper.

23 High scores on the PE scale imply that happiness
24 and excitement are experienced with high frequency
25 and intensity. High NE scores imply that fear, anger,
26 and sadness are experienced with high frequency and
27 intensity. High EC scores reflect a strong ability to
28 control the frequency and intensity of both PE and NE.
29 Tests of the temporal stability of the English version
30 yielded correlations ranging from .30 to .56 for PE,
31 from .39 to .63 for NE, and from .32 to .48 for EC.²⁵

32 In line with the standard procedure developed
33 during the pilot phase, before handing out the HIF
34 questionnaire, the definitions of arousal and emotion
35 regulation were explained to the children by trained
36 assistants and amply discussed with them in reference
37 to their own experience. Furthermore, when the chil-
38 dren were required to rate their emotional experience
39 or behaviors on a Likert scale, the trained assistants
40 ensured that the children had clearly understood the
41 response options, providing any clarification requested
42 by the children. This procedure allowed us to verify
43 that children displayed adequate understanding both
44 of the HIF statements and of the rating task.

45 **Perceived emotional self-efficacy.** A short validated
46 version of the Perceived Self-Efficacy in Managing
47 Negative (NEG) and in Expressing Positive (POS) Affect
48 Scale, originally developed by Caprara and Gerbino,³⁶
49 was administered. Children were invited to rate their
50 own ability to express positive affect (4 items; $\alpha = .67$)
51 and regulate negative affect (4 items; $\alpha = .60$) on a 5-
52 point Likert scale. High scores on the POS subscale
53 indicate high perceived self-efficacy in expressing
54 PEs, whereas high scores on NEG subscale imply
55 high perceived self-efficacy in coping with negative
56 experiences.

1 **Peer nomination.** A sociometric interview was
2 used to assess classmates' emotionality, emotional
3 regulation, and social standing. Children were asked to
4 nominate up to 6 classmates who best fit 11 descriptors;
5 4 items investigated children's emotionality in relation
6 to happiness, sadness, anger, and fear, respectively (ie,
7 "Which kids in the class are the happiest?");³⁷ 2 items
8 assessed emotional control (ie, "Which kids in the class
9 do not overact even if they are angry?" and "Which
10 kids in the class are able to stop themselves from
11 laughing at inappropriate times?"), with calculation
12 of a mean score for overall perceived emotional
13 control;^{26,38} 5 items measured children's social status
14 (ie, "Which kids in the class... ..do you like the
15 most; ...do you like the least; ...are the most
16 popular; ...are the least popular; ...want to stay
17 by themselves").^{39,40} Each peer nomination measure
18 was weighted by dividing children's raw scores by the
19 number of their classmates.

20 **Social desirability.** The tendency to respond in
21 a socially desirable fashion was controlled for via
22 administration of the Children's Social Desirability
23 Scale⁴¹⁻⁴³ in its Italian short version.⁴⁴ Children were
24 invited to indicate how often they exhibited certain
25 behaviors (22 items) on a five-point Likert scale
26 (from 1 = *never* to 5 = *always*). The Denial dimension
27 of the scale (17 items; $\alpha = .86$) measures how much
28 the child denies possessing negative characteristics or
29 enacting negative behaviors (eg, "Sometimes I try
30 to get even when someone does something to me I
31 don't like"). The Enhancement dimension (5 items;
32 $\alpha = .52$) measures the extent to which the child tends
33 to unrealistically attribute itself with self-flattering
34 characteristics and positive behaviors (eg, "I always
35 listen to my parents"). High scores on the Denial
36 (reversed) and on the Enhancement subscales reflect a
37 strong tendency to supply socially desirable responses.
38
39

40 **Data Analysis**

41 The original 3-factor structure of the HIF²⁵ was
42 evaluated via CFA.⁴⁵ In addition, models allowing for
43 possible differences in factor structure as a function
44 of age (considering the median value of 131 months
45 as the cut-off) and sex were tested. Further analyses
46 were conducted to test for age and sex differences
47 in HIF scores. To assess reliability, we calculated
48 Cronbach alpha for each of the 3 subscales of HIF. For
49 temporal stability, test-retest analysis was carried out
50 to evaluate the stability of each of the HIF dimensions
51 over time (ie, at 15 months). Lastly, we calculated
52 the influence of SD on HIF scores. A second set
53 of analyses examined the HIF's concurrent validity,
54 in terms of the associations found between it and
55 both self-reported and peer-estimated measures of
56 emotionality, emotion regulation and children's social
57 status.

1 **RESULTS**

2 **Factor Structure, Reliability, and Stability**

3 Given that inspection of skewness and kurtosis
4 revealed that 5 items (10, 19, 22, 25, and 29) did
5 not have a normal distribution, we adopted the
6 robust maximum likelihood method.⁴⁶ To evaluate
7 the model, we used several fit indices to compensate
8 for the limitations of each,⁴⁷ namely the relative
9 chi-square (χ^2/df), the root mean square error of
10 approximation (RMSEA),⁴⁸ the standardized root
11 mean square residual (SRMR), and the comparative
12 fit index (CFI).⁴⁹ Good model fit is indicated by a
13 CFI of over 0.90 , a relative chi-square between 0 and
14 2 (between 2 and 3 is acceptable), and RMSEA and
15 SRMR of 0.08 or lower.⁵⁰ Covariance between latent
16 factors was allowed, and modification indices were also
17 taken into account. The values of the fit indices were
18 $\chi^2 = 1092.250$, $df = 373$, $\chi^2/df = 2.928$, $CFI = 0.917$,
19 $RMSEA = 0.039$ (95% confidence interval, CI, $0.037-$
20 0.042), $SRMR = 0.060$. All factor loadings were
21 significant ($p < .001$) and ranged from 0.36 to 0.77 ;
22 furthermore, PE was found to be related both to
23 NE (factor loading = 0.08 ; $p < .05$) and EC (factor
24 loading = 0.32 ; $p < .001$). Cronbach alpha values for
25 the 3 subscales ranged from acceptable to good: PE
26 ($\alpha = .82$), NE ($\alpha = .86$), and EC ($\alpha = .77$).⁵¹
27

28 We also tested the HIF-structure for invariance
29 of as a function of gender (boys and girls) and age
30 (students under and over ~~mean~~ age in months), using
31 multi-group analysis: we compared a baseline model
32 which allowed factor coefficients to differ across groups
33 (Model B) to a model in which factor loadings were set
34 to be equal across groups (Model L). Factor structure
35 proved to be invariant across both gender (Model
36 B - Model L: $\Delta\chi^2 = 26.36$, $\Delta df = 27$, $p > .05$) and age
37 (Model B - Model L: $\Delta\chi^2 = 38.91$, $\Delta df = 27$, $p > .05$)
38 groups. Table 1 reports the descriptive statistics.

39 All factors were normally distributed, as suggested
40 by the skewness and kurtosis values. Zero-order
41 correlations (Pearson's r) suggested that PE was
42 positively related to EC ($r = .29$; $p < .001$). A 2×2 (sex
43 \times age) multivariate analysis of variance (MANOVA)
44 was performed to explore differences in relation
45 to each of the 3 HIF factors. Main effects were
46 found for both sex (Pillai's Trace = $.01$; $F(3,$
47 $1373) = 2.777$; $\eta^2 = 0.01$; $p < .05$) and age (Pillai's
48 Trace = $.02$; $F(3, 230) = 8.799$; $\eta^2 = 0.02$; $p < .001$).
49 Specifically, boys (mean = 2.94 , $SD = 0.68$) scored
50 higher than girls (mean = 2.85 , $SD = 0.68$) on EC (F
51 $(1, 1378) = 4.920$; $\eta^2 = 0.004$; $p < .05$); while younger
52 students (mean = 3.51 , $SD = 0.85$) scored higher than
53 older students (mean = 3.40 , $SD = 0.71$) on PE (F
54 $(1, 1378) = 6.920$; $\eta^2 = 0.01$; $p < .01$), but older
55 participants (mean = 2.96 , $SD = 0.59$) scored higher
56 than younger participants (mean = 2.83 , $SD = 0.75$)
57 on EC ($F(1, 1378) = 11.666$; $\eta^2 = 0.01$; $p < .001$).

Table 1. Factorial Loadings, Means, and Standard Deviations of the How I Feel Questionnaire

Items	Factorial Loading	Full Sample		Boys		Girls		Younger		Older	
		(N = 1379)		(N = 680)		(N = 699)		(N = 693)		(N = 686)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
14-Excited strong	.76***	3.25	1.30	3.25	1.32	3.26	1.27	3.31	1.43	3.20	1.15
29-Excited powerful	.76***	3.12	1.26	3.15	1.28	3.08	1.25	3.11	1.36	3.12	1.15
19-Excited often	.74***	3.09	1.29	3.18	1.29	3.00	1.30	3.22	1.40	2.96	1.16
4-Excited all the time	.59***	3.14	1.25	3.20	1.26	3.08	1.25	3.29	1.37	2.99	1.10
26-Happy strong	.53***	3.73	1.13	3.74	1.13	3.71	1.13	3.71	1.26	3.74	.98
11-Happy powerful	.45***	3.82	1.10	3.82	1.13	3.83	1.08	3.75	1.25	3.90	.93
1-Happy often	.41***	3.79	1.02	3.83	1.02	3.75	1.03	3.95	1.11	3.63	.91
16-Happy all the time	.38***	3.68	1.09	3.71	1.07	3.66	1.10	3.73	1.19	3.64	.97
F1: Positive emotion (PE)		3.47	0.79	3.49	0.77	3.42	0.80	3.51	0.85	3.40	0.71
13-Mad often	.77***	2.30	1.17	2.33	1.21	2.28	1.12	2.31	1.25	2.30	1.08
17-Sad powerful	.72***	2.60	1.19	2.53	1.23	2.66	1.15	2.56	1.26	2.63	1.11
2-Sad strong	.63***	2.80	1.17	2.71	1.14	2.89	1.18	2.78	1.22	2.83	1.10
7-Sad often	.61***	2.22	1.11	2.18	1.13	2.25	1.10	2.23	1.19	2.20	1.04
23-Mad powerful	.60***	2.61	1.25	2.65	1.26	2.57	1.24	2.51	1.30	2.71	1.19
28-Mad all the time	.59***	2.01	1.11	2.05	1.14	1.97	1.08	2.05	1.21	1.97	1.00
8-Mad strong	.58***	2.79	1.27	2.85	1.29	2.74	1.24	2.67	1.32	2.91	1.20
22-Sad all the time	.53***	1.91	1.04	1.91	1.06	1.92	1.02	1.92	1.08	1.91	.99
25-Scared often	.42***	2.01	1.11	1.93	1.08	2.08	1.13	2.08	1.19	1.92	1.01
20-Scared strong	.41***	2.38	1.19	2.30	1.19	2.46	1.18	2.41	1.27	2.36	1.10
5-Scared powerful	.40***	2.58	1.26	2.47	1.27	2.68	1.25	2.67	1.36	2.49	1.15
10-Scared all the time	.37***	1.80	1.02	1.72	.95	1.88	1.07	1.90	1.13	1.70	.88
F2: Negative emotion (NE)		2.33	0.73	2.30	0.73	2.36	0.72	2.34	0.77	2.33	0.68
18-Mad intensity	.58***	2.76	1.19	2.82	1.27	2.70	1.11	2.70	1.28	2.82	1.10
27-Sad frequency	.57***	2.83	1.16	2.87	1.23	2.79	1.08	2.73	1.25	2.92	1.04
12-Sad intensity	.54***	2.68	1.16	2.70	1.20	2.05	1.11	2.60	1.22	2.75	1.08
15-Scared frequency	.54***	3.00	1.23	3.08	1.29	2.92	1.16	2.84	1.31	3.16	1.11
30-Scared intensity	.54***	2.84	1.22	2.87	1.27	2.80	1.16	2.77	1.32	2.90	1.10
24-Excited intensity	.48***	2.83	1.19	2.85	1.23	2.81	1.16	2.82	1.31	2.84	1.07
3-Mad frequency	.44***	2.90	1.19	2.93	1.2	2.87	1.15	2.79	1.29	3.01	1.06
9-Excited frequency	.38***	2.98	1.25	2.99	1.28	2.97	1.22	2.89	1.35	3.07	1.13
21-Happy frequency	.38***	2.98	1.17	3.03	1.22	2.94	1.13	3.03	1.29	2.94	1.04
6-Happy intensity	.36***	3.15	1.23	3.21	1.26	3.09	1.21	3.14	1.33	3.16	1.12
F3: Emotion control (EC)		2.89	0.68	2.94	0.68	2.85	0.68	2.83	0.75	2.96	0.59

***p < .001; younger children were aged ≤131 months, older children were aged >131 months. One hundred and thirty-one months were the median value of age variable.

To assess temporal stability, correlations between HIF variable scores at Time 1 and Time 2 were examined: PE ($r = .42, p < .001$), NE ($r = .48, p < .001$), and EC ($r = .34, p < .001$). Cronbach alpha values for the 3 subscales at T2 were PE ($\alpha = .87$), NE ($\alpha = .85$), and EC ($\alpha = .66$).

Further analyses were carried out to test whether the 3 subscales of the HIF were correlated with the Children's Social Desirability Scale; all correlations were nonsignificant, with the exception of a negative correlation between NE and Denial ($r = -.41; p < .001$).

Concurrent Validity

To assess concurrent validity, we analyzed the correlations between each of the HIF dimensions and the other self-reported and peer-estimated measures of emotionality and emotion regulation, specifically 2 measures from the emotional self-efficacy scale (POS and NEG) and the peer nomination variables (emotionality in terms of happiness, sadness, anger,

and fear; emotional control). The associations of the other measures with each subscale of the HIF were tested while controlling for the other 2 subscales, to determine each scale's unique contribution to the association between the various measures. Partial correlation analysis was conducted using Pearson's r to explore the correlations between HIF subscales and the self-report scales, and Spearman's ρ to explore their correlations with the peer-estimated measures; this distinction was to cater for the non-normal distribution of the latter (Table 2).

Positive emotion was uniquely positively associated with POS ($r = .37; p < .001$), NEG ($r = .27; p < .001$) and peer-estimated happiness emotionality ($\rho = 0.28; p < .01$), and negatively associated with peer-estimated fear emotionality ($\rho = -0.19; p = .05$). Furthermore, NE was uniquely and negatively related to NEG ($r = -.34; p < .001$) and peer-estimated emotional control ($\rho = -0.19; p = .05$). Finally, the factor EC was uniquely and

Table 2. Partial Correlations Between the How I Feel Questionnaire and Study Variables (N = 106)

	HIF PE	HIF NE	HIF EC
Social desirability - Denial (self-reported)	.01	-.41***	-.06
Social desirability - Enhancement (self-reported)	.13	-.04	.17
Emotional self-efficacy in expressing positive emotions (self-reported)	.37***	-.01	.04
Emotional self-efficacy in controlling negative emotions (self-reported)	.27**	-.34***	.36***
Happiness emotionality (peer-estimated)	.28**	-.10	-.08
Sadness emotionality (peer-estimated)	-.05	.15	.16
Anger emotionality (peer-estimated)	-.07	.01	.12
Fear emotionality (peer-estimated)	-.19†	.10	.11
Emotional control (peer-estimated)	.07	-.19†	.19†
Most liked (peer-estimated)	.19†	-.18	-.11
Least liked least (peer-estimated)	-.13	.16	.06
Most popular (peer-estimated)	.35***	-.16	-.03
Least popular (peer-estimated)	-.42***	.17	.18
Socially withdrawn (peer-estimated)	-.24*	.05	.10

†p = .05; *p < .05; **p < .01; ***p < .001.

HIF, How I Feel; PE, positive emotion; NE, negative emotion; EC, emotion control. Correlations with self-report measures were analyzed using Pearson's *r*, those with peer-estimated measures using Spearman's rho.

positively correlated with NEG ($r = .36$; $p < .001$) and peer-estimated emotional control ($\rho = 0.19$; $p = .05$).

Next, associations between HIF and children's social status (as measured by continuous peer nomination scores for most liked, least liked, most popular, least popular, socially withdrawn) were explored. Partial correlations (Spearman's rho) with the peer-estimated social indices were calculated (Table 2). Positive emotion was found to be uniquely related to a number of sociometric variables: higher levels of this factor were associated with being more frequently perceived as "liked most" ($\rho = 0.19$; $p = .05$) and "most popular" ($\rho = 0.35$; $p < .001$); moreover, higher levels of PE were correlated with more rarely being perceived as less popular ($\rho = -0.42$; $p < .001$) and with lower levels of social withdrawal ($\rho = -0.24$; $p < .05$).

DISCUSSION

This study, conducted with a large sample of Italian youth, set out to provide empirical support for the psychometric validity of the "How I Feel" (HIF),^{19,25} a 30-item self-report questionnaire created to simultaneously capture frequency, intensity and control of happiness, excitement, sadness, fear, and anger in children and preadolescents.

This aim was fulfilled on a number of counts. In the first place, CFAs replicated the original 3-factor structure of the HIF^{19,25} (ie, PE, NE, and EC) in a large sample of 8 to 12 years old primary and middle school students, and this structure proved to be invariant across sex and age subgroups. Furthermore, the fact that the sample was made up of Italian children provides initial support for the cross-cultural robustness of HIF. As for test-retest analyses over 15 months, our findings demonstrated moderate stability, and they are in line with results from the original English version.²⁵

Overall, our results suggested that HIF subscales may be a valid means of evaluating individual differences in children's emotional arousal and regulation during the transition from childhood to preadolescence. In addition, the HIF questionnaire was not compromised by a SD effect, given that children who were more inclined to report negative emotional experience were also less inclined to hide their negative behaviors.

Second, in relation to concurrent validity, associations were found between the HIF subscales and a set of both self-reported and peer-estimated social variables. The peer measures in particular were originally included in the research design on the basis that a large body of literature stresses the key role of socioemotional competence in promoting positive and efficacious interactions with others.^{10,52} Moreover, the use of peer measure to cross-validate self-reports appeared particularly interesting according to recent literature.^{53,54}

The correlations between the HIF subscales and emotional self-efficacy (especially control of NEs) are of particular interest, because we know that self-efficacy affects appraisal processes, which, in turn, guide actions.^{35,55,56} Furthermore, a number of the peer-reported measures of emotionality and EC were found to be related to the HIF subscales. In particular, the PE subscale was found to be associated with acceptance and visibility among the peer group as well as with low levels of social withdrawal. This is not surprising considering that happiness represents a basic emotion communicating openness to others and contributing to the creation and maintenance of positive social relations.⁵⁷ Such an interpretation is further borne out by the fact that, on the contrary, no significant relationship was found between peer-estimated emotionality and EC and the HIF NE subscale.

1 **Limitations**

2 We are aware that this study is affected by a number
3 of limitations. First, whereas factor structure analyses
4 were conducted on the full sample, only 106 students
5 were involved in the concurrent validity and test-
6 retest analyses; therefore, future studies will need to
7 replicate our findings with a larger sample of primary
8 and middle school students. Furthermore, the cross-
9 sectional nature of the data concerning peer social
10 standing did not allow the direction of causality to
11 be assessed. Future longitudinal studies may explore
12 causal pathways among emotionality, regulation, and
13 social adjustment.

14
15 **Conclusions**

16 Despite these limitations, the results of this study
17 provide evidence that the HIF questionnaire is a
18 reliable and valid instrument for collecting data
19 on emotional arousal and regulation in primary
20 and middle-school students. Importantly, its factor
21 structure was found to be invariant across age and
22 sex, suggesting that it may be used extensively for
23 educational purposes at different ages, with both boys
24 and girls, and at different levels of schooling, in both
25 English- and non-English speaking contexts.

26
27 **IMPLICATIONS FOR SCHOOL HEALTH**

28
29 School is a key institution for the promotion
30 of emotional health and for the prevention and
31 mitigation of socioemotional difficulties and risk
32 behaviors.⁵⁸⁻⁶¹ These 2 interrelated objectives are key
33 components of any school programs, across North
34 American and European contexts, aimed at fostering
35 student wellbeing, given that a good level of emotional
36 competence enhances academic outcomes and makes
37 students less likely to engage in maladaptive and
38 unhealthy behaviors.² A large body of research has
39 shown that promoting emotional health also acts to
40 prevent or decrease socioemotional problems on the
41 part of individual students.

42 In socioemotional education programs, the HIF
43 may be used by a range of socialization agents and,
44 where possible, by appropriately trained teachers, both
45 to evaluate children’s emotional competence and to
46 enhance their emotional health. Emotion socialization
47 agents could exploit the potential offered by HIF
48 working with groups of children at school, as an
49 alternative to individual intervention.

50 The HIF may also be used by school mental health
51 experts for assessment and screening purposes. Its
52 brevity and simplicity of use makes it suitable in all
53 circumstances in which it is appropriate to investigate
54 and measure children’s emotional competence and
55 emotional functioning.

56 Overall, we would especially encourage use of
57 the HIF as part of any educational program aimed

at reinforcing socioemotional competence at school
and enhancing social and emotional learning. School
is an advantaged context for emotion socialization⁶²
and the use of HIF by trained socialization agents
represents an instrument for imparting and gathering
information about emotions, with a view for instance
to helping children understand and cope with
their emotions, learn new behavior management
strategies, and function effectively across different
relationships.

All children and adolescents, including those who
are at risk, can benefit from intervention focused on
emotional arousal and regulation, both of which are
key components of emotional health. Our findings
suggest that HIF may be particularly suitable for
evaluate the impact of interventions designed to
promote emotional health, and for this reason we
recommend its use at school.

21 **Human Subjects Approval Statement**

22 This study met the approval of the Ethical
23 Committee of the University of Milano-Bicocca (Italy),
24 numbers 0018908/13 and 0034864/15.

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