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Development And Validation Of The Feeling Better Scale (FBS)

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Abstract

Development and validation of the Feeling Better Scale (FBS)
The Feeling Better Scale (FBS) is a new self-report measure of 'state well-being'. It assesses well-being following the use of skills learnt in a school-based positive psychology intervention program, A Lust for Life (ALFL). The FBS, along with other validated measures, were administered to 305 children. Additionally, these scales were administered to 345 children who completed the ALFL programs and 382 children who were in a control group. Exploratory and confirmatory factor analyses showed that a 23-item, 2-factor version of the FBS best fit the data. The FBS had excellent reliability (α=0.93, ω=0.93). There was weak, but significant test-retest reliability (ICC=0.2, $p<0.001$, N=382). The FBS had good concurrent and construct validity moderately correlated with trait well-being ($r(304)=0.34$, $p<.01$). It was responsive to change following ALFL intervention ($t(344)=3.07$, $p<.01$, SRM=0.17). Overall, the FBS is a measure of state well-being that may be used to evaluate the impact of the ALFL program.

Keywords: children's well-being, state well-being, well-being assessment, scale validation, school well-being programs, universal school-based intervention, positive psychology.

Introduction

The promotion of well-being in children is central to the mission of applied positive psychology (Chodkiewicz & Boyle, 2016; Mendes de Oliveira, Santos Almeida, & Giacomoni, 2022; Tejada-Gallardo, et al., 2020). Positive psychology interventions that focus on factors which contribute to happiness and positive development result in improved well-being, academic performance, social relationships, and self-esteem (Benoit & Gabola, 2021; Fält-Weckman et al., 2024). A secondary goal of positive psychology programs for children is the prevention of psychological problems (Tejada-Gallardo et al., 2020). Psychological disorders account for 13% of the disease burden in young people, with depression, anxiety and behavioral disorders amongst the leading causes of illness and disability (World Health Organization, 2021). This is strongly related to other health and development concerns, such as lower academic achievement, substance misuse, violence, and poor sexual health (Patel et al., 2007). School-based positive psychology programs aim to achieve these goals by helping children develop skills and engage in activities that increase their well-being and encourage them to thrive and flourish (Chodkiewicz & Boyle, 2016; Fält-Weckman, et al., 2024; Tejada-Gallardo et al., 2020). Positive psychology interventions help children to develop their strengths, build positive

relationships and experience personal growth. This can consist of developing opportunities for children to engage in activities that bring them enjoyment and fulfilment as well as mastering skills to help to overcome any challenges.

ALFL is one such positive psychology program. It was developed by an Irish mental health charity, and was rolled out nationally in Irish Primary schools, with all resources freely available on their website: https://www.alustforlife.com. ALFL is a teacher-led program for 8–13 year old school children, spanning 10 classes, each lasting 40 minutes. The program is delivered to elementary school children in Ireland and developmentally staged with different versions for younger (3rd and 4th class) and older (5th and 6th class) children. The curriculum draws on multiple sources including contemporary positive psychology; traditional, second, and third wave cognitive behaviour therapy (CBT); and developmental, educational, and health psychology. In ALFL children learn the following specific self-regulation skills: naming and rating the intensity of emotions; linking thoughts, feelings and actions; mindfulness; breathing exercises; visualization exercises; progressive muscle relaxation; positive self-talk (gratitude, optimism, and cognitive restructuring); obtaining social support from adults and peers; assertiveness; managing bullying; and using the internet safely. Skills are learned through didactic instruction, video modelling, in-class experiential exercises, and homework practice. The theory of change underlying the ALFL program is that it helps children develop specific skills or engage activities which improve their mood states when applied in situations that arise in their daily lives. The program is designed to have a positive effect on 'state' rather than 'trait' well-being.

Most available well-being scales assess 'trait' well-being. For example the Individual Protective Factors Index (IPFI; Phillips & Springer, 1992), the Children's Stirling Well-being Scale (SCWBS; Diener et al., 1985; Liddle & Carter, 2015), and the Warwick Edinburgh Mental Well-being Scale (WEMWBS; Tennant et al., 2007). Their items inquire about children's usual level of well-being. Such scales and items may not be sensitive to changes in 'state' well-being that arise from using specific skills or engaging in activities in particular situations. For example, using belly breathing or square breathing may make a child feel less tense in a threatening situation; or consciously planning to do enjoyable activities such as meeting with friends or spending time with trusted family members may increase a child's positive mood state while they are engaged in these activities.

Two cluster randomized controlled trials (RCTs) of the ALFL program showed that trait measures of a range of well-being variables including positive mental health, resilience, mindfulness, emotional literacy, anxiety, depression, coping, and self-efficacy did not detect positive changes arising from the ALFL program (Clancy et al., 2023; O'Connor et al, 2022). In contrast, two qualitative studies found that children who participated in the ALFL program (Hoctor et al., 2022), as well as parents of program participants (Listwan et al, 2023) reported the program had positive benefits, such as improvements in their emotional literacy, coping skills, self-awareness, openness to sharing their feelings, emotion management, conflict resolution, and lifestyle changes.

The aim of the current study was to develop a self-report scale (the Feeling Better Scale (FBS)) for assessing the state well-being of children, that could be used for evaluating the ALFL program. The intention was to develop items that asked about skills or activities children used, and the changes in well-being that arose as a consequence. That is, rather than asking children how they usually feel, think or act, they would be asked to think of a specific situation in the past week, in which they used a skill or activity they learned on the ALFL program, and indicate how much better this made them feel.

The study addressed the following research questions

1) What is the factor structure of the FBS?
2) What is the internal consistency reliability of the FBS and its factor subscales?
3) What is the test-retest reliability of the FBS and its factor subscales?
4) Is the FBS and its factor subscales responsive to change following intervention with the ALFL program?
5) Does the FBS and its factor subscales have concurrent and construct validity shown through medium significant correlations with psychometric measures of trait well-being, anxiety,

and depression, and with satisfaction with the ALFL program?

6) Does the FBS and its factor subscales have significant associations with age, gender, and social disadvantage?

Method

Ethics and Preregistration

The study was conducted with ethical approval of the University's Human Research Ethics Committee and consent of participants' parents and assent of participants. The study was preregistered on Open Science Framework (OSF) prior to data collection (https://osf.io/wp5mv/).

Item Development

Based on a content analysis of the ALFL programs for elementary schools in Ireland in 3rd and 4th, and 5th and 6th class, an initial pool of 37 items was developed. Where possible, slightly different wordings were written for most items, leading to a pool of 73 items. Comments on these were elicited from 32 pupils, aged 9-12 (M = 10.34 years, SD age = 1.0) that were allocated to eight focus groups of approximately equal size containing approximately equal number of males and females, from schools specifically for children from socially disadvantaged communities (as determined by "Delivering Equality of Opportunity in Schools (DEIS)), and non-DEIS schools (Department of Education, 2017). The focus groups took between 57 minutes and 100 minutes, with an average duration of 86 minutes. Transcripts of the focus group audio recordings were analysed to assess the readability and understandability of items, and preference for wording of items. The preferred wording of the introductory statement at the beginning of the scale was also assessed; and the preferred wording and number of response options for items. This process resulted in a 38-item FBS and a 5-point response format.

Design

A cross-sectional correlational design (N = 305) was used to address research questions 1, 2, 5 and 6, which concerned the factor structure, internal consistency reliability, concurrent and construct validity, and FBS's correlations with demographic items. A longitudinal design with data collected on two occasions (N=727), approximately 10 weeks apart, and involved a subsample of 382 participants who did not receive intervention between testing occasions was used to address research question 3 regarding the test-retest reliability. Additionally, to address research question 4 concerning the FBS's responsiveness to change following intervention with the ALFL program, a longitudinal design was used with data collected on two occasions, approximately 10 weeks apart, and involved a subsample 345 participants who completed the ALFL program between both testing occasions. Data was anonymized, ensuring that no personally identifiable information was collected.

Participants

The cross-sectional correlational design aspect study had 305 pupils participating. These were 205 (67.2%) boys, 99 (32.5%) girls, and one child identified as other (non-binary). Their ages ranged from 8-13 (M = 10.48) (SD = 1.2). Regarding socioeconomic status, 178 (58.4%) participants attended non-DEIS primary schools and 127 (41.6%) attended DEIS schools. In the longitudinal test-retest aspect of the study there were 192 (50.3%) boys, and 190 (49.7%) girls. Their ages ranged from 8-13 (M = 10.03) (SD = 1.25), and 289 (75.7%) attended non-DEIS primary schools and 93 (24.3%) attended DEIS schools. In the longitudinal responsiveness to change aspect of the study there were 173 (50.0%) boys, 171 (49.6%) girls, and one child identified as other (non-binary). Their ages ranged from 8-13 (M = 10.18) (SD = 1.12), and 186 (53.9%) attended non-DEIS primary schools and 159 (46.1%) attended DEIS schools.

Instruments

FBS

The FBS was designed to assess 'state well-being' arising from using skills and activities that promote well-being learned on the ALFL program. These skills and activities include identifying factors that influence well-being; naming and rating the intensity of emotions; linking thoughts, feelings and actions; mindfulness; breathing exercises; visualization exercises; progressive muscle relaxation; positive self-talk (gratitude, optimism, and cognitive restructuring); obtaining social support from adults and peers; assertiveness; managing bullying; and internet safety. The 38-

item FBS scale assesses the extent to which well-being promotion, and self-regulation skills, and activities were used in recent situations, as well as the impact of this on children's state well-being. The following is an example of an item that was used to assess the application of a skill to promote well-being: I used Square Breathing. Square Breathing is when I breathe in for 5 seconds, held for 5, breathed out for 5, and held for 5. For all FBS items there are five response options: Yes and it made me feel a lot better; Yes and it made me feel somewhat better; Yes and it made me feel a little better; Yes but I did not feel better; and No I did not do it. Each item yields a score from 0 =No I did not do it, to 4 = Yes and it made me feel a lot better. The FBS yields an overall well-being state score based on all 38 items. Additionally, it yields a score for the number of skills used. To calculate this, items are given a score of one if the skill was used (regardless of its impact on well-being) and 0 if the skill was not used.

Stirling Children's Well-being Scale (SCWS; Liddle & Carter, 2015)

The SCWS (Liddle & Carter, 2015) is a 15-item scale which yields scores for a participant's overall well-being (based on 12 items, ranging from 12-60); positive emotional state (based on six items, ranging from 6-30); and positive outlook (based on six items, ranging from 6-30); as well as a three item social desirability index (ranging from 3-15) which detects 'faking good'. The following is an example of a positive emotional state item: I've been feeling calm. The following is an example of a positive outlook item: I thought there are many things I can be proud of. The following is an example of a social desirability item: I have always told the truth. There are five response options for all items ranging from 1 = Never to 5 = Always. The SCWS has good psychometric properties and UK norms. In order to obtain state well-being, participants were asked to respond factoring in the previous week, as opposed to the 'past couple of weeks' as detailed normally in the scale. In the present study, the measure displayed good internal consistency (α=0.87).

Revised Children's Anxiety and Depression Scale (RCADS; Ebesutani et al., 2012)

The RCADS (Ebesutani et al., 2012) is a 25-item self-report measure which yields scores for the severity of anxiety and depression symptoms in children aged 8-18 years. The following is an example of an item from the 15-item anxiety subscale: I felt scared if I had to sleep on my own. The following is an example of an item from the 10-item depression subscale: I felt sad or empty. There are four response options for all items ranging from 0 = Never to 3 = Always. The RCADS has good psychometric properties and US norms. In order to obtain the state of the person, participants were asked to think of their response relating to the past week, as opposed to 'how often eat of these things happens to you' as per the scale. The measure displayed good internal consistency in the present study (α=0.91).

Satisfaction Scale (SS; O'Connor, 2022)

This 8-item scale assesses participants satisfaction with the ALFL program. It was created by O'Connor (2022) for use in a previous ALFL evaluation study. Arising from focus group feedback, the original 8-point response format used for all items, was replaced with a 5-point Likert scale ranging from 0= Strongly Disagree to 4= Strongly Agree. Additionally, participants considered their response relating to the previous week. The following is an example of an SS item: Overall, I am satisfied with A Lust for Life. The SS demonstrated good internal consistency in this study (α=0.91).

Demographic Questionnaire

Three items were used to collect information about participants' age, gender, and attendance at a DEIS school for children from socially disadvantaged communities.

Procedure

The DQ, FBS, SCWS, RCADS, and SS were completed by pupils online using tablets in a classroom setting with support from two researchers on the Pavlovia (https://pavlovia.org) platform. A verbal explanation of how to complete the online assessment pack was given and participants' initial questions were answered in a plenary format. Questions that arose while completing the assessment pack were answered quietly in a one-to-one format. Where pupils experienced fatigue, brief rest periods were permitted. Students could opt-out at any time. Data for the main analysis was from pupils who had

completed the ALFL program. The test-retest analysis data was from a subsample of participants in the no-intervention control arms of two RCTs (Grennan et al., in progress, O'Dowd et al., in progress). The responsiveness to intervention analysis data was from a subsample of participants in the ALFL intervention arms of two RCTs (Grennan et al., in progress, O'Dowd et al., in progress).

Data Analytic Plan

To address the first research question about the factor structure of the FBS, exploratory (EFA) and confirmatory (CFA) factor analyses were conducted (Kyriazos & Stalikas, 2018). To address the second question about internal consistency reliability, Cronbach's (1951) alpha and McDonald's (1999) omega were computed. To address the third question about test-retest reliability, intraclass correlations were computed between FBS values returned on two occasions 10 weeks apart during which no intervention occurred in a subsample of 382 cases (Qin et al. 2019). To address the fourth question about responsiveness to change, the significance and magnitude of FBS scales sensitivity to change were assessed with dependent t-tests and standardized response means (SRM) computed using FBS values returned on two occasions 10 weeks apart during which a subsample of 345 cases completed the ALFL program (Husted et al., 2000). To address the fifth research question about concurrent and construct validity, Pearson product moment correlations were calculated between the FBS and scales and subscale scores of the SCWS, RCADS, and SS. To address the sixth research question about the statistical significance of the relationship between the FBS and demographic variables, Pearson product moment correlations were calculated for continuous variables (age), and point-biserial correlations for dichotomous variables (gender, and attendance at a school for disadvantaged children). Quantitative data analyses were conducted using the IBM SPSS version 27 and Amos software version 27.

In the correlational aspect of the study (N = 305) there were missing values in 35.1% of cases. 8.4% of these cases had only one missing item. The remaining 16.7% of cases had at least two items missing items, and fewer than 5% of data points missing. The expectation maximization method was used to manage missing values in the correlational aspect of the study (Dempster et al., 1977). In the longitudinal test-retest aspect of the study (N = 382) there were missing values in 59.7% of cases, and in these cases fewer than 6% of data points were missing. In the responsiveness to change aspects of the study (N = 345) there were missing values in 49.3% of cases, and in these cases fewer than 5% of data points were missing. Missing data was managed by multiple imputation for the longitudinal test-retest and responsiveness to change aspects of the study (Rubin, 2004; Graham, 2009).

Results

Factor Structure of the FBS

To address the first research question about the factor structure of the FBS, an initial EFA was conducted on a sample of 305 cases. The Kaiser–Meyer–Olkin (KMO) test value was 0.93, indicating that the proportion of common variance among FBS items justified conducting factor analysis. For the EFA, principal axis factoring with Promax rotation and Kaiser normalization was used. This yielded a 5-factor solution containing two large factors (with eigenvalues of 10.65 and 2.27) and three small factors with eigenvalues of 1.33, 1.29 and 1.17. A second similar EFA limited to two factors yielded a 27-item solution shown in Table 1. In this solution there were 27 items with loadings above 0.3 and no items with large cross-loadings.

Confirmatory factor analyses were then conducted on post-test data from a sample of 537 cases from the intervention and control groups of the two RCTs. Cases with more than 5% of missing data were excluded. In cases with less than 5% missing data, the expectation maximization algorithm was used to impute missing data points (Dempster et al., 1977). The aim of the CFA was to determine if the two or five-factor solution fit the data best. A second order model in which two factors were nested within a single superordinate factor was also tested. The 2-factor model fit the data (χ^2 = 516.799, df = 225, p = 0.00; Comparative fit index (CFI) = 0.94; Tucker-Lewis index (TLI)=0.93; Root mean squared error of approximation (RMSEA) = 0.05; standardized root mean square residual (SRMR) = 0.04). In contrast, the 5-factor model was not acceptable and did not fit the model. Finally, the fit of the

higher-order 2-factor model was improved by removing four items (10, 12, 25, and 26) with weak factor loadings. Although the fit was acceptable, it was not as acceptable as the 2-factor model (χ^2 = 616.79, df = 225, p = 0.00; CFI = 0.91; TLI = 0.90; RMSEA = 0.06; SRMR = 0.05). Figure 1 contains the CFA two factor model.

The two-factor model provides a conceptually coherent solution. Factor 1 reflects the use of specific arousal reducing behavioral skills learned on the ALFL program and was labelled Behavioural skills. Factor 2 reflects engaging in particular cognitive strategies to enhance well-being, online safety, or to reduce distress discussed in the ALFL program and was labelled Cognitive skills. This 23-item two factor version of the FBS was used in subsequent analyses (and is contained in Table 3 supplemental information). The following is an example of an item that assesses the use of a cognitive skill to promote well-being: Something upset me so I paused to think about the situation, before I decided what to do. The following is an example of an item that assesses the use of a behavioral skill to promote well-being: I used Heart Breathing. Heart Breathing is when I breathe in love and breathe out my worries.

Internal Consistency Reliability

In answer to the second research question about internal consistency reliability, Cronbach's alpha and McDonald's omega analyses showed that the FBS had good internal consistency reliability (α=0.93, ω =0.93, N =305). The FBS total and factor scale reliability coefficients, shown in Table 2, fell above the criterion of 0.7. All other scales used in the study had acceptable internal consistency reliability, with the exception of the SCWS social desirability subscale, also shown in Table 2. The low reliability of this subscale may have been due to fact that it contained only 3 items.

Test-retest Reliability

In answer to the third research question about test-retest reliability, intraclass correlations showed that the FBS total had low, but significant test-retest reliability over a 10-week period (ICC=0.20, p < 0.01, N =382). From Table 2 it may be seen that intraclass correlations for the FBS total and factor scales were significant (p < 0.001) and ranged from 0.18 to 0.22.

Responsiveness to Change

In answer to the fourth question about responsiveness to change it was found that the FBS was responsive to change arising from engagement in the ALF program (Table 3). Paired sample t-tests showed that the mean FBS total improved significantly from pre- to post-intervention (t (344) = 3.07, p < 0.001). The SRM for the FBS was 0.17, indicating that while the FBS was responsive to change, the amount of change detected arising from the ALFL program was small. The SRM for Factor 1: Behavioural skills was 0.25 and associated with significant change. However, the SRM for Factor 2: Cognitive skills was 0.01 and was not associated with significant change.

Concurrent and Construct Validity: Correlations with trait well-being, anxiety, depression, and service satisfaction

Table 2 presents correlations between the FBS and other scales. In answer to the fifth research question about concurrent and construct validity, it was found that the FBS total had good concurrent and construct validity evidenced by a positive significant medium correlation with SCWS total trait well-being (r(304)= 0.34, p<.01). The FBS factor scales also had positive significant medium correlations with the SCWS total ranging from 0.29 to 0.33. The FBS factor scales had positive significant small to medium correlations with SCWS positive outlook and positive emotional state subscales ranging from 0.19 to 0.31. There were strong positive and significant correlations between the SS and the FBS total and factor scales ranging from 0.51 to 0.56 indicating that FBS state well-being was associated with satisfaction with the ALFL program. There were small to medium positive and significant correlations between the SCWS social desirability scale and the FBS total and factor scales ranging from 0.22 to 0.25 indicating that state well-being assessed by the FBS was associated with a social desirability response set. Correlations between the FBS total and factor scale with the RCADS total, anxiety and depression scales were negligible.

Relationships with age, gender, and social disadvantage

Table 2 presents correlations between the FBS and demographic variables. In answer to the sixth research question, it was found that the

FBS total scale had significant negative medium correlations with age and social disadvantage, and a negligible correlation with gender. These results indicate that younger children and children in DEIS schools for the socially disadvantaged obtained higher FBS state well-being scores. Independent samples t-tests were conducted to compare the FBS total scores for males and females. There was a significant difference in scores for males (M=45.4; SD=24.9) and females (M=39.5; SD=19.9) ($t(304) = 48.6$, $p<.001$), with males having higher scores. Independent samples t-tests were also conducted to compare total FBS scores for DEIS and non-DEIS schools. There was a significant difference in schools, with DEIS schools having higher scores (M=52.8, SD=23.5) than non-DEIS schools (M=37.6, SD=21.5) ($t(304) = 56.0$, $p<.001$).

Discussion

This research aimed to develop the FBS, a child self-report scale, designed to measure the change in state well-being by using the specific skills learned on the ALFL Program, and therefore, also facilitated an evaluation of the ALFL program. The central findings of the study were that a 23-item, 2-factor version of the FBS best fit the data. The FBS total and factor scales had strong internal consistency but weak test-retest reliability, and they had good concurrent and construct validity shown by medium and high correlations with the SCWS and SS respectively. However, the FBS total and factor scales had negligible correlations with RCADS total, anxiety and depression scales, which may have been due to the universal nature of the ALFL program which aims to promote well-being as opposed to combat poor mental health. The FBS total was responsive to change following ALFL intervention, although only a small amount of change occurred. Significant change occurred on the Behavioural skills, but not the Cognitive skills factor scale. This may have been due to children finding it easier and more accessible to apply behavioral strategies in their daily lives (Gualtieri & Finn, 2022). The FBS total had significant negative medium correlations with age and social disadvantage, and boys obtained significantly higher state well-being scores than girls. Younger male children from socially disadvantaged schools obtained higher FBS state well-being scores. This is in line with other research that school-based programs may have the greatest impact on the well-being of children who are most disadvantaged (Ungar et al., 2019).

Two previous cluster RCTs of the ALFL program showed that trait measures of well-being variables did not detect positive changes arising from the ALFL program (Clancy et al., 2023; O'Connor et al., 2022), while two qualitative studies indicated that the ALFL program had positive benefits, some of which were situation specific (Hoctor et al., 2022; Listwan et al., 2023). These previous studies demonstrated that a generic trait measurement tool which lacked specificity to the skills learned from ALFL program was insufficient in capturing the educational outcomes, thus promoting the development of the state FBS tool. The findings from this study showcase that the FBS, which assesses situation-specific, state-well-being, is sensitive to change arising from participation in the ALFL program and can be used as an adequate measure for evaluating ALFL.

The following section will discuss the ramifications of these findings in terms of strengths, limitations, and avenues which future studies could explore. The study is in line with best practice, the development of this scale included focus groups, theoretical analysis, psychometric analysis, validity and reliability testing, and an adequate sample size (Boateng, et al 2018; Morgado et al., 2017). Furthermore, the FBS is an easy to administer scale, accessible, and assesses numerous domains relevant to this program.

A number of limitations of this research need to be acknowledged. First, this scale was tailor-made for the ALFL program, which limits its wide applicability in other contexts. Whilst this research addresses an important need for the development and validation of a measure of state-well-being, self-report measures have limitations. Second, there may be social desirability bias in children's responses, despite being reminded of the anonymous nature of the survey. In the current study the FBS had significant small to medium correlations with the SCWS social desirability scale, suggesting this response style may have influenced responses to FBS items. Third, the FBS has poor test-retest reliability. The FBS was responsive to change; however, the change it detected was relatively small. It may be that

the FBS has a low responsiveness to change, or that the ALFL program has a small effect on state well-being. Future psychometric investigations of the FBS may concentrate on identifying an item set with a high level of responsiveness to change, but one which is also accessible and factorially valid. The main implication of this study for research is that it requires replication.

In conclusion, the main implication of this study for practice is that the FBS may be used routinely for evaluating ALFL programs for children aged 8-13. Despite its limitations, the present study provides ALFL with a valid, robust, and precise tool to explore the evidence base of the program, which in turn may impact upon educational policy change, by enabling the program to expand into more schools nationally and internationally. The study additionally offers ALFL policy makers guidance for further refinement of the program. Future research can replicate this study to further explore its psychometric properties.

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Declaration of interest statement

None of the authors have a conflict of interest to disclose.

Data availability statement

The data from this study are available from the corresponding author, NMcK, upon reasonable request.

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Tables

Table 1. Twenty-seven item two-factor solution from an exploratory factor analysis on subsample (N = 305), using principal axis factoring with Promax rotation and Kaiser normalization.

		Factor Loadings	
FBS Item		**Factor 1**	**Factor 2**
	Factor 1. Behavioral Skills		
FBS29	I used the Feeling Thermometer. This is when I name my feelings and notice how strong they are.	.866	
FBS14	I used Heart Breathing. Heart Breathing is when I breathe in love and breathe out my worries.	.825	
FBS21	I imagined a picture of dropping pebbles into a still pond. As I was breathing, I imagined small waves being kind wishes spreading out to me and the world.	.825	
FBS20	I imagined thoughts were like floating bubbles in my mind. I popped the worry bubbles and kept the kind bubbles.	.803	
FBS13	I did Square Breathing. This is when I breathed in for 5 seconds, held for 5, breathed out for 5, and held for 5.	.763	
FBS15	I used the Body Scan or Selfie Scan. This is when I breathe in and out slowly and notice the feelings all over my body.	.760	
FBS17	I used a Mindful Moment. This is when I breathe in deeply and imagine the tightness flowing out of my body and the happiness flowing in.	.747	

FBS30	I imagined I had an inner warrior. When I breathed in, I felt strong, kind and brave. When I breathed out, all the fear went away.	.747	
FBS22	I Imagined a picture that made me feel calm and strong. For example, a strong tree bending in a storm, but not breaking.	.678	
FBS16	I used the Tighten, Loosen, Calm muscle relaxation. This is when I tighten and then relax the muscles in my body.	.678	
FBS19	I used Thoughtful Words. This is when I imagine giving and getting a body of kind words.	.651	
FBS23	I imagined 'Switching Off'. This is when I breathe in to imagine charging up my body, and breathe out to imagine 'switching off'.	.558	
FBS32	I stood up for myself and told the person who was upsetting me to stop in a clear, controlled and confident way.	.341	
	Factor 2. Cognitive Skills		
FBS26	I didn't give information about myself to anyone I didn't know.		.763
FBS27	I checked with an adult if I thought something might be a fake or a scam.		.693
FBS28	I checked with someone before posting anything online about them.		.640
FBS25§	I used a strong password		.616
FBS9	I reminded myself that it is ok to feel happy, sad, angry or worried.		.611
FBS35	I paused to think about a situation before I decided what to do.		.597
FBS8	I reminded myself that I have the right to ask for help or make mistakes or say no.		.506
FBS24	I checked if stuff on the internet was real or fake		.463
FBS10§	I reminded myself that if I am not feeling safe, my body can have a fight, flight, or freeze response.		.460
FBS37	I noticed that I was falling into the thinking trap that other people were thinking bad things about me, and did something about it.		.416
FBS11	I reminded myself of nice things in my life that I was thankful for.		.415
FBS26	I paused and checked if I was being guided by others before I decided what to do.		.371
FBS38	I noticed that I was falling into the thinking trap that bad things would happen to me, and did something about it.		.346
FBS12§	I reminded myself of fun things I will be doing in the future.		.344
Eigenvalue		10.48	2.34
Variance explained (%)		38.80	8.67
Cumulative variance explained		38.80	47.47
Corrected item total correlations		.50 - .78	.39 - .67
Cronbach's alpha		.94	.87
McDonald's omega		.95	.87

Note: The Kaiser–Meyer–Olkin (KMO) test value was 0.932, indicating that the proportion of common variance justified conducting factor analysis. § These items were dropped from the final 23 item version of the FBS following CFA shown in Figure 1.

Table 2. Means, standard deviations, alpha and omega reliability coefficients, and correlations between FBS and its 2-factor scales with measures of well-being, anxiety, depression, satisfaction and demographic variables.

			Internal consistency reliability (N = 305)		**Test-retest Reliability (N = 382)**	**Correlations (N = 305)**		
Variables	**M**	**SD**	**α**	**ω**	**ICC**	**FBS Total**	**FBS Factor 1 Behavioral skills**	**FBS Factor 2 Cognitive skills**
FBS total	43.380	23.46	.93	.93	.20**			
FBS Factor 1 Behavioral skills	21.06	15.67	.94	.94	.22**	.948**		
FBS Factor 2 Cognitive skills	22.68	9.99	.86	.84	.18**	.870**	.668**	
SCWS total	59.79	8.31	.87	.87	-	.337**	.297**	.332**
SCWS Social Desirability	12.21	2.08	.56	.59	-	.254**	.224**	.243**
SCWS Positive outlook	25.39	3.31	.71	.70	-	.250**	.199**	.256**
SCWS Positive Emotional state	22.18	4.49	.85	.85		.311**	.288**	.308**
RCADS total	48.38	12.38	.91	.91	-	.1	.135	.034
RCADS anxiety	47.84	11.50	.86	.86	-	.147*	.158**	.098
RCADS depression	49.76	12.22	.85	.85	-	.012	.077	-.065
SS Total	23.39	7.92	.91	.92	-	.564**	.512**	.551**
Age	10.48	1.2	-	-	-	-.291**	-.324**	-.192**
Gender (Female 32.5%; 1=boy, 2= girl, 3=other).	-	-	-	-	-	-.117	-.151*	-.014
Social disadvantaged (41.6%; 1= disadvantaged, 2 = not disadvantaged)	-	-	-	-	-	-.315**	-.337**	-.213**

Note: FBS = Feeling Better Scale. SCWS = Stirling Children's Well-being Scale. RCADS = Revised Children's Anxiety and Depression Scale. SS = Satisfaction Scale. M = mean. SD = standard deviation. Correlations of .1, .3 and .5 are considered small, medium and large respectively. ** p<0.01, * p<0.05

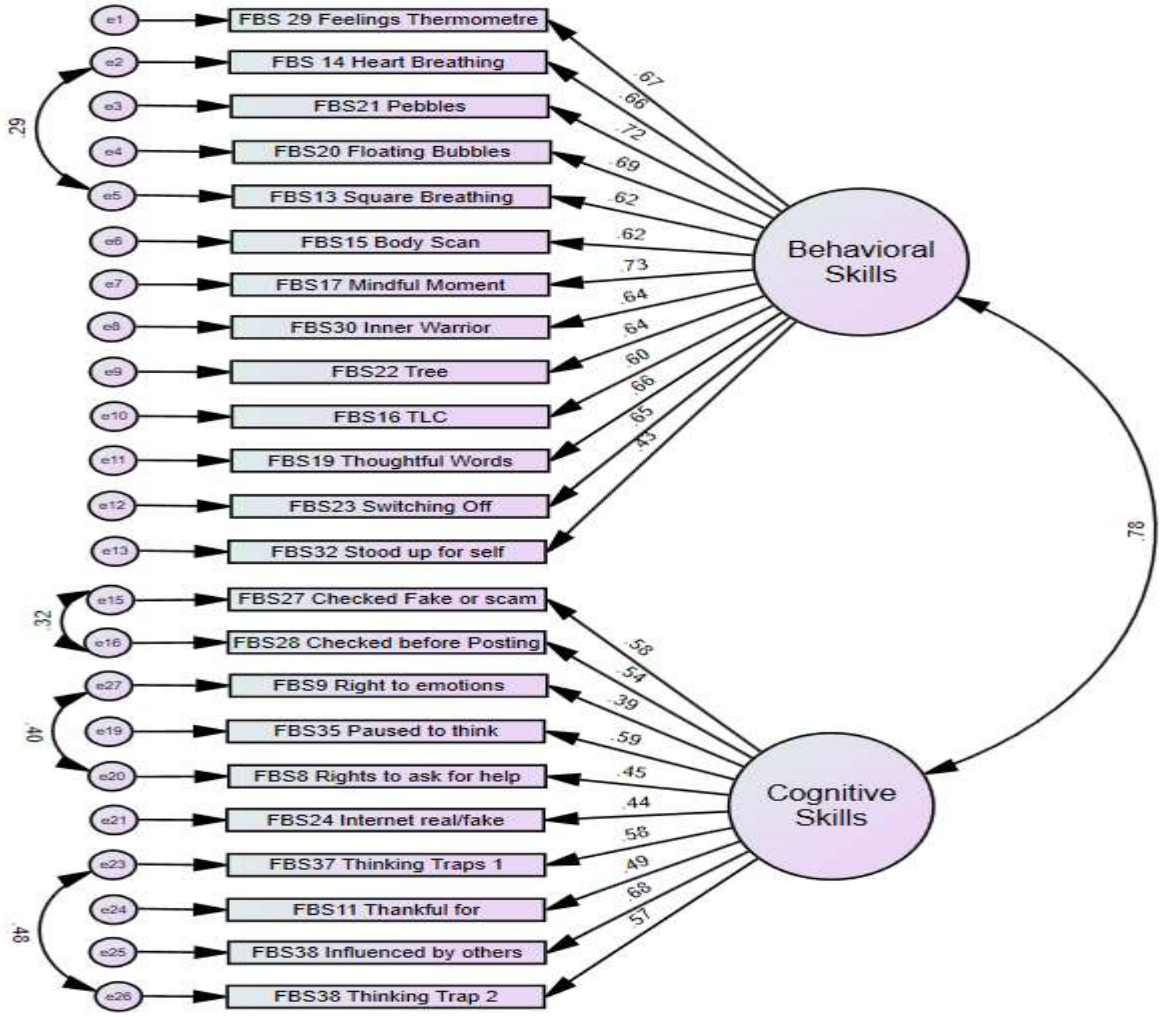
Table 3. Responsiveness of the FBS to change arising from ALFL

	Pre-ALFL M (SD) N = 345	**Post-ALFL M (SD) N = 345**	**t**	**p**	**SRM**
FBS Total	36.22 (19.29)	39.46 (18.87)	3.069**	.002	0.165
FBS Factor 1: Behavioral skills	15.84 (12.47)	19.15 (11.99)	4.645***	<.001	0.250
FBS Factor 2: Cognitive skills	20.38 (8.91)	20.31 (8.44)	0.128	.898	0.007

Note: FBS = Feeling Better Scale. M = Mean. SD = Standard deviation. t = dependent t test result. p = probability level. SRM = Standardized Response Mean. SRM >0.8 indicates high, 0.5–0.8 medium, and 0.2–<0.5 low responsiveness. *p<.05. **p<.01. ***p<.001

Figures

Figure 1. Confirmatory factor analysis results of FBS 23-item two factor model (N = 537)



Supplementary Material

Table S1. 23-item Feeling Better Scale

FEELING BETTER SCALE						
Here are some statements about things you might have done in the past week because they are enjoyable, or to make you feel better if you were upset. Click the answer that best describes what you did.						
	In the PAST WEEK to feel better I reminded myself that					
1.	I have the right to ask for help or make mistakes or say no	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
2.	It is ok to feel happy, sad, angry or worried	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
	In the PAST WEEK I did these things to calm down if I was upset or just to feel good					
3.	I reminded myself of nice things in my life that I was thankful for	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
4.	I did Square Breathing. This is when I breathed in for 5 seconds, held for 5, breathed out for 5, and held for 5	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
5.	I used Heart Breathing. Heart Breathing is when I breathe in love and breathe out my worries	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
6.	I used the Body Scan or Selfie Scan. This is when I breathe in and out slowly and notice the feelings all over my body	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it

7.	I used the Tighten, Loosen, Calm muscle relaxation. This is when I tighten and then relax the muscles in my body	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
8.	I used a Mindful Moment. This is when I breathe in deeply and imagine the tightness flowing out of my body and happiness flowing in	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
9.	I used Thoughtful Words. This is when I imagine giving and getting a box of kind words	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
10.	I imagined thoughts were like floating bubbles in my mind. I popped the worry bubbles and kept the kind bubbles	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
11.	I imagined a picture of dropping pebbles into a still pond. As I was breathing, I imagined small waves being kind wishes spreading out to me and the world	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
12.	I imagined a picture that made me feel calm and strong. For example, a strong tree bending in a storm, but not breaking	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
13.	I imagined 'Switching Off'. This is when I breathe in to imagine charging up my body, and breathe out to imagine ‘switching off’	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
	In the PAST WEEK to make sure I am safe online					
14.	I checked if stuff on the internet was real or fake.	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it

15.	I checked with an adult if I thought something might be fake or a scam	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
16.	I checked with someone before posting anything online about them	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
	In the PAST WEEK when I got upset					
17.	I used the Feelings Thermometer. This is when I name my feelings and notice how strong they are	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
18.	I imagined I had an inner warrior. When I breathed in, I felt strong kind and brave. When I breathed out, all the fear went away	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
19.	I stood up for myself and told the person who was upsetting me to stop in a clear, controlled and confident way	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
20.	I paused to think about a situation before I decided what to do	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
21.	I paused and checked if I was being guided by others before I decided what to do	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it
22.	I noticed that I was falling into the thinking trap that other people were thinking bad things about me, and did something about it	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it

23.	I noticed that I was falling into the thinking trap that bad things would happen to me, and did something about it	Yes and it made me feel a lot better	Yes and it made me feel somewhat better	Yes and it made me feel a little better	Yes but I did not feel better	No I did not do it

FBS Scoring

To get the FBS Overall wellbeing state, score all items 0-3 as shown below and sum scores of all items.

0 = No I did not do it

1 = Yes but I did not feel better

2 = Yes and it made me feel a little better

3 = Yes and it made me feel somewhat better

4 = Yes and it made me feel a lot better

To get the FBS Total number of skills used, recode all items [0 = 0] and [1, 2, 3 or 4 = 1] & sum scores for items 1-23

FBS Factor 1 behavioural = 4 + 5 + 6 + 7 + 8 + 9 + 10 + 11 + 12 + 13 + 17 + 18 +19

FBS Factor 2 Cognitive scoring = 1 + 2 + 3 +14 + 15 + 16 + 20 + 21 + 22 + 23

FBS total score = add all together.