

1 **Norwegian Acceptance and Action Questionnaire (NAAQ): A psychometric**
2 **evaluation.**

3
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7
8 **Abstract**

9 The Acceptance and Action Questionnaire (AAQ-II) aims to measure psychological
10 flexibility (PF), described as the ability to act according to chosen values while consciously
11 being in contact with present moment experiences that might function as obstacles. To date,
12 the psychometric properties of a Norwegian translated version of the AAQ-II (NAAQ) have
13 not been published, thus limiting the confidence of findings based on its use with Norwegian
14 samples. The current study sought to address this omission by evaluating the psychometric
15 properties of the NAAQ in a clinical sample ($N = 163$) with a history of major depressive
16 disorder and residual symptoms of depression. Explanatory and confirmatory factor analyses
17 supported a unidimensional structure of the scale with good internal ($\alpha = .87$) and satisfactory
18 levels of concurrent and convergent validity. Incremental validity beyond two measures of
19 value-based living was found in predicting depression, anxiety, and three of four domains
20 reflective of quality of life. The overall results support the use of the NAAQ in both research
21 and clinical practice with Norwegian samples.
22

23 **Highlights**

- 24 • Validation of the Norwegian Acceptance and Action Questionnaire-II.
25 • Factor analyses supported a unidimensional structure of the scale.
26 • Satisfactory levels of internal consistency, concurrent, and convergent validity.
27 • Mixed support for incremental validity.
28

29 **Keywords**

- 30 • Psychometric evaluation
31 • Acceptance and Action Questionnaire II (AAQ-II)
32 • Psychological flexibility
33 • Depression
34
35

36 1. Introduction

37 Interest in what is referred to as psychological flexibility (PF) has been growing, given
38 increasing evidence linking mental health status to how we relate to our ongoing
39 psychological experiences (e.g., Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008; Wenzlaff
40 & Luxton, 2003). PF is defined as “the ability to fully contact the present moment and the
41 thoughts and feelings it contains without needless defense, and, depending upon what the
42 situation affords, persisting in or changing behavior in the pursuit of values and goals”
43 (Hayes, Luoma, Bond, Masuda, & Lillis, 2006, p. 3). Avoiding certain types and/or levels of
44 private experiences often supports psychological rigidity that has been found to be a central
45 component in the development of psychopathology (Bardeen & Fergus, 2016; Carvalho,
46 Pinto-Gouveia, Gillanders, & Castilho, 2019; Fledderus, Bohlmeijer, & Pieterse, 2010) and a
47 limitation to quality of life and emotional well-being (Hayes, Villatte, Levin, & Hildebrandt,
48 2011).

49 PF has received the most attention within the model of human functioning on which
50 acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 2012) is based. The
51 ACT model posits that the following six interdependent processes contribute to PF: (a)
52 acceptance, (b) cognitive defusion, (c) contact with the present moment or mindfulness, (d)
53 self-as-context, (e) values, and (f) committed action (see Hayes et al., 2012, for details). PF
54 was originally measured by the Acceptance and Action Questionnaire (AAQ; Hayes et al.,
55 2004). A revised version (AAQ-II; Bond et al., 2011) subsequently was developed following
56 a number of studies that found the internal consistency of the scale to be low to moderate and
57 its factorial structure to be unstable. Confirmatory factor analyses across six samples
58 suggested a one-factor solution identified as PF that explained over 50% of the variance. An
59 item response theory analysis also supported a unidimensional structure for 7-items
60 (Fledderus, oude Voshaar, ten Klooster, & Bohlmeijer, 2012) with a lower total score reflecting
61 greater PF. The AAQ-II was found to have good internal consistency with alpha coefficients
62 ranging from .78 -.88, and satisfactory test-retest coefficients at 3 (.81) and 12-months (.79)
63 (Bond et al., 2011). Correlations of PF with symptoms of depression, anxiety, stress, and
64 overall psychological distress supported the validity of the scale. A more recent longitudinal
65 study by Spinhoven, Drost, de Rooij, van Hemert, and Penninx (2014) demonstrated that PF
66 as tracked by the AAQ is a stable construct, with scores invariant over 2 years despite
67 fluctuations in current emotional disorder. Furthermore, they found that higher scores in PF
68 predicted changes in depression and anxiety 2 years later.

69 Despite its other psychometric properties, recent questions have been raised concerning the
70 construct validity of the AAQ-II and whether it may be more reflective of general
71 psychological distress and neuroticism than psychological rigidity (Rocheffort, Baldwin, &
72 Chmielewski, 2018; Tyndall et al., 2019; Wolgast, 2014). As a result, a number of other
73 instruments assessing PF or variants of it have been or are under development, including
74 Open Engaged State Questionnaire (Benoy et al., 2019), Comprehensive Assessment of
75 Acceptance and Commitment Therapy (Francis, Dawson, & Golijani-Moghaddam, 2016) and
76 Multidimensional Experiential Avoidance Questionnaire (Gámez, Chmielewski, Kotov,
77 Ruggero, & Watson, 2011). To this date, however, the AAQ-II still remains the most widely
78 used measure of PF as supported by findings of discriminant validity with traditional
79 measures of affect, suggesting that the scale explains variance above and beyond
80 psychological distress (Gloster, Klotsche, Chaker, Hummel, & Hoyer, 2011).

81 The AAQ-II has been translated into a number of languages and validated with different
82 populations in various cultural settings, such as in Sweden (Lundgren & Parling, 2017),
83 France (Monestes, Villatte, Mouras, Loas, & Bond, 2009), Colombia (Ruiz et al., 2016), and
84 the Netherlands (Jacobs, Kleen, De Groot, & A-Tjak, 2008). The psychometric properties of
85 the AAQ-II with a Norwegian-speaking sample have not been investigated before. Such an
86 evaluation of a Norwegian version of the AAQ-II (NAAQ) is needed to more extensively
87 address differences involving language and culture, especially as ACT becomes more widely
88 practiced and disseminated in this country. To the extent that similar investigations have been
89 conducted with other non-English-speaking communities, our findings may provide a further
90 assessment of the universality of psychological rigidity and flexibility as possible
91 psychological risk and protective factors, respectively.

92 A related project that perhaps most closely parallels this one was conducted by Fledderus et
93 al. (2012) with a Dutch sample reporting mild to moderate depressive symptoms. The AAQ-
94 II explained variance in depression, anxiety, and positive mental health above and beyond that
95 accounted for by facets of mindfulness. Our study provided an opportunity to investigate the
96 incremental validity as well as other psychometric properties; including the factor structure,
97 internal consistency, and additional types of validity; of the AAQ-II in another clinical sample
98 with symptoms of depression. Although this project is similar to that of Fledderus and
99 colleagues (2012) in a number of respects, it also noticeably differs from it in at least two
100 ways.

101 Fledderus et al. (2012) investigated the factor structure of the AAQ-II by application of item
102 response theory (IRT), which is generally regarded as preferable to confirmatory factor
103 analysis (CFA) (Fischer & Molenaar, 1995). We, however, opted for CFA instead given our
104 smaller sample size ($N = 163$ vs. 376). Traditionally, the recommended sample sizes required
105 for IRT have been as large as $1,000$ (Hambleton, 1989), although this requirement has more
106 recently been called into question (e.g., Sahin & Anil, 2017). Our choice of CFA thus
107 represents a more conservative option, but one that more readily allows comparisons of our
108 findings with other those of other studies that have also employed it in investigating the factor
109 structure of the AAQ-II (e.g., Bond et al., 2011; Ruiz et al., 2016).

110 A second respect in which our project differs from that of Fledderus and colleagues (2012)
111 involves evaluating the incremental validity of the AAQ-II. Their study was the second
112 (McCracken & Zhao-O'Brien, 2010) to specifically assess its incremental validity over
113 measures of mindfulness. However, such present moment awareness, as discussed earlier, is
114 only one of six interdependent processes posited to contribute to PF. To the extent that these
115 other processes are also reflected by what the AAQ-II assesses, it would be expected to
116 demonstrate incremental validity when compared with various measures of mindfulness and
117 its facets. What is not clear, however, is whether the AAQ-II still provides incremental
118 validity when measures of other processes thought to also contribute to PF are considered,
119 particularly those reflecting value-based living as noted by Fledderus and associates (2012).
120 Our inclusion of measures of value-congruent behavior thus provided a more robust
121 evaluation of the incremental validity of the AAQ-II, particularly by also predicting
122 variability in quality of life, an outcome not considered by Fledderus et al. (2012).

123 2. Method

124 2.1. Participants

125 Our sample consisted of 163 participants aged $18-65$ ($M = 36.8$, $SD = 12.5$) recruited from
126 specialist mental health care centers, regular general practitioners, and via self-referrals in
127 ($N = 56$) and ($N = 107$). As seen in Table 1, the majority were female (76.7%), with higher
128 levels of education (70%). All participants had a history of depression and took part in a
129 clinical trial investigating the effect of attentional bias modification and group-based ACT on
130 residual symptoms of depression. Only data collected at baseline from this project were
131 analyzed in the present study.

132 < insert table 1 about here >

133 2.2. Procedure

134 The study was approved by the Norwegian Regional Committee for Medical and Health
135 Research Ethics, reference number 2014/1989. Information about the trial was disseminated
136 through flyers, social media, orientation meetings, and provided to general practitioners and
137 local hospitals in the recruitment area. The data collection period was from May 2015 to
138 October 2018. All participants signed informed consents.

139 2.3. Measures

140 **Acceptance and Action Questionnaire.** The Acceptance and Action Questionnaire (AAQ-II;
141 Bond et al., 2011) includes seven items rated on a Likert scale ($7 = \textit{always}$; $1 = \textit{never true}$),
142 with higher totals, as scored in this study, indicating less PF. Following a recommended
143 procedure (Guillemin, Bombardier, & Beaton, 1993), the AAQ-II was translated into
144 Norwegian and back-translated into English by seven therapists fluent in both languages and
145 with in-depth knowledge of ACT. A professional translator also translated the AAQ-II into
146 Norwegian with a final version chosen by means of consensus within the translation
147 committee. As discussed earlier, the psychometric properties of the parent instrument are
148 well-documented. Alpha coefficient in the present study was .87.

149 **Beck Depression Inventory.** The Beck Depression Inventory-II (BDI-II; Beck, Steer, &
150 Brown, 1996) is a psychometrically sound measure of the severity of 21 depressive
151 symptoms. The Norwegian translation of the BDI-II displays high internal consistency, and
152 acceptable convergent and discriminative validity (Aasen, 2001). Its internal consistency ($\alpha =$
153 .92) was good in this study.

154 **Hamilton Rating Scale for Depression.** The Hamilton Rating Scale for Depression (HRSD;
155 Hamilton, 1960, 1967) is a widely used semi-structured, clinical interview measuring the
156 severity of 17 affective, behavioral, and biological symptoms of depression. Items are scored
157 on a 0-4 Likert scale with higher scores reflecting more severe depression. The HRSD has
158 acceptable psychometric properties (Rabkin & Klein, 1987) with good internal consistency (α
159 = .79) and a high correlation ($r = .57$) with the BDI-II in this study.

160 **Beck Anxiety Inventory.** Beck Anxiety Inventory (BAI) measures severity of anxiety
161 symptoms by rating 21-items (Beck, Epstein, Brown, & Steer, 1988) on a 4-point Likert scale.

162 The BAI has been found to have high internal consistency and has shown good convergent
163 and divergent validity (de Beurs, Wilson, Chambless, Goldstein, & Feske, 1997; Kabacoff,
164 Segal, Hersen, & Van Hasselt, 1997). The Norwegian version of the BAI displays good
165 psychometric properties (Nordhagen, 2001). Its internal consistency in this study was .91
166 good.

167 **Mental Health Continuum.** The Mental Health Continuum – Short Form (MHC-SF; Keyes,
168 2002, 2009) measures positive mental health with 14 items that assess the degree of well-
169 being in the past month. Higher scores suggests higher levels of positive mental health. MHC-
170 SF has been found to have good psychometric properties (Lamers, Westerhof, Bohlmeijer, ten
171 Klooster, & Keyes, 2011). The MHC-SF was translated into Norwegian by Langland et al
172 (2013). The scale showed good internal consistency ($\alpha = .92$).

173 **Quality of Life.** WHO Quality of Life-BREF is a 26-item version of the WHOQOL-100
174 assessment that measures quality in life (WHOQOL-BREF; World Health Organization,
175 1998). The instrument consists of two general items that consider overall quality of life and
176 health satisfaction, with the remaining 24 items assessing satisfaction on a 5-point Likert scale
177 in the following domains: (a) physical health, (b) psychological health, (c) social
178 relationships, and (d) environment. The WHOQOL-BREF in general (Skevington, Lotfy,
179 O'Connell, & Group, 2004), as well as a Norwegian translated version, have shown
180 satisfactory psychometric properties (Hanestad, Rustøen, Knudsen, Lerdal, & Wahl, 2004). In
181 this study, the levels of internal consistency for the separate domains were satisfactory: (a)
182 physical health ($\alpha = .82$), (b) psychological health ($\alpha = .85$), (c) social relationships ($\alpha = .70$),
183 and (d) environment ($\alpha = .73$).

184 **Bull's Eye Value Survey.** The Bull's Eye Value Survey (BEVS) measures value-congruent
185 behavior (Lundgren, Luoma, Dahl, Strosahl, & Melin, 2012) in four domains: (a) health, (b)
186 leisure activities, (c) family, and (d) work/education. Respondents place separate marks on a
187 picture of a dartboard to reflect the degree to which they are behaving in ways consistent with
188 each, with higher scores indicating greater levels of self-defined value attainment. The BEVS
189 has shown good temporal stability and satisfactory construct validity (Lundgren et al., 2012).
190 In this study, internal consistency was .63.

191 **Engaged Living Scale (ELS).** This instrument is a newly developed self-report measure
192 based on the framework of ACT consisting of 16 questions scored on a 5-point Likert scale

193 (Trompetter et al., 2013). In contrast to the BEVS that evaluates valued-living in four
194 specified domains, ELS provides a more broad-band assessment of response style as a way in
195 which valued life activities are pursued (Trindade, Ferreira, Pinto-Gouveia, & Nooren, 2015).
196 ELS has predefined statements of values while values as assessed by the BEVS by contrast
197 are self-defined. Thus, these two instruments appear to reflect somewhat different, albeit
198 related facets of values and committed action. Trompetter et al. (2013) found ELS to be a
199 valid and reliable measure. It was translated into Norwegian for use in the present study,
200 which included a forward and back translation with independent checking. In the present
201 study we only considered ELS total scores, which displayed good internal consistency ($\alpha=.88$)
202 and a strong correlation with BEVS ($r = .577$).

203 204 **3. Statistical Analyses**

205 Statistical analyses were conducted by Stata/IC version 15.1. Bartlett's test of sphericity
206 (Bartlett, 1950) was used to ensure that the correlation matrix was not random and the Kaiser-
207 Meyer-Olkin (*KMO*) statistic (Kaiser, 1974) to verify that it was above .50. We conducted an
208 exploratory factor analysis (EFA) with principal factors as the estimation method. A parallel
209 analysis (PA), minimum average partial correlation (MAP), and a scree plot was used to
210 determine which factors to retain. Based on the general consensus in the literature (e.g.
211 Brown, 2015; O'Rourke & Hatcher, 2013), we adopted $\geq .40$ as the threshold for salient
212 loadings. Retention of factors was further based on three criteria; (a) theoretical
213 meaningfulness, (b) a minimum of three salient loadings, and (c) internal consistency above
214 .70 (Watkins, 2018).

215 The factor structure suggested from EFA was further investigated by CFA. Model fit was
216 evaluated by the chi-square model test, the standardized root mean squared residual (*SRMR*),
217 the root mean squared error of approximation (*RMSEA*), the comparative fit index (*CFI*) and
218 the Tucker-Lewis index (*TLI*). In order to conclude with high model fit, Hu and Bentler
219 (1999) recommend a cutoff of .95 on *CFI* and *TLI*, .06 on the *RMSEA*, and $<.08$ on the *SRMR*.
220 Chi-square test was not used as a primary measure of model fit because of sensitivity to
221 sample size (West, Taylor, & Wu, 2012).

222 The internal consistency of the NAAQ was further evaluated by its alpha coefficient.
223 Pearson's correlation coefficients were calculated to examine convergent and concurrent
224 validity. Based on previous research (Fledderus et al., 2012; Gloster et al., 2011), we expected

225 negative correlations between the NAAQ and positive mental health and the quality of life
226 domains, and positive correlations between NAAQ and measures of depression and anxiety.

227 Hierarchical regression analyses were performed to evaluate the incremental validity of the
228 NAAQ beyond the established constructs of values and committed action in predicting
229 depression, anxiety, positive mental health, and quality of life domains (i.e., physical health,
230 psychological health, social relationships and environment). Measures from the two
231 instruments assessing valued-living that correlated significantly with the predicted variables
232 were entered in a first step within the models with the NAAQ entered in step 2. Reversed
233 hierarchical regression analyses were also conducted.

234 4. Results

235 4.1. Factor structure

236 The Bartlett's test of sphericity ($p < .001$) and the *KMO* statistics (.81) indicated that the
237 correlation matrix was appropriate for EFA. The determinant of the correlation matrix also
238 did not indicate any concerns for singularity (.03).

239 Parallel analysis indicated three retained factors, while MAP and scree test suggested keeping
240 one. The eigenvalues of the analysis also suggested a one-factor model, with the first factor
241 constituting an eigenvalue of 3.48 that explained 81.93% of total variance, while the second
242 and third factors, respectively, produced eigenvalues of .53 and .23, explaining 12.54 % and
243 5.5% of total variance. Retaining one factor in addition met all three criteria for doing so.
244 Combined, these determinations suggest a one-factor solution, with all items loading above
245 threshold of .40, is adequate (see Table 2).

246 The CFA indicated a poor initial fit of the one-factor model ($CFI = .795$, $TLI = .692$, $RMSEA$
247 $= .222$, $SRMR = .082$). Modification indices were calculated, which suggested correlated
248 measurement errors between items 1-4 and 2-3, that had also been found in previous research
249 (Bond et al., 2011; Kleszcz, Dudek, Białaszek, Ostaszewski, & Bond, 2018; Ruiz et al., 2016;
250 Yavuz et al., 2016). These error terms can be explained by the overlapping content between
251 the items mentioned (Brown, 2015). All the fit indices improved, suggesting that the modified
252 model fit the data better: (a) $CFI = .981$, (b) $TLI = .966$, (c) $RMSEA = .073$, and (d) $SRMR =$
253 $.035$).

254

255 < insert table 2 about here >

256

257 4.2. Internal validity

258 The participants scored a mean of 28.57 ($SD = 8.53$), with a strong coefficient alpha of .87.

259 4.3. Construct validity

260 Correlations between measures of this study can be found in Table 3. Congruent with our
261 hypothesis, NAAQ was positively correlated with depression and anxiety, and negatively
262 correlated with the different domains of quality of life and positive mental health. As
263 expected, there was a negative correlation between NAAQ and values and committed action.

264

265 < insert table 3 about here >

266

267 4.4. Incremental validity

268 The results of seven hierarchical regression analyses investigating the incremental validity of
269 the NAAQ are presented in Table 4. They were performed by entering BEVS and ELS in the
270 first block, and NAAQ in the second. The two measures of valued living at step 1 explained
271 variance in all of the predicted variables except anxiety. The NAAQ, by contrast, accounted
272 for a significant proportion of variability in BAI scores, but failed to do so with both positive
273 mental health and quality of social relationships. The NAAQ, however, displayed incremental
274 validity at step 2 in the four remaining models. Significant contributions from the two
275 measures of valued action were maintained within these models at step 2 with the exception
276 of ELS in no longer independently accounting for variability in quality of life involving the
277 environment domain. Reversed hierarchical analyses indicated the same results, suggesting
278 that ELS and BEVS explained unique variance beyond the NAAQ in depression, positive
279 mental health, and in all quality of life domains.

280

281 < insert table 4 about here >

282

283 **5. Discussion**

284 The overall purpose of this current study was a preliminary evaluation of the psychometric
285 properties of the NAAQ in a clinical sample. This included an opportunity to further assess
286 the incremental validity of the AAQ-II as a measure of PF in explaining both positive and
287 negative psychological outcomes beyond value-based living. The results suggest that the
288 NAAQ displays sufficient psychometric properties to be used by both clinicians and
289 researchers with Norwegian participants.

290 The EFA suggested a one-factor solution similar to findings from other psychometric studies
291 of the AAQ-II (e.g., Bond et al., 2011; Lundgren & Parling, 2017; Yavuz et al., 2016), that
292 was substantiated by the CFA after accounting for correlated measurement errors explainable
293 by method effects in items 1 and 4, and 2 and 3. Items 1 and 4 both refer to, “my painful
294 memories”, while items 2 and 3 ask about “feelings”. The modified model fit the data well,
295 and supported the one-factor solution also found in administering the AAQ-II in additional
296 languages other than English (e.g. Eisenbeck & Szabó-Bartha, 2018; Lundgren & Parling,
297 2017; Ruiz et al., 2016). Although the AAQ-II itself in the past has often been construed as
298 assessing both PF and experiential avoidance (Bond et al., 2011), consensus appears to be
299 growing for regarding it as solely evaluating PF (Gloster et al., 2011; Tyndall et al., 2019),
300 especially given the development of what appear to be more psychometrically sound
301 measures of experiential avoidance (Gámez et al., 2014; Gámez et al., 2011).

302 Internal consistency of the NAAQ was good with its mean comparable to those from similar
303 studies investigating clinical samples (Bond et al., 2011; Eisenbeck & Szabó-Bartha, 2018;
304 Karekla & Michaelides, 2017; Yavuz et al., 2016). The instrument correlated negatively with
305 domains of life quality, positive mental health, and value attainment, and negatively with
306 depression and anxiety. The findings of convergent validity are consistent with research with
307 other populations (e.g. Bond et al., 2011; Lundgren & Parling, 2017; Monestes et al., 2009).
308 Regression analyses indicated that the NAAQ explained additional variance in several salient
309 outcomes beyond value-based living as measured by ELS and BEVS. The NAAQ specifically
310 incrementally predicted symptoms of depression and anxiety as well as the quality of life
311 domains of physical health, psychological health, and environment above and beyond
312 measures of values and committed action. However, NAAQ did not predict additional

313 variance in positive mental health and quality of social relationships. Findings that the NAAQ
314 and the ELS and BEVS taken together each account for unique variance suggest that the
315 NAAQ as a putative measure of PF is, as expected, related to values and committed action,
316 but does not completely subsume them. These results should not be surprising given its
317 brevity (seven items) and parallel findings that the AAQ-II and some facets of mindfulness
318 also explain additional variance beyond each other (Fledderus et al., 2012). Future research
319 should more fully explore the incremental contribution of PF in conjunction with measures of
320 other processes, such as fusion and self-as-context, also held to be related to it within the
321 model on which ACT is based.

322 This study acknowledges several limitations. First, because our sample was limited to a
323 clinical one with residual symptoms of depression, generalization to both nonclinical as well
324 as other clinical samples who speak Norwegian should be made with care. Second, we were
325 not able to assess test-retest reliability because our participants received treatment following
326 administration of the NAAQ. Third, our sample size was rather modest. Although it was
327 sufficient to give reliable estimates in both EFA and CFA (Kyriazos, 2018; Little, 2013;
328 Williams, Onsman, & Brown, 2010), it was not for applying IRT. Future psychometric
329 evaluations of the NAAQ would be facilitated by its administration to larger nonclinical and
330 clinical samples along with additional measures affording more detailed assessments of its
331 convergent, discriminant, and incremental validity.

332

333 **6. Conclusion**

334 This study evaluated the NAAQ in a clinical sample with depressive symptoms. Factor
335 analyses were consistent with those with other linguistic samples in suggesting a one-factor
336 model of PF. Preliminary findings support the reliability (internal consistency) and validity
337 (concurrent, convergent, and discriminant) of the instrument. Incremental validity
338 demonstrated in depression, anxiety, and quality of life domains involving physical health,
339 psychological health, and environment beyond measures of values and committed action, was
340 not found in predicting positive mental health and quality of social relationships. The overall
341 results add further support to psychological rigidity as a transcultural and translanguistic
342 pathogenic process, and to a lesser degree to psychological flexibility as a process supportive

343 of well-being. Further studies are needed to confirm the findings in nonclinical and diverse
344 clinical samples.

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Table 1
Sample Characteristics and Scores on Relevant Measures

Characteristics	Scores
Gender ($N = 163$):	
Males (N (%))	38 (23.31)
Females (N (%))	125 (76.69)
Age ($N = 163$): M (SD)	36.77 (12.48)
Education ($N = 163$): N (%)	
Lower than university	48 (29.45)
University or higher	112 (68.71)
Missing	3 (1.84)
Psychological flexibility (AAQ-II) ($N = 163$): M (SD)	28.57 (8.53)
Depression (BDI-II) ($N = 163$): M (SD)	19.07 (11.15)
Depression (HRSD) ($N = 161$): M (SD)	9.09 (5.71)
Anxiety (BAI) ($N = 157$): M (SD)	12.25 (9.56)
Positive mental health (MHC-SF) ($N = 156$): M (SD)	32.92 (14.22)
Quality of life (WHOQOL-BREF): M (SD)	
Psychological health ($N = 163$)	11.48 (2.75)
Environment ($N = 163$)	14.41 (2.58)
Social health ($N = 160$)	12.28 (3.36)
Physical health ($N = 163$)	12.72 (3.03)
Engaged living (ELS) ($N = 155$): M (SD)	47.49 (10.75)
Values (BEVS) ($N = 158$): M (SD)	12.63 (4.51)

Table 2
Items statistics, internal consistency, and EFA and CFA factor loadings for AAQ-II

AAQ-II 7-items	Mean (SD)	One factor solution - EFA	Modified model - CFA
My painful experiences and memories make it difficult for me to live a life that I would value	3.63 (1.65)	.735	.612
I'm afraid of my feelings.	3.93 (1.60)	.605	.528
I worry about not being able to control my worries and feelings.	4.35 (1.66)	.720	.694
My painful memories prevent me from having a fulfilling life.	3.26 (1.69)	.751	.625
Emotions cause problems in my life.	4.28 (1.52)	.699	.710
It seems like most people are handling their lives better than I am.	4.81 (1.62)	.654	.717
Worries get in the way of my success.	4.31 (1.64)	.759	.827
Scale mean (SD)	28.57 (8.53)		
Cronbach's alpha	.87		

Table 3

Correlations between AAQ-II and outcome measures of depression (BDI-II & HRSD), anxiety (BAI), life quality (WHOQOL-BREF), positive mental health (MHC-SF), Engaged Living scale (ELS) and Bull's eye

Measurements	BDI-II (N=163)	HRSD (N=161)	BAI (N=157)	MHC-SF (N=156)	WHOQOL- Physical (N=160)	WHOQOL- Psychological (N=163)	WHOQOL- Social (N=163)	WHOQOL- Environment (N = 163)	ELS (N=155)	Bull's eye (N=158)
AAQ-II	.533***	.360***	.486***	-.398***	-.435***	.601***	.278***	.418***	-.437***	-.454***
BDI-II		.573***	.603***	-.630***	-.582***	-.732***	-.449***	-.495***	-.579***	-.525***
HRSD			.577***	-.391***	-.450***	-.466***	-.270***	-.336***	-.305***	-.309***
BAI				-.290***	-.390***	-.423***	-.214***	-.304***	-.242***	-.185**
MHC-SF					-.527***	-.766***	-.627***	-.464***	.749***	.547***
WHOQOL- Physical						.625***	.388***	.549***	.549***	.559***
WHOQOL- Psychological							.578***	.522***	.730***	.591***
WHOQOL- Social								.418***	.526***	.473***
WHOQOL-Environment									.439***	.524***
ELS										.577***

*p < .05

*** p < .001

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Table 4
Hierarchical Regression Analyses for Depression (BDI-II), Anxiety (BAI), Positive Mental Health (MHC-SF) and Quality of Life (WHOQOL-BREF)

Measure	β	Model 1		Model 2		
		β	Adjusted R^2	β	Adjusted R^2	ΔR^2
BDI-II						
ELS	-.414***			-.336***		
BEVS	-.286***			-.196*		
AAQ-II				.297***		
			.381		.445	.066***
BAI						
ELS	-.203*			-.074		
BEVS	-.069			.080		
AAQ-II				.498***		
			.049		.225	.179***
MHC-SF						
ELS	.649***			.636***		
BEVS	.173**			.158*		
AAQ-II				-.048		
			.574		.573	.002
QOL – Physical health						
ELS	.340***			.297***		
BEVS	.363***			.314***		
AAQ-II				-.163*		
			.397		.397	.020*
QOL - Psychological health						
ELS	.584***			.503***		
BEVS	.254***			.161*		
AAQ-II				-.308***		
			.571		.640	.071***
QOL – Social relationships						
ELS	.380***			.381***		
BEVS	.253**			.254**		
AAQ-II				.004		
			.310		.306	.003
QOL – Environment						

529	ELS	.205*		.154	
	BEVS	.406***			
530				.348***	
	AAQ-II			-.193*	
531			.293		.317
					.028*

* $p < .05$. ** $p < .01$. *** $p < .001$.

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