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A dual-factor model of mental health and social support: evidence with adolescents in residential care

Eunice Magalhães & Maria Manuela Calheiros

1. Introduction

According to the positive psychology background, the focus on constructive dimensions of individual functioning implies a critical change on the paradigm from the merely analysis focused on individual pathology (and on the need to repair the damage) to an approach focused on self-actualization and well-being (Seligman & Csikszentmihalyi, 2000). Despite the progressive investment in this area, the study of distress and disorders has been greater than in the positive individual functioning. As such, in order to address the limitations of traditional models of mental health, a range of theoretical models, with different labels but focused on the same conceptual meanings, has emerged from the positive psychology framework. For instance, there are authors proposing a Dual-factor system of mental health (Greenspoon & Saklofske, 2001), others the The two continua model of mental illness and health (Westerhof & Keyes, 2010) and others the Dual-factor model of mental health (Wang, Zhang & Wang, 2011). All these models suggest that mental health must be viewed as a complete state, reflecting the integration of a positive (well-being) and a negative (psychopathology) dimension of adjustment, in two continuums but related factors (Wang et al., 2011; Westerhof et al., 2010).

This conceptualization of mental health has been empirically tested and results supported the model with two separate dimensions (Keyes, 2005; Wilkinson & Walford, 1998). This evidence of a dual-factor model of mental health allows the classification of

26 individuals and the emergence of diverse groups with distinct status of mental health
27 (Wang, et al., 2011). Different approaches of classification could be adopted, with the
28 quartered classification theory suggesting that mental health status can be understood in
29 four groups: 1) *Complete mental health* [average/high well-being and low
30 psychopathology]; 2) *Vulnerable* [low well-being and low psychopathology]; 3)
31 *Symptomatic but content* [average/high well-being and high psychopathology] and 4)
32 *Troubled* [low well-being and high psychopathology] (Suldo & Shaffer, 2008; Suldo,
33 Thalji & Ferron, 2011). These options of classification allowed addressing some
34 limitations of traditional theoretical models of mental health. For instance, people that
35 reveal low levels of psychopathology but reveal also low levels of well-being are
36 typically overlooked in terms of mental health by these models, and consequently, they
37 tend to have less support from services (Suldo & Shaffer, 2008). As such, the absence
38 of psychological problems is not a sufficient condition to show higher levels of mental
39 health (Suldo, Thalji & Ferron, 2011).

40 Analyzing how mental health outcomes varies according to supportive
41 relationships during adolescence, results suggest that youth in the group of *Complete*
42 *mental health* (or Positive mental health as the authors named this group) reported
43 greater perceived support from family than all other groups, and from peers compared
44 with *Vulnerable* and *Troubled* groups. The *Symptomatic but content* group showed
45 significantly higher support from family, peers and teachers than *Vulnerable* and
46 *Troubled* groups (Antaramian, Huebner, Hills & Valois, 2010). These results may
47 underline the importance of perceived social support as a protective factor (Sarason,
48 Levine, Basham & Sarason, 1983), and the importance of interpersonal relationships to
49 the psychological adjustment in the adolescence (Ackard, Neumark-Sztainer, Story, &
50 Perry, 2006; Moon & Rao, 2010).

51 Specifically, considering the young people in residential care, mental health
52 conceptualization and measurement is particularly challenging. In this manuscript we
53 are particularly focused on young people who were taken from their families and placed
54 in care as derived from their need of alternative protection. As such, it is relatively
55 consensual that young people in care have increased developmental challenges
56 compared with normative youth. Not only they might overcome difficulties arising from
57 their previous vulnerability and risk experiences, they also must deal with their current
58 living conditions, and with those developmental challenges that all young people have
59 to deal with (Jansen, 2010). In fact, the literature with young people in residential care
60 reveals that they are a vulnerable group in what concerns mental health outcomes, since
61 they show significant emotional and behavioral difficulties (Kjelsberg & Nygren, 2004;
62 Simsek, Erol, Öztop & Münir, 2007; Schmid, Goldbeck, Nuetzel & Fegert, 2008). On
63 the other hand, the research on mental health in care following a positive framework
64 and focused on human potential and well-being has been less developed (Dinisman,
65 Montserrat & Casas, 2012). The studies with young people in residential care (those
66 who were taken from their families derived from protection reasons) reveal that worse
67 subjective well-being tends to be reported by young people in care, even with slightly
68 different results. Some of them reveal significant lower scores on overall life
69 satisfaction and specifically considering a set of indicators of subjective well-being
70 (e.g., health, school, social relations) (Dinisman, et al., 2012; Llosada-Gistau,
71 Montserrat & Casas, 2014). Others reported significant differences merely on specific
72 dimensions of well-being - i.e., significant differences were found on negative affect but
73 neither on positive affect nor on life satisfaction (Poletto & Koller, 2011). Moreover,
74 Although these results are very important for understanding mental health
75 outcomes in care, an integrated and holistic approach is needed (i.e., considering both

76 mental distress and well-being). As such, in this work we go beyond the traditional
77 models of mental health focused merely on the absence of difficulties, emphasizing our
78 analysis also on aspects of self-actualization and well-being (Seligman &
79 Csikszentmihalyi, 2000; Wang et al., 2011). Similarly, given the significant relevance
80 of supporting relationships for mental health (Chu, Saucier & Hafner, 2010), and
81 consistently with previous evidence using a dual-factor model approach (Antaramian, et
82 al., 2010), we will explore the relationship between different status groups of mental
83 health and a set of social support components and resources (i.e., formal and informal).
84 Both types of social support are relevant, given that young people in residential care
85 identifies different sources of support, peers or adults both from care settings and
86 outside (e.g., biological family, school) (Bravo & Del Valle, 2003). Generally, these
87 supportive relationships are important for youths' mental health being associated with
88 fewer adjustment problems (Pinchover & Attar-Schwartz, 2014); in contrast, the lack of
89 supportive caregiving is related to more mental health problems (Erol, Simsek & Munir,
90 2010). These supportive relationships may help these adolescents to deal with
91 difficulties and challenges during their developmental trajectories (Bravo & Del Valle,
92 2003; Martin & Dávila, 2008).
93
94 **2. Research problems and objectives**

95 As we postulated before, the literature with young people in residential care
96 tends to be more focused on negative outcomes, and less in positive functioning. On the
97 other hand, the literature that has been testing paradigms focused on these two
98 dimensions of mental health (i.e., dual-factor models of mental health) are mostly
99 focused on measures of subjective well-being (i.e., life satisfaction, positive affect)
100 (Antaramian, et al., 2010), and lesser on eudaimonic dimensions. Moreover, those

101 studies that include psychological well-being dimensions tend to be developed with
102 adults, less evidence existing with adolescents (Keyes, 2006). Besides, to our best
103 knowledge, the studies developed within this theoretical paradigm do not include
104 adolescents in care, and for that reason, in the present study we are looking for evidence
105 on mental health as a complete state with this population. As such, this study aims to: 1)
106 test the suitability of a dual-factor model with young people in care; and to 2) explore
107 how different mental health groups may differ on social support dimensions from
108 different sources (formal and informal).
109
110 **3. Method**
111 **3.1. Participants**
112 A sample of 369 Portuguese adolescents (54% males), from 59 residential care
113 settings, participated in this study (*M* = 14.75; *SD* = 1.83). These adolescents came from
114 at-risk families characterized mainly by neglectful parental practices (66%). Also,
115 additional risk factors were also found in these families, namely, unemployment (47%),
116 parental divorce or separation (36%) and alcohol abuse (35%). The placement in the
117 present residential setting is the first one for 57% of these young people. These
118 residential settings, as defined by our law, aim to "contribute to the creation of
119 conditions that guarantee the adequate physical, psychological, emotional and social
120 needs of children and young people and the effective exercise of their rights, favouring
121 their integration in a safe socio-familial context and promoting their education, well-
122 being and integral development" (Law 142/2015, p. 7221). Moreover, these settings
123 may be specialized namely, therapeutic settings or apartments for autonomy. In this
124 work we did not include specialized settings. All residential care settings included in
125 this study are dealing with youth who were taken from their families for protection

126 concerns. These settings vary significantly in their dimension (there are larger facilities
127 with 45 children but also smaller units with 6 children), and are diverse in their
128 typology, namely, including settings for both sexes (42%), others that receive merely
129 female children/youth (25%), and finally others that receive merely male children/youth
130 (32%).

131 **3.2. Measures**

132 **3.2.1. Questionnaire of Institutional Support**

133 Formal social support was assessed using an adapted version of the
134 Questionnaire of Institutional Support (Calheiros & Paulino, 2007; Calheiros, Graça,
135 Patrício, Morais & Costa, 2009). Three dimensions of functional support were assessed
136 (23 items), each of them considering both social workers and educators: 1) Esteem - it
137 involves young people perceptions that they are valued by social workers/educators (6
138 items, e.g. "Do you think that in this institution social workers/educators value you as a
139 person?"), 2) Emotional/relational - it involves young people perceived concern, care
140 and empathy from social workers/educators (7 items, e.g. "To what extent do you think
141 social workers/educators are available to attend you?"), and 3) Evaluative/informational
142 - it involves young people perceived information, guidance or feedback provided by
143 social workers/educators that can help them to solve a problem (7 items, e.g. "Do you
144 think that in this institution the social workers/educators well evaluate your
145 problems?"). Young people might answer each item using a scale from Never (1) to
146 Ever (5) (Calheiros & Paulino, 2007; Calheiros et al., 2009). This scale revealed
147 adequate reliability and validity evidence (Reference deleted for blind review).

148

149 **3.2.2. Social support questionnaire**

150 Informal social support was assessed in terms of perceived satisfaction and
151 availability of social support using a short version of the Social Support Questionnaire
152 (Sarason, Levine, Basham & Sarason, 1983) adapted to the Portuguese context by
153 Moreira, Andrez, Moleiro, Silva, Aguiar and Bernardes (2002). This questionnaire
154 contains six items that allows the assessment of these two dimensions of perceived
155 social support: 1) the perceived availability (i.e., the number of individuals who are
156 available to provide support) and 2) the perceived satisfaction (i.e., the perceived
157 satisfaction with this support). Each item requires two answers: 1) the participants list
158 the number of people who may support them using a scale from (0) "Nobody" to (9)
159 "Nine people"); and 2) they might indicate their degree of satisfaction with that support
160 (on a scale from (1) "very dissatisfied" to (6) "Very satisfied") (Moreira et al., 2002;
161 Sarason et al., 1983). Validity and reliability evidence was found in residential care
162 (Reference deleted for blind review).
163

164 **3.2.3. Reynolds Adolescent Adjustment Screening Inventory (RAASI)**.

165 In the present study a Portuguese version of the RAASI, translated and adapted
166 for youth in residential care (Calheiros et al., 2009) was used. A four dimensional
167 structure composed by 22 items was obtained in a previous study testing construct
168 validity of this measure (Reference deleted for blind review): Antisocial Behaviour
169 (youth's troubled behaviours in different contexts, 6 items; *Cronbach's Alpha*= .78);
170 Anger control problems (youth's oppositional behaviours, 5 items; *Cronbach's Alpha*=
171 .72); Emotional distress (youth's general distress, excessive anxiety and worry, 7 items;
172 *Cronbach's Alpha*= .81), and Positive Self (difficulties of self-esteem and sociability, 4
173 items; *Cronbach's Alpha*= .58). Those 4 items from Positive self are written in a
174 positive way, which means that they should be reversed to reflect psychological

175 problems. The items are answered in a three-point scale, from 1 (Never or almost
176 never), 2 (Sometimes) to 3 (Nearly all the time) (Reynolds, 2001; Calheiros et al.,
177 2009).

178

179

180

181 **3.2.4. The Satisfaction with Life Scale**

182 The Portuguese version of this scale was used to assess the adolescents'
183 perception about their life circumstances and quality of life (Neto, 1993). This scale
184 involves five items answered in a 7 point Likert scale, ranging from 1 (strongly
185 disagree) to 7 (strongly agree). Reliability evidence exists in the Portuguese context
186 with a *Cronbach' Alpha* of 0.78 (Neto, 1993).

187

188 **3.2.5. Scales of Psychological Well-being**

189 The Portuguese shortened version of Scales of Psychological Well-Being
190 (adolescents' version) was used in this study (Fernandes, Vasconcelos-Raposo &
191 Teixeira, 2010). This version is composed by 30 items (answered in a Likert 5-point
192 scale, from 1 - strongly disagree to 5 -strongly agree) and assess six dimensions,
193 consistently with the theoretical premises: 1) Autonomy: includes aspects of self-
194 determination and independence, as well as skills to resist to external pressures and to
195 regulate the individual behavior; 2) Environmental mastery: refers to the individual
196 capacity to manage the environment in which he/she is integrated, as well as to make
197 important decisions to meet his/her needs and personal values; 3) Personal growth:
198 refers to the individual perception about the possibility to improve his/her skills and
199 knowledge and to develop his/her potential, as well as the openness to experience; 4)

200 Positive relations with others: involves the individual perception that he/she has trust
201 and secure relationships with significant others, and that he/she is able to develop bonds
202 of affection and intimacy; 5) Purpose in life: implies the subject's perception that there
203 is a set of objectives and directions in his/her life that give meaning to individual past
204 and present experiences; and finally, 6) Self-acceptance: refers to an individual's
205 positive attitude to face himself, accepting the multiple aspects of the self and positively
206 integrating his/her past events of life (Ryff, 1989; Ryff & Singer, 1996).

207 Evidence of validity and reliability were reported for the Portuguese version
208 (Fernandes et al., 2010), as well as with young people in residential care (Reference
209 deleted for blind review). Based on this evidence, a four-dimensional structure of
210 psychological well-being was used in this study (19 items): Personal growth (5 items),
211 Positive relations with others (5 items), Self-acceptance (5 items) and Purpose in life (4
212 items) (Reference deleted for blind review).

213

214 **3.3. Procedures of data collection and analysis**

215 As part of a broader research project, this study was developed with adolescents
216 in residential settings. Formal contacts allowed the necessary authorisations to collect
217 data, and all adolescents placed in these settings (aged from 11 to 18 years old) were
218 invited to participate, except: 1) if they participated in other studies from the broader
219 project; or 2) if they had significant cognitive impairment inhibiting them autonomously
220 participate. The first author articulated with a professional from the residential setting,
221 informing him/her about the selection criteria of the sample recruitment and the
222 professional invited the young people to participate in the study. Then, on a date
223 scheduled according to the availability of young people, the first author collected the
224 data in each residential setting and a consent form was requested from adolescents and

225 professionals. Confidentiality and voluntary nature of their participation was
226 guaranteed. From a total sample of 1259 children and adolescents placed in the
227 residential settings, 438 both fulfil the selection criteria and accepted to participate in
228 the study. Merely 369 participants were considered in the present manuscript given that
229 these were the participants who completed all the necessary questionnaires. Ethical
230 approval was provided by the Scientific Commission of the research centre and from the
231 ethical committee of the university.

232 In order to achieve the first objective in this study - to test the suitability of a
233 dual-factor model on mental health with young people in residential care - first, we
234 analyze how the theoretical assumptions of two independent but related factors fit the
235 data with this population (N=369). A confirmatory factor analysis will be tested in order
236 to verify if a dual-factor model is better or worse than a single continuum model of
237 mental health. Consistent with previous studies, we will test both models (one-
238 dimensional and two-dimensional models), and in the case of two-dimensional models
239 we will test orthogonal and oblique solutions (Keyes, 2005). The dual-factor model of
240 mental health includes the following constructs: 1) Well-being – this factor comprises
241 four dimensions of psychological well-being (i.e., Personal growth, Positive relations
242 with others, Purpose in life, and Self-acceptance) and one dimension of subjective well-
243 being (i.e., life satisfaction); 2) Psychopathology – this factor includes the four
244 dimensions of the adjustment screening inventory of Reynolds (i.e., positive self, anger
245 control problems, antisocial behavior and emotional distress), consistent with
246 externalizing and internalizing syndromes on psychopathology (Reynolds, 2001).

247 After this first step, in which we tested the dual factor model adequacy with
248 youths in residential care, we performed a second step, in which we analyzed how
249 different groups of mental health may show diverse levels of social support: a) informal

250 support availability (i.e., sufficient number of available sources of support) and
251 satisfaction (i.e., the individual satisfaction with support); b) three contents of formal
252 support, each one responded for social workers and educators: esteem (i.e., young
253 people perceptions that they are valued by social workers/educators),
254 emotional/relational (i.e., young people perceived concern, care and empathy from
255 social workers/educators) and evaluative/informational (i.e., young people perceived
256 information, guidance or feedback provided by social workers and educators) (Calheiros
257 et al., 2009; Calheiros & Paulino, 2007).

258 In line with previous research, a classification on mental health was performed
259 in order to identify in the present sample those groups that were previously explored in
260 the literature (Suldo et al., 2011). Initially, a composite of both scales was calculated
261 according to two dimensions obtained in the previous confirmatory analysis, and then a
262 descriptive analysis was performed to explore the data. On Well-being dimension,
263 young people scores ranged from 56 to 128 points (*M*= 95.74; *SD*= 14.44) and on
264 Psychopathology they scored from 18 to 54 points (*M*= 30.80; *SD*= 6.62). In order to
265 identify groups of young people scoring high and low in these dimensions of mental
266 health, percentiles analysis was performed: Well-being [percentile 30 – score 88 (Low
267 well-being); percentile 70- score 103 (High well-being)] and Psychopathology
268 [percentile 30 – score 27 (Low psychopathology); percentile 70- score 34 (High
269 psychopathology)].

270 Based on these percentiles, four groups were computed: *Complete mental health*
271 [high well-being and low psychopathology; N=41]; *Vulnerable* [low well-being and low
272 psychopathology; N=28]; *Symptomatic but content* [high well-being and high
273 psychopathology; N=30] and *Troubled* [low well-being and high psychopathology;

274 N=53]. As only extreme scores were considered to create these four groups, the
275 majority of young people did not belong to any group (217; 59%).
276
277
278
279
280 **4. Results**

281 **4.1. First step: validity and reliability evidence of a dual-factor model with**
282 **young people in care**
283

284 **4.1.1. Descriptive statistics**

285 Prior the analysis of the measurement model, a set of descriptive statistics was
286 performed to understand the nature of the relationships between the indicators that will
287 be included in the model. The analysis of the ratio *Skewness/Std Error* revealed that
288 there was a set of dimensions that did not show values too close the range -2 and 2
289 (Table 1). However, it was found that the absolute values of *skewness* were lower than 3
290 what can be considered as non-problematic in terms of distribution (Kline, 2005).
291 INSERT TABLE 1 HERE
292

293 **4.1.2. Correlation analysis**

294 Different patterns of associations were found between psychopathology and
295 well-being indicators, with emotional distress being negative and significantly
296 associated with Life Satisfaction; Antisocial behavior was negative and significantly
297 associated with Personal Growth; and finally, Anger control problems was negative and
298 significantly associated with Personal Relations with others.

299 Negative and significant correlations were found between Positive self and all
300 dimensions of well-being (Table 2). Positive and significant correlations were found
301 between all indicators of well-being, and between all indicators of psychopathology
302 (except between Positive Self and Anger control problems and Antisocial behavior).

303 INSERT TABLE 2 HERE

304

305

306 **4.1.3. Confirmatory factor analysis**

307 A first two-dimensional model was tested - consistent with previous evidence
308 that propose a model with two related factors (Keyes, 2005; 2006). This model reveals
309 some weak fit statistics ($\chi 2/df = 7.18$, $p<.001$; GFI= .90; CFI=.85; RMSEA= .130;
310 CI90% [.112; .147]), with Positive Self (reversed) showing non-significant regression
311 weights with the dimension of Psychopathology ($\beta= .094$, SE= .045, $p=.10$). For that
312 reason, this dimension was removed from the analysis, maintaining merely the other
313 dimensions with significant regression weights. As such, three new models were tested:
314 two-dimensional and oblique, two-dimensional and orthogonal, and a one-dimensional
315 model. Looking at the fit statistics in the Table 3, we can see that both two dimensional
316 models revealed higher and satisfactory CFI and GFI coefficients than the one-
317 dimensional model, considering the common criteria (Hu & Bentler, 1999;
318 Schermelleh-Engel et al., 2003). Also, analyzing AIC and ECVI we found that lower
319 values were observed on the two-dimensional model (oblique), suggesting that this is
320 the best model.

321 INSERT TABLE 3 HERE

322

323 **4.1.4. Reliability evidence**

Internal consistency was tested on these two factors, and acceptable values of *Cronbach's Alpha* were found: Psychopathology (.72) and Well-being (.70).

4.2. Second step: how mental health status and social support are related to?

4.2.1. Young people's individual characteristics and placement history by mental health status group

In terms of young people's characteristics considering these four groups, data reveals that they varies significantly only in terms of placement length ($F(3,141)= 5.19$, $p<.01$). Results reveal that young people on the *Troubled* group showed lower length of placement than young people of the *Complete mental health* group (Table 4).

INSERT TABLE 4 HERE

4.2.2. Group differences on social support variables

A set of assumptions were firstly analyzed in order to decide if a multivariate analysis can be performed. No problems of multicolinearity were found, however the Box's test of equality of covariance matrices ($M=235.28$; $F(108, 5763.23)= 1.70$; $p<.001$) revealed a significant p-value. Also, the Levene's test of equality of error variances was significant for two dimensions: Perceived satisfaction with social support ($F(3,85)= 9.63$; $p<.001$) and Institutional support from educators in the Relational dimension ($F(3,85)= 3.32$; $p<.05$). Six dimensions revealed a non-significant p-value on Levene's test of equality of error variances - Esteem support from educators ($F(3,85)= .772$; $p=.513$), Evaluative support from educators ($F(3,85)= 1.95$; $p=.127$), Availability of social support ($F(3,85)= .838$; $p=.477$), Esteem support from social workers ($F(3,85)= .721$; $p=.542$), Evaluative support from social workers ($F(3,85)= .928$; $p=.431$) and Relational support from social workers ($F(3,85)= 1.73$; $p=.166$).

350 Since some problems on the homogeneity of variances were found, parametric
351 (Mancova) and non-parametric (Kruskal-Wallis Test) tests were performed. Then,
352 considering that the results were similar for all dimensions (i.e., significant differences
353 were found across groups in all dimension both in the parametric and non-parametric
354 analysis), parametric results will be reported. A Mancova was used in order to control
355 for length of placement since previous significant differences were found on these
356 dimensions by groups. Wilks Lambda revealed statistically differences between groups
357 of mental health, considering dimensions of perceived social support (Wilks Lambda=
358 .378, F(24, 223.925)= 3.713, p<.001). The Mancova analysis revealed statistically
359 significant differences in all dimensions: Satisfaction with social support (F(3,89)=
360 8.30, p<.001), Availability of social support (F(3,89)= 4.73, p<.01), Esteem support
361 from social workers (F(3,89)= 13.55, p<.001), Esteem support from educators (F(3,89)=
362 19.27, p<.001), Evaluative support from social workers (F(3,89)= 12.93, p<.001),
363 Evaluative support from educators (F(3,89)= 16.17, p<.001), Relational support from
364 social workers (F(3,89)= 20.25, p<.001), and Relational support from educators
365 (F(3,89)= 15.61, p<.001).

366 The post hoc test Tukey HSD revealed that *Complete mental health* group
367 scored significantly higher than *Troubled* group in these all dimensions - Satisfaction
368 with social support (C.I. 95%] .684; 2.19 [; p<.001), Availability of social support (C.I.
369 95%] .518; 2.92 [; p<.01), Esteem support from social workers (C.I. 95%] 3.71; 8.68 [;
370 p<.001), Esteem support from educators (C.I. 95%] 4.24; 8.82 [; p<.001), Evaluative
371 support from social workers (C.I. 95%] 3.88; 10.12 [; p<.001), Evaluative support from
372 educators (C.I. 95%] 4.19; 10.82 [; p<.001), Relational support from social workers
373 (C.I. 95%] 5.89; 11.50 [; p<.001), and Relational support from educators (C.I. 95%]
374 5.04; 11.23 [; p<.001).

Also, the *Complete mental health* group scored significantly higher than *Vulnerable* group in all dimensions - Satisfaction with social support (C.I. 95%] .049; 1.95 [; $p<.05$), Availability of social support (C.I. 95%] .488; 3.51 [; $p<.01$), Esteem support from social workers (C.I. 95%] .337; 6.60 [; $p<.05$), Esteem support from educators (C.I. 95%] 1.02; 6.79 [; $p<.01$), Evaluative support from social workers (C.I. 95%] .439; 8.31 [; $p<.05$), Evaluative support from educators (C.I. 95%] 1.57; 9.93 [; $p<.01$), Relational support from social workers (C.I. 95%] 1.06; 8.13 [; $p<.01$), and Relational support from educators (C.I. 95%] 1.60; 9.40 [; $p<.01$).

Furthermore, *Symptomatic but content* group outscored all dimensions compared with *Troubled* group (except on perceived availability of social support) – Satisfaction with social support (C.I. 95%] .380; 2.39 [; $p<.01$), Esteem support from social workers (C.I. 95%] 1.43; 8.05 [; $p<.01$), Esteem support from educators (C.I. 95%] 3.35; 9.46 [; $p<.001$), Evaluative support from social workers (C.I. 95%] 1.71; 10.03 [; $p<.01$), Evaluative support from educators (C.I. 95%] 3.72; 12.55 [; $p<.001$), Relational support from social workers (C.I. 95%] 1.60; 9.08 [; $p<.01$), and Relational support from educators (C.I. 95%] 2.67; 10.92 [; $p<.001$). Also, *Symptomatic but content* group revealed higher scores on esteem (C.I. 95%] .257; 7.30 [; $p<.05$) and evaluative (C.I. 95%] 1.29; 11.47 [; $p<.01$) support from educators than *Vulnerable* group.

Finally, the *Vulnerable* group scored significantly higher on Relational support from social workers (C.I. 95%] .635; 7.57 [; $p<.05$) than *Troubled* group (Table 5).

INSERT TABLE 5 HERE

5. Discussion

In the present study we aimed to explore a dual-factor model of mental health with young people in residential care. Specifically, the appropriateness of that model with young people in care was explored with a confirmatory factor analysis. Results

401 revealed that two-dimensional models show better fit statistics than the one-dimensional
402 model, which strengthens the literature that apprehends the mental health as two
403 continuum dimensions more than a one-dimensional construct (Keyes, 2005; Westerhof
404 et al., 2010). Furthermore, the oblique two-dimensional model revealed better fit
405 statistics, which underline previous theoretical and measurement evidence describing
406 mental health dimensions as different but related factors (Keyes, 2005).

407 Moreover, we aimed to explore how different mental health groups may differ
408 on social support, both formal and informal. As such, results suggest that the *Complete*
409 *mental health* group shows better results in these different dimensions and, on the
410 contrary, the *Troubled* group tends to reveal the worst results. Moreover, we found that,
411 besides the lack of significant psychological problems, the potential for self-
412 actualization and well-being seems to contribute to different profiles of young people in
413 residential care. In fact, we found that not only the absence of significant psychological
414 problems distinguishes young people in care (e.g., *Complete mental health* and
415 *Vulnerable* groups revealed significant differences in some dimensions compared to
416 *Symptomatic but content* and *Troubled* groups), as the possibility of individual self-
417 realization also contributes to different profiles (e.g., *Complete mental health* and
418 *Symptomatic but content* revealed significant differences in a large number of variables
419 compared to *Vulnerable* and *Troubled* groups). Actually, we found that *Complete*
420 *mental health* and *Symptomatic but content* groups tend to show better results on a set of
421 dimensions of perceived social support compared to *Vulnerable* and *Troubled* groups.
422 These findings are consistent with previous results with normative samples of
423 adolescents that suggest that, for instance, *Complete mental health* and *Symptomatic but*
424 *content* groups report greater perceived support compared with *Vulnerable* and
425 *Troubled* groups (Antaramian, et al., 2010).

426 Furthermore, some important distinctions among these four groups that may
427 reveal some important specificities related to these profiles should be noted. First, the
428 presence of psychological difficulties together with reduced well-being outcomes
429 (*Troubled* group) is generally related to the worst results on social support dimensions.
430 This finding is consistent with previous evidence on the worst profile of this group in
431 terms of other psychosocial variables compared with the positive mental health status
432 (Antaramian, et al., 2010). Specifically, this group with a more problematic profile of
433 adjustment would benefit from practices based on supportive relationships not only to
434 reduce their psychological difficulties but also to foster positive dimensions of well-
435 being. In fact, the literature suggests that social support may have a set of theoretical
436 benefits to the individuals functioning, namely, by increasing their self-esteem, reducing
437 anxiety and depression symptomatology or by promoting adaptive coping strategies
438 (Wills & Shinar, 2000).
439 In addition, we found that the *Vulnerable* group emerges generically as the
440 second group with the worst results in those different supportive relationships. In line
441 with the literature, this suggests that the absence of significant problems is not enough
442 for an optimal psychological functioning (Greenspoon et al., 2001; Wang et al., 2011),
443 as this group of young people seems to reveal a profile closer to the *Troubled* group
444 than to the *Complete mental health group* on those variables. Thus, it was found that
445 only one dimension was significantly different between *Vulnerable* and *Troubled*
446 groups –Perceived relational/emotional support from social workers. This may suggest
447 that higher levels of perceived social support from staff in care (e.g., perceived concern,
448 care and empathy from social workers) could be related to lower psychological
449 problems.

450 Moreover, the *Symptomatic but content* group revealed more positive outcomes
451 on a set of social support dimensions when compared to *Vulnerable* and *Troubled*
452 groups. Therefore, when *Symptomatic but content* is compared with *Vulnerable* group,
453 although the adolescents from the first one shows significant psychological problems
454 they can also reveal positive outcomes on well-being. Nevertheless, young people on
455 the *Vulnerable* group did not reveal such positive outcomes, despite the absence of
456 significant problems. In addition, comparing *Symptomatic but content* with *Troubled*
457 group, if both groups revealed significant psychological problems, *Symptomatic but*
458 *content* are also able to reveal positive outcomes of well-being. As such, this may be
459 related to more supportive relationships, which could differentiate these groups in terms
460 of well-being. In truth, we found that *Symptomatic but content* group show higher levels
461 of perceived social support than Troubled adolescents (all dimensions analyzed) as well
462 as higher scores on esteem and evaluative support from educators than the *Vulnerable*
463 group. Thus, these results seem to suggest that while young people in residential care
464 may show significant psychological problems, the promotion of some protective factors
465 (e.g., significant and supportive relationships) may contribute to their positive
466 development and higher levels of well-being. This is consistent with previous studies
467 that suggest that the interpersonal relationships emerged as positive factors to
468 *Symptomatic but content* individuals, with these adolescents revealing adaptive
469 outcomes on global self-worth or behavioral conduct (Greenspoon & Saklofske, 2001).
470 Likewise, the existence of adequate and positive social support in residential
471 care plays a key role for young people as it helps them to effectively cope with their
472 difficulties and challenges (Bravo & del Valle, 2003). It is important to point out that
473 this population presents a set of individual characteristics and life experiences that
474 reflects their psychological and social vulnerability. Not only they experienced previous

475 family problems that justified their removal from home (e.g., maltreatment), but also
476 they must to face with difficulties inherent to this separation from their family context,
477 as well as the integration in a new development context (the residential care setting);
478 also, future circumstances of life involves some vulnerabilities related to the process of
479 adaptation to different contexts and challenges (e.g., return to the family, transition to
480 independent living) (Bravo & del Valle, 2003; Martin & Dávila, 2008). Finally, their
481 significant mental health problems (Schmid et al., 2008; Erol et al., 2010) are an
482 additional risk factor for these adolescents, and for this reason the availability of formal
483 and informal social support seems to be even more decisive. Actually, supportive
484 relationships both in and out of residential care are significant protective factors
485 concerning the young people's mental health outcomes (Martin & Davila, 2008;
486 Siqueira & Dell'Aglio, 2010). In sum, this manuscript provided innovative results about
487 a dual factor model of mental health in residential care together with the relevance of
488 social supportive relationships to young people adjustment.

489 Despite these innovative results, it is important to note some limitations. First,
490 merely self-reported measures were used in this study, and further evidence could be
491 obtained based on multiple informants. For instance, it would be interesting to have
492 information about social support provided by professionals in care from their
493 perspective, simultaneously, with the view of young people. This may provide more
494 information to deal with potentially divergent perceptions in care about social support
495 (perceived vs received vs provided). Second, we may also discuss this evidence
496 carefully considering that this is a cross-sectional study and no causal inferences can be
497 done. As such, we are not able to guarantee that it is the social support that lead to more
498 positive mental health outcomes. Actually, although we considered that as an
499 explanatory hypothesis, we may also hypothesize that troubled adolescents could

500 perceive lower social support than the adolescents with positive outcomes derived from
501 their own emotional and behavioral difficulties. Moreover, given that we know that both
502 maltreated and institutionalized children reveals compromised attachment patterns (e.g.,
503 disorganized attachment) (Vorria, Papaligoura, Dunn, van IJzendoorn, Steele,
504 Kontopoulou & Sarafidou, 2003), we could also imagine that the young people's ability
505 to feel connected with others and rely on people may be compromised. Actually, the
506 literature points that child disorganized attachment (i.e., contradictory behaviours,
507 confusion, fear and disorganization in the relationship with caregivers) is viewed as a
508 critical risk factor for later behavioural problems (Bakermans-Kranenburg, Van
509 IJzendoorn & Juffer, 2005). In this sense, this could also be explored in the future in
510 order to understand how these early relationships may shape later perceived social
511 connections and supportive relationships together with the young people mental health
512 outcomes in care. Furthermore, causal inferences may also be done merely from
513 longitudinal studies, which are needed to better understand this issue. Third, a non-
514 random sample was included in this study, which may bias the evidence obtained in this
515 study; in the future randomized samples must be included. Finally, additional variables
516 must be explored in the future (more than social support components) in order to
517 evaluate if these different mental health status groups may differ on other indicators
518 (e.g., academic achievement, academic adaptation).
519

520 **6. Conclusions**

521 Generally, this study suggested that the absence of psychological difficulties is
522 not a sufficient condition for an optimal mental health and that significant psychological
523 difficulties are not necessarily incompatible with well-being outcomes. This evidence is
524 important given that the literature with young people in residential care tends to

525 overlook these possibilities by studying mental health outcomes merely focused
526 separately on well-being or on psychological problems.

527 As such, these results propose important implications for practice in this specific
528 context, as well as for the public intervention policies in this area. Specifically, this
529 evidence thus suggests the need to implement, monitor and evaluate intervention
530 practices based on the youth's needs (and not an approach of *one fits all*), considering
531 their different mental health needs. Also, public policies should involve greater
532 investment in the quality of residential care services, professionals training, and an
533 effective integration of international recommendations into national legal documents.

534 In sum, these findings strengthen the importance to focus on well-being
535 outcomes together with psychological difficulties in order to obtain a more accurate
536 snapshot on young people's mental health in care. A more straightforward knowledge
537 on mental health of young people is also important to address their needs with a more
538 appropriate intervention approach.

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540 **7. References**

541 Ackard, D. M., Neumark-Sztainer, D., Story, M., & Perry, C. (2006). Parent– child
542 connectedness and behavioral and emotional health among adolescents.
543 *American Journal of Preventive Medicine, 30*(1), 59–66.
544 doi:10.1016/j.amepre.2005.09.013
545 Antaramian, S., Huebner, E. S., Hills, K. J., & Valois, R. F. (2010). Toward a more
546 comprehensive understanding of youth functioning. *American Journal of*
547 *Orthopsychiatry, 80*(4), 462–472. doi: 10.1111/j.1939-0025.2010.01049.x
548 Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., & Juffer, F. (2005).
549 Disorganized infant attachment and preventive interventions: A review and meta-
550 analysis. Infant Mental Health Journal, 26(3), 191-216.
551 Bravo, A., & Del Valle, J. F. (2003). Las redes de apoyo social de los adolescentes
552 acogidos en residencias de protección. Un análisis comparativo con población

553 normativa [Social support networks for adolescents in residential care. A
554 comparative analysis with normative population]. *Psicothema 15*(1), 136–142.
555 Calheiros, M., & Paulino, A. P. (2007). Construção e determinação das qualidades
556 psicométricas do questionário de suporte social institucional na saúde (QSSIS).
557 *Laboratório de Psicologia, 5*(1), 17–32.
558 Calheiros, M., Graça, J., Patrício, J., Morais, I., & Costa, R. (2009). *Programa de*
559 *Residência e Apoio à Integração de Adolescentes (RAIA)*. Final Report. Lisboa:
560 CIS-IUL.
561 Chu, P. S., Saucier, D. A., & Hafner, E. (2010). Meta-analysis of the relationships
562 between social support and well-being in children and adolescents. *Journal of*
563 *Social and Clinical Psychology, 29*(6), 624.
564 Dinisman, T., Montserrat, C., & Casas, F. (2012). The subjective well-being of Spanish
565 adolescents: Variations according to different living arrangements. *Children and*
566 *Youth Services Review, 34*(12)*,* 2374–2380. doi:
567 10.1016/j.childyouth.2012.09.005
568 Erol, N., Simsek, Z., & Munir, K. (2010). Mental health of adolescents reared in
569 institutional care in Turkey: challenges and hope in the twenty-first century.
570 *European Child & Adolescent Psychiatry,19*(2),113–24. doi: 10.1007/s00787-
571 009-0047-2
572 Fernandes, H., Vasconcelos-Raposo, J., & Teixeira, C. (2010). Preliminary analysis of
573 the psychometric properties of Ryff's scales of psychological well-being in
574 Portuguese adolescents. *The Spanish Journal of Psychology, 13*(2), 1032–1043.
575 doi: 10.1017/S1138741600002675
576 Greenspoon, P. J., & Saklofske, D. H. (2001). Toward an integration of subjective well-
577 being and psychopathology. *Social Indicators Research, 54*(1), 81–108. doi:
578 10.1023/A:1007219227883
579 Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure
580 analysis: Conventional criteria versus new alternatives. *Structural Equation*
581 *Modelling, 6(1)*, 1–55. doi: 10.1080/10705519909540118
582 Jansen, A. (2010). Victim or troublemaker? Young people in residential care. *Journal of*
583 *Youth Studies*, *13*(4), 423–437. doi: 10.1080/13676261003801770
584 Keyes, C. (2005). Mental health and/or mental illness? Investigating axioms of the
585 complete state model of health. *Journal of Consulting and Clinical Psychology,*
586 *73*(5), 539–548. doi: 10.1037/0022-006X.73.3.539

587 Keyes, C. (2006). Mental health in adolescence: Is America's youth flourishing?
588 *American Journal of Orthopsychiatry, 76*(3), 395–402. doi: 10.1037/0002-
589 9432.76.3.395
590 Kjelsberg, E., & Nygren, P. (2004). The prevalence of emotional and behavioural
591 problems in institutionalized childcare clients. *Nordic Journal of Psychiatry,*
592 *58*(4), 319–325. doi: 10.1080/08039480410005846
593 Kline, R. (2005). *Principles and practice of structural equations modeling* (2nd Ed.).
594 London, UK: Guilford.
595 Law 142/2015. The Law for Protection of Children and Youth at Risk. [Lei de
596 Protecção de Crianças e Jovens em Perigo]. Retrieved from
597 http://www.cnpcjr.pt/preview_documentos.asp?r=5738&m=PDF
598 Llosada-Gistau, J., Montserrat, C., & Casas, F. (2014). The subjective well-being of
599 adolescents in residential care compared to that of the general
600 population. *Children and Youth Services Review, 52*, 150–157. doi:
601 10.1016/j.childyouth.2014.11.007
602 Martín, E., & Dávila, L. M. (2008). Redes de apoyo social y adaptación de los menores
603 en acogimiento residencial. *Psicothema*, *20*(2), 229–235.
604 Moon, S. S., & Rao, U. (2010). Youth–family, youth–school relationship, and
605 depression. *Child & Adolescent Social Work Journal, 27*(2), 115–131. doi:
606 10.1007/s10560-010-0194-9
607 Moreira, J. M., Andrez, M., Moleiro, C., Silva, M. F., Aguiar, P., & Bernardes, S.
608 (2002). Questionário de apoio social (versão portuguesa do "social support
609 questionnaire"): Tradução e estudos de validade. *Revista Ibero-Americana de*
610 *Diagnóstico e Avaliação Psicológica, 13*(1), 55–70.
611 Neto, F. (1993). The satisfaction with life scale: Psychometrics properties in an
612 adolescent sample. *Journal of Youth and Adolescence, 22*(2), 125–134. doi:
613 10.1007/BF01536648
614 Pinchover, S., & Attar-Schwartz, S. (2014). Institutional social climate and adjustment
615 difficulties of adolescents in residential care: The mediating role of victimization
616 by peers. *Children and Youth Services Review*, *44*, 393–399. doi:
617 10.1016/j.childyouth.2014.07.005
618 Poletto, M., & Koller, S. (2011). Subjective well-being in socially vulnerable children
619 and adolescents. *Psicologia: Reflexão e Crítica, 24*(3), 12–25. doi:
620 10.1590/S0102-79722011000300008

621 Reynolds, W. M. (2001). *Reynolds Adolescent Adjustment Screening Inventory: RAASI: professional manual*. Psychological Assessment Resources.
623 Ryff, C. D. (1989). Beyond Ponce de Leon and life satisfaction: New directions in quest of successful ageing. *International journal of behavioral development*, *12*(1), 35–55. doi: 10.1177/016502548901200102
626 Ryff, C. D., & Singer, B. (1996). Psychological well-being: Meaning, measurement, and implications for psychotherapy research. *Psychotherapy and Psychosomatics, 65*(1), 14–23. doi: 10.1159/000289026
629 Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: the social support questionnaire. *Journal of personality and social psychology*, *44*(1), 127–139. doi: 10.1037/0022-3514.44.1.127
632 Schermelleh-Engel, K., Moosbrugger, H., & Muller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online, 8*(2), 23–74.
635 Schmid, M., Goldbeck, L., Nuetzel, J., & Fegert, J.M. (2008). Prevalence of mental disorders among adolescents in German youth welfare institutions. *Child and Adolescent Psychiatry and Mental Health, 2*(2), 1–8. doi: 10.1186/1753-2000-2-2
638 Seligman, M., & Csikszentmihalyi, M. (2000). Positive Psychology. An introduction. *American Psychologist, 55*(1), 5–14. doi: 10.1037//0003-066X.55.1.5
640 Simsek, Z., Erol, N., Öztop, D., & Münir, K. (2007). Prevalence and predictors of emotional and behavioral problems reported by teachers among institutionally reared children and adolescents in Turkish orphanages compared with community controls. *Children and youth services review*, *29*(7), 883–899. doi: 10.1016/j.childyouth.2007.01.004
645 Siqueira, A. C., & Dell'Aglio, D. D. (2010). Crianças e adolescentes institucionalizados: desempenho escolar, satisfação de vida e rede de apoio social. *Psicologia: Teoria e Pesquisa*, *26*(3), 407–415. doi: 10.1590/S0102-37722010000300003
649 Suldo, S. M., & Shaffer, E. J. (2008). Looking beyond psychopathology: The dual-factor model of mental health in youth. *School Psychology Review, 37*(1), 52–68.
652 Suldo, S. M., Thalji, A., & Ferron, J. (2011). Longitudinal academic outcomes predicted by early adolescents' subjective well-being, psychopathology, and mental health

654 status yielded from a dual-factor model. *Journal of Positive Psychology, 6*(1),
655 17–30. doi: 10.1080/17439760.2010.536774
656 Wang, X., Zhang, D., & Wang, J. (2011). Dual-factor model of mental health: Surpass
657 the traditional mental health model. *Psychology, 2*(8), 767–772. doi:
658 10.4236/psych.2011.28117
659 Westerhof, G. J., & Keyes, C. (2010). Mental illness and mental health: The two
660 continua model across the lifespan. *Journal of Adult Development, 17*(2), 110–
661 119. doi: 10.1007/s10804-009-9082-y
662 Wills, T. A., & Shinar, O. (2000). Measuring perceived and received social support. In
663 S. Cohen., L. G. Underwood., & B. H. Gottlieb (Eds.), Social support
664 measurement and intervention: A guide for health and social scientists (pp 86–
665 135). Oxford: Oxford University Press
666 Wilkinson, R. B., & Walford, W. A. (1998). The measurement of adolescent
667 psychological health: One or two dimensions? *Journal of Youth and*
668 *Adolescence, 27*(4), 443–455. doi: 10.1023/A:1022848001938
669 Vorria, P., Papaligoura, Z., Dunn, J., van IJzendoorn, M.H., Steele, H., Kontopoulou,
670 A., & Sarafidou, Y. (2003). Early experiences and attachment relationships of
671 Greek infants raised in residential group care. *Journal of Child Psychology and*
672 *Psychiatry, 44*, 1208– 1220.
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697 Table 1

698 *Descriptive analyses of mental health variables*

	M	*SD*	Skewness			Kurtosis		
			Statistic	*SE*	Statistic / *SE*	Statistic	*SE*	Statistic / *SE*
Personal Growth	20.36	3.18	-0.55	0.13	-4.32	-0.03	0.25	-0.11
Personal relations with others	19.23	3.12	-0.47	0.13	-3.72	0.61	0.25	2.40
Self-Acceptance	18.80	3.27	-0.33	0.13	-2.60	0.18	0.25	0.72
Purpose in life	15.52	2.61	-0.18	0.13	-1.38	-0.27	0.25	-1.06
Life Satisfaction	21.83	7.37	-0.19	0.13	-1.48	-0.55	0.25	-2.17
Antisocial behavior	9.20	2.71	1.12	0.13	8.78	1.06	0.25	4.19
Anger control problems	8.33	2.27	0.53	0.13	4.17	-0.07	0.25	-0.28
Emotional distress	13.27	3.19	0.13	0.13	1.02	-0.16	0.25	-0.65
Positive Self	6.49	1.76	0.45	0.13	3.46	-0.16	0.25	-0.65

699 *Note. M*=Mean; *SD*= Standard deviation; *SE*= Standard error.

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726 Table 2

727 *Correlations (above the diagonal), and covariances (diagonal and below; shaded area) matrices for the*
728 *variables in the measurement models*

	1	2	3	4	5	6	7	8	9
1.Antisocial Behavior	7.340	.708***	.386***	.056	-.148**	-.071	-.023	-.053	-.030
2.Anger Control Problems	4.355	5.154	.397***	.043	-.206***	-.106*	-.022	-.063	.029
3.Emotional Distress	3.342	2.881	10.207	.246***	-.057	-.043	-.096	-.039	-.250***
4. Positive Self	.267	.171	1.385	3.107	-.302***	-.388***	-.342***	-.270***	-.330***
5.Personal Growth	-1.272	-1.487	-.580	-1.689	10.094	.521***	.481***	.542***	.250***
6.Personal Relations with others	-.596	-.750	-.426	-2.137	5.167	9.744	.533***	.490***	.297***
7.Self-Acceptance	-.202	-.161	-1.006	-1.975	5.001	5.445	10.701	.598***	.453***
8.Purpose in Life	-.375	-.374	-.322	-1.242	4.494	3.985	5.099	6.802	.293***
9.Life Satisfaction	-.603	.493	-5.891	-4.282	5.852	6.837	10.917	5.620	54.246

729 *Note*. *p<.05; **p<.01; ***p<.001

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756 Table 3
757 *Fit statistics from the CFA – dual-factor model*

	χ^2(df)	χ^2/df	GFI	CFI	RMSEA [90% CI]	AIC	ECVI
One-dimensional model	403.281(20)	20.16***	.80	.59	.228[.209;.248]	435.281	1.183
Two-dimensional model, orthogonal	86.488(20)	4.32***	.94	.93	.095[.075;.116]	118.488	0.322
Two-dimensional model, oblique	82.497(19)	4.34***	.94	.93	.095[.075;.117]	116.497	0.317

758 *Note*. ***p<.001
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762 Table 4

763 *Young people's individual characteristics and placement history by mental health status group*

	Groups			
	Complete mental health (n=41)	Vulnerable (n=28)	Symptomatic but content (n=30)	Troubled (n=53)
Age (*M; SD*)	15.27 (1.88)	14.43 (1.62)	14.31 (2.01)	14.77 (1.64)
Sex (Frequency)				
Females	13	14	12	21
Males	28	14	18	32
Number of previous placements (N)				
No prior placement	21	13	17	30
One	14	8	9	19
2 or more	3	3	3	1
Placement length (*M*; *SD*)[1]	47.71(39.48)**	31.52(38.83)	43.86(36.62)	23.28(29.16)**

764 *Note*. **p<. 01; [1]Mean of Months; *M*=Mean; *SD*= Standard deviation

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767 Table 5

768 *Levels of perceived social and institutional support by Mental health status group*

	Groups (*M; SD*)			
	Complete mental health (n=41)	Vulnerable (n=28)	Symptomatic but content (n=30)	Troubled (n=53)
Informal support				
Availability	3.75 (2.18)	1.75 (1.52)	2.83 (2.08)	2.03 (1.68)
Satisfaction	5.66 (0.74)	4.65 (1.27)	5.60 (0.46)	4.22 (1.58)
Formal support				
Relational [Ed]	31.50 (3.98)	26.00 (5.63)	30.15 (4.28)	23.36 (5.40)
Relational [SW]	32.28 (3.50)	27.69 (4.80)	28.92 (4.50)	23.58 (5.90)
Evaluative [Ed]	30.06 (4.85)	24.31 (6.64)	30.69 (3.77)	22.56 (5.26)
Evaluative [SW]	30.75 (4.13)	26.38 (5.51)	29.62 (5.14)	23.75 (5.20)
Esteem [Ed]	26.28 (3.59)	22.38 (4.22)	26.15 (3.74)	19.75 (3.27)
Esteem [SW]	26.22 (3.62)	22.75 (4.10)	24.77 (4.88)	20.03 (3.68)

769 *Note. M*=Mean; *SD*= Standard deviation.
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