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1 **Validity of the PARADISE24 questionnaire in people with substance use**
2 **disorders: a measure to assess psychosocial difficulties**

3
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Abstract

Objectives Psychosocial difficulties (PSDs) are common in people with substance use disorders (SUDs). The PARADISE24 has been shown to be an adequate tool for measuring PSDs in inpatients with SUDs. The aim of this study is to evaluate the psychometric properties of the PARADISE24 in a sample of patients with SUDs.

Methods 2,637 participants with SUDs completed the PARADISE24 questionnaire during their treatment. The latent structure of the PARADISE24 questionnaire was analyzed in the outpatient sample by means of exploratory and confirmatory factor analysis (EFA and CFA). Metric invariance was then assessed in relation to the inpatient sample, using multiple group CFA. Finally, evidences of known-groups validity were checked to test the ability of the questionnaire to differentiate between socio-demographic and clinical groups.

Results The one-factor model presented an adequate fit in both the EFA (CFI = 0.98; TLI = 0.98; RMSEA = 0.07) and the CFA (CFI = 0.98; TLI = 0.98; RMSEA = 0.07) solutions. The reliability of the scale was found to be high ($\alpha = 0.93$). Strict metric invariance between inpatients and outpatients was achieved (RMSEA = 0.063; TLI = 0.983; CFI = 0.981). The PARADISE24 was able to discriminate between the inpatients and outpatients, at both latent ($d = 0.98$) and observed levels ($d = 0.86$).

Conclusions The PARADISE24 is a unidimensional tool that is reliable for assessing and comparing PSDs in both outpatients and inpatients with SUDs. Further research is required for evaluating the ability of the PARADISE24 to quantify longitudinal changes in PSDs.

Keywords: PARADISE24, Substance use disorders, Validation, Factor Analysis, Alcohol.

43 **1. Introduction**

44 Drug and alcohol use disorders are common in many European countries and are
45 associated with problems and expenses to the society (Organisation for Economic Co-operation
46 and Development, 2014). Although there is a considerable treatment gap in people with
47 substance use disorders (SUDs), it is estimated that a 90% of people with drug dependence and a
48 54% of people with alcohol dependence seek help at some point of their life (Blanco et al.,
49 2015).

50 Validated and reliable measures are needed for the evaluation of needs and treatment
51 effects. Traditionally, the effectiveness of SUD treatment has been measured by the duration of
52 abstinence, number of relapses, or addiction severity scores (Black et al., 2017; Dutra et al.,
53 2008). However, alongside with harm reduction and withdrawal management, enhancing
54 psychosocial functioning has been recognized as an important goal of SUD treatment
55 (Department of Health, 2007; Moyer, 2013; World Health Organization, 2016). Psychosocial
56 difficulties (PSDs) such as emotional, cognitive and social problems affect everyday life. PSDs
57 are widely experienced in people with substance use disorders (Levola et al., 2014; Poudel et al.,
58 2016). In addition, some PSDs have been reported to be related to subsequent relapses (Moore et
59 al., 2014) and poor treatment outcomes in SUDs (Stevens et al., 2014). It has therefore become
60 increasingly necessary to incorporate information on PSDs in clinical practice in order to
61 effectively personalize treatment of SUDs, and to monitor treatment progress and prevent
62 relapses (Luquiens et al., 2012).

63 The concept of PSDs is not uniform in the literature and includes different areas ranging
64 from problems in daily functioning to mental health disorders (Vannieuwenborg et al., 2015).

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65 According to the International Classification of Functioning, Disability and Health (ICF),
66 disability is more than the mere presence of health conditions (World Health Organization,
67 2001). PSDs have been operationalized in the ICF framework as “*the impairments in mental and*
68 *body functions under nervous-system control, activity limitations and participation restrictions*
69 *that result from the interaction of a person with a brain disorder and the environmental and*
70 *personal factors*” (Cieza et al., 2015a). Therefore, PSDs are not mental health disorders but may
71 be the consequences of mental health disorders.

72 The PARADISE24 instrument was created in a multi-country effort to measure common
73 psychosocial difficulties in mental and neurological disorders. The instrument showed adequate
74 properties in a sample of nine different health conditions, including inpatients with SUDs (Cieza
75 et al., 2015b). However, there is still no evidence of the PARADISE24 latent structure in a
76 sample of outpatients with SUDs, checking whether the structure of the questionnaire is the same
77 between inpatient and outpatient groups with SUDs.

78 The aim of this study was to evaluate the psychometric properties of the PARADISE24 in
79 a sample of outpatients with SUDs, focusing on i) the latent structure of the questionnaire, ii) the
80 metric invariance in relation to a sample of inpatients with SUD, and iii) its ability to
81 discriminate across different demographic and clinical groups.

82 **2. Methods**

83 *2.1. Design and Sample*

84 The present work is a psychometric study based on cross-sectional register data which
85 included a convenience sample of 2,851 participants with SUDs (alcohol 57.5%, opioids 17.8%,
86 stimulants 8.0%, cannabis 7.0% and sedatives 5.5% coded as primary substance) who completed
87 the PARADISE24 questionnaire during their treatment at the A-Clinic Foundation (Finland).

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88 This institution serves annually around 10,000 outpatients and 5,000 inpatients. The A-Clinic
89 Foundation has clinics in several large cities in Finland, additionally Järvenpää Addiction
90 Hospital (JAH) provides inpatient services for SUDs nationally. Data were collected in 2014-
91 2017. The present data included 1,376 inpatients at 14 treatment units, 30.0% of which at JAH.
92 Most of the studied inpatients (56.8%) had completed the questionnaire during detoxification, the
93 rest (43.2%) during rehabilitation. The data also included 1,261 outpatients from 26 treatment
94 units. Outpatient treatment consists largely of therapy and counselling for individuals or groups;
95 the recovery process involves assessing and monitoring patients' health and medication and
96 developing a plan for rehabilitation and follow-up. One fourth (24.7%) of the studied outpatients
97 had filled in the questionnaire in the context of opioid substitution treatment, 7.6% in connection
98 to housing services for substance abusers, 5.4% at one of the youth clinics that aim to help young
99 people with SUDs, and the rest (62.4%) at clinics for adults with SUDs. Out of the 2,851 patients
100 who had filled in the PARADISE24 questionnaire, 92.5% (2,637) had answered all questions,
101 which was the sample considered in the present study. The use of anonymized register data was
102 approved by the A-Clinic Foundation's Ethical Committee for Treatment and Research and the
103 National Institute for Health and Welfare.

104 2.2. Variables

105 Participants were asked to fill out the PARADISE24 questionnaire with five response
106 options (PARADISE24fin, 2018) during the treatment, and the answers were coded by the health
107 care worker into the electronic treatment record. The questionnaire comprises 24 items,
108 evaluating the presence and severity of PSDs in the last 30 days (Cieza et al., 2015b). The items
109 included questions such as: "*How much difficulty did you have in remembering to do important*
110 *things?*". Each question was scored on a scale ranging from 0 (no difficulty) to 4 (extreme

111 difficulty/cannot do). The items were added into an overall mean score, summarizing the
112 presence and severity of PSDs (Pitkänen et al., 2016). Higher score means higher number and/or
113 severity of PSDs.

114 Age in years, gender, level of education (coded as less than primary education, primary
115 education completed, secondary education completed and tertiary education), type of substance
116 used (alcohol use only vs. drug or polysubstance use), and clinical setting (inpatients and
117 outpatients) were collected from the electronic treatment record system. By definition,
118 outpatients visited the clinic for counselling or treatment consisting of several of appointments,
119 whereas inpatients stayed at the clinic over-night.

120 *2.3. Data analysis*

121 A general profile comprising socio-demographic and clinical characteristics of the
122 inpatients and outpatients was obtained. Statistical differences between inpatients and outpatients
123 were tested using chi-square tests for categorical variables, and two sample t-tests for continuous
124 variables. Effect sizes were also computed for each contrast, using Cramer's V for the chi-square
125 tests, and Cohen's d for the t-tests. Cohen's guidelines (Cohen, 1988) were used for interpreting
126 the effect sizes. For Cramer's V , 0.10 represents a small effect size, 0.30 is a medium effect size,
127 and 0.50 is a large effect size. For Cohen's d , 0.20, 0.50 and 0.80 represent, respectively, a small,
128 a medium, and a large effect size.

129 Subsequently, the latent structure of the PARADISE24 questionnaire was analyzed in the
130 outpatient sample following a two-step factor analysis approach. This sample was randomly
131 divided into two groups: 1) a developmental exploratory subsample, comprising 70% of the total

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132 outpatient's sample, and 2) a validation subsample with the remaining 30% of this sample. This
133 two-step validation procedure has been implemented in previous studies (Caballero et al., 2017).

134 An exploratory factor analysis (EFA) was conducted over the estimated polychoric
135 correlations matrix in the developmental subsample. The estimation method used was Weighted
136 Least Squares with mean adjusted statistics (WLSM), using the 'oblimin' rotation to allow for
137 potential correlated factors. The number of factors to be selected was based on parallel analysis
138 (PA) (Horn, 1965) and Velicer's minimum average partial (MAP) test (Velicer, 1976.).

139 Secondly, the factor structure identified in the EFA solution was fitted on the outpatient
140 validation sample by means of Confirmatory Factor Analysis (CFA). The fit of the model was
141 assessed considering the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI) and the
142 Root Mean Square Error of Approximation (RMSEA). Standards proposed by Hu and Bentler
143 (1999) were considered as indicators of an acceptable fit: CFI>0.90; TLI>0.90; RMSEA<0.08.
144 The parameters of the CFA model were estimated over the polychoric correlation matrix, using
145 Weighted Least Squares with mean adjusted test statistics (WLSM). Mean adjusted chi-square
146 test statistic with the Satorra-Bentler correction, and robust standard errors were implemented for
147 both the CFA and the subsequent metric invariance analysis. The reliability of the scale in the
148 overall outpatient sample was also estimated using the Cronbach's alpha coefficient, which
149 ranges from 0 (no reliability) to 1 (perfect reliability).

150 Thirdly, measurement invariance between the outpatient and inpatient groups was conducted
151 through multiple group CFA. Metric invariance analysis consisted on a series of nested models
152 with increasing parametric constraint imposition, and it allows for assessing whether the

153 structure, meaning, and metric of the measured construct (i.e., PSDs) are the same for both
154 populations (Gregorich, 2006).

155 The levels of constraints imposed in each invariance model correspond to 1) configural
156 invariance (factor structure is equal across groups), 2) metric invariance (equal factor loadings),
157 3) scalar invariance (equal loadings and intercepts), and 4) strict invariance (residual variances
158 are also fixed to be equal across groups). Theta parameterization was used. The measurement
159 invariance analysis was based on changes in the CFI values lower than 0.01 across the different
160 nested models (Cheung & Rensvold, 2002). When scalar invariance was achieved, latent mean
161 scores on the general factor were compared between the outpatients and inpatients' groups.

162 Finally, evidences of known-groups validity (Davidson, 2014) were checked by testing mean
163 differences between relevant groups based on socio-demographic variables (i.e. gender, age
164 groups and educational level) and clinical characteristics, such as clinical setting (outpatient vs.
165 inpatients) and type of substance used (alcohol use only vs. drug use problems) in the overall
166 sample. Cohen's f was used as effect size measure when testing differences across more than 2
167 groups, considering 0.1, 0.25 and 0.40 values representing small, medium and large effect sizes,
168 respectively.

169 PA and Velicer's MAP test were implemented using the *R* package *psych* (Revelle, 2008). EFA
170 was carried out in Mplus version 7 (Muthén & Muthén, 2011), while CFA and metric invariance
171 analysis were conducted using the *lavaan* package in *R* (Roseel, 2011).

172 **3. Results**

173 *3.1. General description of the sample*

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174 Altogether 2,637 patients in treatment for substance use disorders had filled out the
175 PARADISE24 questionnaire. As can be seen in **Table 1**, significant differences (although with
176 small effect sizes) were found by gender ($p = 0.007$; Cramer's $V = 0.05$), age ($p = 0.033$;
177 Cohen's $d = 0.08$), education ($p < 0.001$; Cramer's $V = 0.11$), and type of substance used ($p =$
178 0.039 ; Cramer's $V = 0.07$) between the outpatients ($n=1,261$) and inpatients ($n=1,376$), with the
179 inpatient group comprising a higher proportion of males.

180 *3.2. Exploratory factor analysis*

181 The PA analysis and the Velicer's MAP test implemented in the developmental sample ($n = 935$)
182 indicated that the optimum number of factors to retain was 1. Results from the one-factor EFA
183 solution presented an adequate fit (CFI = 0.98; TLI = 0.98; RMSEA = 0.07), with the factor
184 explaining 45% of the items' total variance. The standardized estimated factor loadings of the
185 solution (pattern matrix) were all statistically significant ($p < 0.001$), ranging from 0.41 to 0.80.

186 *3.3. Confirmatory factor analysis*

187 Considering the results from the previous EFA solution, a unidimensional model was fitted in the
188 outpatient's validation sample ($n = 437$). Results from the CFA revealed an adequate fit of the
189 unidimensional model in the outpatient's validation sample (CFI = 0.98; TLI = 0.98; RMSEA =
190 0.07). Standardized factor loadings of the unidimensional solution (**Table 2**) were all statistically
191 significant ($p < 0.001$), and ranged from 0.43 to 0.80.

192 *3.4. Reliability of the item scores*

193 Before conducting the measurement invariance analysis, the reliability of the scale was assessed
194 in the overall outpatient sample, obtaining a high Cronbach's alpha value ($\alpha = 0.93$). The mean
195 inter-item correlation was 0.36, and dropping any item of the scale did not increase the
196 Cronbach's alpha coefficient.

197 *3.5. Measurement invariance analysis*

198 Results from the multiple group CFA measurement invariance are presented in **Table 3**. Models
199 1 to 4 presented values of RMSEA lower than 0.05, and values of CFI and TLI higher than 0.95.
200 No significant increments in CFI ($\Delta\text{CFI} < 0.01$ in all cases) were observed in the sequential
201 comparisons conducted over these nested models. The strict invariance (equal residuals) model
202 presented a good fit (RMSEA = 0.063; TLI = 0.983; CFI = 0.981). Standardized loadings of the
203 strict invariance model are presented in **Table 2** for both outpatient and inpatient groups. Latent
204 mean scores on the general factor were calculated based on the scalar invariance model and
205 significant differences ($p < 0.001$) were found between the two groups, the score being higher in
206 the inpatient group ($d = 0.98$).

207 *3.6. Known-groups validity*

208 As shown in **Table 4**, statistically significant differences in the PARADISE24 overall mean
209 scores were found across all background variables. The total mean score was higher (more
210 frequent and/or severe PSDs) for females than for males ($d = 0.11$) and for the less educated in
211 comparison with those who had completed at least secondary education ($d = 0.15$). Younger
212 patients had slightly higher PARADISE24 means scores than older patients ($f = 0.14$). Regarding
213 clinical variables, people with alcohol use only obtained lower mean scores than those with drug

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214 or multiple substances ($d = 0.36$). Large differences were found in the PARADISE24 overall
215 mean score between outpatients and inpatients ($d = 0.86$), with inpatients showing higher scores.

216 **4. Discussion**

217 This article provides evidence on the unidimensional structure of the PARADISE24
218 questionnaire in a sample of Finnish outpatients with SUDs. Unidimensional measures with high
219 internal consistency are essential in psychological assessment, since construct-irrelevant variance
220 is one of the most important sources of invalidity in tests and questionnaires (Messick, 1995). In
221 regard to unidimensionality, a strong general factor was found in both the developmental (EFA)
222 and validation (CFA) samples of outpatients with SUDs. The unidimensional model presented
223 adequate goodness-of-fit indices, with all items having significant loadings over 0.40. In terms of
224 reliability, the questionnaire presented high reliability in the overall outpatient sample with a
225 Cronbach's alpha of 0.93 indicating a strong internal consistency. According to the
226 unidimensional structure of the PARADISE24, it is possible to calculate an overall total score
227 based on the sum of all item' scores. This unidimensional structure has been previously reported
228 in people with different health conditions, including inpatients with SUDs (Cieza et al., 2015b).

229 In addition to stopping or reducing substance use and the harm associated therewith, the aims of
230 SUD treatment include enhancing psychosocial functioning and improving the quality of life of
231 the patients. Our results suggest that the PARADISE24 seems suitable for measuring a wide
232 range of common psychosocial difficulties in SUDs.

233 Routine assessment of problems related to psychosocial functioning may facilitate
234 communication between health professionals and patients with SUDs in a common and

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235 understandable language (Stucki, 2005). Other instruments specific to SUDs such as the
236 European Addiction Severity Index (EuropASI) (Gsellhofer et al., 1995), or the Alcohol and
237 Drug Outcome Measure, (Deering et al., 2009; McLellan et al., 1980) include information on
238 some PSDs. However, this information is often incorporated in measures with a broader focus,
239 e.g. assessment of diagnostic criteria or assessment of the severity of dependence. The
240 PARADISE24 additionally covers a range of issues (for example, psychomotor or self-control
241 problems) that are not usually included in the generic instruments such as the WHO's Disability
242 Assessment Schedule (WHODAS II) (Üstün, 2010), and the 36-item Short Form Survey (Ware,
243 2000). The application of the PARADISE24 is also probably faster and its scoring easier than
244 other battery of instruments such as the Measurements in the Addictions for Triage and
245 Evaluation (MATE) (Schippers et al., 2010).

246 On the other hand, the use of the PARADISE24 has provided a more accurate prospection of
247 total health care costs than the use of symptom-related information in depression and anxiety
248 disorders (Twomey et al., 2017). Further longitudinal studies should verify the clinical utility of
249 the PARADISE24 for individualized treatment planning and prospection of health care
250 resources.

251 Moreover, our study provides evidence of strict metric invariance between outpatients and
252 inpatients, supporting the use of this tool for assessing and comparing the level of psychosocial
253 difficulties in both inpatient and outpatient populations with SUDs. Useful tools are needed
254 across treatment phases. Our results suggest that PARADISE24 is an adequate instrument to
255 monitor the clinical progress of people with SUDs across treatment phases. The use of a same

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256 instrument during different phases of treatment can help to bridge the existing information gap
257 between hospital registries and outpatient health care records (García Álvarez et al., 2011).

258 The present study also analysed whether the PARADISE24 was able to discriminate between
259 relevant demographic and clinical groups. Results were all congruent with previous literature.
260 Females and younger people reported significantly more frequent or/and severe PSDs problems
261 than males (Garg et al., 1999) and older people (Whiteford et al., 2013). People with primary
262 education or less showed higher scores (more frequent or/and severe PSDs) than people who had
263 completed at least secondary education (Poudel et al., 2016). Patients with drug use or multiple
264 substances use reported more frequent and/or severe PSDs than those with alcohol use only
265 (Smith and Larson, 2003). Finally, inpatients scored higher in the severity and/or presence of
266 PSDs than outpatients, at both observed and latent level, which is also congruent to previous
267 research evidence (Garg et al., 1999).

268 This study comprises a large sample of Finnish people with SUD and with different clinical and
269 demographic profiles. However, the results should be interpreted considering the following
270 limitations. The application of the PARADISE24 was not similarly performed at a specific point
271 in treatment (e.g. in the beginning or the end of treatment). Nonetheless, the aim of this study
272 was not to evaluate treatment efficiency. In addition, the study was cross-sectional, so
273 longitudinal invariance analyses and sensitivity to change could not be assessed. Further
274 longitudinal studies concerning clinical utility of the PARADISE24 are also needed in the future.
275 Considering the evidence of unidimensionality of the questionnaire, future research could
276 explore the possibility of creating a reduced version of the PARADISE24. However, the
277 questionnaire was originally created to measure PSDs that are experienced in common across

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278 mental, neurological and substance use disorders. The selection of the items was based on
279 different sources of information including expert's opinions and patient's experiences (Cieza et
280 al., 2015b). Therefore, content validity of the items across all these disorders should be
281 considered as further studies create a reduced version.

282 To conclude, this study has showed that the PARADISE24 is a valid tool with high internal
283 consistency in both outpatients and inpatients with substance use disorders. The PARADISE24 is
284 a short but comprehensive tool to collect relevant psychosocial information in people with SUDs
285 in different clinical settings. The PARADISE24 was also able to discriminate between inpatients
286 and outpatients in terms of presence and severity of PSDs. Further longitudinal studies should
287 report the ability of PARADISE24 to detect response to treatment in people with SUDs.

288

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401 **Table 1.** General profile of the outpatients and inpatients' groups.

	Outpatients <i>n</i> =1261	Inpatients <i>n</i> =1376	<i>p</i>	Effect size
Male, <i>n</i> (%)	832 (65.98)	975 (70.86)	0.007	0.05
Age, Mean (S.D.)	41.12 (14.16)	39.99 (12.97)	0.033	0.08
Education			< 0.001	0.11
None, <i>n</i> (%)	30 (2.38)	25 (1.82)		
Primary education, <i>n</i> (%)	460 (36.48)	511 (37.14)		
Secondary education, <i>n</i> (%)	541 (42.90)	541 (39.32)		
Tertiary education, <i>n</i> (%)	134 (10.63)	111 (8.07)		
Type of substance			0.039	0.07
Only alcohol, <i>n</i> (%)	585 (50.56)	572 (49.44)		
Drugs or multiple substances, <i>n</i> (%)	601 (43.14)	792 (56.86)		

402 Note: Cramer's *V* was used as effect size measure in the comparisons between categorical variables, while
403 Cohen's *d* was used as effect size measure in the comparisons between continuous variables.

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417 **Table 2.** Standardized factor loadings of the unidimensional model.

	Outpatients' validation sample	Strict metric invariance	
		Outpatients	Inpatients
1. How much of a problem did you have due to not <u>feeling rested and refreshed</u> during the day (e.g. feeling tired, not having energy)?	0.71	0.72	0.68
2. How much of a problem did you have with <u>loss of interest</u> ?	0.75	0.71	0.67
3. How much of a problem did you have with your <u>appetite</u> ?	0.59	0.61	0.56
4. How much of a problem did you have with <u>sleeping</u> , such as falling asleep, waking up frequently during the night or waking up too early in the morning?	0.57	0.57	0.52
5. How much of a problem did you have <u>being so irritable</u> that you started arguments, shouted at people or even hit people?	0.67	0.58	0.53
6. How much of a problem did you have with being <u>slowed down</u> or feeling as if <u>things were moving too fast</u> around you?	0.69	0.68	0.63
7. How much of a problem did you have with <u>feeling sad, low or depressed</u> ?	0.80	0.80	0.76
8. How much of a problem did you have with <u>worry or anxiety</u> ?	0.79	0.81	0.77
9. How much of a problem did you have with <u>not being able to cope with all the things</u> that you had to do?	0.78	0.79	0.75
10. How much <u>bodily ache or pain</u> did you have?	0.48	0.47	0.42
11. How much difficulty did you have in <u>concentrating on doing something for ten minutes</u> ?	0.73	0.72	0.67
12. How much difficulty did you have in <u>remembering to do important things</u> ?	0.69	0.71	0.67
13. How much difficulty did you have in <u>making decisions</u> ?	0.74	0.75	0.71
14. How much difficulty did you have in <u>starting and maintaining a conversation</u> ?	0.68	0.62	0.57
15. How much difficulty did you have <u>in walking a long distance</u> such as a kilometer (or equivalent)?	0.43	0.51	0.46
16. How much difficulty did you have in <u>grooming or dressing, toileting or eating</u> ?	0.68	0.69	0.64
17. How much difficulty did you have in <u>sexual activities</u> ?	0.55	0.56	0.51
18. How much difficulty did you have in <u>staying by yourself for a few days</u> ?	0.55	0.59	0.54
19. How much difficulty did you have with <u>looking after your health</u> , such as eating well, exercising and taking your medicines?	0.74	0.77	0.73
20. How much difficulty did you have <u>in initiating and maintaining a friendship</u> ?	0.69	0.69	0.64
21. How much difficulty did you have in <u>getting along with people who are close to you</u> ?	0.61	0.64	0.59
22. How much difficulty did you have in <u>your day-to-day work or school</u> ?	0.64	0.66	0.61
23. How much difficulty did you have with <u>managing your money</u> ?	0.55	0.63	0.58
24. How much difficulty did you have in <u>joining in community activities</u> (for example, festivities, religious or other activities) in the same way as anyone else can?	0.72	0.72	0.68

418 Note: In the strict invariance model, the standardized factor loadings are not the same for the inpatients
419 and outpatient's groups due to differences in the latent factor variance.

420 **Table 3.** Goodness-of-fit indices for the invariance models.

	χ^2 (df)	RMSEA (90% IC)	TLI	CFI	Δ CFI
1. Configural	5833.72 (504)	0.066 (0.065, 0.068)	0.981	0.983	-
2. Metric / Weak	5745.46 (527)	0.065 (0.064, 0.067)	0.982	0.983	0.000
3. Scalar / Strong	5570.98 (598)	0.063 (0.062, 0.065)	0.983	0.982	0.001
4. Strict	5085.15 (622)	0.063 (0.061, 0.064)	0.983	0.981	0.001

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440 **Table 4.** PARADISE24 mean score comparisons across known-groups based on socio-
 441 demographic and clinical background variables in the overall sample ($N=2,637$).

	<i>M (SD)</i>	<i>p</i>	Effect size
Gender		0.004	0.11
Females	1.48 (0.81)		
Males	1.39 (0.79)		
Age group		< 0.001	0.14
≤ 30	1.57 (0.84)		
31-50	1.42 (0.78)		
50+	1.25 (0.74)		
Education		< 0.001	0.15
Lower than secondary education	1.48 (0.81)		
Secondary education completed or higher	1.36 (0.78)		
Clinical setting		< 0.001	0.86
Inpatients	1.72 (0.74)		
Outpatients	1.09 (0.72)		
Type of substance		< 0.001	0.36
Only alcohol	1.27 (0.74)		
Drugs or multiple substances	1.55 (0.81)		

442 Note: Cohen's *d* was used as effect size measure in the comparisons comprising two groups, while
 443 Cohen's *f* was used as effect size measure in the comparisons across more than two groups. Effect sizes
 444 were computed for statistically significant differences only.