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3 Evaluating mental health literacy amongst US college students: A cross sectional study

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10 **Abstract**

11 **Objective:** This study examined levels of mental health literacy amongst US university students, as
12 well as relationships between mental health literacy, help-seeking behaviours, and mental health
13 outcomes.

14 **Participants:** 326 US University Students participated in this study online.

15 **Methods:** Participants filled out questionnaires that assessed their mental health literacy, intentions to
16 seek support, psychological distress, wellbeing, and self-compassion.

17 **Results:** The mean mental health literacy score was 123.96 (SD=16.01). Women scored significantly
18 higher than men ($p < .01$) on mental health literacy. Individuals who had a previous mental disorder
19 diagnosis had significantly higher scores than those with no previous diagnosis ($p < .01$). A
20 significant positive relationship was found between mental health literacy and self-
21 compassion ($p < .01$).

22 **Conclusions:** Our research highlights significant differences between women and men in
23 relation to mental health literacy, psychological distress and help-seeking behaviour. There is
24 a need to design culturally competent interventions that involve diverse students.

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27 Evaluating mental health literacy amongst US college students: A cross sectional study
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29 Background

30

31 Current research shows that university students in the United States experience mental
32 health symptoms and disorders, especially with respect to depressive and anxiety symptoms
33 and sleep disturbance, exacerbated by the current Covid-19 pandemic.^{1,2} In comparison to
34 other countries, US university students experience some of the highest rates of prevalence for
35 depression, anxiety, and sleep disturbance.³ The consequences of poor mental health in this
36 population have been severe, ranging from poor academic attainment and academic
37 dissatisfaction, to higher rates of dropout and lower employability after completion of
38 studies.^{1,4,5}

39 Universities have tried to raise awareness of mental health and in a response to
40 increased prevalence of poor mental health, have, where possible, expanded mental health
41 professional services and resources to students.⁶⁻⁹ Researchers have suggested that targeted
42 strategies, perhaps those rooted in mental health literacy, are needed to provide students with
43 information about mental health symptoms and disorders, to facilitate self-compassion and
44 self-care, to address the negative perceptions and attitudes towards poor mental health, and to
45 provide clear pathways about how to access mental services when needed.⁶⁻⁸ Results from a
46 longitudinal study of mental health service utilization of US university students have shown a
47 significant increase between 2007 and 2017.¹⁰ Researchers state that continued efforts to
48 provide information about mental health and reduce stigma can help provide mental health
49 services to even more students in need of support.¹⁰ Mental health literacy is the knowledge
50 and attitudes individuals have about mental health and mental health services.^{11,12}
51 Specifically, mental health literacy covers the following six areas: 1) knowledge and ability
52 to identify symptoms of poor mental health; 2) knowledge and beliefs of causes of poor

53 mental health; 3) knowledge and beliefs of self-compassion and self-care practices to
54 maintain good mental health; 4) knowledge and beliefs of mental health services; 5) attitudes
55 toward poor mental health and mental health services; and 6) intentions to access mental
56 health services when needed.

57 Research has shown that different elements of mental health literacy are associated
58 with better mental health, improved knowledge of and attitudes toward poor mental health,
59 and greater intentions to seek support from mental health services.^{6-8,13} Investigations of self-
60 compassion have shown it to be associated with higher ratings of wellbeing and lower ratings
61 of loneliness in young adults in the US.¹⁴ To date, studies have not collectively examined all
62 areas of mental health literacy for US university students in relation to mental health
63 outcomes. For example, work by Miles and colleagues examined the mental health
64 knowledge of US undergraduates without examining their attitudes toward poor mental
65 health or their intentions to seek support.¹⁵ Such fragmentation of findings make it difficult to
66 establish a coherent picture of the overall importance of mental health literacy of students in
67 relation to their mental health.

68 The purpose of this study was to evaluate the levels of mental health literacy,
69 intentions to seek support, distress, wellbeing, and self-compassion amongst different US
70 university students. A secondary aim was to examine relationships between these variables.

71

72 **Methods**

73

74 ***Participants and procedures***

75

76 After receiving ethical approval, students registered at US universities who were 18 years or
77 older were invited to fill out online questionnaires through Qualtrics Research Panels
78 anonymously.

79

80 *Measurements*

81

82 Participants were asked demographic questions about their age, gender, sexual orientation,
83 previous diagnosis of mental health disorder, and current education year.

84

85 The 35-item Mental Health Literacy Scale (MHLS) was used to measure literacy in mental
86 health knowledge and attitudes.¹⁶ Scores for the MHLS range from 35 to 160, with higher
87 scores indicating greater literacy. The MHLS showed excellent internal consistency with a
88 Cronbach's alpha of .91.

89

90 Intentions to seek support from partners, friends, mental health professionals, and religious
91 leaders were evaluated through one question on the General Help-Seeking Questionnaire
92 (GHSQ). Higher scores indicated a greater intention to seek support. The GHSQ has been
93 demonstrated to have good test-retest reliability ($r=.92$) and be highly correlated with seeking
94 counselling ($r_s=.17, p<.05$).¹⁷

95

96 Psychological distress was assessed through the Kessler Psychological Distress Scale 10
97 (K10). Scores on the K10 range from 10 to 50, with scores under 20 indicating an individual
98 is likely to not be in distress.¹⁸ The K10 showed excellent internal consistency with a
99 Cronbach's alpha of .93.

100

101 Wellbeing was assessed through the 14-item Warwick-Edinburgh Mental Well-Being Scale
102 (WEMWBS). Scores range from 14 to 70, with higher scores indicating higher wellbeing.¹⁹

103 The WEMWBS indicated excellent internal consistency with a Cronbach's alpha of .94.

104

105 The 12-item Self-Compassion Scale Short Form (SCS-SF) assessed self-compassion. Scores
106 on the scale range from 12 to 60, and higher scores representing greater warmth, connection,
107 and concern for oneself.²⁰ The SCS-SF indicated good internal consistency with a Cronbach's
108 alpha of .86.

109

110 *Statistical Analysis*

111

112 To examine differences amongst demographic variables and MHLS, GHSQ, K10,
113 WEMWBS and SCS-SF, Kruskal-Wallis H tests were conducted given the data was not
114 normally distributed. To examine relationships between MHLS, GHSQ, K10, WEMWBS
115 and SCS-SF, Spearman's correlations were used. For all analyses, an alpha level of .05 was
116 used.

117

118

119 Results

120

121 Demographics

122

123 A total of 326 US university students participated in the study (185 women, 133 men, 3
124 transgender, and 5 other). The average age of participants was 20.74 years (SD=2.01).

125 Students identified with the following sexual orientations: 271 (83%) heterosexual; 25 (8%)

126 bisexual; 7 (2%) lesbian; 3 (1%) gay; and 20 (6%) other. A total of 93 (29%) students
127 disclosed they had a previous diagnosis of a mental disorder. Students were enrolled in the
128 following year of study: 100 (31%) first year undergraduate; 68 (21%) second year
129 undergraduate; 51 (16%) third year undergraduate; 76 (23%) fourth year undergraduate; 24
130 (7%) masters; and 7 (2%) PhD.

131

132 MHLS

133

134 The overall mean mental health literacy score was 123.96 (SD=16.01). Women scored
135 significantly higher (M = 128.84, SD = 15.14) than men (M = 116.64, SD = 13.98)
136 ($\chi^2(3)=53.73$, $p=.00$). Individuals who had a previous diagnosis of a mental health problem
137 had significantly higher scores (M = 134.14, SD = 14.36) than those with no previous
138 diagnosis (M = 120.00, SD = 14.79) ($\chi^2(1)=59.09$, $p=.00$). No significant differences were
139 found between sexual orientations or years of study ($p>.05$).

140

141 GHSQ

142

143 The overall mean general help-seeking score was 35.41 (SD=9.30). No statistically
144 significant differences in help seeking were found between genders, sexual orientations, years
145 of study, or with previous diagnoses of mental health problems ($p>.05$)

146

147 K10

148

149 The mean K10 score was 24.55 (SD = 9.39). In total, 208 (63.80%) individuals indicated
150 either mild (n = 50, 15.34%), moderate (n = 54, 16.56%), or severe (n = 104, 31.90%) levels

151 of psychological distress. Women scored significantly higher for distress ($M = 25.62$, $SD =$
152 9.25) than men ($M = 22.59$, $SD = 9.08$) ($\chi^2(3)=15.28$, $p=.00$). Individuals who identified with
153 a sexual orientation other than heterosexual, bisexual, gay, or lesbian, indicated a
154 significantly higher level of distress ($M = 31.50$, $SD = 10.47$) than those who identified as
155 heterosexual ($M = 23.86$, $SD = 9.11$) ($\chi^2(4)=12.06$, $p=.02$). Those individuals who indicated a
156 previous diagnosis of a mental health problem scored significantly higher in distress ($M =$
157 29.45 , $SD = 8.58$) than those who did not indicate a previous diagnosis of a mental health
158 problem ($M = 22.59$, $SD = 8.98$) ($\chi^2(1)=36.72$, $p=.00$). No significant difference in wellbeing
159 were found between years of study ($p>.05$).

160

161 WEMWBS

162

163 The mean WEMWBS score was 46.20 ($SD = 11.40$). Women scored significantly lower for
164 wellbeing ($M = 44.41$, $SD = 11.33$) than men ($M = 49.75$, $SD = 10.42$) ($\chi^2(3)=21.71$, $p=.00$).

165 A significant difference in wellbeing was found between those who identified as heterosexual
166 ($M = 46.85$, $SD = 11.26$) and those who identified as other ($M = 36.75$, $SD = 13.40$)

167 ($\chi^2(4)=13.60$, $p=.01$). Those individuals who indicated a previous diagnosis of a mental

168 health problem scored significantly lower wellbeing ($M = 41.51$, $SD = 11.05$) than those who

169 did not indicate a previous diagnosis of a mental health problem ($M = 48.26$, $SD = 10.94$)

170 ($\chi^2(1)=20.312$, $p=.000$). No significant difference in wellbeing were found between years of

171 study ($p>.05$).

172

173 SCS-SF

174

175 The mean self-compassion score was 36.52 (SD = 8.23). No significant differences in self
176 compassion were found between genders, sexual orientations, years of study, or with
177 previous diagnoses of mental health problems ($p > .05$),

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179 Comparing mental health literacy with help seeking behaviours, distress, wellbeing, and self-
180 compassion

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182 A Spearman's correlation determined a significant positive relationship between mental
183 health literacy and self-compassion ($r_s(285) = .17, p = .00$) and a significant negative
184 relationship between mental health literacy and wellbeing ($r_s(285) = -.13, p = .03$). This
185 indicated that individuals with higher levels of mental health literacy exercised greater self-
186 compassion and experienced less wellbeing. A significant negative relationship was found
187 between distress and help seeking behaviour ($r_s(326) = -.12, p = .03$) and wellbeing ($r_s(285) =$
188 $-.66, p = .00$). This indicated that individuals with higher distress were less likely to seek
189 support and experienced less wellbeing. A significant positive relationship was found
190 between self-compassion and help seeking behaviour ($r_s(285) = .23, p = .00$), meaning those
191 who exercised greater self-compassion were more likely to seek support.

192

193

194 **Discussion**

195

196 Our research shows that women had significantly higher levels of mental health literacy than
197 men. Individuals who had a previous diagnosis of a mental health disorder had significantly
198 higher levels of mental health literacy, as well as higher levels of distress, compared to those
199 with no previous diagnosis. Moreover, women scored significantly higher for distress and

200 lower for wellbeing than men, whilst individuals who identified as bisexual, gay or lesbian
201 indicated significantly higher levels of distress and lower levels of wellbeing compared to
202 those who identified as heterosexual. Individuals with higher levels of mental health literacy
203 exercised greater self-compassion and experienced less wellbeing. At the same time,
204 individuals with higher levels of distress were less likely to seek support and experience
205 lower wellbeing. Help-seeking behaviour generally represents a complex decision-making
206 process instigated by a problem that challenges personal abilities.¹⁵ This, combined with the
207 evidence that optimism, self-esteem and social support are often associated with decreased
208 levels of mental distress might mean that students experiencing psychological distress are
209 less likely to seek (professional) support.²² Seeking help is also highly related to addressing
210 public and self-stigma associated with mental health symptoms and disorders.²³ Research has
211 shown that higher levels of mental health literacy have been associated with lower levels of
212 stigma and stronger social support to see help.²⁴ Although rates of mental health service use
213 amongst US university students has increased, there are many students who may lack the
214 personal awareness or knowledge that they may be experiencing mental health symptoms or
215 may feel like they cannot overcome public or self-stigma to seek support.¹⁰ Mental health
216 literacy may help facilitate this process, but further research is needed as to how to deliver it
217 to diverse student populations.

218

219 Our research also found a significant positive relationship between mental health literacy,
220 self-compassion and help seeking behaviour. This association has not been reported between
221 mental health literacy and self-compassion or wellbeing, but has been found with intentional
222 help-seeking behaviour.^{6,16} The relationship between mental health literacy, self-compassion,
223 wellbeing, psychological distress and help seeking behaviour is important, in light of early
224 intervention and identification of mental health conditions.²⁵

225

226 Limitations of our work should be pointed out. First, this is a cross sectional study, where
227 only associations and not predictions can be observed from the data. Second, we did not
228 collect data on race or ethnicity, limiting the generalizability of the findings. Despite these
229 limitations, our research has specific implications for US college campuses. Our research
230 highlights that while there is some understanding of common mental health disorders among
231 university students in the US, negative attitudes toward mental health exist.²⁶ While our
232 research highlights significant differences between women and men in relation to mental
233 health literacy, psychological distress and help-seeking behaviour, and between those who
234 identified as heterosexual, bisexual, gay or lesbian other research has highlighted differences
235 between cultures, races, and ethnic groups.^{27,28} There is a need to design culturally competent
236 interventions that involve diverse students, staff, and mental health professionals.²⁹

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