

Mamun, M.A., Bhuiyan, A. & Griffiths, M.D. (2020). Depression literacy among Bangladeshi pre-university students: Differences based on gender, educational attainment, depression, and anxiety. *Asian Journal of Psychiatry*, in press.

Introduction

A recent study by Mamun and colleagues (2019a) suggested that Bangladeshi undergraduate fresher students are prone to suffering from mental health disorders (52.5% depression, 57.8% anxiety). This research also demonstrated that Bangladeshi university students also have high levels of stress due to a wide range of factors including harassment-related issues (e.g., political violence, campus ragging, etc.), that facilitate these mental health issues causing physical, behavioral, emotional, and social problems (Mamun et al., 2019a; Wajahat, 2014). In extreme cases, this can lead to suicide and suicidal behaviors among students (Arafat & Mamun, 2019; Castaldelli-maia et al., 2012). Alongside psychiatric suffering, a recent incident where campus ragging severity led to a murder at a prominent Bangladeshi university (BBC, 2019) received national media attention as well as being reported more globally.

In Bangladesh, *ragging* is the term is known by other names in the world (e.g., hazing, fagging, pledging, bullying, etc.) and is a commonplace practice in Bangladesh universities and in universities in neighboring countries. More specifically, ragging is the practice of ‘welcoming’ fresher students in a somewhat anti-social and barbaric manner and carried out throughout the student’s first year at university (Wajahat, 2014). Unsurprisingly, such a practice (which is extreme cases can involve both physical and psychological torture), can lead to depression, hopelessness, anxiety, stress, burnout, and suicidality (Lanka & Murshid, 2017; Castaldelli-maia et al., 2012).

However, to prevent the psychological suffering among vulnerable fresher students, mental health literacy (MHL) including specific forms of MHL such as depression literacy is important in developing resilience and coping strategies to deal with such issues, as well as being able to (i) identify problems early, (ii) seek help to relieve the problems, (iii) engage in initiatives to prevent further problems, and (iv) adhere to medication compliance and other issues relating to treatment (see Gabriel and Violato [2010] for a review). Additionally, information concerning MHL can be helpful in awareness programs that have positive effect in decreasing suicidality and mental morbidity (Arafat, Mamun, & Uddin, 2019; Gabriel & Violato, 2010; Shahif et al., 2019).

A previous study reported a low level of depression literacy among Bangladeshi fresher students at Jahangirnagar University (where the present study was carried out), but the study did not examine D-Lit in relation to other variables (e.g., socio-demographics, psychiatric problems etc.) (Arafat, Mamun & Uddin, 2019). Consequently, the present study investigated depression literacy among pre-university students (i.e., who were enrolling in the undergraduate admission test at Jahangirnagar University) and examined their depression literacy scores in relation to socio-demographic (gender, education) and psychiatric (depression, anxiety) status.

Methods

Data from pre-university students at Jahangirnagar University were collected during a three-day period of admission tests. Of approximately 1,200 residing students, 523 students were surveyed. After the removal of incomplete questionnaires, data from 468 students were analyzed. The survey

comprised questions relating to socio-demographics (e.g., gender, educational attainment), as well as a number of psychometric instruments including the Bangla Depression Literacy Questionnaire (Bangla D-Lit-20; Arafat et al., 2017; 20 items, scores range from 0-20 where higher scores indicate higher depression literacy; Cronbach's alpha=0.78 in this study); Bangla Patient Health Questionnaire (PHQ-9, Mamun et al., 2019b; nine items, scores range from 0-27; a score of ≥ 10 was used to indicate the presence of depression; Cronbach's alpha=0.73 in this study); and Bangla Generalized Anxiety Disorder (GAD-7; Hossain et al., 2019; seven items, scores range from 0-21; a score of ≥ 10 was used to indicate the presence of anxiety; Cronbach's alpha=0.80 in this study).

Results

Among the 468 participants, 65.8% were male ($n=308$), 69.7% were from a science educational background ($n=326$), 44% were depressed ($n=206$) and 27.1% were anxious ($n=341$) (Table 1). The mean total Bangla D-Lit score was 8.01 (SD=2.88; see Table 2 for overview of depression literacy scores). Significant gender differences were reported for the behavioral and psychotic spectrum of the scale (males had higher depression literacy). Additionally, depressed and anxious participants had highly significant differences in recognition of cognitive symptoms of D-Lit (i.e., 4.24 ± 1.64 vs. 1.90 ± 1.10 , $p<0.001$; and 4.08 ± 1.90 vs. 2.51 ± 1.54 , $p<0.001$) and had lower mean score on management of depression (i.e., 2.10 ± 1.57 vs. 2.44 ± 1.57 , $p=0.019$; and 2.03 ± 1.43 vs. 2.39 ± 1.62 , $p=0.020$) (Table 1).

Discussion

The present study investigated depression literacy among a pre-university student sample, and found that participants had a mean score of 8.01 (out of 20) on the Bangla D-Lit which is higher than the score (6.55) in a previous study among freshers of the same university (Arafat, Mamun, & Uddin, 2019).

Another study using the Bangla D-Lit reported higher scores among medical graduates (11.19), followed by chronically ill patients with spinal cord injuries (9.59), private university graduates (8.34), and depressed patients (7.55) (Arafat, Ahmed, & Uddin, 2018). Outside Bangladesh, lower depression literacy levels have been reported among Indian (paramedical) healthcare professional students (Ram, Chandran, & Basavana, 2017), Sri Lankan undergraduates (Amarasuriya, Jorm, & Reavley, 2015), and Malaysian non-medical students (Khan, Sulaiman, & Hassali, 2019). However, these studies utilized different instruments which limits the comparison of depression literacy scores to that in the present study,

The present study also showed that there were no significant differences of depression literacy between genders, which supports previous Bangladeshi findings among undergraduate freshers (Arafat, Mamun & Uddin, 2018). Other studies have reported heterogeneous findings (i.e., higher mental health literacy and not just restricted to depression literacy) among high school female students in the US (Coles et al., 2016), and a general population male British sample (Swami, 2012). Additionally, males in the present study scored high in their ability to recognize depression somatology (i.e., behavioral and psychotic symptoms). It is well-established that females are more prone to experience psychiatric problems (e.g., females are two to three times more likely to experience depression compared to males; Albert, 2015). However, compared to females, males are more likely to commit suicide and less likely to seek treatment for mental health issues

(Wilhelm, 2009). Therefore, it appears that targeted mental health literacy is needed for females and targeted suicide literacy is needed for males.

Up to pre-university level, the Bangladeshi education system provides education based on three major disciplinary area (i.e., science, arts, and commerce). No previous study has ever examined the relationship between educational attainment and depression literacy in Bangladesh. It was expected that better educated individuals would have higher depression literacy based on previous research (Fonseca, Silva, & Canavarro, 2017), and that previous exposure to health-related education would increase health literacy (Arafat et al., 2018b). However, the present study found no significant results related to depression literacy scores between disciplines.

To date, there have been few studies examining the relationship between psychiatric suffering and mental health literacy. A study of diabetes patients reported low mental health literacy among those who were depressed (Maneze et al., 2016). Lincoln et al. (2006) also suggested that depressed individuals had poor mental health literacy. However, another study found no significant relationship between mental health literacy and the psychological aspects of general health among female students (Bahrami, Bahrami, & Chaman-Ara, 2019). Based on the findings of the present study, although depressed and anxious students had no significant differences on mean depression literacy score, they had significantly higher knowledge concerning the cognitive symptoms of depression (i.e., feeling guilty when they are not at fault, losing confidence and having poor self-esteem, and affecting memory and concentration) and less knowledge concerning the management of depression (i.e., clinical psychologists not being able prescribe antidepressants, cognitive-behavioral therapy being as effective as antidepressants for mild to moderate depression, antidepressants not being being addictive, antidepressants not working straight away, and antidepressants having sedative property which impairs day time activity. This suggests that students those were suffering from mental health disorders had higher knowledge of D-Lit cognitive symptoms, they were less knowledgeable concerning the management of depression. Knowledge concerning the management of depression is beneficial in depression prevention, and can also can help in developing resilience to depressive symptoms.

Limitations and conclusions

This study is limited due to being a cross-sectional study with a relatively small sample. Moreover, the study only assessed depression literacy (i.e., anxiety literacy and more general MHL literacy were not assessed). Despite the limitations, this study provided the novel evidence on (lower) depression literacy among the pre-university students. Moreover, these who were suffering from psychiatric problems (i.e., depression and anxiety) had lower capability to recognize the management of depression. Therefore, educational programs the develop resilience skills are needed to improve the quality of life and to reduce the burden of psychiatric suffering based on findings of the present study.

References

- Albert, P. R. (2015). Why is depression more prevalent in women? *Journal of Psychiatry and Neuroscience*, 40(4), 219-221.
- Amarasuriya, S. D., Jorm, A. F., & Reavley, N. J. (2015). Depression literacy of undergraduates in a non-western developing context: the case of Sri Lanka. *BMC Research Notes*, 8(1), 593.
- Arafat, S. Y., Shams, S. F., Chowdhury, M. H. R., Chowdhury, E. Z., Hoque, M. B., & Bari, M. A. (2017). Adaptation and validation of the Bangla version of the depression literacy questionnaire. *Journal of Psychiatry*, 20(4), e412.
- Arafat, S., Ahmed, S., & Uddin, M. (2018). Depression literacy status in Bangladesh: A cross-sectional comparative observation. *Journal of Behavioral Health*, 7(2), 91-97.
- Arafat, S. M. Y., Mamun, M. A. A., & Uddin, M. S. (2019). Depression literacy among first-year university students: A cross-sectional study in Bangladesh. *Global Psychiatry*, 2(1), 31-36.
- Arafat, S. M. Y., & Mamun, M. A. A. (2019). Repeated suicides in the University of Dhaka (November 2018): Strategies to identify risky individuals. *Asian Journal of Psychiatry*, 39, 84-85.
- Bahrami, M. A., Bahrami, D., & Chaman-Ara, K. (2019). The correlations of mental health literacy with psychological aspects of general health among Iranian female students. *International Journal of Mental Health Systems*, 13(1), 1-7.
- BBC (2019, October 8). Abrar Fahad: Killing of Bangladesh student triggers protests. *BBC News Asia*. Retrieved October 22, 2019, from: <https://www.bbc.com/news/world-asia-49979097>
- Castaldelli-maia, J. M., Saboia, S., Bhugra, D., Polazzo, M., Guerra, A., Andrade, D., ... Ferraz, D. T. (2012). Does ragging play a role in medical student depression - Cause or effect? *Journal of Affective Disorders*, 139(3), 291-297.
- Coles, M. E., Ravid, A., Gibb, B., George-Denn, D., Bronstein, L. R., & McLeod, S. (2016). Adolescent mental health literacy: Young people's knowledge of depression and social anxiety disorder. *Journal of Adolescent Health*, 58(1), 57-62.
- Fonseca, A., Silva, S., & Canavarro, M. C. (2017). Depression literacy and awareness of psychopathological symptoms during the perinatal period. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*, 46(2), 197-208.
- Gabriel, A., & Violato, C. (2010). Depression literacy among patients and the public: A literature review. *Primary Psychiatry*, 17(1), 55-64.
- Hossain, S., Anjum, A., Uddin, M. E., Rahman, M. A., & Hossain, M. F. (2019). Impacts of socio-cultural environment and lifestyle factors on the psychological health of university students in Bangladesh: A longitudinal study. *Journal of Affective Disorders*. 256, 393-403.
- Khan T. M., Sulaiman S. A., & Hassali M. A. (2019). Mental health literacy towards depression among non-medical students at a Malaysian university. *Mental Health in Family Medicine*, 7, 27-35.
- Lanka, S., & Murshid, N. S. (2017). Bullying victimization and mental health outcomes of adolescents in. *Children and Youth Services Review*, 76, 163-169.
- Lincoln, A., Paasche-orlow, M. K., Cheng, D. M., Lloyd-travaglini, C., Caruso, C., Saitz, R., & Samet, J. H. (2006). Impact of health literacy on depressive symptoms and mental health-related quality of life among adults with addiction. *Journal of General Internal Medicine*, 02118, 818-822.
- Mamun, M. A., Hossain, M. S., & Griffiths, M. D. (2019a). Mental health problems and associated predictors among Bangladeshi students. *International Journal of Mental Health and Addiction*. Epub ahead of print. doi:10.1007/s11469-019-00144-8
- Mamun, M. A., Huq, N., Papia, Z. F., Tasfina, S., & Gozal, D. (2019b). Prevalence of depression among Bangladeshi village women subsequent to a natural disaster: A pilot study. *Psychiatry Research*, 276, 124-128.
- Ram, D., Chandran, S., & Basavana, G. B. (2017). Suicide and depression literacy among health professions students in tertiary care centre in South India. *Journal of Mood Disorders*, 7(3), 149-55.
- Shahif, S., Idris, D. R., Lupat, A., & Rahman, H. A. (2019). Knowledge and attitude towards mental illness among primary healthcare nurses in Brunei: A cross-sectional study. *Asian Journal of Psychiatry*, 45, 33-37.

- Swami, V. (2012). Mental health literacy of depression: Gender differences and attitudinal antecedents in a representative british sample. *PLoS One*, 7(11), e49779.
- Wajahat, A. (2014). Harassment due to ragging. *Procedia - Social and Behavioral Sciences*, 113, 129-133.
- Wilhelm, K. A. (2009). Men and depression. *Australian Family Physician*, 38(3), 102-105.

Table 1. Comparison of Bangla D-Lit overall and by gender, education, depression and anxiety status

Variables	Depression Literacy (<i>mean ± SD</i>)						
	D-Lit overall	Biological symptoms	Cognitive symptoms	Behavioral symptoms	Psychotic symptoms	Impact of depression	Management of depression
Gender							
Male (308, 65.8%)	(8.18 ± 2.84)	(1.23 ± 0.78)	(2.86 ± 1.87)	(0.68 ± 0.46) ^a	(0.48 ± 0.73) ^a	(1.33 ± 0.86)	(2.32 ± 1.55)
Female (160, 34.2%)	(7.68 ± 2.94)	(1.30 ± 0.79)	(3.07 ± 1.63)	(0.56 ± 0.49) ^a	(0.33 ± 0.56) ^a	(1.18 ± 0.95)	(2.23 ± 1.63)
Educational attainment							
Science (326, 69.7%)	(8.15 ± 2.80)	(1.30 ± 0.77)	(2.97 ± 1.88)	(0.67 ± 0.46)	(0.42 ± 0.68)	(1.31 ± 0.88)	(2.28 ± 1.56)
Commerce (36, 7.7%)	(7.16 ± 2.80)	(1.25 ± 0.80)	(3.33 ± 1.65)	(0.55 ± 0.50)	(0.41 ± 0.69)	(1.00 ± 0.89)	(1.97 ± 1.46)
Arts (105, 22.4%)	(7.85 ± 3.11)	(1.11 ± 0.81)	(2.71 ± 1.51)	(0.58 ± 0.49)	(0.44 ± 0.06)	(1.26 ± 0.89)	(2.41 ± 1.56)
Depression status							
Depressed (206, 44%)	(8.04 ± 2.88)	(1.29 ± 0.77)	(4.24 ± 1.64) ^a	(0.63 ± 0.48)	(0.47 ± 0.70)	(1.35 ± 0.92)	(2.10 ± 1.57) ^a
Normal (262, 56%)	(7.99 ± 2.89)	1.22 ± 0.80)	(1.90 ± 1.10) ^a	(0.65 ± 0.47)	(0.39 ± 0.66)	(1.22 ± 0.87)	(2.44 ± 1.57) ^a
Anxiety status							
Anxious (127, 27.1%)	(8.03 ± 2.68)	(1.29 ± 0.77)	(4.08 ± 1.90) ^a	(0.62 ± 0.48)	(0.46 ± 0.69)	(1.33, 0.91)	(2.03, 1.43) ^b
Normal (341, 72.9%)	(8.01 ± 2.95)	(1.24 ± 0.79)	(2.51 ± 1.54) ^a	(0.65 ± 0.47)	(0.41 ± 0.67)	(1.26, 0.89)	(2.39, 1.62) ^b

^a $p < 0.01$

^b $p < 0.05$

Table 2. Distribution of Bangla D-Lit item responses

Variables	Yes; <i>n</i> (%)	No; <i>n</i> (%)	Don't know; <i>n</i> (%)
Biological symptoms			
Q6. Sleeping too much or too little may be a sign of depression. (True)	320 (68.4)	61 (13)	74 (15.8)
Q7. Eating too much or losing interest in food may be a sign of depression. (True)	268 (57.3)	92 (19.7)	102 (21.8)
Cognitive symptoms			
Q2. People with depression may feel guilty when they are not at fault. (True)	350 (74.8)	49 (10.5)	64 (13.7)
Q4. Loss of confidence and poor self-esteem may be a symptom of depression. (True)	361 (77.1)	27 (5.8)	74 (15.8)
Q8. Depression does not affect your memory and concentration. (False)	145 (31)	274 (58.5)	38 (8.1)
Behavioral symptoms			
Q9. People may move more slowly or become agitated as a result of their depression. (True)	302 (64.5)	59 (12.6)	100 (21.4)
Psychotic symptoms			
Q1. People speak in a rambling and disjointed way (False)	330 (70.5)	54 (11.5)	80 (17.1)
Q3. Reckless and foolhardy behavior is a common sign of depression. (False)	312 (66.7)	57 (12.2)	99 (21.2)
Q5. People with depression often hear voices that are not there. (False)	180 (38.5)	90 (19.2)	188 (40.2)
Impact of depression			
Q11. Moderate depression disrupts a person's life as much as multiple sclerosis or deafness. (True)	154 (32.9)	72 (15.4)	238 (50.9)
Q12. Most people with depression need to be hospitalized. (False)	94 (20.1)	196 (41.9)	175 (37.4)
Q13. Many famous people have suffered from depression. (True)	251 (53.6)	60 (12.8)	152 (32.5)
Management of depression			
Q10. Clinical psychologists can prescribe antidepressants. (False)	198 (42.3)	93 (19.9)	170 (36.3)
Q14. Many treatments for depression are more effective than antidepressants. (False)	269 (57.5)	39 (8.3)	153 (32.7)
Q15. Cognitive behavioral therapy is as effective as antidepressants for mild to moderate depression. (True)	185 (39.5)	50 (10.7)	219 (46.8)
Q16. Of all the alternative and lifestyle treatments for depression, vitamins are likely to be the most helpful. (False)	122 (26.1)	104 (22.2)	232 (49.6)
Q17. People with depression should stop taking antidepressants as soon as they feel better. (False)	104 (22.2)	128 (27.4)	231 (49.4)
Q18. Antidepressants are addictive. (False)	104 (22.2)	172 (36.8)	188 (40.2)
Q19. Antidepressant medications usually work straight away. (False)	71 (15.2)	170 (36.3)	225 (48.1)
Q20. All antidepressants having sedative property which impairs day time activity. (True)	183 (39.1)	62 (13.2)	222 (47.4)