The Prevalence of Depression, Anxiety and Stress and Their Associated Factors among Malaysian Population: Original Research

ONG SC[1]*, SHAKEEL S[1,2], OOI GS[3]

[1]Discipline of Social and Administrative Pharmacy, School of Pharmaceutical Sciences, Universiti Sains Malaysia, Penang, Malaysia
[2]Faculty of Pharmaceutical Sciences, Dow College of Pharmacy, Dow University of Health Sciences, Karachi-Sind, Pakistan
[3]Discipline of Clinical Pharmacy, School of Pharmaceutical Sciences, Universiti Sains Malaysia, Malaysia

ABSTRAK

Peningkatan prevalens gangguan mental dan kesannya terhadap beban penyakit global ialah kekhuatiran kesihatan awam yang semakin menjadi-jadi. Kajian ini adalah untuk menilai prevalens kemurungan, tekanan dan keresahan dalam kalangan masyarakat Malaysia dengan menggunakan ujian skala Depression Anxiety and Stress Scale-21 (DASS-21) dan mengenal pasti perkaitannya dengan skala Belief of Depression Questionnaire (BDQ). Kajian keratan rentas telah dijalankan dalam kalangan masyarakat Malaysia melalui kaedah persampelan mudah dari Oktober hingga Disember 2019. Skala DASS-21 dan BDQ digunakan untuk meneroka tahap kesihatan mental dan kepercayaan responden terhadap keadaan kesihatan mental mereka. Kelulusan jawatankuasa etika institusi dan persetujuan bertulis peserta telah diperoleh sebelum kajian dimulakan. Pekali korelasi pangkat Spearman digunakan untuk menentukan perkaitan antara skor DASS. Seramai 462 responden telah diambil dalam kajian ini. Hasil kajian menunjukkan bahawa responden mengalami tahap tekanan yang ringan (min=14.5 $\pm$ 10.3), tahap keresahan yang sederhana (min= 12.1 $\pm$ 10.0) dan tahap kemurungan yang ringan (min=11.9 $\pm$ 10.8). Gejala utama yang diperhatikan ialah keletihan (68.4%), tenaga berkurangan (46.8%), dan pening (44.2%). Senaman (82.9%), penerapan kerohanian (81.2%) dan mengubah "cara saya berfikir tentang diri saya" (79%) adalah faktor utama yang dilaporkan membantu oleh responden untuk mengawal atau menyembuhkan keadaan mereka. Kajian itu melaporkan prevalens kemurungan, tekanan dan keresahan yang lebih tinggi dalam golongan yang lebih muda, wanita, India, bercerai/belum berkahwin dan responden yang berpendapatan bulanan rendah. Mengambil kira

Address for correspondence and reprint requests: Dr. Siew Chin Ong. Discipline of Social and Administrative Pharmacy, School of Pharmaceutical Sciences, Universiti Sains Malaysia, Penang, Malaysia. Tel: +604-6533888 Email: siewchinong@usm.my; oschin99@yahoo.com

hasil kajian ini, adalah penting untuk membangunkan program kesihatan mental asas dan sekunder berasaskan bukti dan bersesuaian berasaskan komuniti.

Kata kunci: BDQ, DASS-21, kemurungan, keresahan, masyarakat Malaysia, tekanan

ABSTRACT

The rising prevalence of mental disorders and their impact on the global disease burden is an emergent public health concern. The present study was to assess the prevalence of depression, stress and anxiety level among the Malaysian community by using Depression Anxiety and Stress Scale-21 (DASS-21) and identify their correlates by using the Belief of Depression Questionnaire (BDQ). The cross-sectional study was conducted among the Malaysian community through a convenient sampling method from October to December 2019. The DASS-21 and BDQ scales were used to explore the level of mental health and the respondents' belief in their condition. The institutional ethics committee's approval and participants' written consent had been obtained before the commencement of the study. Spearman's rank correlation coefficient was used to determine the association between the DASS scores. A total of 462 respondents were recruited into the study. The outcomes revealed that the respondents fell into mild stress levels (mean=14.5 $\pm$ 10.3), moderate levels of anxiety (mean= 12.1 $\pm$ 10.0), and mild levels of depression (mean=11.9 $\pm$ 10.8). The majorly observed symptoms were tiredness (68.4%), reduced energy (46.8%), and dizziness (44.2%). Exercise (82.9%), spirituality (81.2%), and changing "how I think about myself" (79%) were the majorly reported factors considered helpful by the respondents to control or cure their condition. The study reported a higher prevalence of depression, stress, and anxiety among the younger age group, females, Indians, divorced/ unmarried, and lower monthly income respondents. Considering the results, it is essential to develop evidence-based and suitable community-based primary and secondary mental health prevention programmes.

Keywords: anxiety, BDQ, DASS-21, depression, Malaysian community, stress

INTRODUCTION

Mental health issues are the most widely acknowledged psychosomatic concerns, and their prevalence reflects the psychological well-being of the general population. They are among the most imperative indicators of health that may cause considerable morbidity (Hooten 2016). According to the 2008 report of the World Health Organisation (WHO), one in every five adults suffer from mental conditions in the preceding time, and 29.2% had a history of mental disorder during their lifespan (Saxena et al. 2013). The

prevalence of mental health issues in adults rises from 10.7% in 1996 to 11.2% in 2006, to 29.2% in 2015. Every 3rd person beyond 16 years of age has certain types of mental health problems (Saravanan et al. 2019). For the improvement of mental health, WHO established an evidence-based mental health programme for the years 2013-2020 (Saxena et al. 2013).

Depression is a common and curable mood disorder upsetting more than 300 million people worldwide; characterised by interim emotional reactions to a severe mental health condition accompanying compromised routine functioning (Selvaganapathy et al. 2017). For some individuals, depressed feelings might not only instigate unspeakable sentiments, like panic, feeling of paucity, and frustration, it can be associated with mental and physical morbidities (American Psychiatric Association 2013). The indicators of depression serve as predictors of well-being complications and poor health status, along with the low quality of work as well as work performance. The disorder makes a considerable effect on humanity as it is a multi-risky issue that prompts hindrance in relational, professional, and social work (American Psychiatric Association 2013; Iturralde et al. 2017). It is accompanied by high societal costs and higher functional impairment than several other chronic ailments, including arthritis and diabetes (American Psychiatric Association 2013).

Anxiety is a mental disorder characterised by an unpleasant sensation with uneasiness about future events or the panic of reacting to existing events. It might happen devoid of any recognisable triggering stimulus. In 2013, one in every nine individuals in the world had at least one of the anxiety disorders (American Psychiatric Association 2013). Under stress, an individual's lack of compliance with environmental settings leads to psychological and biological variations, and the individual is at risk of becoming ill (Nahas et al. 2019). The mental well-being of an individual is affected by high paces of mental and social health issues. The intensity of the disorder varies by age, gender, financial pressure, healthy lifestyles, and family associations (Selvaganapathy et al. 2017). Past investigations have comprehended that down-hearted moods among sufferers are common with the potential of expanding. Furthermore, mental disorders are related to a few extreme issues, predominantly self-destructive ideations, substance misuse, and acute infectious diseases. Hence, considering it as a significant health issue, there remains the need to investigate the accountable factors and to provide appropriate psychological counseling to moderate these elements (Nahas et al. 2019; Ithnain et al. 2018).

The Depression Anxiety and Stress Scale (DASS) is an inspirational tool in comparison with other customary measures on account of its more noteworthy disparate strength. The DASS was created to give maximal separation between signs of anxiety and depression. The instrument was primarily developed through factor analysis, preliminary items not

associated with anxiety and depression and finally, another 'stress' scale was developed to formulate the concluding form of the DASS survey (Beaufort et al. 2017). It has been verified that the DASS may consistently classify in depression (DASS-D), anxiety (DASS-A), and stress (DASS-S) scales. The depression subscale measures the nonexistence of motivation, dysphoria, and a lower level of self-respect. The anxiety subscale stated emotional and somatic manifestations of anxiety level and its acute reaction. The stress subscale assessed irritation, annoyance, pressure, and insistent provocation. At present, the two variants of the DASS tools are commonly used, i.e., the originally developed 42-item form (DASS-42) and the summarised 21 items adaptation (DASS-21). DASS-21 has quite a few benefits over DASS-42; fewer items, minor inter factor correlations, and cleaner factor structure (Nanthakumar et al. 2017; Gomez 2016). The majority of DASS studies were conducted on specific populations such as university students, outpatients, medical staff, and secondary school instructors (Selvaganapathy et al. 2017; Ithnain et al. 2018; Beaufort et al. 2017; Nanthakumar et al. 2017). However, there is limited information covering mental health concerns among Malaysia's urban communities, and we were unable to identify publications focused particularly on the severity of depression, anxiety, and stress.

The Belief of Depression Questionnaire (BDQ), a scale based on Leventhal's common-sense model (CSM) recommends that every patient has their own belief about disease along 5 cognitive measurements: identity, cause, fix/control, results, and course of events. These intellectual disease observations, alongside passionate interpretations of the condition, could determine the patient's decisions of adapting methodologies and therefore may impact the consequence of the disease (De Las Cuevas & de Leon 2019; Glattacker et al. 2018). Early discovery and prevention of psychological issues are therefore fundamental to timely cure the condition (Nahas et al. 2019). Hence, the current study was carried out to observe the prevalence of depression, anxiety, and stress and their associated predictors among the Malaysian community using DASS-21 and their approach towards their mental health condition using BDQ. The outcomes of this study may possibly assist in generating evidence-based community mental health plans. Besides, the outcomes will help in identifying the aspects related to mental health problems among the Malaysian community and notifying public health authorities about prioritising the activities in identical settings in Malaysia.

MATERIALS AND METHODS

Study Settings

The cross-sectional study was conducted among the Malaysian community through a convenient sampling method from October to December 2019. The survey was conducted to recruit as many respondents as possible across the

different states of Malaysia from different age groups, gender, and ethnicities within the study period. The contributions were intentional, and the individuals who consented provided signed informed consent forms and allowed to withdraw at any time from the study without giving any reason. The institutional ethics committee's approval (PPSF HECU 2019/008) was obtained before the commencement of the study.

Sample Size Estimation and Sampling Procedure

Raosoft, an online sample size calculator (2004 by Raosoft, Inc., Seattle, WA, USA), was used to calculate the required sample size with a 5.0% margin of error, 50.0% response distribution and confidence level of 95.0% (Omair 2014). The calculated sample size was 377. With additional 20.0% to account for possible data attrition, the required sample size was 453 participants. The public was conveniently approached in all potential public areas. Participants could answer a web-based (Google Forms) or a paper-based self-administered questionnaire based on their preferences. The survey link of the Google Forms was also promoted through social media platforms to reach out the public to participate in the study. The respondents included in the study were Malaysian citizens; above 18 years; understood English or Malay language and agreed to participate in the study by giving the written informed consent. Individuals with comprehension difficulties were excluded as it could have compromised their contribution to the study.

Study Instruments

The survey form consisted of two sections, i.e. socio-demographic characteristics and psychological health. The DASS-21 contains 21 items, and every emotional stage has 7 items. The respondents were to rate the level at which they have encountered in the previous week. Every item was recorded on a 4-point Likert scale (0 means 'Did not apply at all', 1 indicates 'Applied to some degree', 2 indicates 'Applied to a considerable degree', and 3 shows 'Applied most of the time'). According to DASS guidebook instructions, scores from every subscale were summarised and multiplied by two to match with the inventive 42-items. Every score in subscale will be at some point in the range of 0 and 42 with greater scores showing higher levels of suffering (Nanthakumar et al. 2017; Gomez 2016). Both English and Malay language versions of DASS-21 have been validated for use in Malaysia, therefore the questionnaire was used directly in the study without any changes made (Ramli et al. 2007; Abd Majid et al. 2019).

The BDQ section consists of five subsections focusing on symptoms, causes, duration, control or cure and consequences of the condition as perceived by respondents with a 6-point Likert scale beginning from 1 = 'Strongly disagree' towards 6 = 'Strongly agree' (De Las Cuevas & de Leon 2019; Glattacker et al.

2018). The BDQ scale was used to determine the respondents' approach towards their mental health condition along 5 cognitive measurements: identity, cause, fix/control, results, and course of events. The original English version of the BDQ was translated into Malay language according to the international guidelines, i.e., through forward-backward translation method. An expert panel consisting of two academic pharmacists and expert in the field of health services research and two bilinguals with medical background who were fluent in both English and Malay languages assessed the content and face validity of the translated questionnaire. Ten local Malaysians who knew the Malay language well as native speakers of Malay language and ten Malaysians with good command of English language were selected for pilot testing the Malay and English versions of the questionnaire, respectively. Their comments and recommendations were recorded by the researchers.

Statistical Analysis

Table 1: Characteristics of study population (n=462)

	Frequency (%)
Age, mean S.D. years: 29.37 11.48; Median (IQR): 24 (17)	
Gender n (%)	
Male	146 (31.5)
Female	316 (68.3)
Level of education	
Secondary school	38 (8.2)
College/Pre-University/Diploma	122 (26.3)
Undergraduate	240 (51.8)
Postgraduate	62 (13.4)
Ethnic group	
Malay	366 (79.0)
Chinese	77 (16.6)
Indian	10 (2.2)
Others	9 (1.9)
Resident state	
Northern Region	222 (48.0)
East Coast Region	63 (13.6)
Central Region	84 (18.1)
Southern Region	75 (16.2)
East Malaysia	18 (3.8)
Marital status	
Single	304 (65.7)
Married	149 (32.2)
Divorced	3 (0.6)
Widowed	6 (1.3)
Monthly income	
Less than RM 1000	155 (33.5)
RM 1000- RM 3999	150 (32.4)
RM 4000- RM 6999	102 (22.0)
RM 7000- RM 9999	40 (8.6)
More than RM 10,000	15 (3.2)

Table 2: Prevalence of Stress, Anxiety and Depression (n=462)

Level of DASS	Stress		Anxiety		Depression	
	n	%	n	%	n	%
Normal	275	59.4	179	38.7	224	48.4
Mild	44	9.5	36	7.8	60	13.0
Moderate	74	16.0	96	20.7	88	19.0
Severe	37	8.0	44	9.5	36	7.8
Extremely severe	32	6.9	107	23.1	54	11.7
DASS-21 Score	Mean $\pm$ S.D.					
Depression score	11.9 ± 10.8					
Anxiety score	12.1 ± 10.0					
Stress score	14.5 ± 10.3					

Descriptive data examination was done by using IBM SPSS version 20 (IBM Corp, Armonk, NY, USA) software. The descriptive statistics of every item i.e. frequency and percentage were evaluated. The Chi-Square, or t-test, was used wherever applicable to evaluate the dissimilarities in means of DASS scores associated with independent variables. Non-normal distribution of data was confirmed through the Shapiro-Wilk test, therefore Kruskal-Wallis test or Mann-Whitney test was used wherever applicable. The significant level was fixed at $p<0.05$. Spearman's rank correlation coefficient was used to determine the association between the DASS scores. Internal consistency of the questionnaire was assessed using Cronbach's alpha coefficients.

Ethical Considerations

The research has been reviewed and approved by the appropriate ethics review committee (Human Ethics Committee, School of Pharmaceutical Sciences, Universiti Sains Malaysia. Reference Number: PPSF HECU 2019/008).

RESULTS

Demographic Characteristics

Overall, 462 survey forms were included in the study yielding a response rate of 99.0%. The mean age of the respondents was 29.4 ± 11.5 years. Female respondents were more as compared to males (68.3% vs. 31.5%). More than half (51.8%) of the respondents had an undergraduate education level. Most of the respondents, 366 (79.0%), were Malay followed by Chinese (n=77, 16.6%). The majority of the respondents n=304, 65.7% were single (Table 1).

DASS-21

The mean score and standard deviation of items and subscales, in addition to the numeral figures and portions of respondents scoring, are illustrated in Table 2. The face and content validity of the questionnaire were deemed

Table 3: Cross-tabulation of respondents' demographics with DASS Score (n=462)

Characteristics	Frequency (%)					p-value
	Depression Score					
	Normal	Mild	Moderate	Severe	Extremely severe	
Gender						
Male	83(17.9)	10(2.1)	25(5.4)	13(2.8)	15(3.2)	0.034*
Female	141(30.5)	50(10.8)	63(13.6)	23(4.9)	39(8.4)	
Age						
18-20 years	45(9.7)	16(3.4)	36(7.7)	8(1.7)	18(3.8)	0 0.0001*
21-30 years	73(15.8)	21(4.5)	29(6.2)	18(3.8)	30(6.4)	
31-40 years	46(9.9)	7(1.5)	9(1.9)	6(1.2)	3(0.6)	
41-50 years	45(9.7)	9(1.9)	7(1.5)	3(0.6)	3(0.6)	
51-60 years	15(3.2)	7(1.5)	7(1.5)	1(0.2)	0(0)	
Level of education						
Secondary school	20((4.3)	4(0.8)	8(1.7)	3(0.6)	3(0.6)	0.733
College/Pre-University/Diploma	59(12.7)	11(2.3)	23(4.9)	9(1.9)	20(4.3)	
Undergraduate	110(23.8)	38(8.2)	47(10.1)	19(4.1)	26(5.6)	
Postgraduate	35(7.5)	7(1.5)	10(2.1)	5(1.0)	5(1.0)	
Ethnic group						
Malay	175(37.8)	52(11.2)	64(13.8)	28(6.0)	47(10.1)	0.400
Chinese	41(8.8)	8(1.7)	19(4.1)	5(1.0)	4(0.8)	
Indian	4(0.8)	0(0)	2(0.4)	2(0.4)	2(0.4)	
Others	4(0.8)	0(0)	3(0.6)	1(0.2)	1(0.2)	
Marital status						
Single	124(26.8)	40(8.6)	66(14.2)	28(6.0)	46(9.9)	0.0001*
Married	96(20.7)	19(4.1)	20(4.3)	8(1.7)	6(1.2)	
Divorced	1(0.2)	0(0)	0(0)	0(0)	2(0.4)	
Widowed	3(0.6)	1(0.2)	2(0.4)	0(0)	0(0)	
Monthly income						
Less than RM 1000	53(11.4)	22(4.7)	42(9.0)	11(2.3)	26(5.6)	0.002*
RM 1000- RM 3999	70(15.1)	21(4.5)	27(5.8)	13(2.8)	20(4.3)	
RM 4000- RM 6999	62(13.4)	11(2.3)	14(3.0)	9(1.9)	6(1.2)	
RM 7000- RM 9999	28(6.0)	5(1.0)	4(0.8)	2(0.4)	1(0.2)	
> RM 10,000	11(2.3)	1(0.2)	1(0.2)	1(0.2)	1(0.2)	
	Stress Score					
Gender						0.055*
Male	90(19.4)	11(2.3)	30(6.4)	11(2.3)	4(0.8)	
Female	185(40.0)	33(7.1)	44(9.5)	26(5.6)	28(6.0)	
Age						
18- 20 years	57(12.3)	17(3.6)	24(5.1)	13(2.8)	12(2.5)	0.001*
21-30 years	95(20.5)	12(2.5)	27(5.8)	20(4.3)	17(3.6)	
31-40 years	51(11.0)	4(0.8)	15(3.2)	1(0.2)	0(0)	
41-50 years	51(11.0)	6(1.2)	5(1.0)	2(0.4)	3(0.6)	
51-60 years	21(4.5)	5(1.0)	3(0.6)	1(0.2)	0(0)	
Level of education						
Secondary school	22(4.7)	3(0.6)	8(1.7)	4(0.8)	1(0.2)	0.487
College/Pre-University/Diploma	65(14.0)	10(2.1)	21(4.5)	14(3.0)	12(2.5)	
Undergraduate	144(31.1)	25(5.4)	38(8.2)	16(3.4)	17(3.6)	
Postgraduate	44(9.5)	6(1.2)	7(1.5)	3(0.6)	2(0.4)	

Ethnic group						
Malay	218(47.1)	32(6.9)	58(12.5)	31(6.7)	27(5.8)	0.007*
Chinese	49(10.6)	8(1.7)	13(2.8)	4(0.8)	3(0.6)	
Indian	4(0.8)	1(0.2)	2(0.4)	2(0.4)	1(0.2)	
Others	4(0.8)	3(0.6)	1(0.2)	0(0)	1(0.2)	
Marital status						
Single	159(34.4)	31(6.7)	56(12.1)	31(6.7)	27(5.8)	0.004*
Married	109(23.5)	13(2.8)	17(3.6)	5(1.0)	5(1.0)	
Divorced	1(0.2)	0(0)	1(0.2)	1(0.2)	0(0)	
Widowed	6(1.2)	0(0)	0(0)	0(0)	0(0)	
Monthly income						
Less than RM 1000	74(16.0)	18(3.8)	30(6.4)	16(3.4)	16(3.4)	0.003*
RM 1000- RM 3999	84(18.1)	11(2.3)	32(6.9)	14(3.0)	10(2.1)	
RM 4000- RM 6999	71(15.3)	11(2.3)	9(1.9)	7(1.5)	4(0.8)	
RM 7000- RM 9999	33(7.1)	4(0.8)	2(0.4)	0(0)	1(0.2)	
> RM 10,000	13(2.8)	0(0)	1(0.2)	0(0)	1(0.2)	

*p-value < 0.05 was considered as statistically significant

satisfactory to the expert panel and the Cronbach alpha was found to be 0.96 for DASS scores. The outcomes revealed that the respondents fell into mild stress levels (mean=14.5 $\pm$ 10.3), moderate levels of anxiety (mean= 12.1 $\pm$ 10.0), and mild levels of depression (mean=11.9 $\pm$ 10.8). In the present study, 16.0% of the respondents revealed moderate stress whereas, 8.0% and 6.9% showed severe and extremely severe level of stress, respectively. More than half of the respondents (53.3%) showed moderate to extremely severe level of anxiety. Moderate, severe, and extremely severe level of depression were observed in 19.0%, 7.8% and 11.7% of the respondents, respectively.

Statistically significant associations were observed between mean DASS scores and the demographic characteristics of respondents (Table 3). Females were found to be more depressed as compared to males (mean depression score for females 12.3 vs. males 11.0, *p=0.034*) (Table 4). Female respondents were more likely to feel that they were using a lot of nervous energy (females 50.4% vs. males 19.6%, *p= 0.019*), felt down-hearted and blue (females 45.2% vs. males 16.0%, *p= 0.013*), felt that life was meaningless (females 25.3% vs. males 12.5%, *p= 0.047*) and worried about situations in which they might panic and make a fool of themselves (females 48.2% vs. males 18.3%, *p= 0.007*). It was observed that anxiety was not found to be significantly varied by gender. The DASS scores were found to be statistically associated with age, in which younger respondents (18-20 years of age) were found to be more depressed, anxious and stressed up as compared to the older age groups. There was no statistically significant association between DASS scores and the level of education of respondents. Statistically significant associations were observed between DASS scores and the marital status of the respondents. The mean DASS scores for depression (21.3), stress (20.0), and anxiety (16.0) scales were higher in divorced respondents.

Table 4: Mean DASS Scale Scores among respondents' demographics (n=462)

	Characteristics	DASS Mean score	p-values
Depression Score			
Gender	Female	12.3	*0.034**
	Male	11.0	
Age groups	18- 20 years	14.3	*0.0001**
	21-30 years	14.1	
	31-40 years	8.1	
	41-50 years	7.3	
	51-60 years	8.3	
Ethnicity	Malay	12.1	*0.400*
	Chinese	10.1	
	Indian	15.6	
	Others	13.8	
Marital status	Single	13.9	*0.0001**
	Married	7.7	
	Divorced	21.3	
	Widowed	6.7	
Level of education	Secondary school	10.5	*0.412*
	College/Pre-University/Diploma	12.9	
	Undergraduate	12.1	
	Postgraduate	10.0	
Monthly income	Less than RM 1000	14.7	*0.002**
	RM 1000- RM 3999	12.5	
	RM 4000- RM 6999	9.2	
	RM 7000- RM 9999	6.7	
	> RM 10,000	7.3	
Stress score			
Gender	Female	13.3	*0.055**
	Male	15.1	
Age groups	18- 20 years	17.0	*0.0001**
	21-30 years	16.1	
	31-40 years	10.5	
	41-50 years	11.2	
	51-60 years	11.9	
Ethnicity	Malay	14.9	*0.007**
	Chinese	12.2	
	Indian	17.4	
	Others	14.7	
Marital status	Single	16.1	*0.004**
	Married	11.4	
	Divorced	20.0	
	Widowed	9.0	
Level of education	Secondary school	13.6	*0.487*
	College/Pre-University/Diploma	16.4	
	Undergraduate	14.3	
	Postgraduate	12.0	
Monthly income	Less than RM 1000	17.2	*0.003**
	RM 1000- RM 3999	15.3	
	RM 4000- RM 6999	11.9	
	RM 7000- RM 9999	9.5	
	> RM 10,000	10.0	

Anxiety Score			
Gender	Female	10.7	*0.301*
	Male	12.8	
Age groups	18- 20 years	14.6	*0.0001**
	21-30 years	13.8	
	31-40 years	9.1	
	41-50 years	8.0	
	51-60 years	9.3	
Ethnicity	Malay	12.5	*0.334*
	Chinese	9.7	
	Indian	13.8	
	Others	14.0	
Marital status	Single	13.7	*0.008**
	Married	9.0	
	Divorced	16.0	
	Widowed	6.7	
Level of education	Secondary school	10.1	*0.230*
	College/Pre-University/Diploma	13.3	
	Undergraduate	12.4	
	Postgraduate	9.9	
Monthly income	Less than RM 1000	14.6	*0.001**
	RM 1000- RM 3999	13.4	
	RM 4000- RM 6999	8.6	
	RM 7000- RM 9999	8.0	
	> RM 10,000	8.8	

*p-value < 0.05 was considered as statistically significant

Besides, the single ones were having higher DASS scores than married respondents with the mean depression score (13.9 vs. 7.7, *p=0.0001),* stress score *(*16.1 vs. 11.4, *p=0.004*), and anxiety scores (13.7 vs. 9.0, *p=0.008*). Stress score (17.4) was higher in Indians as compared to the other ethnicities (*p=0.007*). The monthly income of respondents had an influence on respondents' mental health status. The mean depression score (14.7, *p=0.002*), stress score (17.2, *p=0.003*), and anxiety scores (14.6, *p=0.001*) were higher in respondents having lower monthly income as compared to those having a higher monthly income. For the determination of correlation between DASS scores, Spearman rank tests were used. A strong positive correlation was observed between depression and stress scores (*p=0.001*; r=0.7), depression and anxiety scores (*p=0.001*; r=0.7), and stress and anxiety scores (*p=0.001*; r=0.7).

BDQ

The face and content validity of the questionnaire were found to be satisfactory, and the Cronbach alpha was 0.9 for BDQ scores. In the current study, only 11.4% of the respondents have ever gone for a medical check-up for their mental health. The response was significantly associated with gender *(p=0.006),* level of education *(p=0.017),* ethnic group *(p=0.0001)* of the respondents. The majorly observed symptoms were tiredness

(68.4%), reduced energy (46.8%), and dizziness (44.2%) (Table 5). Younger respondents (18-20 years of age) were more likely to report the overall symptoms of depression *(p=0.001)*. Unmarried respondents reported more symptoms including lack of hope for the future (23.1% vs. 5.1%, *p=0.0001*), feeling of a black cloud (30.7% vs.9.7%, *p=0.001*), and suicidal thoughts (14.7% vs. 2.1%, *p= 0.0001*) as compared to married respondents. Malays reported more tiredness (58.2% vs. 10.3%, *p=0.0001*), pain (27.9% vs. 4.7%, *p=0.008*), breathlessness (8.6% vs. 4.1%, *p=0.03*), incapable to enjoy things (24.4% vs. 4.5%, *p=0.015*), and reduced energy (40.2% vs. 6.9%, *p=0.004*) as compared to other ethnicities. The respondents having lower monthly income reported lack of hope for their future (*p=0.001*), feeling of a black cloud (*p=0.001*), changes in appetite (*p=0.004*), reduced energy (*p=0.001*), tiredness (*p=0.001*), and suicidal thoughts (*p=0.005*).

The majorly reported reasons by the respondents for their mental status were their own flaws (54.6%), overdoing things (49.6%), lack of confidence (47.3%), and unresolved problems from the past (46.2%). Female respondents were more likely to believe that the hormonal changes (*p=0.003*) and inherited/genetic factors *(p=0.001)* were responsible for their mental health condition. Younger respondents (18-20 years of age) assumed that their personal flaws (13.4% vs. 10.6%, *p=0.0001*) and unresolved problems from the past (10.3% vs. 3.2%, *p=0.001)* were the majorly considerable factors.

Unmarried respondents considered their mental condition a result of their personal flaws (unmarried 10.3% vs. married 6.0%, *p=0.001*) and unresolved problems from the past (unmarried 12.3% vs. married 3.8%, *p=0.011*). Single *(p=0.009)* and younger *(p=0.001)* respondents having a low monthly income *(p=0.014)* were more likely to consider that they will always have this condition.

Exercise (82.9%), spirituality (81.2%), and changing "how I think about myself" (79.0%) were the majorly reported factors considered helpful by the respondents to control or cure their condition. The responses vary significantly by gender *(p=0.015)* and marital status (*p=0.003*) of the respondents. Malays were more likely to consider that changing how they think about themselves (23.1% vs. 3.4%, *p=0.015*), keeping busy (19.6% vs. 2.8%, *p=0.008*), spirituality (11.2% vs. 2.5%, *p=0.004*), and counseling therapy (12.5% vs. 2.1%, *p=0.004*) as the major useful influences to cure their mental condition. Youngsters seemed to be helpless and did not know that what will help them to control their mental condition *(p=0.001)*. Hiding their feelings from other people (58.7%), my condition affects how others see me (55.2%), and avoiding other people (53.3%) were the reported consequences by the respondents of their condition. The responses vary significantly by age *(p=0.001)*, marital status *(p=0.0001)*, and monthly income *(p=0.004)* of the respondents.

Table 5: Respondents perceived responses of BDQ items

Respondents perceived symptoms related to their condition	Yes (%)	No (%)
Lack of hope for the future	27.8	71.9
Pain	32.6	66.9
Feeling of a black cloud hanging over me	40.3	59.3
Changes in appetite	30.6	69.1
Breathlessness	12.7	87.0
Agitation	34.1	65.6
Suicidal thoughts	16.8	82.9
Reduced energy	46.8	52.9
Tiredness	68.4	31.3
Dizziness	44.2	55.5
Weight loss	17.7	82.0
Unable to enjoy things	28.9	70.8
Muscle aches	38.0	61.7
Short tempered	42.9	56.8
Respondents perceived reasons for their mental status	**Agree (%)**	**Disagree (%)**
Low esteem/ lack of confidence	47.3	52.5
My personal flaws	54.6	45.1
Unresolved problems from the past	46.2	53.5
Problems from childhood	28.0	71.7
Problems with relationships	43.8	55.9
Loss of loved ones	31.7	68.0
Work	48.3	51.4
Physical illness	25.2	74.5
Hormonal changes	44.0	55.7
Inherited/ genetic factors	16.4	83.3
Overdoing things	49.6	50.1
I don't know what caused my condition	38.8	60.9
Respondents perceived factors to control/cure their mental status	**Agree (%)**	**Disagree (%)**
Changing how I think about myself	79.0	20.7
Changing my behavior	78.6	21.1
Spirituality/ religious beliefs	81.2	18.5
I can't do anything to alter my condition	22.2	77.5
I don't know what will help	36.0	63.7
Counselling/ therapy	69.7	30.0
Support from family or friends	78.1	21.5
Support from health professionals	70.1	29.5
Keeping busy	72.1	25.2

Taking medication prescribed	44.7	55.0
Natural medicines	51.1	48.5
Exercise	82.9	16.8
Respondents perceived consequences for their mental status	**Agree (%)**	**Disagree (%)**
I do not want to go out	46.2	53.5
I neglect myself	38.2	61.5
I feel I have to hide how I feel from other people	58.7	41.0
I want to avoid other people	53.3	46.4
Having this condition makes me a stronger person	51.8	47.9
There is a stigma	46.6	53.1
My condition affects how others see me	55.2	44.4

DISCUSSION

The current research assessed the prevalence of stress, anxiety, and depression levels among the Malaysian community. The respondents experienced a range of psychosocial stressors that expanded their possibility of significant depression and other mental health problems. It is worthy to investigate the psychosocial factors, as these are potentially modifiable and could be the focal point of respondents' explicit psychological well-being mediations (Ministry of Health Malaysia 2015; Lugova et al. 2021). The current study reported that respondents were having higher scores for anxiety and depression scales. The results of a national study in Malaysia, which employed the Mini International Neuropsychiatry Interview (MINI), revealed that present depression (1.8%) and generalised anxiety disorder (GAD) (1.7%) were considerably lower in adult population (Ministry of Health Malaysia 2015). Another study among outpatients in Selangor reported similar prevalence rates of moderate anxiety (22.4%) while lower

prevalence of severe anxiety (10.6%) (Manaf et al. 2016). The different study instruments could have contributed to the differences in the outcomes. Notably population-based studies that utilised the same instrument as this study found comparable rates of depression, anxiety, and stress. Research in urban, high-density areas in Iran using the DASS inventory discovered a prevalence of depression of 29.0%, which is comparable with the findings of this study (Mirzaei et al. 2019). The Malaysian studies based on DASS were majorly directed among particular sets of the population. Several DASS studies directed to Malaysian university students pointed towards a higher incidence of mental disorders among this susceptible population. However, there is little information available regarding mental health issues among the general population in Malaysia. Moreover, we were unable to find publications that focused specifically on the severity of depression, anxiety, and stress.

In the current study, the mean depression, stress, and anxiety scores were higher in younger respondents

as compared to older age groups. Another study revealed that senior respondents were having lower anxiety level because they adapted better time managing skill and intellectual adjustments to social pressure (Yahaya et al. 2018). The younger age associating with depression is well-supported by the outcomes of the national survey in Malaysia that indicated younger individuals between 16-24 years of age, females, Indian ethnicity, and single individuals showed a higher level of depression and anxiety (Ministry of Health Malaysia 2015; Amir Hamzah et al. 2019). On the other hand, another research discovered that the frequency of depression was higher among older individuals (Mirzaei et al. 2019).

Secondly, marital status was shown to be related to stress in this study. Specifically, our findings showed that single, widower or divorced people were more stressed than married people. Similar findings were reported in other studies where singles were observed with higher levels of depression, anxiety, mood disorders, adjustment problems, other forms of psychological distress, and lower emotional well-being than partnered individuals (Mirzaei et al. 2019). This could be due to married or partnered couples could share negative feelings and their problems with their counterpart. Relationship status have an impact on psychological well-being through better social support, being a key component in promoting better mental health and avoiding psychological distress (Braithwaite et al. 2010; Adamczyk & Segrin 2015).

Thirdly, the current findings revealed

that the mean depression score was higher in females as compared to males. Similar outcomes were reported by another study revealing the higher prevalence of depressive symptoms in females as compared to males (Mirzaei et al. 2019). This dissimilarity among genders can be attributed to cultural restrictions, socioeconomic disadvantage, and violence. The social challenges, hormonal factors, and pressure brought about by the regular challenging tasks are equally significant elements for mental health issues among females (Segrin & Domschke 2011). Besides, females may experience emotional pressure because of higher self-desires and sentiment of the absence of competency. Additionally, they tend to over-express their physical and mental health symptoms (Abd Majid et al. 2019). Conveying their feelings might be one of the manners in which females adapt to unpleasant occasions. In the present study, the stress scores revealed a significant association with ethnicity and Indians were having higher mean scores. Similar findings were reported by another study conducted in Malaysia revealing the significant differences in the scores of perceived stress by marital status and ethnicity (Lugova et al. 2021).

In the current study, the mean depression, stress, and anxiety scores were higher in respondents having lower monthly income as compared to those having a higher monthly income. The individuals having low monthly income are among the most susceptible groups as it is evident that social stress found in the urban

surroundings is generally mediated by poverty (Kokaliari 2018). It is obvious that low socioeconomic position is certainly related to depression, stress, and anxiety and this connotation is multifaceted and highly complex. Surviving in a situation with a smaller amount of income than one needs might induce mental health complications through a stress response pathway (Flores et al. 2017). Besides, there is evidence that poverty can be an outcome of suffering from mental disorders through the conception of "social drift" (James et al. 2017). According to the findings of our study, non-Indian ethnic groups experienced severe or extremely severe depression, anxiety, and stress. Our findings were similar to the findings of the NHMS II, which revealed that the non-Indian ethnic group had a greater prevalence of sadness and anxiety (Ministry of Health Malaysia 2015).

In the BDQ items, the major symptoms observed were tiredness, reduced energy, and dizziness. Younger respondents (18-20 years of age) were more likely to report the overall symptoms of depression. Physical signs and behaviour fluctuations due to depression may consist of reduced energy, continuing fatigue, or a sensation of lethargy (Rotenstein et al. 2016). The major factor that the respondents think would help them to control or cure their condition were exercise, spirituality, and changing their perception about themselves. Spirituality has been recognised as contrarily associated with indications of depression and self-destructive ideation. Another study reported the

positive and significant relationship between spirituality and the mental health of respondents (Negi et al. 2019). On the other hand, research has also shown that physical activity can help relieve depression (Pillay et al. 2016). Individuals with mental health issues may experience difficulty in carrying out conventional work routines or sustaining social obligations. This could be due to the symptoms of the disease, including helplessness to focus, recall issues, and trouble in deciding (Talib & Abdollahi 2017). On inquiring about the consequences of their condition; stigma, feeling to hide how they feel from others and desire to avoid other people were the major concerns the respondents faced due to their condition. Individuals with mental disorders generally fight a two-edged sword battle. Managing the symptoms of the disorder itself is problematic enough whereas misunderstandings of the illness generates additional problems including having negative connotations-'stigma' and discrimination (Hussain & Griffiths 2018). Stigma and discrimination are recognised to be the major obstacles to mental health recovery, mental health help-seeking, and social inclusion (Hussain & Griffiths 2018). Research has shown that social isolation can anticipate expanded morbidity and mortality, diminished quality of life, wellbeing, and prosperity. Social segregation has additionally been demonstrated to be related to psychological wellness concerns, including suicide and intellectual weakness, and dementia (Chow et al. 2017; Chang et al. 2019).

This study adds to the existing information by emphasising the importance of mental health concerns among Malaysia urban-dwelling people and investigating the association between socio-demographic variables and the severity of depression, anxiety, and stress in this group. The adoption of a robust sample design and random sampling procedures are the strengths of this work. Another strength of the study is that it was done to identify levels of depression, anxiety, and stress in the local community using a validated version of the DASS-21 and BDQ questionnaires in English and local Malay language.

The current study has some limitations; the study was cross-sectional which may not reasonably comprehend a cause–effect relationship among the independent variables and DASS scores. The survey was based on the responses indicating that how much the questionnaire items can apply to respondents over the past week. To reduce recall bias, the researchers gave emphasis to the significance of responding to questions as carefully as possible.

To address the mental health issues experienced by the local community, free counseling service in the form of telemedicine should be made nationwide in multiple language choices. It might sound cliche, but it would be effective if well-trained counselors are involved in the process. Counseling will act as a triage, determining if one requires further referral for formal psychiatric evaluation and care. Meanwhile, others may benefit from supportive interventions such as empathic listening, psychoeducation or supportive therapy (Sidi 2020). It is thus important to remove the hurdles that are obstructing people from approaching counselors for help. Emphasis should be given to break the stigma that seeking help is a sign of weakness or incapability (Giovazolias et al. 2010). Furthermore, the one-to-one counseling service could be made available through toll free numbers, or even live chat for those who are too shy to communicate verbally. A systematic review of individual synchronous interventions using chat showed a significant positive effect of online chat counseling, further claimed that online chat counseling is as effective as face-to-face help (Dowling & Rickwood 2013). If those options are inaccessible by the community, other free offline messaging applications which operate using Bluetooth should be made available. However, this effort should be evaluated from time to time to rectify any problem that arises in the process. Moreover, the counselors should be subjected to re-training to guarantee high quality service is provided. Other than that, cognitive behavioral therapy (CBT) could also be one of the interventions in assisting the respondents deal with mental health issues. A randomised controlled trial of culturally adapted CBT (CaCBT) based self-help done in psychiatric departments in three Pakistani cities revealed CaCBT to be effective in reducing depression and anxiety symptoms, as well as somatic symptoms and disability. In this randomised controlled trial, the

researchers utilised an easy-to-use, culturally adapted, self-help book, involving a family member (to support the participant) and psychologists or psychiatrists (to help the family member). They even advocated the use of technology in place of book (Naeem et al. 2014). To accentuate, it is important to involve guardian(s) in the recovering process to improve patient adherence, thus achieving mental health goals effectively. Also, it is worth noting that CBT should be assimilated to Malaysian culture to better suit the local community.

CONCLUSION

The study reported the higher prevalence of depression, stress, and anxiety among the younger age group, females, Indians, divorced/unmarried, and lower monthly income respondents in Malaysia. As mental health problems have a strong impact on the quality of life, comprehensive consideration is vital in forthcoming community health strategies to decrease the factors of mental health risk among the Malaysian community. The interventions for mental health must particularly give emphasis on low-income groups for addressing the social disparities within economically-deprived populations.

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