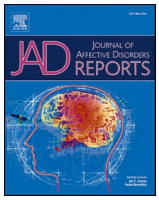
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Research Paper

# The prevalence and underlying factors of mental health disorders in Malaysian youth

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ABSTRACT

This study aims to identify the current state of mental health among youth aged between 15 and 30 years old in Malaysia, using nationally representative data for the year 2020. This data consists of 21,126 respondents from all states in Malaysia. Apart from using inferential analysis to understand the distribution, we used the logit model to identify the factors that affect the likelihood of having three kinds of mental health symptoms, namely depression, stress, and anxiety. Among young people who reported having mental health symptoms, 17 percent have one, 20 percent have two, and 20 percent have all three mental health symptoms. These symptoms and suicide ideation show a significantly different distribution by gender, with females showing a higher incidence than males. Age, gender, ethnicity, income, marital status, social interaction, and physical illness significantly affect the likelihood of exhibiting mental health problems. These findings may be helpful for policymakers and respective agencies in designing appropriate and effective policy measures to address the issue of mental health among youth, particularly in Malaysia.

## 1. Introduction

Population mental health is a vital subject and is often discussed among medical and general societies. However, unlike any other physical illnesses, mental health problems often go undetected because many sufferers are unaware that they are experiencing symptoms of mental health problems. In addition, society's stigma against mental disorders, often associated with 'insanity,' dangerous and hereditary, rarely causes sufferers to come forward for evaluation. Clinically, experts divide mental health into three main dimensions, namely depression, anxiety, and stress. Although it is difficult to differentiate all three, as they are all related to negative affectivity, researchers have developed several scales to distinguish these three symptoms. Negative affectivity is an experience of subjective distress and unpleasant situations (Ref. to Clark and Watson (1991) for more substantive and methodological elaboration).

Depression is a common yet significant mental disease. It profoundly affects our psychological and physical health and everyday routines. The constant feeling of emptiness, hopelessness, sadness, downheartedness, and worthlessness, among others, may suggest that one is experiencing the symptoms of depression. The symptoms must be present constantly for at least two weeks before a diagnosis. Other common symptoms like feeling nervous or panicky, breathing rapidly, sweating, trouble concentrating, and sleeping may suggest that one may suffer from an anxiety problem. A combination of physiological symptoms, including but not limited to muscle tension, elevated heart rate, and perspiring palms, as well as a lack of confidence in one's ability to deal with the perceived threat, characterize anxiety disorders. All these conditions undeniably have affected work productivity and social interaction with family, friends, and colleagues.

Things that can cause us stress are everywhere in today's complex and demanding environment. Individuals endure stress due to their increasingly difficult work and social obligations. If not curbed, it will have adverse effects on public health and the development of the country as a whole. We can observe the characteristics of stress from an emotional point of view (e.g., being easily upset and having difficulty calming down), physical (e.g., headache and chest pains symptom), cognitive (e.g., difficulty focusing and forgetfulness), and finally, behavioral (e.g., change in appetite, nail-biting, fidgeting). Mental distress begins in early adulthood. Thus initiatives targeting their early detection and treatment may help mitigate the development of secondary disorders (Kessler et al., 2007).

Suicide is one of the primary causes of mortality among teenagers

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between the ages of 15 and 19, and it claims the lives of more than 700,000 people worldwide each year, mostly in low and middle-income nations (WHO, 2021). The difficulties of modern living render them highly delicate and prone to mental illness. Studies within the context of low and middle-income countries reported that while the symptoms of depression or anxiety and the need for specific intervention can be pretty high, the services are still inadequate (Rathod et al., 2017). Socioeconomic conditions like poverty, low-income family relationships, lack of social support, employment status, and limited access to medical care can be the root cause of mental health problems (Alegría et al., 2018; Gaur and Ram, 2016; Bartelinket al.,2020; Sulistiowati et al., al.,2020). There is also evidence that the unprecedented impact of the COVID-19 pandemic has had a substantial influence on the economy and public health. Several people suffer from mental illness as a direct result, including adolescents (Branje and Morris, 2021; De Luca et al., 2022).

According to the findings of the National Health and Morbidity Survey 2017, which specifically examined the health of adolescents, it was revealed that approximately 9.3 percent of secondary school students reported signs of depression, as indicated by the experience of feeling lonely. This prevalence was notably higher in urban areas, such as Kuala Lumpur, and was more prevalent among female students. It is undeniable that a sense of loneliness was closely associated with suicidal ideation as the report also highlighted an increase in the rate of suicidal ideation from 7.9 percent in 2015 to 10 percent in 2017. Similar to that of depressive symptoms, the tendencies toward suicidal thoughts were more pronounced among adolescents from urban areas. Regarding anxiety, as measured by the frequency of experiencing sleep disturbances due to worrying, it was reported that 7.1 percent of the sample reported experiencing this situation 'most of the time or always' (Institute for Public Health, 2017).

Based on the Global Burden of Disease Study 2019 (GBD2019) approximately 1 in 7 boys and 1 in 9 girls between the ages of 10 and 19 in East Asia and Pacific have mental health conditions. In this region also, it's noteworthy that suicide was among the leading causes of death of youth aged 15 to 19-year-olds. This study also reveals that mental disorders and self-harm play substantial roles in the overall disease burden among adolescents aged 10 to 19, making up 19 percent of the total burden in Malaysia. Another noteworthy finding is the noticeable increase in the prevalence of mental disorders during the early to mid-adolescent years (15–19 years old) when compared to the younger age group. Anxiety and depressive disorders are more prevalent among girls, while conduct disorders are more common among boys (IHME, 2019). Studies within the Malaysian context found that age, gender, socioeconomic status social relations, cultural beliefs or ethnicity, physical activities, academic stress and internet use are among the risk factors contributing to mental health conditions among youth (Congsheng et al., 2022; Kok and Low, 2019; Hassan et al., 2022; Samsudin and Tan, 2016; Shamsuddin et al., 2013; Yahaya et al., 2012).

Promoting mental health among the young population is vital for every economy as they are the key drivers for social and economic changes. Addressing their needs, be they physical or mental, requires an in-depth understanding of the current situation and expectations. Even though there are many studies within the context of Malaysia on youth mental health, this study offers more comprehensive evidence based on extensive data source. This study aims to identify the prevalence of mental health problems among youth in Malaysia and estimate the net effect of possible correlates on three dimensions of mental health – depression, anxiety, and stress. This study is original in two respects. First, this study utilizes a large dataset at the national level to better capture the depth of the current mental health problems among youth in Malaysia. Second, this paper uses data that were collected during the Movement Control Order (MCO) implementation, which period has led to disruption in the social circle of people's daily life and caused mental disorders (O'Sullivan et al., 2021; Wong et al., 2021). Evidence from the crisis perspective may provide helpful direction for a potentially sustainable and policy-ready framework in addressing the mental health issue and youth development in Malaysia post-pandemic.

## 2. Methods

### 2.1. Data

We obtained the data from the Malaysian Youth Index Survey 2020 (MYI'20) conducted by the Institute for Youth Research Malaysia (IYRES) in 2020, during the onset of the COVID-19 pandemic in the country. It involved 217 trained enumerators conducting a face-to-face interview with 21,126 respondents between the ages of 15 and 30 using a structured questionnaire. The survey employed a proportionate random sampling technique to guarantee that responses were drawn from various segments (i.e. age categories, localities, gender and various backgrounds) of the population. In ensuring the randomness of the data, the sample selection process relied on the 2010 Census Calculation Block (CB) to establish the sample selection area. This encompassed 13 states and 3 Federal Territories in Malaysia. To facilitate this, the survey sought advisory services from the Department of Statistics Malaysia and the agreement of respondents was secured before the interview. The survey data were presented to the Technical Working Group (TWG) comprised of key agencies to ensure its validity (Institute of Youth Research Malaysia (IYRES), 2021).

The MYI'20 consists of 12 domains of quality of life and well-being of Malaysian Youth. The Depression Anxiety Stress Scale (DASS-21) is the foundation for the health domain. The DASS-21 is the shorter version of the previous DASS with 42 items and has been validated by numerous studies (Henry and Crowford, 2005). It screens depression, anxiety, and stress symptoms, and each category is measured by seven items (Lovibond and Lovibond, 1995).

### 2.2. Variable measurement

Table 1 shows the definition of variables used in the study. For each item that measures mental health, respondents were required to rate their situation as "0=Did not apply to me at all", "1=applied to me to some degree or some of the time", "2=applied to me to a considerable degree or a good part of the time", and "3=applied to me very much or most of the time". Later, the scores for each health category were multiplied by 2; as such, the thresholds of DASS-42 can be used on the total scores (Lovibond and Lovibond, 1995). Each category was later divided into five sub-categories based on suggested thresholds or cut-off points, based on each symptom. Each symptom has different cut-off points. For example, scores 0 to 9 are considered as 'normal' category for depression but for anxiety, the normal scores are between 0 and 7. We also split the scores of each type into two groups, i.e., asymptomatic and symptomatic. All outcomes in the category mild and above are categorized as symptomatic. The 2-category mental situations are used in logistic regression, i.e. logit model. The utilization of the two categories in the logit model facilitates a meaningful synthesis across symptoms. This approach was employed with the goal of comparing potential correlates on whether or not one exhibits the symptoms rather than the severity of symptoms.

Other demographic and socioeconomic variables which were considered as possible correlates of mental health conditions in the study were gender, ethnicity, urbanization status of residing area, marital and social relation statuses, education level and income level. The association between mental health conditions and other chronic diseases or any medical disorders was also tested. Respondents were required to self-declare whether or not, during the time of the interview, were suffering from any diseases that require medical attention. Apart from medical conditions, we incorporated an indicator to capture the significance of interpersonal connections among individuals within both family and community contexts, namely social relations. This particular domain consists of 14 items, which also assess the safety levels within the community. Higher scores in this domain indicate stronger social

**Table 1**
Summary statistics of dependent and independent variables.

| $n = 21{,}126$ Variable | Definition | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| *Dependent variables* | | | | | |
| DEPRESSION | Depression score*2 | 7.134 | 8.169 | 0 | 42 |
| DEPRESSION_5 | Depression 5 sub-category 1 - Normal (0–9) 2 - Mild (10–13) 3 - Moderate (14–20) 4 - Severe (21–27) 5 - Extremely severe (28+) | 1.707 | 1.083 | 1 | 5 |
| DEPRESSION_2 | Depression 2 sub-category 0 - Asymptomatic (≤9) 1 - Symptomatic (>9) | 0.356 | 0.479 | 0 | 1 |
| ANXIETY | Anxiety score*2 | 8.566 | 8.389 | 0 | 42 |
| ANXIETY_5 | Anxiety 5 sub-category 1 - Normal (0–7) 2 - Mild (8–9) 3 - Moderate (10–14) 4 - Severe (15–19) 5 - Extremely severe (20+) | 2.217 | 1.419 | 1 | 5 |
| ANXIETY_2 | Depression_2 sub-category 0 - Asymptomatic (≤7) 1 - Symptomatic (>7) | 0.489 | 0.499 | 0 | 1 |
| STRESS | Stress score*2 | 11.343 | 8.931 | 0 | 42 |
| STRESS_5 | Stress 5 sub-category 1 - Normal (0–14) 2 - Mild (15–18) 3 - Moderate (19–25) 4 - Severe (26–33) 5 - Extremely severe (34+) | 1.604 | 1.005 | 1 | 5 |
| STRESS_2 | Depression 2 sub-category 0 - Asymptomatic (≤14) 1 - Symptomatic (>14) | 0.325 | 0.469 | 0 | 1 |
| *Independent variables* | | Mean | Std. Dev. | Min | Max |
| AGE | Age of respondents in years | 22.705 | 4.328 | 15 | 30 |
| MALE | 1 male, 0 female | 0.512 | 0.500 | 0 | 1 |
| INDIAN | 1 Indian, 0 otherwise | 0.075 | 0.263 | 0 | 1 |
| CHINESE | 1 Chinese, 0 otherwise | 0.132 | 0.339 | 0 | 1 |
| OTHERS | 1 others, 0 otherwise | 0.159 | 0.366 | 0 | 1 |
| URBAN | 1 lives in an urban area, 0 lives in a rural area | 0.633 | 0.482 | 0 | 1 |
| MARRIED | 1 married, 0 otherwise | 0.190 | 0.392 | 0 | 1 |
| SEPARATED | 1 separated, 0 otherwise | 0.007 | 0.083 | 0 | 1 |
| WIDOWED | 1 widowed, 0 otherwise | 0.001 | 0.034 | 0 | 1 |
| SOCIAL | Mean score for social relation 1 – Very disagree with positive social relation and safety statement to 4 – Very agree with positive social relation and safety statement. | 3.052 | 0.420 | 1 | 4 |
| MEDICAL | 1 has at least one medical condition, 0 otherwise | 0.295 | 0.456 | 0 | 1 |
| PRIMARY | 1 primary education, 0 otherwise | 0.038 | 0.191 | 0 | 1 |
| SECONDARY | 1 secondary education, 0 otherwise | 0.464 | 0.499 | 0 | 1 |
| CERT | 1 Certificate/ Diploma post-secondary level, 0 otherwise | 0.309 | 0.462 | 0 | 1 |
| UNI | 1 University level (Degree, Masters, Ph.D), 0 otherwise | 0.173 | 0.378 | 0 | 1 |
| OTHER_EDU | 1 Other education, 0 otherwise | 0.004 | 0.062 | 0 | 1 |
| INCOME (RM) | Monthly income from all sources | 960.720 | 1241.662 | 0 | 14,000 |

Note: *female, Malay, rural, single, no medical conditions and no education are the reference variables.*

relations and increased safety. The importance of relationships and protecting factors on youth mental conditions was synthesized by Kok and Low (2019).

## 3. Method of analysis

We utilized descriptive, inferential, and the logit model, to analyze the distribution of the symptoms and identify the possible causes of each problem. To use logit regression, the dependent variable in each model, $y_j$, has been transformed into two categories – which in this case would be DEPRESSION_2, ANXIETY_2, and STRESS_2. The specification of the model is described below.

$$Pr(x_{ij}) = \frac{e^{x_{ij}'\beta}}{1 + e^{x_{ij}'\beta}}$$

where;

$Pr(x_{ij})$ refers to the probability as whether or not a respondent, $i$, has exhibited mental distress symptoms $j$ and $x_i$ refers to demographic and socioeconomic variables, including comorbidity status for each respondent, $i$.

$$y_{ij} = \left\{ \begin{array}{l} 1 \text{ if the respondent has symptom} \\ 0 \text{ otherwise} \end{array} \right\}$$

After each regression, we applied the goodness-of-fit test (Hosmer-Lemeshow) to determine how well the analysis data fits the calculated data model. Next, we calculated each independent variable's variance inflation factor (VIF) for the diagnostic test to identify the multi-collinearity problem. Later, we utilized a *link test* to ensure that each model was correctly specified.

## 4. Analysis and discussion

### 4.1. Inferential analysis

The reliability (internal consistencies) of the DASS-21 was estimated using Cronbach's alpha. It was 0.926 for the DEPRESSION, 0.899 for ANXIETY, 0.899 for STRESS, and 0.955 for overall scales, which are considered reliable. Fig. 1 shows the distribution of mental health by gender. All categories show a significant difference pattern by gender. Overall, females exhibit a higher prevalence, if not equal, of mental health distress symptoms than males. For instance, 20 percent of females exhibit moderate symptoms of depression compared to 18 percent of males. As for anxiety, 12 percent of females show severe symptoms, while 10 percent of males have similar symptoms. Fig. 1 also shows that the prevalence of anxiety symptoms is higher than that of depression and stress.

Fig. 2 shows the suicidal behavior among the youth under study. Like depression, anxiety, and stress symptoms, we found that females have a higher tendency to have suicidal ideation than males. However, there is no statistical difference between suicide plans and attempts, although the percentage of females planning suicide shows a higher percentage than males. Similar findings, among others, were found in Grøholt et al. (1999), Lewinsohn et al. (2001), and Cheah et al. (2018). However, Grøholt et al. (1999) found that the differences by gender reduce as age increases. On the other hand, in a smaller data set, a study on 232 youth from selected urban states in Malaysia, aged between 15 and 25, Ibrahim et al. (2017) found the opposite finding. It shows that males exhibit higher suicidal ideation than females. Thus, the scope of analysis and number of observations play an essential role in contradicting empirical findings. Our analysis shows that 43 percent of respondents are free from all mental health problems under study – depression, anxiety, and stress. In comparison, 17 percent have one problem, 20 percent suffer two, and 20 percent exhibit all three mental health symptoms.

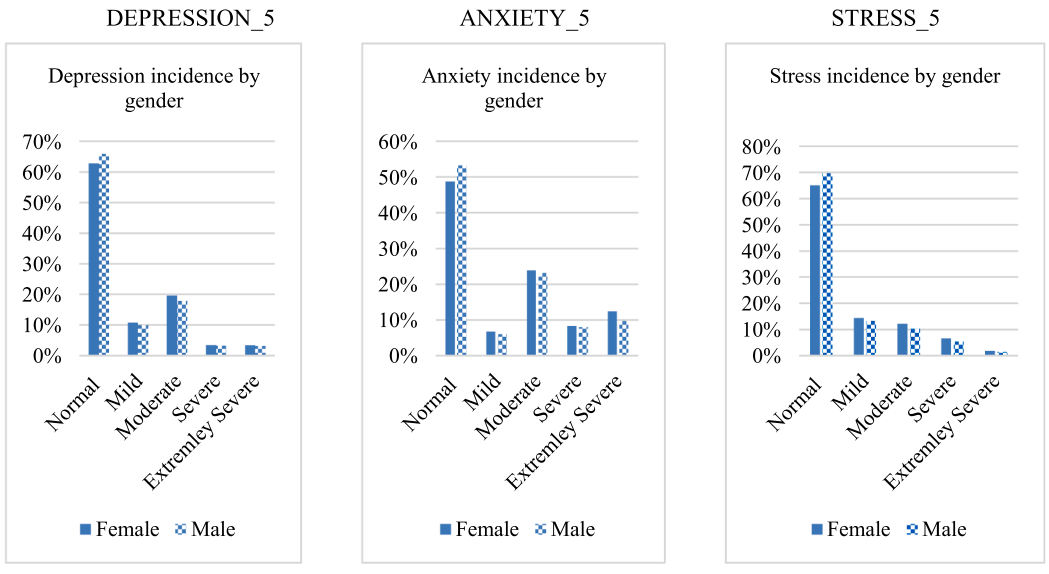
### 4.2. Logit model

Tables 2, 3 and 4 show the estimation of the logit model for depression, anxiety, and stress, respectively. The post estimations on all models suggest that though the models have a moderate percentage to predict the actual situation, they are a good fit and free from multicollinearity issues among variables used. In addition, the findings show that age, gender, income, marital, social interaction, and medical condition statuses, are significant with consistent direction throughout all models.

Our data show that age is negatively associated with the prevalence of all mental health symptoms. This finding is sensitive to the age group considered in this study which is between the ages of 15 and 30, and we treated the age variable as continuous rather than categorical. Controlling the effects of other variables, youth at the lower age spectrum may exhibited more symptoms, which reduce as they age. With each additional year of age, the odds of experiencing depression, anxiety, and stress symptoms decrease by 2.1 2.3, and 3.2, respectively. It is such an eye-opener that the young, probably those still at school and learning institutions, reported higher symptoms than those in a higher age cohort, though we may first hypothesize the opposite. The effects are consistent in all models. The effect of age in other similar studies varies according to many factors, including age range, country or region, and method used. For example, a trend analysis between the years 2011 and 2018 among Canadian youth aged 12–24 years old found that young females (19–24 years) exhibit a higher prevalence of having poor/fair mental health compared to their younger counterparts (12 −18 years old) (Wiens et al., 2020).

In terms of ethnicity, Chinese youth are less likely to exhibit all mental symptoms that we considered in this section when compared to other ethnicities. For instance, they had a 24.3 percent reduced risk of experiencing anxiety symptoms when compared to Malay youth. This could be attributed to diverse coping strategies guided by cultural norms and behaviors which require further investigation. Several studies conducted in Malaysia have also indicated a higher prevalence of mental health issues, specifically suicidal ideation, within specific ethnic groups (Armitage et al., 2015; Cheah et al., 2018; Khan et al., 2014; Kok and Low, 2019; Palmer, 2015). These studies revealed that individuals of Indian ethnicity are more susceptible to exhibiting suicidal behavior compared to other ethnic groups. These findings indicate that different mental symptoms are correlated to different factors, suggesting the importance of understanding mental issues according to symptoms for effective intervention.

A male shows a 13 to 18 percent lower likelihood of having mental health symptoms. Female youth may be exposed to more restrictions in households, lower mobility, and higher expectations to behave in




Pearson *Chisq*(4) = 22.2225 Pr=0.000

Pearson *Chisq*(4) = 63.7077 Pr=0.000

Pearson *Chisq*(4) =60.2200 Pr=0.000

**Fig. 1.** Mental health distribution by gender.

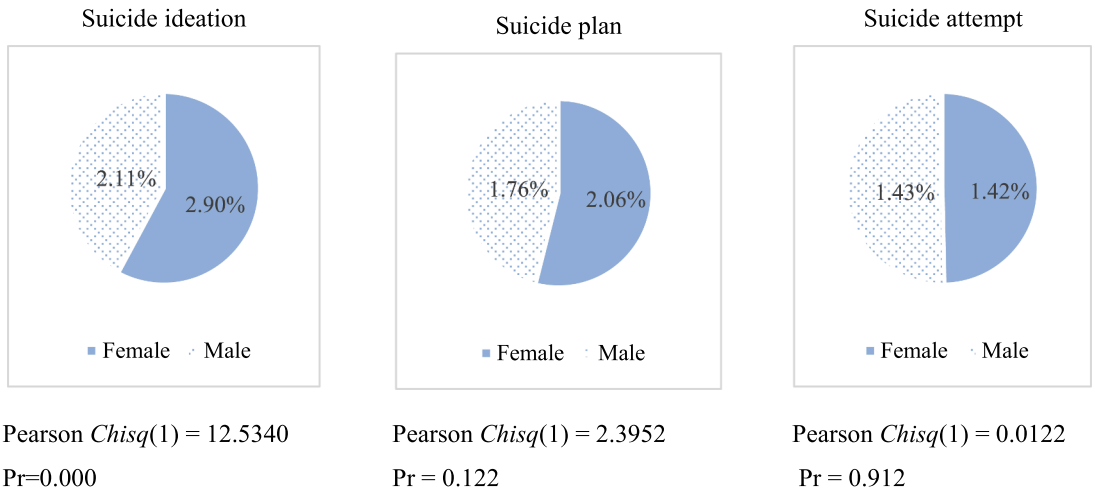



**Fig. 2.** Suicide ideation, plan, and the attempt by gender.

**Table 2**
Logit estimation for depression.

| $n$ = 21,126 | | | | | | |
|---|---|---|---|---|---|---|
| DEPRESSION | Coef. | Odds Ratio | Std. Err. | $P>z$ | [95 % Conf. Interval] | |
| AGE | −0.021 | 0.979 | 0.005 | 0.000** | 0.970 | 0.988 |
| MALE | −0.082 | 0.922 | 0.028 | 0.006** | 0.869 | 0.977 |
| INDIAN | 0.079 | 1.082 | 0.061 | 0.159 | 0.969 | 1.209 |
| CHINESE | −0.088 | 0.916 | 0.041 | 0.052 | 0.838 | 1.001 |
| OTHERS | −0.024 | 0.976 | 0.040 | 0.559 | 0.900 | 1.059 |
| URBAN | −0.071 | 0.931 | 0.029 | 0.020* | 0.877 | 0.989 |
| MARRIED | −0.229 | 0.795 | 0.035 | 0.000** | 0.729 | 0.868 |
| SEPARATED | 0.292 | 1.339 | 0.232 | 0.093 | 0.953 | 1.881 |
| WIDOWED | 0.451 | 1.570 | 0.644 | 0.272 | 0.703 | 3.507 |
| SOCIAL | −0.615 | 0.541 | 0.019 | 0.000** | 0.504 | 0.580 |
| MEDICAL | 0.407 | 1.503 | 0.048 | 0.000** | 1.412 | 1.599 |
| PRIMARY | −0.157 | 0.855 | 0.126 | 0.286 | 0.640 | 1.140 |
| SECONDARY | −0.117 | 0.889 | 0.114 | 0.360 | 0.692 | 1.143 |
| CERT | −0.088 | 0.916 | 0.119 | 0.497 | 0.710 | 1.180 |
| UNI | −0.060 | 0.942 | 0.125 | 0.653 | 0.726 | 1.222 |
| OTHER EDU | 0.145 | 1.156 | 0.301 | 0.577 | 0.694 | 1.926 |
| INCOME | −0.000 | 1.000 | 0.000 | 0.006** | 1.000 | 1.000 |
| _cons | 1.899 | | | | | |
| Correct prediction (%) | | 65.19 | | | | |
| Maximum VIF | | 1.19 | | | | |
| Pearson chi2(17,126) | | 17,255.02 | | | | |
| (Prob > chi2) | | (0.2423) | | | | |
| Predicted squared (*p*-value) | | 0.194 (0.07) | | | | |

*Note*: **$p$<0.01, *$p$<0.05.

**Table 3**
Logit estimation for anxiety.

| $n$ = 21,126 | | | | | | |
|---|---|---|---|---|---|---|
| ANXIETY | Coef. | Odds Ratio | Std. Err. | $P>z$ | [95 % Conf. Interval] | |
| AGE | −0.023 | 0.977 | 0.004 | 0.000** | 0.968 | 0.986 |
| MALE | −0.118 | 0.889 | 0.026 | 0.000** | 0.840 | 0.940 |
| INDIAN | −0.139 | 0.870 | 0.048 | 0.011* | 0.782 | 0.969 |
| CHINESE | −0.193 | 0.824 | 0.036 | 0.000** | 0.757 | 0.897 |
| OTHERS | −0.015 | 0.985 | 0.039 | 0.705 | 0.911 | 1.065 |
| URBAN | −0.056 | 0.946 | 0.028 | 0.058 | 0.892 | 1.002 |
| MARRIED | −0.211 | 0.810 | 0.034 | 0.000** | 0.746 | 0.879 |
| SEPARATED | 0.377 | 1.458 | 0.252 | 0.030* | 1.038 | 2.047 |
| WIDOWED | −0.440 | 0.644 | 0.274 | 0.301 | 0.280 | 1.481 |
| SOCIAL | −0.438 | 0.645 | 0.022 | 0.000** | 0.603 | 0.690 |
| MEDICAL | 0.588 | 1.800 | 0.056 | 0.000** | 1.694 | 1.914 |
| PRIMARY | −0.030 | 0.970 | 0.139 | 0.832 | 0.732 | 1.285 |
| SECONDARY | −0.126 | 0.882 | 0.110 | 0.315 | 0.690 | 1.127 |
| CERT | −0.004 | 0.996 | 0.126 | 0.975 | 0.778 | 1.276 |
| UNI | 0.106 | 1.112 | 0.144 | 0.412 | 0.863 | 1.432 |
| OTHER EDU | 0.356 | 1.428 | 0.376 | 0.176 | 0.852 | 2.392 |
| INCOME | −0.000 | 1.000 | 0.000 | 0.001** | 1.000 | 1.000 |
| _cons | −1.903 | | | | | |
| Correct prediction (%) | | 57.91 | | | | |
| Maximum VIF | | 1.19 | | | | |
| Pearson chi2(17,126) | | 17,203.63 | | | | |
| (Prob > chi2) | | (0.3364) | | | | |
| Predicted squared (*p*-value) | | −0.096 (0.189) | | | | |

*Note*: **$p$<0.01, *$p$<0.05.

specific ways, which may develop mental issues later. Using nationally representative data of Indian adolescents, Ram et al. (2014) confirm an association between gender socialization and youth mental health. They found that when households favored males over females, female youth were more likely to suffer from mental health issues. Within the Iranian context of university students, Bayati et al. (2009) found a significant difference between females and males in anxiety scores, where females showed a higher risk factor. A higher risk of developing mental disorders among young females is complicated to explain. Women are more negatively impacted by female sex hormones and brain chemistry than males because their hormones significantly impact their behavior and reactions. Additionally, in the age of social media, the capacity to handle all online social pressures could be harder for females and lead to tremendous suffering than for males.

A negative association is also found in married respondents, as they are less likely to exhibit mental health issues than single ones. To maintain one's mental health, having a partner to lean on for cognitive support, someone to cry with, and someone to talk to about problems is essential. Due to these reasons, some studies have shown that being married results in lower mental problems than being single or never married (Gaur and Ram, 2016). However, it is essential to note that marital happiness and stability also play an important role, as unhappy marriages may negatively influence well-being (Waite et al., 2009). Young married couples, for instance, may have more significant challenges in building a decent life with small children to feed and debt to serve. To improve their livelihood, they tend to face a stressful lifestyle that will later negatively influence their health (Norris et al., 2014).

Social interaction also plays a vital role in maintaining good mental health. It is evident from the finding that those with a higher score in the social relation domain (positive social relation) are less likely to exhibit mental health issues than those with a lower score. The interaction starts from the family level to the larger community. In this study, this social

**Table 4**
Logit estimation for stress.

| $n = 21{,}126$ | | | | | | |
|---|---|---|---|---|---|---|
| STRESS | Coef. | Odds Ratio | Std. Err. | $P>z$ | [95 % Conf. Interval] | |
| AGE | −0.032 | 0.969 | 0.005 | 0.000** | 0.960 | 0.978 |
| MALE | −0.145 | 0.865 | 0.027 | 0.000** | 0.815 | 0.919 |
| INDIAN | 0.108 | 1.114 | 0.064 | 0.061 | 0.995 | 1.246 |
| CHINESE | −0.177 | 0.838 | 0.040 | 0.000** | 0.764 | 0.919 |
| OTHERS | 0.002 | 1.002 | 0.042 | 0.970 | 0.922 | 1.088 |
| URBAN | −0.036 | 0.965 | 0.031 | 0.255 | 0.907 | 1.026 |
| MARRIED | −0.301 | 0.740 | 0.034 | 0.000** | 0.676 | 0.811 |
| SEPARATED | 0.173 | 1.189 | 0.214 | 0.337 | 0.835 | 1.693 |
| WIDOWED | −0.084 | 0.920 | 0.417 | 0.854 | 0.378 | 2.238 |
| SOCIAL | −0.564 | 0.569 | 0.021 | 0.000** | 0.530 | 0.611 |
| MEDICAL | 0.585 | 1.795 | 0.058 | 0.000** | 1.686 | 1.912 |
| PRIMARY | 0.202 | 1.224 | 0.190 | 0.193 | 0.903 | 1.660 |
| SECONDARY | 0.078 | 1.082 | 0.149 | 0.568 | 0.826 | 1.416 |
| CERT | 0.249 | 1.282 | 0.178 | 0.073 | 0.977 | 1.683 |
| UNI | 0.352 | 1.422 | 0.201 | 0.013* | 1.077 | 1.877 |
| OTHER EDU | 0.694 | 2.001 | 0.530 | 0.009** | 1.190 | 3.364 |
| INCOME | −0.000 | 1.000 | 0.000 | 0.000** | | |
| _cons | −1.537 | | | | | |
| Correct prediction (%) | | 68.18 | | | | |
| Maximum VIF | | 1.19 | | | | |
| Pearson chi2(17,126) | | 17,340.44 | | | | |
| (Prob > chi2) | | (0.1235) | | | | |
| Predicted squared (*p*-value) | | −0.102 (0.066) | | | | |

*Note*: **$p<0.01$, *$p<0.05$.

relation domain also includes feeling safe in the community. The absence of a solid community and social connection causes loneliness, sadness, boredom, anxiety, or even depression. Appropriate interventional procedures and policy initiatives, involving support from parents, teachers, and peers, can significantly enhance the emotional well-being of individuals (Ibrahim and El Zaatari, 2020; Sulistiowati et al., 2020). Family roles are undeniably crucial for adolescent mental health and can be gender sensitive. Cummins et al., al.,1999) found that family caring and parents' expectations are among the significant factors affecting youth mental health and should be prioritized.

Physical health is also one of the critical factors in determining mental health. The highest prevalence of medical problems among the respondents was obesity (4.5 %), hypertension (3 %), and diabetes (1 %). The mobility problems, social isolation and medical side-effects due to chronic conditions may exacerbate mental conditions. Our results show that those with medical conditions are more likely to experience mental health problems, especially anxiety, with a 69.4 percent increased likelihood observed in those who are affected. It is evident that there is a two-way association between physical and psychological health, but the results vary from case to case. For example, a study on 3129 students aged 14–19 years using the Barcelona Adolescent Survey found that the association between chronic illness and emotional problems was significant among females but not males. It was later suggested that identifying an 'at-risk' group was necessary for effective outreach (Surís et al., 1996).

Another considered factor in this study is education level. Our results show that education level shows a limited net association on mental health issues. It may be because there was less variation in education level among youth respondents, as some were still in education institutions during the study period. Unlike physical health, empirical evidence of education's impact on mental health among youth is scarce. However, for the adults' population, some studies found that an additional year of education has reduced the probability of mental disorders like depression (Crespo et al., 2014; Viinikainen et al., 2018) or no significant relationship (Dahmann and Schnitzlein, 2019). Finally, income shows a significant adverse effect in all models. Those with higher incomes are less likely to exhibit depression, anxiety, or stress symptoms than those with lower incomes. It shows that households' financial situation has somewhat influenced the mental condition of youth, supporting the association of poverty and mental disorders (Akee et al., 2023; Rathod et al., 2017).

## 5. Conclusion

Identifying mental disorders in the community is crucial, especially after the world was shocked by the devastating health disaster of COVID-19. Apart from reducing mortality from non-communicable diseases, achieving good health and well-being is also one of the agenda in the Sustainable Development Goal (WHO, 2020) to ensure a healthy life and promote well-being for all. Therefore, the presence of mental diseases in society will impact overall well-being. However, due to less societal sensitivity to the symptoms than chronic physical diseases, it is more difficult to determine the prevalence of mental health disorders, which calls for increased community exposure. With no exception, youth are also exposed to mental health problems due to social and economic factors. Hence, in recognizing the importance of the youth in shaping the country's future, this study aims to identify the prevalence of mental disorders among youth at the national level and its determinants.

From the analysis of depression, anxiety, and stress symptoms, many factors prove to be the risk factors for youth mental health in this study, including age, gender, ethnicity, marital status, social interaction, pre-existence medical condition, and household income. The data suggests that women are more vulnerable to mental health problems than men, which may be attributable to differences in brain chemistry and hormones, societal expectations, and an overly optimistic belief in the potential of gender equality. Constant promotion of social activities in school, workplace, and community areas is imperative to promote a healthy lifestyle among youth. Early intervention and enhanced primary care services for youth mental health are required to give young people better access to evidence-based care. Furthermore, as the findings show that financial instability can affect mental health, economic empowerment among youth is crucial to ensure adequate financial resources for a decent living.

It is also important to acknowledge that data obtained through questionnaires may be susceptible to response bias because respondents might choose to conceal their true mental conditions from the interviewer. However, this study provides an overview of youth mental conditions during the pandemic that can be useful as a foundation for more a comprehensive investigation. In this study, we identify the factors associated with mental health symptoms without placing particular emphasis on the severity of each symptom. Thus, for effective intervention, it is crucial to conduct in-depth analyses of each symptom by considering the severity of the conditions.

### *5.1. Declaration of generative AI and AI-assisted technologies in the writing process*

During the preparation of this work, the authors used ChatGPT to improve language clarity. After using this tool/service, the author(s) reviewed and edited the content as needed and take full responsibility for the content of the publication.

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## Informed consent

Informed consent was obtained from all individual participants included in the study.

## Ethical approval

This article does not contain any interview with human participants performed by any of the authors. Data were obtained from secondary sources and written permission to use the data was obtained prior to analysis. Data used were solely for academic purposes and were anonymously analysed.

## Data availability statement

The data that support the findings of this study were granted with special permission for the current study, and so are not publicly available. Data are however available from the data provider upon reasonable request.

## Declaration of Competing Interest

This manuscript has not been published and is not under consideration for publication elsewhere. The authors have no conflicts of interest to disclose.

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