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# Adolescent Mental Health Literacy and its Association with Depression

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The objective of this study was to examine mental health literacy (MHL) and its relationship with depression among young adolescents. Adolescents aged 12 to 14 years from forty-six schools were recruited to participate in this cross-sectional study which was conducted from August to November 2017. MHL was examined using the MHL and stigma questionnaire. The Malay version of the Centre for Epidemiological Studies Depression scale (CES-D) was used to assess depression. Data were analysed using multivariable logistic regression. A total of 1707 adolescents completed the survey. Only 51 (3.0%) adolescents had adequate MHL. Majority of participants, 80% had the intention to seek help for depression, however few were able to correctly recognize depression, 3.5%. A number of 347 (20.3%) adolescents were categorized as having depression. Multivariable logistic regression analysis showed that adolescents with inadequate MHL were more likely to have depression (AOR = 2.24; 95% CI; 0.74, 6.80). However this finding was not statistically significant. Adolescents with no intention to seek help had higher odds of having depression (AOR = 2.31; 95% CI: 1.68, 3.18). Intention to seek help for depression, which was a component of MHL was found to be significantly associated with depression. School-based health interventions should focus on improving adolescents' MHL.

**Keywords:** Adolescent; depression; mental health literacy

## I. INTRODUCTION

Mental health literacy (MHL) is a concept that encompasses the following components: "knowledge of how to prevent mental disorders, recognition of when a disorder is developing, knowledge of help-seeking options and treatments available, knowledge of effective self-help strategies for milder problems, and first aid skills to support others who are developing a mental disorder or are in a mental health crisis" (Jorm, 2012). MHL is currently receiving increasing attention as part of potential strategies aimed at improving mental health (Kutcher *et al.*, 2015). Evidence shows that individuals with adequate MHL are better able to recognise mental health disorders (MHDs) at an early stage (Essau *et al.*, 2013), are more likely to seek professional help (Burns and Rapee, 2006) and have fewer stigmatising attitudes towards MHDs (Yap *et al.*, 2013; Reavley and Jorm, 2011), all of which result in more favourable mental health outcomes.

Since the introduction of MHL in 1995, studies have examined MHL among adolescents in different regions. Many of the them were conducted in Western countries (Perry *et al.*, 2014; Swartz *et al.*, 2017; Bruno *et al.*, 2015; Burns and Rapee, 2006; Jorm *et al.*, 2006), involved older adolescents (Bruno *et al.*, 2015) and assessed various components of MHL. Other studies that examined the

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determinants of MHL in adolescents reported that older age (Essau *et al.*, 2013), being female (Burns and Rapee, 2006) and having higher education (Essau *et al.*, 2013) and socioeconomic status (Leighton 2010) were associated with better MHL.

To date, few studies have reported on the adequacy of MHL and its relationship with MHDs in adolescents (Lam 2014; Townsend *et al.*, 2017). This could be due to the lack of consensus on what constitutes adequate MHL (Spiker and Hammer, 2018). Some scholars suggested that adequate MHL means having sufficient mental health knowledge, displaying favourable attitudes towards seeking help for MHDs, being capable of seeking help for MHDs and actually seeking help if symptoms develop (Anjo, 2018), whereas others conceptualise adequate MHL as the ability to recognise a mental disorder alongside the intention to seek help (Lam, 2014).

The primary rationale for this study was the scarcity of evidence pertaining to the adequacy of adolescents' MHL (Lam, 2014). Previous studies examined several components of MHL without reporting the adequacy of MHL. This did not provide a true understanding of MHL among adolescents. For example, adolescents may intend to seek help if they experience a mental health problem, but they lack the ability to recognise symptoms of MHDs, resulting in failure to seek help from appropriate sources at an early stage (Aluh *et al.*, 2018). Second, more evidence is needed to understand the role MHL has in determining mental health outcomes, especially in the case of depression (Lam, 2014), because depression is a common mental health disorder with severe negative health, financial and social implications affecting many adolescents worldwide (Bodden *et al.*, 2008). The rising prevalence of depression in adolescents both globally (Erskine *et al.*, 2017) and in Malaysia specifically (Institute for Public Health, 2017) indicates an urgent need to investigate whether adequate MHL improves depression outcomes. Younger adolescents (12 to 14 years) should be the target of MHL studies, as majority of MHDs develop before the age of 14, depressive disorders usually tend to start as early as 13 years (Kessler *et al.*, 2005), the severity of depression also increases across both genders by the age of 12 years (Dekker *et al.*, 2007) and younger adolescents tend to face higher levels of stressful challenges compared to older adolescents (Latiffah *et al.*, 2016). Furthermore, studies have reported that older adolescents have better understanding of MHL compared to younger adolescents (Essau *et al.*, 2013). Such findings can be translated into recommendations for mental health interventions (Lam 2014).

This study investigated MHL and depression amongst secondary school adolescents. Specific objectives include:

a. to determine the adequacy of adolescents' MHL;
b. to examine the association between ability to recognise depression and intention to seek help with depression, and;
c. to examine the association between adequacy of MHL and depression.

## II. MATERIALS AND METHOD

### *A. Participants*

A cross-sectional study was conducted in Selangor, a state located in the peninsular region of Malaysia, with a total population of 6,470,000 (Department of Statistics Malaysia, 2018). Of the 225 national secondary schools in Selangor state, 50 schools were randomly selected. However, four schools refused to participate, therefore data were collected from 46 schools. At the school level all Form 1 students from all classes were sampled. Form 1 is equivalent to the 7$^{th}$ Grade in the United States (Hays, 2015). Form 1 students have an advantage over other students as they are not under exam pressure (lower secondary- and upper secondary-level examinations) and so any change in their classroom routine would not impact negatively on their academic work. A total of 2,560 adolescents were approached and 71% obtained parental consent for their participation ($N$=1,815). The questionnaires were administered in classrooms of the participating schools and the researcher was available during each session to aid and ensure independent response. Data were collected from August to November 2017. A minimum sample of 1,417 was required for this study based on the Open Epi (version 3.01) sample size calculator and parameters from a previous study that examined the association between MHL and depression amongst adolescents in China (Lam, 2014).

### *B. Measures*

MHL relating to depression in this study was examined using the Australian National MHL and Stigma Youth Survey (Reavley and Jorm, 2011). This is a self-administered questionnaire which presents a vignette about depression, following which participants are asked a series of questions relating to the vignette (Reavley and Jorm, 2011). This tool is one of the most commonly used vignette-based questionnaires (Attygalle *et al.*, 2017; Lubman *et al.*, 2017; Sharma *et al.*, 2017) for assessment of adolescents' MHL as it assesses multiple components of MHL simultaneously (Wei *et al.*, 2015). The original version is in English, so the questionnaire was translated into *Bahasa Malaysia* using the forward and backward translation process and was finally presented to participants in both English and *Bahasa Malaysia*. The MHL and stigma questionnaire was found to have acceptable Cronbach's alpha values (0.64 to 0.76) across all constructs and moderate to substantial agreements across all items in the test re-test reliability analysis.

To make the questionnaire suitable for use among Malaysian adolescents the character in the vignette was named Ali and described as follows: "Ali is a 15-year-old who has been feeling unusually sad and miserable for the last few weeks. He is tired all the time and has trouble sleeping at night. Ali doesn't feel like eating and has lost weight. He can't keep his mind on his studies and his marks have dropped. He puts off making any decisions and even day-to-day tasks seem too much for him. His parents and friends are very concerned about him."

After reading the description of Ali respondents were asked 'What, if anything, do you think is wrong with Ali?' Respondents selected one of three responses ('yes'; 'no'; 'don't know') for each of the following possibilities: 'depression', 'mental illness', 'an eating disorder', 'stress', 'substance abuse' and 'nothing'. Respondents were considered to have recognised depression if they answered 'yes' to 'depression', 'mental illness' and 'stress' and 'no' to the other options (Lam, 2014; Loureiro *et al.*, 2013). Participants' intention to seek help in these circumstances was assessed by asking 'If you had a problem like Ali right now would you get help?' The response options were "yes' and 'no'.

In order to generate an overall measure of adequacy of MHL relating to depression we created a composite variable combining ability to recognise depression with intention to seek help variables (Lam, 2014). This is justified, because classifying someone who is able to recognise depression but has no intention of seeking help as having adequate MHL defeats the clinical purpose of the concept. Conversely, having the intention to seek help in the absence of being able to recognise depression correctly may result in inappropriate help seeking (Jorm *et al.*, 1997; Lam 2014). These points are in line with the definition of MHL by Jorm *et al.* (1997).

Depression was examined using the Malay version of the Centre for Epidemiological Studies Depression scale (CES-D) (Ghazali *et al.*, 2016). This instrument is a 20-item, self-administered questionnaire based on the DSM IV diagnostic criteria for depression, with four-point Likert scale response options. It has been validated among Malaysian adolescents and is reported to have satisfactory psychometric properties (Ghazali *et al.*, 2014; Ghazali *et al.*, 2016). A cut-off point of 27 differentiates between 'depressed' and 'normal' (Ghazali *et al.*, 2014; Ghazali *et al.*, 2016).

The independent variables in this study were 13 sociodemographic variables and three MHL variables, namely ability to recognise depression, intention to seek help for depression and adequacy of MHL. The dependent variable was depression status. All variables were treated as categorical variables.

### *C. Statistical Analysis*

Sociodemographic and MHL variables were analysed descriptively using the Statistical Package for Social Sciences (SPSS) version 24.0 software and presented as frequencies and percentages (IBM Corporation, 2016). Univariate logistic regression was used to examine the relationships between MHL variables and depression. Variables found to be significant at $p < 0.25$ in the univariate regression were entered into a multiple logistic regression (Bursac *et al.*, 2008). The significance level was set at $p < 0.05$. Crude and adjusted odds ratios along with 95% confidence intervals (CIs) were reported.

As there were some missing data (6%), we tested if they were missing completely at random (MCAR) using Little's

MCAR test in SPSS. The p-value for the test was 0.213. Comparison of basic characteristics were done between those included in the analytical sample (n = 1707) and those excluded (n = 108) (based on the following variables gender, age, ethnicity, smoking status, alcohol consumption, drug use, being bullied, felt lonely, change of school, involvement in co-curricular activities, parental supervision, parental income, parental marital status, MHL level) and no significant differences were found, so missing data were handled with list-wise deletion in this study (Kang, 2013).

Ethical approval was obtained from the University of Malaya Research Ethical Committee (Reference No: UM. TNC2/RC/H&E/UMREC-156) and this study was also registered with the National Medical Research Registry Malaysia (NMRR-18-719-40569).

## III. RESULT

A total of 1,707 students (39.6% male; 60.4% female) completed the questionnaire, giving a response rate of 65%. The demographic characteristics of participants, MHL variables and depression status are shown in Table 1. Approximately 20.3% (n = 347) of participants were classified as having depression. Few participants were able to recognise depression (n = 60, 3.5%) although the majority of adolescents (n = 1,365, 80%) reported that they would seek help if they had the problems depicted in the vignette. Only 3.0% (n = 51) of respondents were classified as having adequate MHL.

Table 1. Characteristics of study participants (N=1707)

| **Characteristics** | | **Frequency N (%)** |
|---|---|---|
| Gender | Male | 676 (39.6) |
| | Female | 1031 (60.4) |
| Age (Years) | 12 | 25 (1.5) |
| | 13 | 1598 (93.6) |
| | 14 | 84 (4.9) |
| Ethnicity | Malay | 1118 (65.5) |
| | Chinese | 337 (19.7) |
| | Indian | 215 (12.6) |
| | Others | 37 (2.2) |
| Smoked cigarettes in the past 30 days | Yes | 80 (4.7) |
| | No | 1627 (95.3) |
| Consumed alcohol in the past 30 days | Yes | 145 (8.5) |
| | No | 1562 (91.5) |
| Drug use in the past 30 days | Yes | 10 (0.6) |
| | No | 1697 (99.4) |
| Bullied in the past 30 days | Yes | 191 (11.2) |
| | No | 1385 (81.1) |
| | Don't know | 131 (7.7) |
| Shifted or changed school in the past 30 days | Yes | 22 (1.3) |
| | No | 1685 (98.7) |
| Involved in co-curricular activities | Yes | 1479 (86.6) |
| | No | 228 (13.4) |
| Felt lonely in the past 12 months | Yes | 703 (41.2) |
| | No | 1004 (58.8) |
| Parents know what you were doing in the past 30 days | Yes | 1126 (66.0) |
| | No | 206 (12.0) |
| | Don't know | 375 (22.0) |
| Parental marital status | Married and living together | 1505 (88.2) |
| | Married and living apart | 31 (1.8) |
| | Divorce | 102 (6.0) |
| | Separated | 32 (1.9) |
| | Don't know | 37 (2.2) |
| Parental monthly income | Low (less than RM3000) | 639 (37.4) |

| | | |
|---|---|---|
| | High (more than RM3000) | 502 (29.4) |
| | Don't know | 566 (33.2) |
| Ability to correctly recognize depression | Yes | 60 (3.5) |
| | No | 1647(96.5) |
| Intention to seek help | Yes | 1365 (80.0) |
| | No | 342 (20.0) |
| MHL level | Adequate | 51 (3.0) |
| | Inadequate | 1656 (97.0) |
| Depression | Normal | 1360 (79.7) |
| | Depressed | 347 (20.3) |

*1. Association between recognition of depression and intention to seek help with depression*

Participants who reported that they would not seek help for depression were more likely to have depression (OR = 2.97; 95% CI: 2.28, 3.86) as were those who were unable to recognise depression (OR = 2.35; 95% CI: 1.00, 5.51). After adjusting for variables including gender, age, ethnicity, being bullied, feeling lonely, no involvement in co-curricular activities, lack of parental supervision, parental divorce and parental income, young adolescents who would not seek help were more likely to have depression (AOR = 2.31; 95% CI: 1.68, 3.18). Recognition of depression was not significantly associated with depression (AOR = 2.22; 95% CI: 0.85, 5.81). Results are shown in Table 2.

Table 2. Association between recognition of depression and intention to seek help with depression

| **Variables** | **Univariate logistic regression** | | **Multiple logistic regression** | |
|---|---|---|---|---|
| | **Odds Ratio** | **95% CI** | **Adjusted Odds Ratio** | **95% CI** |
| Female[1] | 2.65 | 2.20, 3.49* | 2.61 | 1.89, 3.59** |
| 12-year old[2] | 1.02 | 0.38, 2.75* | 1.30 | 0.39, 4.35 |
| 14-year old[2] | 2.05 | 1.28, 3.27* | 2.30 | 1.30, 4.07** |
| Chinese[3] | 0.49 | 0.35, 0.69* | 0.39 | 0.23, 0.67** |
| Indian[3] | 0.35 | 0.22, 0.55* | 0.56 | 0.38, 0.84** |
| Others[3] | 1.94 | 0.98, 3.82* | 1.67 | 0.72, 3.88 |
| Smoked cigarettes[4] | 1.15 | 0.67, 1.96 | - | - |
| Consumed alcohol[5] | 0.80 | 0.51, 1.26 | - | - |
| Used drugs[6] | 2.31 | 0.29, 18.26 | - | - |
| Shifted or changed school[7] | 1.16 | 0.42, 3.15 | - | - |
| Not involved in co-curricular activities[8] | 1.83 | 1.34, 2.50* | 1.51 | 1.03, 2.21** |
| Felt lonely[9] | 8.32 | 6.26,11.04* | 6.58 | 4.86, 8.91** |
| Bullied[10] | 2.77 | 1.99, 3.85* | 2.79 | 1.86, 4.19** |
| Unsure if bullied[10] | 3.60 | 2.47, 5.25* | 2.18 | 1.39, 3.44** |
| No parental supervision[11] | 3.76 | 2.71, 5.21* | 2.29 | 1.55, 3.40** |
| Unsure about parental supervision[11] | 2.44 | 1.85, 3.23* | 1.52 | 1.09, 2.12** |
| Married living apart[12] | 1.69 | 0.77, 3.71* | 1.87 | 0.74, 4.75 |
| Divorce[12] | 1.72 | 1.11, 2.69* | 1.45 | 0.83, 2.52 |
| Separated[12] | 1.88 | 0.88, 4.01* | 1.06 | 0.42, 2.63 |
| Unsure about parental marital status[12] | 0.65 | 0.25,1.67* | 0.52 | 0.18, 1.50 |
| Parental monthly income more than RM3000[13] | 0.91 | 0.68, 1.23* | 1.04 | 0.73, 1.47 |
| Unsure about parental monthly income[13] | 1.20 | 0.91, 1.59* | 1.25 | 0.89, 1.75 |

| | | | | |
|---|---|---|---|---|
| Unable to correctly recognize depression[14] | 2.35 | 1.00, 5.51* | 2.22 | 0.85, 5.81 |
| No intention to seek help[15] | 2.97 | 2.28, 3.86* | 2.31 | 1.68, 3.18** |

Note. *Variables significant at p < 0.25 **p value < 0.05 Hosmer-Lemeshow goodness-of-fit test chi square = 6.19 (df = 8); CI, Confidence Interval; RM, Ringgit Malaysia. Referent values for independent variables are:[1]Male; [2]13 year; [3]Malay; [4]No smoking; [5]No alcohol intake; [6]No drug use; [7]No shift or changed school; [8]Involved in co-curricular activities; [9]No feeling lonely; [10]No bullied; [11]Yes parents know what you were doing (has parental supervision);[12]Married and living together; [13]Parental income less than RM3000; [14]Able to correctly recognize depression; [15]Have intention to seek help.

*2. Association between adequacy of MHL and depression*

Adolescents with inadequate MHL were more likely to have depression (OR = 3.07; 95% CI: 1.10, 8.58). After adjusting for similar potential confounding factors, there was no association between inadequate MHL and depression (AOR = 2.24, 95% CI: 0.74, 6.80; p = 0.154). The bivariate and multivariate analyses are shown in Table 3.

Table 3. Association between adequacy of MHL and depression

| **Variables** | **Univariate logistic regression** | | **Multiple logistic regression** | |
|---|---|---|---|---|
| | **Odds Ratio** | **95% CI** | **Adjusted Odds Ratio** | **95% CI** |
| Female[1] | 2.65 | 2.20, 3.49* | 2.72 | 1.98, 3.74** |
| 12-year old[2] | 1.02 | 0.38, 2.75* | 1.33 | 0.42, 4.30 |
| 14-year old[2] | 2.05 | 1.28, 3.27* | 2.41 | 1.37, 4.23** |
| Chinese[3] | 0.49 | 0.35, 0.69* | 0.40 | 0.24, 0.68** |
| Indian[3] | 0.35 | 0.22, 0.55* | 0.61 | 0.41, 0.91** |
| Others[3] | 1.94 | 0.98, 3.82* | 1.77 | 0.78, 4.00 |
| Smoke cigarettes[4] | 1.15 | 0.67, 1.96 | - | - |
| Consumed alcohol[5] | 0.80 | 0.51, 1.26 | - | - |
| Used drugs[6] | 2.31 | 0.29, 18.26 | - | - |
| Shifted or changed school[7] | 1.16 | 0.42, 3.15 | - | - |
| Not involved in co-curricular activities[8] | 1.83 | 1.34, 2.50* | 1.54 | 1.05, 2.24** |
| Felt lonely[9] | 8.32 | 6.26, 11.04* | 6.71 | 5.00, 9.06** |
| Bullied[10] | 2.77 | 1.99, 3.85* | 2.84 | 1.90, 4.24** |
| Unsure if bullied[10] | 3.60 | 2.47, 5.25* | 2.32 | 1.48, 3.65** |
| No parental supervision[11] | 3.76 | 2.71, 5.21* | 2.49 | 1.69, 3.64** |
| Unsure about parental supervision[11] | 2.44 | 1.85, 3.23* | 1.75 | 1.26, 2.42** |
| Married living apart[12] | 1.69 | 0.77, 3.71* | 2.05 | 0.82, 5.18 |
| Divorce[12] | 1.72 | 1.11, 2.69* | 1.43 | 0.83, 2.48 |
| Separated[12] | 1.88 | 0.88, 4.01* | 1.15 | 0.48, 2.79 |
| Unsure about parental marital status[12] | 0.65 | 0.25,1.67* | 0.56 | 0.20, 1.60 |
| Parental monthly income more than RM3000[13] | 0.91 | 0.68, 1.23* | 1.02 | 0.72, 1.45 |
| Unsure about parental monthly income[13] | 1.20 | 0.91, 1.59* | 1.29 | 0.92, 1.80 |
| Inadequate MHL[14] | 3.07 | 1.10, 8.58* | 2.24 | 0.74, 6.80 |

Note. *Variables significant at p < 0.25 **p value < 0.05 Hosmer-Lemeshow goodness-of-fit test chi square = 10.99 (df = 8); CI, Confidence Interval; RM, *Ringgit Malaysia*. Referent values for independent variables are:[1]Male; [2]13 year; [3]Malay; [4]No smoking; [5]No alcohol intake; [6]No drug use; [7]No shift or changed school; [8]Involved in co-curricular activities; [9]No feeling lonely; [10]No bullied; [11]Yes parents know what you were doing (has parental supervision);[12]Married and living together; [13]Parental income less than RM3000; [14]Adequate MHL.

## IV. DISCUSSION

The level of MHL relating to depression in our sample was alarmingly low. Although most participants (80%) reported that they would seek help for depression, few (3.5%) were able to recognise depression. Inability to recognise depression not only indicates a poor understanding of symptoms and signs of depression, but implies a possible delay in seeking professional help (Aluh *et al.*, 2018), or seeking help from inappropriate sources (Jorm *et al.*, 1997;

Lam, 2014). Compared to our sample, MHL adequacy was higher among American (Townsend *et al*., 2017; Swartz *et al*., 2007; Swartz *et al*., 2017) and Chinese (Lam, 2014) adolescents. This variation may be due to the younger age of our respondents. Evidence suggests that MHL tends to improve with age (Essau *et al*., 2013). We examined MHL relating to depression using the MHL and stigma questionnaire because this instrument is able to examine multiple components of MHL simultaneously and subsequently provide an overall report on the adequacy of MHL (Lam 2014), while other studies used the Adolescent Depression Knowledge Questionnaire, so direct comparison is difficult. Furthermore, American adolescents' greater MHL may be due to their greater exposure to school-based MHL interventions (Swartz *et al*., 2007). Inability to recognise depression contributed to our participants' poor MHL, because we conceptualised adequate MHL as the ability to recognise depression along with intention to seek help.

The low levels of recognition of depression in our study could be due to our use of a vignette featuring a depressed male adolescent without symptoms of suicidal ideation, as previous studies had used vignettes featuring a female with suicidal ideation (Bruno *et al*., 2015; Burns and Rapee, 2006; Lubman *et al*., 2017). The use of vignettes featuring girls or women with suicidal ideation increases the likelihood that depression will be identified because female characters tend to receive more sympathy and taken more seriously by participants, while suicidal ideation tends to act as a red flag, alerting participants to the possibility of depression (Bruno *et al*., 2015; Burns and Rapee, 2006; Lubman *et al*., 2017).

Our results demonstrated that most participants had the intention to seek help if they experienced depression. This corroborates evidence from previous studies (Burns and Rapee, 2006; Bruno *et al*., 2015; Aluh *et al*., 2018; Boyd *et al*., 2011; Lam, 2014; Ando *et al*., 2018). This finding indicates that adolescents regard the problem faced by the character in the vignette as one that requires help, and they are willing to seek help for such a problem. The high proportion of adolescents in our study who reported an intention to seek help for depression may be due to the rising prevalence of depression among adolescents in Malaysia, as reported by the National Health Morbidity Survey 2017 (Institute for Public Health, 2017). It is possible that these adolescents had experienced depression themselves or had peers who had sought help for symptoms of depression (Adlina *et al*., 2007; Kaur *et al*., 2014).

Our findings indicated that although inadequate MHL increased the odds of depression, the effect was not statistically significant. This finding is inconsistent with a previous study conducted in China (Lam, 2014), perhaps because the respondents in this study who were suffering from depression, were somehow able to label the person described in the vignette as having depression, mental illness and stress, as well as reporting an intention to seek help. We used a closed-ended question to assess ability to recognize depression, which may have reduced the rate of recognition, because participants had to respond to all the items listed in the question, whereas other studies used an open-ended question. We chose not to use an open-ended question because they are dependent on the respondents' motivation to provide comprehensive, descriptive responses (Amarasuriya *et al*., 2018). We controlled for a number confounders when examining the association between MHL and depression, but it is possible that in previous studies there was no adjustment for similar confounders, such as feeling lonely or being bullied (Kaur *et al*., 2014).

Finally, we found that having no intention of seeking help for depression increases the odds of having depression. When adolescents suffering from depression do not seek help, treatment will be delayed or they may self-medicate, leading to poor outcomes (Burns and Rapee, 2006; Boyd *et al*., 2011; Sawyer *et al*., 2012). Depressed adolescents may be unwilling to seek help due to an underlying perception of estrangement, a negative outlook on the future, pessimism, indecisiveness and negative thinking, all of which are exacerbated by depression (Boyd *et al*., 2011).

Several recommendations for improvements in school-based mental health programmes in Malaysia can be generated from the findings of this study. Our results suggest that unwillingness to seek help for depression increases the likelihood of depression, so educating adolescents about the common symptoms and signs of depression and the importance of getting help would not only improve their ability to recognise depression but would also encourage them to seek professional help more quickly.

### *A. Strengths and Limitations*

To the best of our knowledge, this is the first study to investigate the association between MHL and depression among young Malaysian adolescents. The use of a validated instrument to assess MHL and depression reduces the potential for measurement bias. The limitations of this study include the cross-sectional design, which is unable to establish causality (Wei *et al.*, 2015). Potential confounders such as educational achievement and recent stressful life events, which are known determinants of depression, were not taken into account. Longitudinal studies are needed, owing to the small number of investigations being conducted to date (Lam, 2014).

## V. CONCLUSION

The main objective of this study was to examine the association between MHL and depression. Our results suggest that MHL, more specifically intention to seek help for depression, is an important factor that could improve outcomes in depression. Future studies should examine whether reported intention to seek help translates into actual help-seeking behaviour in adolescents, as this study shows that most adolescents have an intention to seek help if they experience depression. Programmes are needed to improve adolescents' ability to recognise MHDs and raise awareness about the importance of seeking help.

## VI. ACKNOWLEDGEMENT

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