

ORIGINAL ARTICLE

Psychosocial Determinants and Treatment Outcomes in Adolescents with Major Depressive Disorder and Generalised Anxiety Disorder: A Preliminary Retrospective Analysis.

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Abstract

Mental health conditions such as anxiety and depression are prevalent among adolescents, yet evidence on psychosocial determinants and treatment responses remains limited. This retrospective study investigates the psychosocial determinants, prescribed treatments, and treatment outcomes in adolescents with major depressive disorder (MDD) and generalised anxiety disorder (GAD) at a Malaysian hospital. Data from 80 adolescents aged 10-19 years were analysed using descriptive statistics, Pearson's Chi-square tests, and logistic regression. Low self-esteem (16.5%) and dysfunctional family dynamics (15.4%) were identified as the most common determinants. Combined psychotherapy and pharmacotherapy were prescribed to 62.5% of patients, significantly improving symptom outcomes ($p = 0.005$). Disabilities were significantly associated with MDD and GAD diagnoses ($p = 0.041$), increasing the odds of developing these disorders by approximately 25-fold. The findings emphasise the need for integrated psychosocial and pharmacological interventions to optimise treatment outcomes, as well as the need for customised strategies in the care of adolescent mental health.

Keywords: Adolescents, *Generalised anxiety disorder, Major depressive disorder, Malaysia, Psychosocial.*

Introduction

Mental health disorders, particularly major depressive disorder (MDD) and generalised anxiety disorder (GAD), are significant public health concerns, especially among adolescents [1]. Adolescence, defined by the World Health Organization (WHO) as the age range of 10–19 years, is a critical developmental stage with rapid physical, emotional, and social changes [2]. During this period, individuals are highly susceptible to mental health challenges due to increased exposure to psychosocial stressors, including academic pressures, family conflicts, and peer dynamics [3]. Globally, after the COVID-19 pandemic, the prevalence of depression and anxiety among adolescents skyrocketed, with pooled prevalence rates of 25.2% for depression and 20.5% for anxiety [4].

In Malaysia, the situation is even more concerning. According to the 2017 National Health and Morbidity Survey, 18.3% of adolescents reported experiencing depression, while 39.7% faced anxiety symptoms [5]. These figures clearly show that there is a growing mental health crisis among Malaysian adolescents. Left untreated, mental health disorders in adolescence can lead to severe consequences, including academic failure, strained relationships, substance abuse, and an increased risk of suicide. These outcomes burden not only individuals but also society, with economic costs stemming from reduced workforce participation, decreased productivity, and increased government support expenditures [6].

Psychosocial factors, such as traumatic life events, dysfunctional family dynamics, peer rejection, and academic stress, are critical contributors to the onset and progression of MDD and GAD [7]. Dysfunctional family environments, for example, can disrupt an adolescent's emotional stability, leading to maladaptive coping mechanisms and exacerbating mental health issues [8]. Similarly, peer-related stressors, such as bullying and social isolation, can significantly impact an adolescent's self-esteem and psychological well-being [9].

Despite the established role of these factors, there is limited research in Malaysia exploring their influence on treatment outcomes in adolescents with MDD and GAD.

Another pressing issue is the lack of clinical practice guidelines (CPGs) for managing MDD and GAD in Malaysian adolescents. The absence of standardised management protocols creates inconsistencies in diagnosis and treatment, potentially affecting outcomes. Addressing this gap requires robust research to provide evidence-based recommendations tailored to the unique challenges faced by Malaysian adolescents.

This study seeks to bridge these gaps by conducting a retrospective analysis of psychosocial determinants and treatment outcomes among adolescents with MDD and GAD. Medical records from a tertiary care hospital were reviewed to identify key psychosocial factors, evaluate treatment patterns, and assess their effectiveness. The findings aim to inform clinical practice and policy development, ultimately contributing to improved mental health care for adolescents in Malaysia.

Materials and methods

Study design

The study employed a retrospective analysis, reviewing medical records of adolescent patients diagnosed with MDD and GAD within a specified timeframe (January to December 2023).

Study setting

The data was collected at Hospital Al-Sultan Abdullah (HASA), a newly operational tertiary care centre in Malaysia. HASA is located in an urban area and provides specialised services. The psychiatry clinic caters to a diverse patient population with varied socio-economic backgrounds, making it an ideal setting for studying adolescent mental health disorders.

Sample size calculation

The sample size was calculated using Cochran's formula with a confidence level of 95%, a standard deviation of 0.5, and a margin of error of 0.05 using a population size of 300, which was the number of adolescents registered to Child Psychiatry Clinic according to the census of child and adolescent clinic of HASA.

Initial sample size:

$$n_0 = \frac{z^2 \cdot p \cdot (1 - p)}{e^2}$$
$$n_0 = \frac{1.96^2 \cdot 0.5 \cdot (1 - 0.5)}{0.005^2}$$
$$n_0 = 384.16$$

Finite population:

$$n = \frac{n_0}{1 + \frac{n_0 - 1}{\text{population}}}$$
$$n = \frac{384.16}{1 + \frac{384.16 - 1}{300}}$$
$$n \approx 168.37$$
$$n = 169$$

While the calculated sample size was 169, only 80 patients were included due to the limited population of adolescents diagnosed with MDD and GAD at this newly operational tertiary care hospital. This limitation reflects the specific focus of the study population and the challenges of recruitment within a single centre setting.

Inclusion and exclusion criteria

Patients were included if they were Malaysian citizens aged 10-19 years old diagnosed with MDD and/or GAD and had at least two recorded visits to the psychiatry clinic. A second visit is crucial for confirming a diagnosis of MDD or GAD, as it ensures comprehensive medical records, engagement in care, minimises bias, and enhances data reliability by allowing cross-verification of patient-reported factors and clinician observations. Patients who defaulted on treatment were excluded to ensure data reliability.

Data collection

A self-designed Data Collection Form (DCF) was used to extract anonymised data from the Hospital Information System (UniMEDS) on demographics, psychosocial determinants, treatments, and outcomes. The psychiatrists identified the determinants through history-taking with patients and caregivers during follow-ups, and these details were documented in the patients' records. Information on treatments (pharmacotherapy or psychotherapy) and improvement of symptoms were also included. To ensure patient privacy and confidentiality, all record reviews were conducted solely by a single investigator.

Statistical analysis

Descriptive statistics were used to summarise the sociodemographic characteristics. Pearson's Chi-square tests assessed associations between psychosocial factors and treatment outcomes. Logistic regression was conducted to examine the influence of various psychosocial determinants on the likelihood of MDD and GAD diagnoses. The analysis calculated odds ratios to quantify the strength of associations, with statistical significance defined at $P < 0.05$.

Results

The study population comprised 80 adolescents aged 11-18 years (mean age: 16.29 years, SD: 1.836). The youngest patient was 11 years old, and the oldest was 18. The majority were female (n = 65, 81.3%) and of Malay ethnicity (n=77, 96.3%), with a minority representation of Chinese adolescents (n=3, 3.8%). The majority of the patients' parents (65%) had a high education level, while 35% had an intermediate education level. In terms of household income, 60% of patients came from families earning above RM8000 per month, while 40% had family earning between RM3000 - RM8000 per month. Most patients (71.3%) lived with both parents, whereas only 2.5% lived with a single parent (Table 1).

The frequency of MDD and GAD was also recorded, and the percentage of adolescent patients with MDD, GAD, and MDD with GAD was 76.3%, 13.8%, and 10% respectively (Figure 1).

The majority of adolescents (96.3%) had more than one psychosocial determinant contributing to MDD and/or GAD, with the most common being low self-esteem (16.5%), dysfunctional family dynamics (15.4%), and academic pressures (11.9%). Other notable factors included family history of mental health problems (8.1%), isolation (7.7%), bullying (7.3%), and adjustment to a new school environment (6.5%). Less common determinants were traumatic events (5%), substance abuse (4.6%), excessive workload (3.8%), disability (1.5%), and least frequently, domestic violence and misuse of social media (both 0.4%) (Table 2).

A binary logistic regression was performed to examine the relationship between the psychosocial determinants and the likelihood of experiencing MDD and/or GAD. The model demonstrated adequate fit (-2 Log Likelihood = 43.188). The Cox & Snell R² and Nagelkerke R² values are 0.225 and 0.392 respectively,

suggesting that the model explains between 22.5% and 39.2% of the variance in the dependent variable. The logistic regression analysis revealed that disability was significantly associated with the likelihood of experiencing the disorders. The coefficient for disability was 3.213 (p=0.041), suggesting that disabled individuals were 24.853 times more likely to have MDD and/or GAD (Table 3).

The majority of the patients (n=50, 62.5%) received combined psychotherapy and pharmacotherapy, while 27.5% received psychotherapy alone and 10% received pharmacotherapy alone. Sixteen different psychotherapy modalities were administered. Among adolescents with MDD and GAD, supportive therapy was the most common intervention (n=34, 20.2%), followed by cognitive behavioural therapy (CBT; 17.3%) (Figure 2).

There were (n= 23; 39.7%) patients who received a single agent of selective serotonin reuptake inhibitors (SSRIs) followed by mirtazapine (3.4%), quetiapine (1.7%), lorazepam (3.4%), and methylphenidate (1.7%). Twelve MDD patients received SSRIs with benzodiazepines or non-benzodiazepines, and two patients received a combination of olanzapine and benzodiazepines. Among 11 adolescents diagnosed with GAD, only one received SSRIs. Other than that, (3.4%, n= 2) were prescribed benzodiazepines and SSRIs. Eight patients were diagnosed with MDD and GAD, and four of them received SSRIs. Two patients received benzodiazepines together with SSRIs and one patient received methylphenidate and escitalopram (Table 4).

A Pearson's Chi-square test was conducted to analyse the association between the improvement of the symptoms and the type of therapy prescribed to the patients. The results are shown in Table 5. There was a statistically significant association between the improvement of patients' symptoms and the type of therapy ($p = 0.005$).

Discussion

This study examines the intricate relationship between psychosocial factors and treatment outcomes in adolescents diagnosed with MDD and GAD. Dysfunctional family dynamics emerged as a critical determinant, consistent with global findings on adolescent mental health [10]. Growing up in a dysfunctional family environment can hinder the development of healthy coping mechanisms, often leading to maladaptive strategies such as avoidance, self-blame, and externalizing blame onto others [11]. Family stability is crucial in maintaining a sense of security and system homeostasis. Parental conflicts or chronic familial discord can disrupt this balance, leaving adolescents vulnerable to emotional distress. Adolescents who perceive instability in their family system may exhibit problematic behaviours, such as withdrawal, defiance, or difficulties in forming healthy peer relationships. These challenges further exacerbate their risk of developing MDD and GAD by creating a cycle of insecurity, interpersonal conflicts, and impaired emotional regulation. Addressing these family dynamics through targeted psychosocial interventions is essential to improving treatment outcomes in this vulnerable group.

Next, low self-esteem has been associated with an increased risk of depression through mechanisms such as inflammation, interaction effects, or cognitive biases [12]. Self-perceptions of worthlessness and uselessness have been linked to mental health issues [13]. It was found that poor self-esteem is associated with higher levels of anxiety, sadness, and suicidal thoughts. It can also result in substance abuse, early sexual engagement, and eating disorders in young individuals [14].

Our study found that adolescents with disabilities were nearly 25 times more likely to develop MDD and/or GAD, which is substantially higher than the threefold increased risk reported in studies focusing on individuals with physical disabilities

in the general population [15]. This discrepancy may be attributed to differences in study populations, as our research included a broader range of disabilities, including intellectual and developmental disorders such as autism spectrum disorder (ASD) and attention deficit/hyperactivity disorder (ADHD), which may elevate the risk further. The relatively small sample size in our study may have also influenced the observed effect size. Individuals with intellectual development disorders (PVID) are more prone to anxiety and stress-related illnesses and are commonly misdiagnosed, particularly those with more severe disabilities [16].

Adolescents facing significant life stressors or dysfunctional family environments were more likely to be prescribed combination therapy. This approach reflects the need to address both emotional and biological aspects of mental health conditions. For instance, supportive therapy, which accounted for 20.2% of prescribed treatments, was often utilised in adolescents with family-related stressors to provide a stable and empathetic therapeutic environment. The practice of prescribing supportive therapy is recommended by clinical practice guidelines (CPG) as supportive therapy is indicated to be applied to patients who are tolerating high levels of anxiety and experiencing subsyndromal symptoms [17].

Similarly, CBT was prescribed to 17.3% of patients and was particularly effective in adolescents with academic pressures or peer-related issues, helping them develop coping strategies and restructure maladaptive thought patterns. Several randomised controlled trials have shown that CBT is effective for a variety of mental and behavioural problems [18].

The success of these treatments was significantly associated with the type of therapy, as revealed by the Chi-square analysis ($p = 0.005$). The finding that monotherapy appears more effective than combination therapy contradicts the existing literature, which often supports the superiority of combination therapy in treating MDD and GAD. The discrepancy, where monotherapy appeared

more effective, may be attributed to various factors. The limited sample size and possible selection bias could have influenced the results, as patients undergoing monotherapy may have experienced milder symptoms or encountered fewer psychosocial stressors. Furthermore, combination therapy is frequently recommended for more severe or treatment-resistant cases [19], which may inherently result in less favourable outcomes. Variations in treatment adherence, especially regarding psychotherapy sessions, may have reduced the effectiveness of combination therapy. Moreover, the type, frequency, and quality of psychotherapy, along with the therapist's expertise, may have impacted patient outcomes. Ultimately, the treatment duration and follow-up period may not have been adequate to fully assess the advantages of combination therapy, which typically necessitates a longer timeframe (6 months to 24 months) to show substantial improvements [20, 21].

Adolescents with disabilities, who are at an elevated risk for severe symptoms, demonstrated greater benefits from integrated care approaches that addressed the complex challenges they encounter. This is consistent with a meta-analysis indicating that the combination of psychotherapy and medication is more effective than monotherapy for individuals with anxiety disorders [22].

Some psychosocial factors were not explicitly associated with specific treatment choices, which raises questions regarding individualised care plans. This issue illustrates the necessity for clinicians to integrate a thorough psychosocial assessment into treatment planning. Tailoring interventions to the specific needs of each adolescent can enhance outcomes.

Conclusion

In conclusion, this study highlights the significant role of psychosocial factors in the development and treatment outcomes of MDD and GAD in adolescents. Low self-esteem, dysfunctional

family dynamics, and the presence of disabilities emerged as critical determinants. The findings emphasise the potential of integrating psychotherapy and pharmacotherapy in addressing complex cases, particularly for adolescents facing severe psychosocial stressors or disabilities. Although monotherapy appeared more effective in this study, the discrepancy with existing literature signals the need for further exploration of the factors influencing treatment outcomes, such as severity of symptoms, treatment adherence, and duration of therapy. This information not only contribute to the growing evidence supporting integrated care models but also highlight the importance of culturally sensitive, individualised treatment plans. Future research should focus on longitudinal studies to assess the long-term efficacy of combination therapy, thereby informing clinical guidelines and health policies for adolescent mental health.

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Conflict of interests

The author declares no conflict of interest regarding the publication of this manuscript.

Authors' contributions

NARMR: Conceptualisation of the research, supervision of the study, editing the manuscript and final approval of the manuscript for submission.

NQAL: Data collection, results analysis and drafting the manuscript.

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Table 1. Demographic characteristics of adolescents who are diagnosed with MDD and/or GAD.

Characteristics	Frequency (N=80)	Percentage (%)	Range	Mean (SD)	Skewness (Kurtosis)
Age			11-18	16.29 (1.836)	-0.865 (-0.303)
Gender					
Male	15	18.8			
Female	65	81.3			
Ethnicity					
Malay	77	96.3			
Chinese	3	3.8			
Parental education					
Middle	28	35			
High	52	65			
Household income					
RM3000-RM8000	32	40			
RM8000 above	48	60			
Living arrangements					
With both parents	57	71.3			
With father only	2	2.5			
With mother only	13	16.3			
With father and stepmother	2	2.5			
With mother and stepfather	3	3.8			
With adopted family	3	3.8			

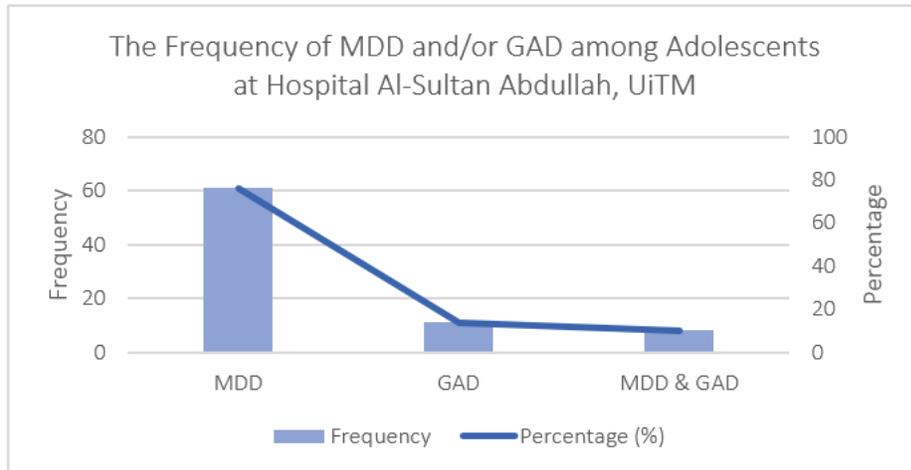


Figure 1. The frequency of MDD and/or GAD among adolescents at HAS

Table 2. Psychosocial determinants of MDD and/or GAD among adolescents in Hospital Al-Sultan Abdullah, UiTM

Psychosocial determinants	Frequency (N=80)	Percentage (%)
Only one contributing psychosocial determinant	3	3.8
More than one contributing psychosocial determinants	77	96.3
	Frequency (n=260)	Percentage (%)
Domestic violence	1	0.4
Dysfunctional family dynamics	40	15.4
Family of history mental health problems	21	8.1
Isolation	20	7.7
Peer rejection	14	5.4
Misuse social media	1	0.4
Bullying	19	7.3
Excessive workload	10	3.8
Adjustment (new school environment)	17	6.5
Academic pressures	31	11.9
Traumatic events	13	5
Disability	4	1.5
Substance abuse	12	4.6
History of mental health problems	14	5.4
Low self-esteem	43	16.5

Table 3. Logistic regression analysis of psychosocial determinants associated with Major Depressive Disorder and Generalized Anxiety Disorder among adolescents at HASA

Variables in the Equation						
Predictor variable	B	S.E.	Wald	df	p-value*	Exp (B)
Dysfunctional family dynamics	0.534	0.923	0.334	1	0.563	1.705
Isolation	-2.869	1.902	2.276	1	0.131	0.057
Disability	3.213	1.571	4.183	1	0.041	24.853
Substance abuse	-19.423	10549.336	0.000	1	0.999	0.000
Low self-esteem	-0.183	0.985	.035	1	0.852	0.833
History of mental health problems	0.846	1.314	0.414	1	0.520	2.329
Traumatic events	1.726	1.047	2.721	1	0.099	5.620
Family history of mental health problems	-0.703	1.098	0.410	1	0.522	0.495
Adjustment to new school environment	-1.073	1.479	0.526	1	0.468	0.342
Academic pressures	1.080	0.910	1.409	1	0.235	2.944
Excessive workload	1.225	1.209	1.027	1	0.311	3.405
Peer rejection	1.207	1.447	0.696	1	0.404	3.345
Bullying	0.787	1.005	0.612	1	0.434	2.196
Misuse of social media	0.804	41554.342	0.000	1	1.000	2.234

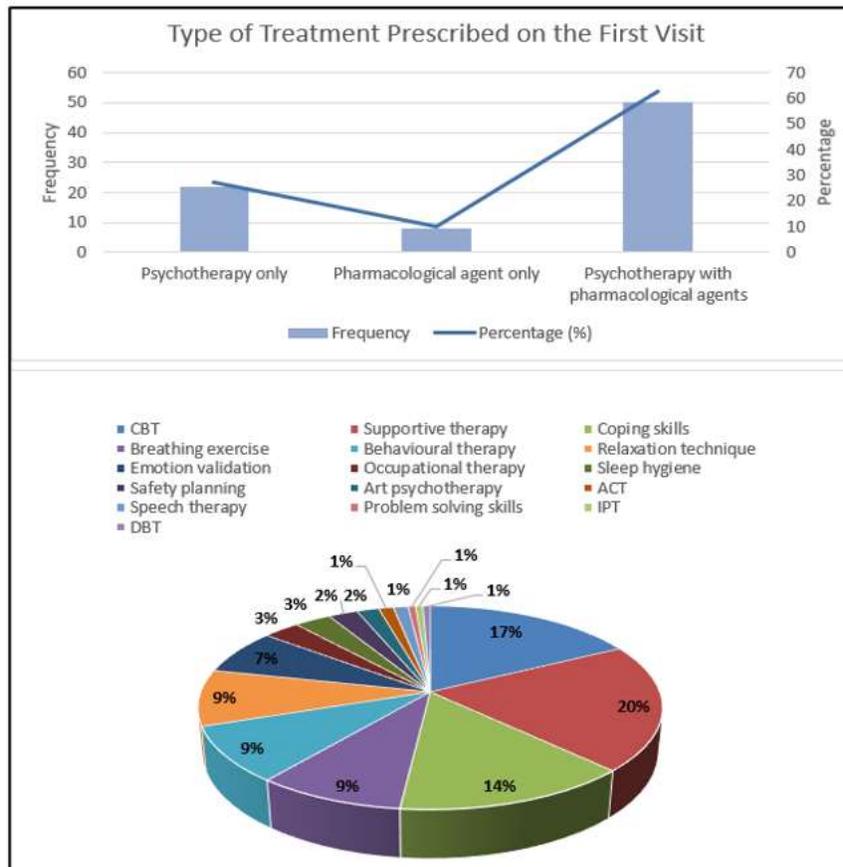


Figure 2. Type of treatment prescribed on the first visit

Table 4. Pharmacological agents received by MDD and/or GAD adolescents

Diagnosis	Pharmacological agent	Frequency (n=58)	Percentage (%)
MDD	Single-agent		
	SSRI		
	Sertraline	7	12.1
	Escitalopram	13	22.4
	Fluoxetine	3	5.2
	TCAs		
	Mirtazapine	2	3.4
	Atypical antipsychotic		
	Quetiapine	1	1.7
	Benzodiazepines		
	Lorazepam	2	3.4
	CNS stimulants		
	Methylphenidate	1	1.7
	Double agents		
	Escitalopram + Lorazepam	5	8.6
	Sertraline + Alprazolam	2	3.4
	Sertraline + Lorazepam	2	3.4
Fluoxetine + Olanzapine	1	1.7	
Olanzapine + Lorazepam	2	3.4	
Sertraline + Risperidone	1	1.7	
Escitalopram + Zolpidem	1	1.7	
Triple agents			
Quetiapine + Mirtazapine + Alprazolam	1	1.7	
Quetiapine + Venlafaxine + Lorazepam	1	1.7	
Sertraline + Alprazolam + Risperidone	1	1.7	

	Escitalopram + Quetiapine + Alprazolam	1	1.7
GAD	Single agent		
	SSRI		
	Escitalopram	1	1.7
	CNS stimulants		
	Methylphenidate	1	1.7
	Double agents		
	Escitalopram + Lorazepam	1	1.7
	Sertraline + Alprazolam	1	1.7
MDD and GAD	Single agent		
	SSRI		
	Sertraline	2	3.4
	Escitalopram	1	1.7
	Fluoxetine	1	1.7
	Double agents		
	Sertraline + Lorazepam	1	1.7
	Escitalopram + Alprazolam	1	1.7
	Escitalopram + Methylphenidate	1	1.7

Table 5. Association between improvement of symptoms and type of therapy prescribed

Type of therapy	Response		X² statistic (df)	p-value*
	Symptoms not improved	Symptoms improved		
Monotherapy	0	30		
Combination therapy	11	39	1 ^a	0.005

^aPearson's Chi-square test

References

- [1]. World Health Organization. Mental Health of Adolescents [Internet]. World Health Organization. 2024. Available from: <https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health>
- [2]. World Health Organization. Adolescent Health [Internet]. Who.int. World Health Organization: WHO; 2024. Available from: <https://www.who.int/southeastasia/health-topics/adolescent-health>
- [3]. Sisk LM, Gee DG. Stress and adolescence: Vulnerability and opportunity during a sensitive window of development. *Current Opinion in Psychology*. 2022 Apr 1;44:286-92.
- [4]. Racine N, McArthur BA, Cooke JE, Eirich R, Zhu J, Madigan S. Global prevalence of depressive and anxiety symptoms in children and adolescents during COVID-19: a meta-analysis. *JAMA pediatrics*. 2021 Nov 1;175(11):1142-50.
- [5]. Institute for Public Health (IPH) 2017. National Health and Morbidity Survey (NHMS) 2017:Adolescent Health Survey 2017, Malaysia.
- [6]. Sivertsen B, O'Connor RC, Nilsen SA, Heradstveit O, Askeland KG, Bøe T, Hysing M. Mental health problems and suicidal behavior from adolescence to young adulthood in college: linking two population-based studies. *European Child & Adolescent Psychiatry*. 2024 Feb;33(2):421-9. https://pmc.ncbi.nlm.nih.gov/articles/PMC10869414/pdf/787_2023_Article_2167.pdf
- [7]. González-Rodríguez R, Gandoy-Crego M, Vilaça T. Social determinants and psychosocial factors that impact on health status. *Frontiers in Psychology*. 2024 Apr 26;15:1405206.
- [8]. Mphaphuli LK. The impact of dysfunctional families on the mental health of children. In *Parenting in Modern Societies* 2023 Jun 21. IntechOpen.
- [9]. Almeida IL, Rego JF, Teixeira AC, Moreira MR. Social isolation and its impact on child and adolescent development: a systematic review. *Revista Paulista de Pediatria*. 2021 Oct 4;40:e2020385. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8543788/pdf/1984-0462-rpp-40-e2020385.pdf>
- [10]. Kirkbride JB, Anglin DM, Colman I, Dykxhoorn J, Jones PB, Patalay P, Pitman A, Sonesson E, Steare T, Wright T, Griffiths SL. The social determinants of mental health and disorder: evidence, prevention and recommendations. *World psychiatry*. 2024 Feb;23(1):58.
- [11]. Nicoletti SE. The Association between Adverse Childhood Experiences, Anxiety Symptoms and Maladaptive Coping Strategies and their Mediating Role: A Quantitative Study (Master's thesis, University of Twente). http://essay.utwente.nl/98177/1/Janicsak_MA_BMS.pdf
- [12]. Remes O, Mendes JF, Templeton P. Biological, psychological, and social determinants of depression: a review of recent literature. *Brain sciences*. 2021 Dec 10;11(12):1633.]
- [13]. Orchard F, Pass L, Reynolds S. 'I Am Worthless and Kind'; the specificity of positive and negative self-evaluation in adolescent depression. *British Journal of Clinical Psychology*. 2019

Sep;58(3):260-73.

- [14]. Nguyen DT, Wright EP. Low self-esteem and its association with anxiety, depression, and suicidal ideation in Vietnamese secondary school students: a cross-sectional study. *Frontiers in psychiatry*. 2019 Sep 27;10:438641. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6777005/>.
- [15]. Noh JW, Kwon YD, Park J, Oh IH, Kim J. Relationship between physical disability and depression by gender: a panel regression model. *PloS one*. 2016 Nov 30;11(11):e0166238.
- [16]. Cooray SE, Tassé MJ, Barnhill J, Bhaumik S. Anxiety and stress-related disorders in people with intellectual disability/disorders of intellectual development. In *Textbook of Psychiatry for Intellectual Disability and Autism Spectrum Disorder* 2022 May 12 (pp. 583-608). Cham: Springer International Publishing. https://link.springer.com/chapter/10.1007/978-3-319-95720-3_22
- [17]. Grover S, Avasthi A, Jagiwala M. Clinical practice guidelines for practice of supportive psychotherapy. *Indian Journal of Psychiatry*. 2020 Jan 1;62(Suppl 2):S173-82.
- [18]. Nakao M, Shirotaki K, Sugaya N. Cognitive-behavioral therapy for management of mental health and stress-related disorders: Recent advances in techniques and technologies. *BioPsychoSocial medicine*. 2021 Oct 3;15(1):16.
- [19]. Dunlop BW. Evidence-based applications of combination psychotherapy and pharmacotherapy for depression. *Focus*. 2016 Apr;14(2):156-73.
- [20]. Malaysia. Kementerian Kesihatan, Malaysian Psychiatric Association, Malaysia. Academy Of Medicine. Management of major depressive disorder. Putrajaya: Ministry Of Health Malaysia; 2019.
- [21]. Alemi F, Min H, Yousefi M, Becker LK, Hane CA, Nori VS, Wojtusiak J. Effectiveness of common antidepressants: a post market release study. *EClinicalMedicine*. 2021 Nov 1;41. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8633963/pdf/main.pdf>]
- [22]. Generalized Anxiety Disorder: When Worry Gets Out of Control [Internet]. National Institute of Mental Health (NIMH). Available from: https://www.nimh.nih.gov/health/publications/generalized-anxiety-disorder-gad#part_6119