SOURCES OF PERCEIVED SOCIAL SUPPORT AND DEPRESSION AMONG PRIMARY SCHOOL ADOLESCENTS IN KELANTAN AND CROSS-CULTURAL ADAPTATION OF ITS INSTRUMENT

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DECLARATION

I, Nor Azila Binti Rani, declare that the work presented in this thesis is originally mine. The information which has been derived from other sources is clearly indicated in the thesis.

Nor Azila Binti Rani

Student ID : P-UD 0111/18

Signed on 20 December 2021

LIST OF PAPERS AND CONFERENCES

During my Doctor of Public Health (DrPH) course, the following articles were finally drafted for submission at the Scopus-indexed Journal and/or presented at international level. Overall, the thesis comprises two drafted papers, which corresponds to the study's four specific objectives.

Papers drafted for journal submission:

- **Translation, Cross-cultural Adaptation, and Validation of the Malay Version of the Child and Adolescent Social Support Scale (M-CASSS)**

  Nor Azila Rani[1] Azriani Ab Rahman[1], Wan Mohd Zahiruddin Wan Mohammad[1], Norzila Zakaria[2]

- **Sources of Perceived Social Support and Other Determinants for Depression Among Malaysian Primary School Adolescents during the COVID-19 Pandemic**

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Conference presentation:

International Postgraduate e-Symposium (IPeS) 2021. Universiti Sains Malaysia, Kelantan, Malaysia. 1st and 2nd of August 2021.

- Point Prevalence and Associated Factors of Depression Among Primary School Adolescents in North-Eastern Region, Malaysia (ORAL)

  Awarded for best oral presenter in the category of medical and health sciences.

- How Kelantanese School-Going Adolescents Perceived Social Support From Different Sources: A Comparison Across Gender (POSTER)

  Awarded among Top 8 poster presenters.

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LIST OF ABBREVIATIONS

APA	American Psychological Association
BDI	Beck Depression Inventory
BSSK	Health Status Screening Form (‘Borang Saringan Status Kesihatan’)
BTOP	Bring The Opportunity Programme
CASSS	Child and Adolescent Social Support Scale (CASSS)
CDI	Children Depression Inventory
CES-D	Centre for Epidemiologic Studies Depression scale
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CI	Confidence Interval
ClFit	Close Fit
CVI	Content Validity Index
DASS-21	Depression, Anxiety, Stress Scale-21 questions
df	Degree of freedom
DSM	Diagnostic and Statistical Manual
FVI	Face Validity Index
FLs	Factor loadings

HREC	Human Research Ethics Committee
HUSM	Hospital Universiti Sains Malaysia
IBM	International Business Machines
ICC	Intraclass Correlation Coefficient
MAAH	Malaysian Association of Adolescent Health
M-CASSS	Malay version of Child and Adolescent Social Support Scale
M-CDI	Malay version of Children Depression Inventory
MCO	Movement Control Order
MI	Modification index
MIASA	Mental Illness Awareness & Support Association
MLR	Robust Maximum likelihood
MOE	Ministry of Education
MOH	Ministry of Health
MSPSS	Multidimensional Scale of Perceived Social Support
NCD	Non-Communicable Diseases
NPFDB	National Population and Family Development Board
NGO	Non-Governmental Organization
NHMS	National Health Morbidity Survey

NRI	Network of Relationships Inventory
OR	Odds ratio
PHQ-9	Patient Health Questionnaire 9
PKD	Pejabat Kesihatan Daerah
PRS	Pembimbing Rakan Sebaya
RMSEA	Root Mean Square Error of Approximation
S-CVI/Ave	Scale-level Content Validity Index, Averaging method
S-FVI/Ave	Scale-level Face Validity Index, Averaging method
SD	Standard Deviation
SOP	Standard Operating Procedure
SPM	Sijil Pelajaran Malaysia (High School Certificate)
SPSS	Statistical Package for the Social Sciences
SR	Standardized residuals
SRMR	Standardised Root Mean Residual
SSSC	Social Support Scale for Children
SSSS	Student Social Support Scale
TLI	Tucker-Lewis Index
WHO	World Health Organization

LIST OF SYMBOLS

$<$	Less than
$>$	More than
$\leq$	less than or equal to
$\geq$	More than or equal to
$=$	Equal to
x	Times
α	Alpha
β	Beta
n	Number of populations
d	Precision
χ2	Chi-square
%	Percentage
P	Proportion
&	And
Z	Z statistic for a level of confidence (1.96)

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19.	Certificates awarded for DrPH-related scientific presentations	S

ABSTRAK

Sumber Persepsi Sokongan Sosial dan Kemurungan di Kalangan Remaja Sekolah Rendah di Kelantan dan Adapatasi Budaya Borang Soal Selidiknya

Latar Belakang: Kemurungan remaja adalah kebimbangan kesihatan yang serius pada masa kini, dan persepsi sokongan sosial mempengaruhi hasilnya. Walaupun beberapa borang soal selidik sokongan sosial dewasa wujud, hanya sedikit borang soal selidik kanak-kanak dan remaja yang disahkan tersedia. Pada masa ini, tiada borang soal selidik berbahasa Melayu yang menyeluruh bagi sokongan sosial untuk kanak-kanak dan remaja yang tersedia di Malaysia. Selain itu, kebanyakan kajian kemurungan remaja dijalankan dalam kalangan pelajar sekolah menengah, dan kurang memberi tumpuan kepada sekolah rendah, sekali gus meletakkan mereka berisiko untuk tidak didiagnosis dan tidak dirawat. Oleh itu, kajian ini mempertimbangkan peranan pelbagai sumber persepsi sokongan sosial dalam kemurungan remaja sekolah rendah.

Objektif: Kajian ini bertujuan untuk menterjemah, mengadaptasi silang budaya, dan mengesahkan Skala Sokongan Sosial Kanak-Kanak dan Remaja (CASSS) untuk remaja umur sekolah yang berbahasa Melayu; untuk menilai tahap persepsi sokongan sosial daripada sumber yang berbeza; untuk menentukan prevalens kemurungan dalam kalangan remaja sekolah rendah di Kelantan dan untuk menentukan lebih lanjut perkaitan antara sumber sokongan sosial dan faktor sosio-demografi dengan kemurungan dalam kalangan remaja sekolah rendah di Kelantan.

Kaedah: Kajian ini dijalankan dalam dua fasa. Fasa pertama ialah adaptasi silang budaya CASSS untuk memenuhi objektif pertama. CASSS mengandungi 60 item yang menilai kekerapan dan kepentingan persepsi sokongan sosial daripada ibu bapa, guru,

rakan sekelas, kawan rapat dan orang lain di sekolah. Hanya penilaian 6-Likert skala kekerapan digunakan dalam kajian ini. CASSS menjalani proses terjemahan dan pengesahan mengikut garis panduan yang ditetapkan. Enam panel pakar mengesahkan kandungan, manakala sepuluh pelajar dipilih untuk pengesahan muka. Versi Bahasa Melayu seterusnya disahkan ke atas 382 remaja bersekolah berumur 10 hingga 16 tahun di Kota Bharu. Analisis faktor pengesahan (CFA) menggunakan kaedah anggaran kemungkinan maksimum yang teguh telah digunakan untuk meneliti konstruk struktur dalaman. Objektif kajian kedua, ketiga dan keempat telah dipenuhi dalam fasa kedua menggunakan reka bentuk kajian keratan rentas. Dari Ogos 2020 hingga September 2020, 576 pelajar berumur 10 dan 11 tahun daripada enam sekolah rendah kerajaan yang dipilih secara rawak di tiga daerah yang dipilih secara rawak di Kelantan telah diambil. Versi sah Bahasa Melayu CASSS (M-CASSS) dan Inventori Kemurungan Kanak-Kanak dalam Bahasa Melayu (M-CDI) yang dijawab sendiri telah digunakan untuk mengumpul data. Data dianalisis menggunakan analisa regresi logistik mudah dan berganda untuk fasa kedua.

Keputusan: Borang soal selidik M-CASSS mengekalkan konstruk lima faktor asal dengan 60 item. Kandungan dan kesahan mukanya menunjukkan keputusan yang cemerlang, dengan S-CVI/Ave=0.94 dan S-FVI/Ave=0.99, masing-masing. Berikutan beberapa cadangan yang wajar untuk ketidaksesuaian semasa analisis, lima model struktur yang berbeza telah diperiksa dalam CFA. Model akhir yang dipilih mencadangkan kewujudan lima faktor, dengan empat item berkorelasi dalam faktor (O1 ~~ O2, O10 ~~ O11, T3 ~~ T4, dan T10 ~~ T12). Model akhir menunjukkan indeks muat yang boleh diterima ($\chi 2/df = 1.58$, SRMR=0.05, RMSEA=0.04, CFI dan TLI hampir kepada 0.90, AIC= 75841, BIC= 76370). Pemuatan faktor berjulat antara 0.419 dan 0.764, dan kebolehpercayaan Raykov ialah 0.961. Semua faktor adalah

berbeza, dengan korelasi faktor adalah <0.85. Dalam fasa kedua, kajian ini mendapati bahawa pelajar menganggap guru mereka sebagai yang paling menyokong. Kira-kira 131 (22.7%) daripada mereka telah disaring sebagai murung. Hanya sokongan ibu bapa yang ketara melindungi mereka daripada kemurungan, bukan empat sumber yang lain. Sementara itu, tinggal bersama ibu bapa tunggal (Adj.OR 2.92, 95% CI; 1.61,5.30; p=0.001), dibuli (Adj.OR 1.92, 95 % CI; 1.06,3.47; p=0.032), didera secara emosi (Adj.OR 2.25, 95%CI; 1.27,3.99; p=0.006), dan mempunyai pencapaian akademik yang lemah (Adj.OR 2.08, 95%CI; 1.27,3.41; p=0.004) meningkatkan kemungkinan kemurungan.

Kesimpulan: Kajian ini menghasilkan instrumen yang sah dan boleh dipercayai untuk menilai persepsi sokongan sosial dalam kalangan remaja sekolah berbahasa Melayu di Malaysia. Penemuan kami mengesyorkan bahawa ibu bapa dan guru kerap bertanya dan mengakui kebimbangan remaja. Apa yang penting, kajian ini juga menekankan keperluan untuk pemeriksaan awal kemurungan dalam kalangan remaja di sekolah rendah dan pihak berkepentingan untuk terus memperkasakan ibu bapa dalam menangani remaja.

Kata kunci: Remaja, kemurungan, persepsi sokongan sosial, sekolah rendah, adapatasi budaya, kajian validasi

ABSTRACT

Sources of Perceived Social Support and Depression among Primary School Adolescents In Kelantan and Cross-cultural Adaptation of its Instrument

***Background*:** Adolescent depression is a serious health concern nowadays, and perceived social support influences the outcome. While several validated adult social support measures exist, few validated child and adolescent measures are available. Currently, no Malay measures of comprehensive social support for children and adolescents are available in Malaysia. Moreover, most adolescent depression research was conducted among secondary school students, and less focused on primary schools, thus putting them at risk of going undiagnosed and untreated. Therefore, this study considers the role of multiple sources of perceived social support in primary school adolescent depression.

Objectives: This study aims to translate, cross-culturally adapt, and validate the Child and Adolescent Social Support Scale (CASSS) for Malay-language-speaking school-aged adolescents; to assess the level of perceived social support from different sources; to determine the prevalence of depression among primary school adolescents in Kelantan and to further determine the association between sources of social support and socio-demographic factors with depression among primary school adolescents in Kelantan.

Methods: This study was conducted in two phases. The first phase was a cross-cultural adaptation of the CASSS to fulfill the first objective. The CASSS contains 60 items that assess the frequency and importance of perceived social support from parents, teachers, classmates, close friends, and other people in school. Only the 6-Likert scale

frequency rating was used in this study. The CASSS underwent translation and validation processes following an established guideline. Six expert panels validated the content, while ten students were chosen for face validation. The Malay version was next validated among 382 school-going adolescents aged 10 to 16 in Kota Bharu. Confirmatory factor analysis (CFA) using robust maximum likelihood estimation method was utilised to examine the internal structure construct. The second, third and fourth study's objectives were fulfilled in the second phase using a cross-sectional study design. From August 2020 to September 2020, 576 students aged 10 and 11 years old from six randomly chosen government primary schools in three randomly selected districts in Kelantan were recruited. The self-administered Malay-validated version of CASSS (M-CASSS) and the Malay Children's Depression Inventory (M-CDI) were used to collect data. Data were analysed using simple and multiple logistic regression for the second phase.

Results: The M-CASSS retained the original five-factor construct with 60 items. Its content and face validity showed excellent results, with S-CVI/Ave=0.94 and S-FVI/Ave=0.99, respectively. Following several justified suggestions for misfits during the analysis, five different structure models were examined in the CFA. The selected final model suggested the existence of five factors, with four correlated items within factors (O1 ~~ O2, O10 ~~ O11, T3 ~~ T4, and T10 ~~ T12). The final model showed acceptable fit indices (χ^2/df = 1.58, SRMR=0.05, RMSEA=0.04, CFI and TLI close to 0.90, AIC= 75841, BIC= 76370). Factor loadings ranged between 0.419 and 0.764, and Raykov's reliability was 0.961. All factors were distinct, with factor correlations being < 0.85. In phase two, this study discovered that students regarded their teachers as the most supportive. About 131 (22.7%) of them were screened as depressed. Only parents' support significantly protected them from depression, not the other four

sources. Meanwhile, living with a single parent (Adj.OR 2.92, 95% CI; 1.61,5.30; p=0.001), being bullied (Adj.OR 1.92, 95 % CI; 1.06,3.47; p=0.032), emotionally abused (Adj.OR 2.25, 95%CI; 1.27,3.99; p=0.006), and having poor academic achievement (Adj.OR 2.08, 95%CI; 1.27,3.41; p=0.004) increased the odds of depression.

Conclusions: This study provides a valid and reliable instrument for assessing perceived social support among Malaysian Malay-speaking school-aged adolescents. Our findings recommend that parents and teachers to regularly ask and acknowledge adolescent concerns. Importantly, this study also highlighted the need for early depression screening among adolescents in primary school and for stakeholders to continue empowering parents in dealing with adolescents.

Keywords: Adolescent, depression, perceived social support, primary school, cross-cultural adaptation, validation study

CHAPTER 1 : INTRODUCTION

1.1 Overview of adolescent

Adolescents are the most valuable assets in a country, as they will become future leaders who will continue to drive and sustain the nation's development. The World Health Organization (WHO) has defined adolescents as a population group between the ages of 10 and 19 years. Globally, one in every six people is an adolescent (WHO, 2021). Adolescent categories are further divided in Malaysia into early adolescence (10–14 years), middle adolescence (15–17 years) and late adolescence (18–19 years) (MOH, 2009). In 2018, there are about 5.5 million adolescents in Malaysia, and more than half of them are attending school (Institute for Public Health, 2017). Malaysian formal education typically begins with pre-school education for children ages four to six, followed by primary school education for children ages seven to twelve, and secondary school education for a further five years, up to the age of eighteen (MOE, 2021).

Most researchers agree that adolescence is a transitional period between childhood and adulthood. Significant and challenging changes occur in their lives during this time, including biological, physical, emotional, social, and economic changes (WHO, 2021). It was also recognised as a period of stress and strain that could have an impact on their physical and mental health (Avenevoli et al., 2015). As a result, early adolescence is regarded as a critical developmental period for exploring relationships between parents, children, and the environment. Mental health, like

physical health, is an important component of childhood and adolescent health development and should not be overlooked (Bayer et al., 2010).

1.2 Adolescent depression: definition, burden and impact

Adolescence increases vulnerability to psychopathology, with depression being one of the most prevalent disorders that usually manifest during this period (Kessler and Bromet, 2013). According to the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5), depression is defined as the presence of a sad, empty, or irritable mood accompanied by somatic and cognitive changes that impair an individual's ability to function significantly. The DSM-5 characterizes major depressive disorder as a period of at least two weeks during which a person has a sad mood or loss of interest or pleasure in daily activities, as well as a majority of specified symptoms, such as problems with sleeping, eating, retaining energy, concentration, or reduce self-worth (National Institute of Mental Health, 2017). Even though the same underlying features typically define depressive disorders in childhood, adolescence, and adulthood, studies report that adolescents are more likely to display irritability than sadness. Notably, the likelihood of their onset increases markedly with puberty (American Psychological Association, 2017).

According to the latest statistics, one in seven adolescents worldwide suffers from a mental illness. Depression is recognised as the third leading cause of disease burden among adolescents (WHO, 2021). According to Avenevoli et al. (2015), as adolescents commonly experience an upsurge in negative emotions, they are more susceptible to depression. The lifetime prevalence of depression in adolescents has been reported to rise dramatically during adolescence, from 2%–3% in the

preadolescent period to 8%–15% during adolescence (Rueger et al., 2016). Prior studies have shown that adolescent depression is rising globally, which is a cause for alarm. Between 2011 and 2020, the point prevalence of depressive symptoms among adolescents grew from 24% to 37%, with Asian countries among the top contributors. Disconcertingly, 34% of adolescents worldwide are at risk of having clinical depression, exceeding the estimate of those young adults (Shorey et al., 2021).

Adolescent depression has long-term consequences that extend beyond adolescence and into adulthood. Those adolescents who are depressed are reported to have more interpersonal problems, poor academic performance, are more likely to engage in risky behavior, and are more prone to having other medical comorbidities (Clayborne et al., 2019; Grover et al., 2019; Jackson and Lurie, 2006; Kessler and Bromet, 2013). Studies also demonstrate that suffering from depression in early life is associated with a multitude of long term poor medical and psychosocial outcomes; these range from depression recurrence in adulthood, increased risk of obesity and type II diabetes, increased risk of comorbid mental health disorders, including anxiety, suicide, and substance use disorders, and give rise to marital and occupational problems (Clayborne et al., 2019; Grover et al., 2019; Jackson and Lurie, 2006). To make matters worse, there has been an increment in the number of adolescents with untreated depression over time (Lu, 2019). Research has shown that because of poor adolescent help-seeking behaviour for mental issues, they end up late in receiving necessary health intervention (Radez et al., 2021). Thus, it is not surprising that depression is known as one of the leading causes of illness and disability among adolescents globally (WHO, 2021).

1.3 Current initiatives in mental health prevention in Malaysia

Under the Non-Communicable Diseases (NCD) Section, MOH, the Mental Health Unit is responsible for developing and coordinating the Community Mental Health Programme. The programme's scope includes promoting mental health, prevention and early detection through screening for mental health problems, treatment at primary healthcare and psychosocial rehabilitation (MOH, 2020). The programmes and services provided include:

i. Healthy Mind Programme in schools

ii. Mental Health and Psychosocial Response during disasters

iii. Healthy Mind Services in Primary Care – Mental Health screening using DASS (Depression, Anxiety, Stress Scale)

iv. Mental Health Services at Primary Care involving;

a. Integrated mental health screening using BSSK (Health Status Screening Form) for adolescent, adult and elderly

b. Follow Up of Stable Mentally Ill

c. Treatment of chronic & difficult patients at home

d. Acute home treatment

e. Psychosocial Rehabilitation service

v. Stress at Workplace Programme

On October 10, MOH released the latest National Mental Health Strategic Plan 2020–2025 to correspond with World Mental Health Day 2021, intending to improve the country's mental health services. Previously, MOH has implemented various promotive and preventive programmes for adolescents' mental health with the cooperation from agencies and NGOs. It includes the Healthy Mind Programme carried out by MOE and the nationwide Let's TALK Healthy Minds campaign (MOH, 2020). The modern youth-friendly Cafe@Teen provided by the National Population and Family Development Board (NPFDB) is another platform offered to help adolescents (Aida et al., 2010). Aside from that, several helplines are also made available to provide 24-hour psychosocial support assistance services for those in need. For instance, the Befrienders hotline (03-7627 2929) and the Talian Kasih (15999), which the Ministry of Women, Family and Community Development (MOWFCD) oversees.

1.4 Concept of perceived social support

There have been several definitions of social support presented in the existing literature. One of the earlier definitions by Cobb (1976) was that it entailed three components of social support: feeling loved, feeling valued or esteemed, and belonging to a social network. Another definition used by Cohen (2004) was that social support refers to the material, informational, and psychological resources that derive from the social network with which the person can count on to cope with stress. Meanwhile, Tardy's (1985) definition of social support provides a more detailed understanding. He described social support as a multidimensional concept consisting of five elements. The first element is known as *direction*, and it explains how social support is both offered and received. The second element, *disposition*, distinguishes

between the availability and actual use of social support. The third element, *description/evaluation*, is concerned with the amount and quality of social support. Meanwhile, the fourth component, *content*, includes four types of social support: emotional, instrumental, informational, and appraisal. Emotional support implies caring behaviours from others. Resources, such as time or money provided to someone in need, are instrumental support. Information support consists of providing needed information or advice, while appraisal support consists of feedback or evaluative information provided to someone. The fifth and final element in Tardy's concept was *network*, which relates to the varying sources of social support (e.g., parents, teachers, peers, health professionals).

It is important to emphasise that it is not only the presence of the elements that provide social support but also the way a person perceives them. Literature has suggested that perceptions of support are more predictive of adverse outcomes than measures of the actual amount of support received by a person (Rigby, 2000). In this study, the definition given by Malecki and Demaray (2002), based on the social support model by Tardy (1985) **(Figure 1.1)**, was used. It defined social support as an individual's perceptions of general support or specific supportive behaviours (available

or enacted upon) from people in their social network, which enhances their functioning and/or may buffer them from adverse outcomes.

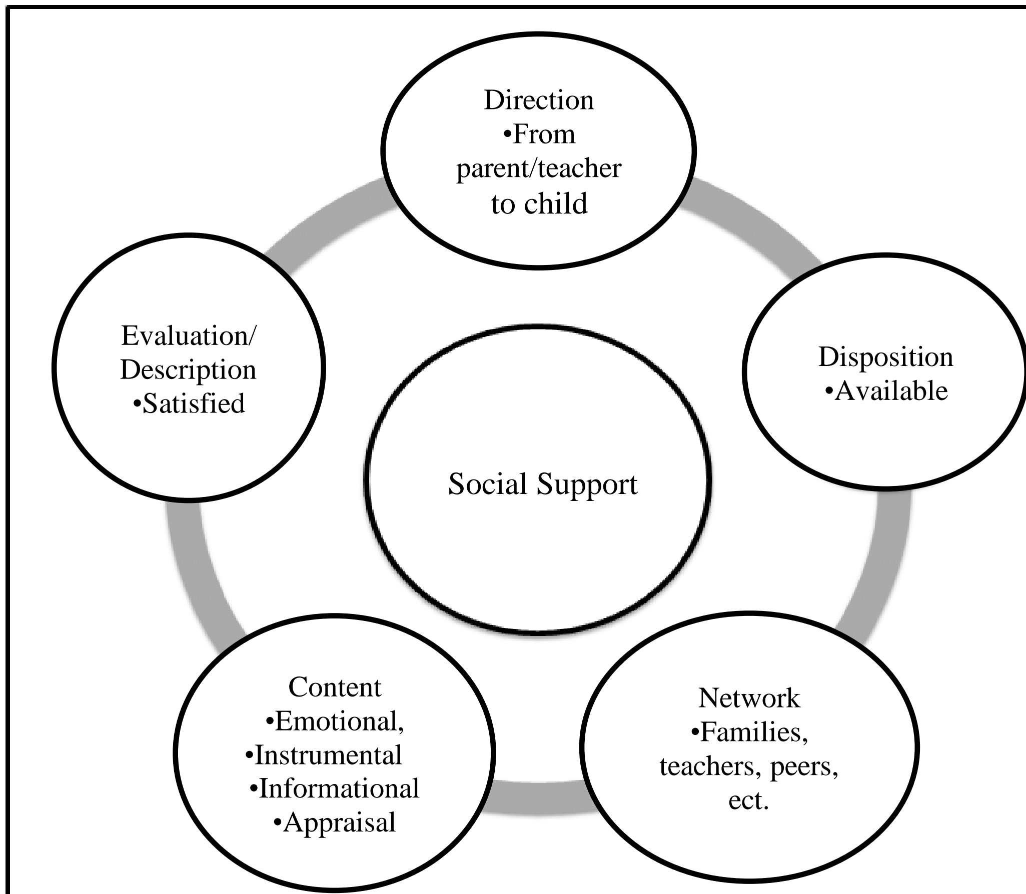

Figure 1.1 Element of social support (Adapted from Tardy,1985)

1.5 Sources of perceived social support in adolescents

Adolescents' access to and perception of social support can significantly impact their social-emotional functioning and development, thus influencing whether they make adolescence a smoother transition or not (Cornwell, 2003; Chu et al., 2010). In particular, early adolescents will undergo significant physical and sexual maturation at this stage. They also start to seek self-identification, feel attracted to others, and become more independent in making their own decisions. However, early adolescents, cognitively, are reasonably concrete thinkers, and their social interaction with peers and adults will greatly influence how they face the challenges of these transitions. They should be able to adapt to these changes, and if they have difficulty adapting, it will make them vulnerable to mental health problems (MOH, 2009).

School has been one of the most important social settings for adolescents aside from home, as they spend most of their time here attaining educational goals here (Kidger et al., 2012). True to this, most studies have reported that parents, peers, and teachers are adolescents' primary sources of support and play a critical role in their mental well-being (Chu et al., 2010; Heng et al., 2020; Rueger et al., 2016; Tennant et al., 2015). The family is the child's first level of interaction where relationships are developed, and the child begins to experience social support (Smetana et al., 2006). Previous work of literature had demonstrated that parental support is able to increase self-efficacy, optimism, hope, and resilience in adolescents. Additionally, it also improved adolescents' study engagement and enhanced problem-focused coping (Siu et al., 2021). Meanwhile, Lyell et al. (2020) reported that social support from either the mother or father could protect early adolescents from internalising disorders, particularly in boys.

As children reach school age, they may look towards other adults and peers within the school setting to find social support. According to Smetana et al. (2006), while parents continue to exert significant influence on long-term issues affecting adolescents, such as job choices, moral issues, and values, social relationships with friends and classmates may have a more substantial influence on adolescent cultural orientation, such as matters of taste, style, and appearance. Additionally, the school environment and students' relationships with school officials, including classroom teachers, administrators, and other school staff, also could impact adolescents' mental health (Kidger et al., 2012). A study conducted in Luxembourg explored school cultures from the teachers' perspectives. It explains how primary and secondary school settings provide adolescents with different school cultures and environments that could influence the outcome of their mental well-being. The findings revealed that school cultures could differ in terms of the quality of the teacher-student relationship, social and academic demands, educational objectives, the structure of the learning environment, and the role of teachers in the classroom setting. For example, although primary school students were highly attached to their school environment and engaged in learning, secondary school students showed a more significant distance towards learning content as well as their teachers and classmates. Additionally, academic demands became more specific at the secondary level, and the students were also expected to work more independently than primary school students (Grecu et al., 2018).

It has previously been observed that a lack of social support has been linked to poorer mental and physical health (Allgöwer et al., 2001; Noret et al., 2019). Nevertheless, some literature also reported contradictory findings. Not all sources of support were equally beneficial and had a positive effect on mental health (Kerr et al.,

2006; Rueger et al., 2010; Rueger et al., 2014; Smetana et al., 2006). This view can be explained further with Camara et al. (2017)'s work that revealed adolescent social relationships could be both stressors and sources of social support.

Adolescents perceive a different level of social support across different sources. A study by Bokhorst et al. (2010) in the Netherlands, conducted among 678 students aged 9–18 years old, discovered that perceived support from parents was equal to the amount of support from friends, and both were significantly higher than support perceived from classmates and teachers. They also concluded that classmates were perceived as significantly more supportive than teachers. However, Chang et al. (2018) reported different findings. They found that teacher social support was perceived higher than parental social support, and classmates had the lowest perceived support in his study involving 1507 primary and secondary school students in Hong Kong. These two studies support previous research that suggests that social environment and culture can influence how adolescents perceive social support from various sources (Kim and Wong, 2002; Jia et al., 2009). Compared to Western cultures, Asian cultures regard teachers as highly respected and highly valued members of society, on a par with the medical profession (Varkey foundation, 2018).

In this current study, social support is conceptualised as the support that students *perceive* as being *available* to them from their parents, teachers, classmates, close friends, and schools. The measure used in the current study also represents Tardy's (I985) four types of support (emotional, appraisal, informational, and instrumental).

1.6 Questionnaires related to social support in children and adolescents

There are a few instruments commonly used in measuring social support for children and adolescents. Such measures include the Social Support Questionnaire (SSQ) (Sarason et al., 1983), the Perceived Social Support Scale (PSSS) (Procidano & Heller, 1983), the Network of Relationships Inventory (NRI) (Furman & Buhrmester, 1985), the Social Support Scale for Children (SSSC) (Harter, 1986), the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988), the Student Social Support Scale (SSSC) (Nolten, 1994), and the Child and Adolescent Social Support Scale (CASSS) (Malecki and Demaray 2002).

Most of the earlier tools used to assess social support in children and adolescents originated from the adult version, which was later validated for use in children and adolescents (Sarason et al., 1983; Procidano & Heller, 1983; Zimet et al., 1988). Because of this, the sources of support measured were limited to family and friends and lacked emphasis on the school components, which were a big part of adolescent and children's social lives. Furthermore, these instruments mostly do not specify the type of support being measured, though they seem to cover emotional and instrumental types only (Rueger et al., 2016).

Meanwhile, few weaknesses were observed for measures explicitly developed to assess children's and adolescents' perceptions of social support (Furman & Buhrmester, 1985; Harter, 1986; Nolten, 1994). Although the NRI (Furman & Buhrmester, 1985) comprehensively evaluated the social support in adolescents, it was too lengthy and taxing to be completed. Meanwhile, the SSSC (Harter, 1986) uses an awkward two-choice scale that some students may find confusing to complete. For example, "Some kids don't have a teacher who helps them to do their very best BUT

other kids do have a teacher who helps them to do their very best." It also does not specify the type of support measured. On the other hand, some items in the SSSS (Nolten, 1994) were not suited for adolescents (e.g., "My classmates play with me at recess"), which is our intended group in this current study. Similarly, the type of support examined was not mentioned in SSSS.

In the effort to improve the available measurement scales in assessing perceived social support in children and adolescents, continued research using the SSSS (Nolten, 1994) had led to its revision and the development of the Child and Adolescent Social Support Scale (CASSS) which also had undergone few refinements until its final single-version was released in the year 2000. Moreover, the CASSS also supplemented the sources of support with a subscale for overall school support which gives beneficial information when examining the social support in school-going adolescents. The CASSS has established strong psychometric evidence throughout literature and has been translated into many languages, indicating that it is a reliable and valid tool to measure social support (Malecki, Demaray, & Elliott, 2000; manual revised in 2019). All items had factor loading values ranging from 0.52 to 0.81. In addition, they demonstrated good internal consistency, test-retest reliability, and concurrent validity when compared to other childhood social support measures. The overall reliability coefficient was 0.96, with subscales ranging from 0.92 to 0.96 (Malecki and Demaray, 2006).

Currently, in Malaysia, the only validated tool available in the Malay version is the MSPSS (Zimet et al., 1988), in which the validation study was conducted among a group of medical students and did not involve adolescents in particular (Ng et al., 2010). To our best knowledge, no measures to assess social support specifically

intended for children and adolescents have yet been translated and validated in the Malay language.

Based on the gathered information from the literature, the CASSS was chosen as one of the research tools in our study for several reasons. First, the framework of the CASSS is congruent with Tardy's (1985) model of perceived social support, which is consistent with the conceptual definition used within this study. Next, the CASSS was used in numerous studies of perceived social support within the school psychology works, thus corresponding with our intended population. Specifically, the CASSS measures school-going adolescents' perceptions of available social support more comprehensively compared to other tools with an acceptable number of items. It covers all four types of support in Tardy's model and includes five main sources of support crucial in school-going adolescents' lives. This will give additional information on perceived social support among our study population compared to the currently available tool in Malay, the MSPSS. Last, research on the CASSS has shown that its psychometric data are robust, making it a proper tool for research purposes. Below is the summarised table showing the comparison of the most commonly used measures of social support for children and adolescents (courtesy of Rueger et al., 2016).

Table 1.1 Comparison of most commonly used measures of social support for children and adolescent.

Scale and Author	Age	Description	Sources of support	Types of support	Additional comments
Child and Adolescent Social Support Scale (CASSS; Malecki, Demaray, & Elliott, 2000)	Developed and validated for use with youth, grades 3-12	60 item scale; 12 items per source subscale	Sources include: •Parent •Teacher •Classmate •Close Friend •School •Global (sum of above)	For each source, three items per type: •Informational •Instrumental •Emotional •Appraisal	Strength: -Cover all type of social support as in Tardy's model -Include school elements -Moderate amount of items
Student Social Support Scale (SSSS; Nolten, 1994)	Developed and validated for use with youth, grades 3-12	60-item scale	Sources include: •Parent •Teacher •Classmate •Friend	For each source, three items per type: •Informational •Instrumental •Emotional •Appraisal	Limitation: -not include school element -some items were not suited for adolescent
Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988)	Developed for adults Validated for use with adolescent youth (mean age 15.8 years	12 item scale 4 items per source subscale	Sources include: •Family Support •Friend Support •Significant Other Support •Global (sum of above)	Unspecified	Limitation: -Sources and type of social support not well covered for adolescent
Social Support Scale for Children and Adolescents (SSSCA; Harter, 1986)	Developed and validated for use with youth, ages 8-18 years	24 item scale; 6 items per source subscale	Sources include: •Parents •Teachers •Classmates •Friends •Global (sum of above)	Unspecified	Limitation: - Type of social support not well covered for adolescent - Uses an awkward two-choice scale
Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985)	Developed and validated for use with youth, ages 11-13 years	249 item scale; 9 social network descriptive items; 30 items per source subscale	Sources include: •Mother •Father •Sibling •Relative •Boy/Girl Friend •Same-Sex Friend •Other-Sex Friend •Another individual •Global (sum of above)	For each source, three items per type: •Companionship • Intimate Disclosure •Nurturance •Affection •Reassurance of Worth/Admiration •Instrumental Aid •Reliable Alliance	Limitation: -Too lengthy -Some items not suitable for older adolescent - Not include school element
Social Support Questionnaire (SSQ; Sarason et al., 1983)	Developed for adults Validated for use with adolescents in grades 8 and 11	27 item scale; 27 items for each source	Sources include: •Family •Network •Global	Unspecified	Limitation: -Sources and type of social support not well covered for adolescent
Perceived Social Support Scale (PSSS; Procidano & Heller, 1983)	Developed for adults Validated for use with youth, ages 12-18	40 item scale; 20 items per source subscale	Sources include: •Friends •Family	Unspecified	Limitation: -Sources and type of social support not well covered for adolescent

1.7 Prevalence of depression among school-going adolescents

According to studies conducted in Asian countries, the prevalence of mental health problems among children and adolescents ranges between 10% and 20% and is steadily increasing (Kieling et al., 2011). Of late, socio-cultural changes and negative interpersonal and intrapersonal relations with one's environment are suggested as the reasons for the worldwide increase in the prevalence of adolescent depression (Bernaras et al., 2019).

There is a wide variation of reported point prevalence rates for depression among school-aged adolescents worldwide, possibly because of the different instruments and cut-off values employed to measure depression among adolescents. Additionally, most previous studies have focused on high school students or included early adolescents as a small subset of a larger group of adolescents aged 10 to 19 years. The different age range of the study population makes it challenging to capture the prevalence of early adolescents in primary school for comparison.

A study by Kubik et al. (2003) involving 3621 students aged 12 and 13 years old revealed that 35% had a depression risk using the Center for Epidemiologic Studies Depression scale (CES-D). A review of Indian studies reported prevalence ranges of 3%–68% in school-based studies using a few different measurements (Grover et al., 2019). Using Patient Health Questionnaire (PHQ-9) to measure depression, Gautam et al. (2021) discovered that 27% of rural Nepalese adolescents were depressed. A meta-analysis of research conducted on Iranian children and adolescents (ages 10–18 years) revealed that depression affects 43.55% of them when the Beck Depression Inventory (BDI) is used and 13.05% when the Children Depression Inventory (CDI) is used (Sajjadi et al., 2013). Meanwhile, Wang et al. (2016) reported a prevalence of 23.9%

among students aged 7–17 years old in west-central China using the CDI tool. Conversely, Sokratis et al. (2017) and Yilmaz et al. (2020) reported a prevalence of 10.3% and 34.5%, respectively, among early adolescents using the same instrument. In the meantime, other studies among school-going adolescents using CDI with different cut-off points of 19 and 20 reported a prevalence range of 20.3%–30.5% (Bahls, 2002; Bilsky et al., 2013; Chan, S.M., 2012; Kleftaras and Didaskalou, 2006; Nalugya-Sserunjogi et al., 2016; Singhal et al., 2016).

Mental health issues among students are not adequately discussed in Malaysia, and many of us are unaware that they exist in our school settings. The prevalence of mental health problems among Malaysian children aged 5–15 years old using a reporting questionnaire for children demonstrated an upward trend from 1996 and 2006 to 2011, with 13%, 19.4%, and 20%, respectively (Ahmad et al., 2015). It is worth mentioning that most adolescent research conducted in Malaysia focuses on secondary school students (aged 13–17 years) and relatively little on adolescents in primary school. According to the latest adolescent nationwide survey in 2019, one in every ten Malaysian adolescents aged 10-15 years struggles with mental health problems (Institute for Public Health Malaysia, 2019). Previously, the Malaysian Ministry of Health revealed the prevalence of mental health problems among secondary school-going adolescents using the Depression, Anxiety, and Stress Scale (DASS) instrument from two national surveys. It showed an increment from 12.1% in 2015 and to 18.3% in 2017 (Institute for Public Health, 2017).

Additionally, a local study by Teoh (2010) discovered that approximately 11% of school-going adolescents aged 10–12 years were depressed while conducting his study in Kuala Lumpur using the CES-D tool. Previously, a study piloted in Selangor

to assess prevalence among 2048 secondary school students using CDI revealed that 10.3% of the students were depressed (Adlina et al., 2007). Whereas a recent study involving only 191 Form Four students in Selangor reported that about 50.3% of the students were positively screened for depression using a similar tool (Norfazilah et al., 2015). Two other local studies conducted to screen for adolescents' depression using the CDI instrument showed a prevalence of 24.2% and 26.2% for school-going adolescents (Ang et al., 2019; Yaacob et al., 2009).

1.8 Sources of perceived social support and depression among school-going adolescents

Noguera In his report, Noguera (2003) stated that youth culture is dynamic and constantly changing and can directly or indirectly affect their well-being. It suggests that adolescents' perceptions of social support from various sources are influenced by their social environment and culture and may play a role in the occurrence of depressive symptoms. This view is further upheld by Bernaras et al. (2019), who wrote that socio-cultural changes and negative interpersonal and intrapersonal relations with one's environment are likely to explain the observed surge in the prevalence of depression worldwide.

Research has found that adolescent attachment to and relationships with parents, peers and the schools they attend are predictors of their mental health (Oldfield et al., 2016). Most studies on the effects of social support on adolescents' depression have only focused on either the general score of perceived support received (e.g., Faleel et al., 2012; Rani et al., 2010) or the independent effects of various sources of support, i.e., by analysing the effects of each source separately (e.g., Joyce and Early, 2014; Millings et al., 2012). Still, adolescents receive support from multiple sources, and it is important to look at the combined effect of those sources, i.e., by analysing the effects of multiple sources simultaneously (Rueger et al., 2010; Rueger et al., 2014).

Although social support is generally considered a protective factor in adolescents' mental health, past research has produced mixed and inconsistent results. Kerr et al. (2006) reported in his study concerning 220 adolescents in the Midwestern

United States that peer support was positively associated with depressive symptoms and suicidal ideation. Whereas Chang et al. (2018) reported that even though a higher level of parental and peer support was related to a lower level of depression, teacher social support showed no significant effect on depression among the school-going adolescents studied in Hong Kong. On the contrary, a study conducted among American adolescents in grades 7–12 showed that higher school and teacher support was significantly associated with fewer depressive symptoms (Joyce and Early, 2014). Nevertheless, a study by Possel et al. (2018) did demonstrate that both family and teacher support predicted depressive symptoms. However, another study revealed contradictory findings. A high level of teacher support was correlated with a greater rate of adverse mental health outcomes in female Norwegian immigrants (Oppedal & Røysamb, 2004).

Likewise, Rashid A. (2017) reported that depression had no significant association with family and friend support after enrolling 300 Pakistani adolescents aged 10–15 years old for his study. In the meantime, while students report receiving more social support from close friends than from classmates (Malecki and Demaray 2002), the literature suggests that classmates may be more predictive of poor social-emotional outcomes (Coyle and Malecki 2018).

In Malaysia, most studies on social support focus on adults rather than children and adolescents. The role of multiple sources of social support in adolescent depression has received little attention. Nevertheless, a study by Amit et al. (2017) in Klang Valley, sampling 263 youth aged 12–24 years old in the general population, revealed that family social support was a significant predictor of depression but not friend support.

1.9 Other determinants of depression among school-going adolescents

This study intends to examine the association between different sources of perceived social support and depression among primary school adolescents as our main interest. However, there are other factors that have been studied that can influence the occurrence of depression among school-going adolescents, as discussed below. The majority, but not all, of these variables were included in our study.

1.9.1 Age

Several studies have found that older adolescents are more likely to have depression when compared to younger adolescents (Kubik et al., 2003; Lu, 2019). On the other hand, a study conducted in Northern India among 2187 school-going adolescent girls aged 10–19 years reported that early and mid-adolescents are significantly more depressed than late adolescents (Shukla et al., 2019). Nonetheless, a few studies reported no significant association when considering age as a predictor for depression (Abd Razak et al., 2019; Ahmad et al., 2015; Bahls, 2002; Chan, S.M., 2012; Sarkar et al., 2016).

1.9.2 Sex

One of the most consistent features of adolescent depression is its predominance among females. According to most studies, female students are more likely to be depressed and report symptoms of depression than male students. They are also more aware of their feelings (Bahls, 2002; Granrud et al., 2019; Sajjadi et al., 2013; Singhal et al., 2016). However, when reviewing trends and associated factors for depression

among Malaysian adolescents, Ahmad et al. (2015) reported that the male sex is more depressed than their counterpart. A study in German adolescents also reported a similar finding (Ravens-Sieberer et al., 2008). Meanwhile, a study by Wang et al. (2016) among 7-17 years old school students discovered no significant association between sex and depression.

1.9.3 Race

Previous research has established that adolescent depression occurs more frequently in certain races or ethnicities. A cohort study conducted by Cheng et al. (2015) observed that non-Hispanic black students are more depressed than their white peers after controlling for discrimination effects. In Malaysia, a few studies have reported that Indian students are more at risk for depression (Abd Razak et al., 2019; Kaur et al., 2014). However, Adlina et al. (2007) conducted a study that reported that depression is more frequently observed among Chinese students.

1.9.4 School locality

Shukla et al. (2019) reported from their study among school-going adolescents (10–19 years) in Northern India that students who studied in rural areas are found to be more depressed compared to their urban counterparts. In contrast, Anjum et al. (2021) found otherwise. They observed more urban school students in the Dhaka district of Bangladesh being positively screened for depression than students in rural schools. Nevertheless, a few studies found no significant association between school locality and depression among school-going adolescents (Ang et al., 2019; Abd Razak et al., 2019).

1.9.5 Household income

It has previously been observed that students living with less affluent families are more likely to develop depression compared to their peers with better household income and economic status (Ahmad et al., 2015; El-Missiry et al., 2012; Moeini et al., 2019; Sajjadi et al., 2013; Wang et al., 2016). Nonetheless, a few studies found no significant association between household income and depression among school-going adolescents (Sameena et al., 2016; Tam et al., 2011).

1.9.6 Living status

In their study, Gautam et al. (2021) found that living arrangements in which the parents lived together or separately did not influence depression outcomes significantly among adolescents in rural Nepal. Meanwhile, a meta-analysis among adopted adolescents by Askeland et al. (2017) showed that adolescents who lived with adopted families reported more mental health issues.

1.9.7 Parental marital status

There is a strong body of evidence on the effect of parental marital status on predicting depression in adolescents. Students whose parents were divorced, separated, or widowed were more likely to suffer from depression than those whose parents were still married (Ang et al., 2019; Abd Razak et al., 2019; Wang et al., 2016). On the other hand, no significant link was found between the two constructs in the study by Moeini et al. (2019) among Iranian adolescents.

1.9.8 Father's and mother's educational level

Previously published studies on the effect of either the father's or mother's educational level were not consistent. Although most studies observed a higher depressive level among students with lower parental education (Adlina et al., 2007; Ahmad et al., 2015; Sajjadi et al., 2013), other studies, however, did not detect a significant association (Ang et al., 2019; Moeini et al., 2019). At the same time, some studies found contradictory results, such as students with better-educated parents being more likely to develop depression. The authors suggested that it might be because educated parents have higher expectations of their children to succeed (Gautam et al., 2021; Shukla et al., 2019).

1.9.9 Number of siblings

Available evidence showed that students with a higher number of siblings were more at risk for depression compared to those without or with a lesser number of siblings (Adlina et al., 2007). However, a systematic study from India reported that students from small families were more vulnerable to depression as they may have had less support from immediate family or relatives (Salodia et al., 2017). Nonetheless, some studies were unable to detect a significant association between family size and adolescent depression (Ang et al., 2019; Moeini et al., 2019; Shukla et al., 2019).

1.9.10 Chronic medical illness

A significant positive relationship between recurrent chronic medical illness and depression appears to exist among school-aged adolescents. A meta-analysis revealed

that those adolescents who reported the presence of chronic physical illness were more likely to have significant depressive symptoms than those who did not report such an illness. It is possibly because they were more likely to miss school and face peer rejection (Pinquart and Shen, 2010). A recent study by Nalugya-Sserunjogi et al. (2016) also found a similar finding whereby those with chronic physical illness were reported to be more at risk for depression.

1.9.11 Physical activity

The existing body of research has suggested that physical activity can greatly influence adolescents' mental health. A large school-based survey conducted among European adolescents showed that frequent physical activity and sports participation were found to independently contribute to greater well-being and lower levels of depressive symptoms in both sexes (McMahon et al., 2017). A similar observation was seen in a study involving 8256 Australian students aged 10–16 years, in which students who reported higher levels of physical activity were associated with fewer depressive symptoms (Kremer et al., 2014). However, a local study conducted among students aged 13–14 years old could not find a significant link between the level of physical activity and depression (Tajik et al., 2017), in line with the finding found in Gautham et al. (2021).

1.9.12 Smoking, alcohol drinking and substance abuse

Substance abuse has been reported to increase the risk of depression among school-going adolescents. Several studies stated that adolescents who smoked, used drugs, or were alcohol drinkers had higher depression scores (Field et al., 2001; Nalugya-