

# Anxiety in Malaysian children and adolescents: validation of the Screen for Child Anxiety Related Emotional Disorders (SCARED)

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## Abstract

**Objective:** Use of the Screen for Child Anxiety Related Emotional Disorders (SCARED) has increased significantly since its publication. Although the validity of the SCARED is well established, most of the samples investigated primarily comprised Caucasian children and, where available, people from Asian cultures such as China. Furthermore, the instrument's utility for screening use in community samples has yet to be validated, although it is commonly advocated for this use. The present study addressed the psychometric properties of the SCARED in a community sample of Malaysian children and adolescents.

**Method:** A total of 386 participants from an urban area, aged between 8 and 17, completed the 41-item SCARED. Confirmatory factor analysis and exploratory factor analysis were performed to investigate the factor structure of the SCARED.

**Results:** Internal consistency ratings for the SCARED's total and subscale scores were good, except for School Avoidance. The validity of the SCARED was further demonstrated through a significant correlation with the Internalizing subscale of the Strength and Difficulties Questionnaire (SDQ). In contrast with the five-factor structure proposed for primarily Caucasian samples, factor analysis revealed a four-factor structure for this Malaysian sample.

**Conclusions:** These research findings support the validity of the SCARED and its utility as a screening tool in a community sample of Malaysian children and adolescents.

**Keywords:** Adolescents, children; Malaysia, reliability, validity

## Introduction

Anxiety is an emotion characterized by a general, unpleasant feeling of apprehension.<sup>1,2</sup> Experiencing occasional anxiety is a common human experience and everyone experiences anxiety at times. In fact, anxiety is considered a normal, beneficial emotion in response to fear-producing stimuli that activate the body's physiological response, known as the fight-or-flight response. An anxiety disorder, however, involves repeated episodes of intense and excessive anxiety, along with other debilitating symptoms such as sweating,

palpitations, heart pounding, chest tightness, light-headedness, and upset stomach.<sup>2,3</sup> Anxiety disorders can alter how a person processes behaviors, thinking, and emotions that disrupt day-to-day living.

Anxiety disorders are among the most common types of childhood psychopathology, affecting approximately 8-12% of children and adolescents at some point in their lives.<sup>3</sup> They may experience anxiety in a variety of ways, such as specific phobias, separation anxiety, and social anxiety disorder.<sup>4</sup> A large majority of studies have explored sex differences in anxiety and found that, in general terms, anxiety is somewhat more prevalent

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among girls than boys.<sup>5-8</sup> The most likely explanation for the sex differences observed is stereotypic sex traits. Notably, girls showed more anxiety than boys, because of their propensity for behavioral inhibition, rumination, and sensitivity to negative stimuli. Although some studies argue that anxiety fades as children grow up,<sup>2</sup> some children may have anxiety disorders that persist into adulthood.<sup>4,9</sup> Because anxiety disorders can cause significant impairment in social and other important areas of functioning,<sup>2,3</sup> there is an imperative to identify children who are at-risk for anxiety.

Self-reports are still the best and most direct type of measure for assessing the internal, subjective nature of anxiety. Despite some drawbacks (e.g., social desirability bias and acquiescence), self-reports remain a time-efficient, brief tool for identifying at-risk children and adolescents who require further psychiatric evaluation.<sup>10</sup> Recent decades have seen considerable advances in terms of development of clinically useful and empirically sound tools for investigating childhood and adolescent anxiety. Common measures include the Spence Children's Anxiety Scale,<sup>11</sup> the Multidimensional Anxiety Scale for Children,<sup>12</sup> and the State-Trait Anxiety Inventory for Children.<sup>13</sup> In contrast with other self-report scales, the Screen for Child Anxiety Related Emotional Disorders (SCARED) is one of the few screening tools that closely corresponds to the Diagnostic and Statistical Manual of Mental Disorders (DSM). The SCARED was originally developed as a screening tool for use in clinical settings, but it is now often used in community settings.<sup>5</sup> The scale is a 41-item rating scale that contains five subscales: Panic Attack, Generalized Anxiety, Separation Anxiety, Social Anxiety, and School Avoidance.

Panic attack is an acute disorder involving sudden and intense feelings of terror and apprehension. It results in palpitations, breathlessness, feelings of suffocation, trembling, and nausea.<sup>1,14</sup> Panic disorders usually occur after exposure to a frightening experience or persistent stress, but may also strike out of the blue, or without a clear warning. Nearly 16% of adolescents are affected.<sup>15</sup> Generalized anxiety disorder is characterized by excessive, long-lasting anxiety, and worries about everyday things.<sup>14</sup> Many people with generalized anxiety disorder find it difficult to control their anxiety even when there is no apparent reason.<sup>1</sup> About 37% of children went to a large anxiety clinic to consult the physician because of generalized anxiety disorder.<sup>16</sup> Separation anxiety disorders usually occur when faced with situations of separation from a person or place to which there is a strong emotional attachment.<sup>1,2</sup> Children who suffer from separation anxiety disorder commonly worry about bad things happening to their

parents, and may experience repeated nightmares about being separated.<sup>16</sup> Prolonged separation anxiety in teenagers sometimes evolves into complete panic attacks.<sup>1</sup> Approximately 4% to 10% of young children have this disorder.<sup>17</sup>

Social anxiety describes a disorder in which an individual experiences fear of being scrutinized and judged negatively by others in social situations.<sup>4,14</sup> Children with social anxiety disorder may often exhibit stage fright, problems with intimacy, and fear of shame and humiliation, causing them to avoid public situations to the point that ability to function in some parts of daily life is impaired. Social anxiety affects 6% to 12% of all school-age children.<sup>4</sup> School avoidance is an anxiety disorder that manifests as an irrational and intense fear of going to school and has significant short and long-term effects on children's educational, emotional, and social development.<sup>1,2</sup> Children with school avoidance may express somatic complaints including migraines, abdominal pain, vomiting, nausea, or diarrhea. School avoidance can present with a vast number of reasons such as stressful life events, separation anxiety, and periods of transition. School avoidance occurs in 2 to 5% of children and adolescents.<sup>4</sup>

Since its publication, the SCARED has rapidly become a preferred instrument for assessment of anxiety in children and adolescents due to its established psychometric qualities. In the original study, the SCARED demonstrated good reliability, with values of internal consistency for the five subscales ranging from 0.74 to 0.89 and 0.93 for the total scale.<sup>5</sup> To date, several validation studies of the SCARED have been carried out in different community samples<sup>18-20</sup> and epidemiological samples.<sup>21,22</sup> These studies have supported the scale's internal consistency and test-retest reliability. Moreover, convergent validity was established on the basis of patterns of correlations with other anxiety questionnaires<sup>6,19</sup> and negative correlation with quality of life.<sup>22</sup> Adequate discriminant validity has also been reported for this measure, differentiating between youth with and without anxiety disorders, and also between children with depressive disorders and anxiety disorders.<sup>5,21</sup> Nevertheless, in some psychometric studies School Avoidance emerged as a weak factor and was unreliable.<sup>8,23</sup> Unreliability of the School Avoidance factor has also been documented in a variety of non-Caucasian populations, including Chinese adolescents<sup>6</sup> and South African youth.<sup>7</sup> These studies generally find that a revised four-factor model that excludes School Avoidance items provides a better fit to the data.

Although the psychometric characteristics of the SCARED have been well established,<sup>5,19,20,24-26</sup> most of

the samples consisted primarily of Caucasian children and, where available, children from Asian cultures like China.<sup>6</sup> More work is needed that examines the psychometric properties of the SCARED in non-Caucasian samples, given that psychometric qualities of self-report instruments vary significantly between Western and Eastern samples.<sup>27</sup> This illustrates the relevance of presenting the psychometric properties of the SCARED in Malaysian children and adolescents. Specifically, item frequencies, descriptive statistics for the entire SCARED scale and its subscales, and item-item reliability were computed. Convergent validity was also assessed by examining the relationship between the SCARED and a measure of internalizing symptoms. Additionally, both confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) were performed to examine the factorial structure of the SCARED.

## Method

### Participants

There were 386 participants, 99 of whom were boys and 287 of whom were girls. Participants were recruited from twenty teaching centers in the Federal Territory of Kuala Lumpur, Malaysia, where the principals agreed to participation in our research. Participants ranged in age from 8 to 17 years, with a mean of 13.76 years (standard deviation [SD] = 2.78). All participants reported living with both parents.

### Measures

The SCARED<sup>5</sup> is a 41-item questionnaire that measures five types of anxiety: 13 items for Panic, 9 items for Generalized Anxiety, 8 items for Separation Anxiety, 7 items for Social Phobia, and the remaining 4 items for School Avoidance. All items are answered on a Likert scale ranging from 0 (not true/hardly ever true) to 2 (true/often true). Scores for the five subscales are created by summing the items of each subscale, which, in turn, are summed together to form a total score.

The Internalizing Problem subscale of the Strength and Difficulties Questionnaire (SDQ) was used to examine convergent validity of the SCARED. This is because anxiety symptoms are usually viewed as an auxiliary part of internalizing problems.<sup>2</sup> This scale is a 5-item questionnaire developed to operationalize the construct of internalizing problems of children aged from 3 to 16 years.<sup>28</sup> All items are answered on a Likert-scale ranging from 0 (not true) to 2 (certainly true). This scale is used extensively in research and has good evidence of both reliability and validity.<sup>29</sup> Its reliability coefficient is high ( $\alpha = 0.81$ ).

### Procedure

During data collection, children who did not have a prior diagnosis of anxiety and whose parents signed consent forms were invited to participate in the study. Children who agreed to participate were also requested to sign an assent form. The questionnaires were then presented to the participants and they were asked to complete them anonymously. Throughout administration, all items were read aloud to the participants by trained research assistants to ensure they filled in the questionnaire accurately. They were reminded several times throughout the administration to ask for help if they had any difficulties with words or phrases. Each session took around 30 minutes to complete and small tokens of appreciation were gifted to the participants as well as the centers. The Departmental Ethics Committee approved all procedures for the study. All participants gave consent for their data to be used in the research.

### Statistical analyses

The statistical programs Statistical Package for the Social Sciences (SPSS) 25.0 and Analysis of Moments Structure (AMOS) 22.0 were used to analyze the data. An alpha level of 0.05 was adopted for all statistical analyses.

## Results

### Item distribution

The distribution of responses for the SCARED is presented in Table 1. For each item, frequencies and percentages were generated by collapsing responses for 1 (somewhat true) and 2 (true/often true).<sup>24</sup> The top five rated anxiety symptoms were feeling nervous wherever there will be unfamiliar people, worrying about how well things are done, heart beating fast when frightened, worrying something bad might happen to parents, and feeling nervous when being watched. The anxiety symptoms for which participants rated themselves lowest were all related to panic/somatic disorders, except for worrying about sleeping alone.

### Mean and standard deviation for total sample and sex subgroups

Table 2 presents the SCARED results for the entire sample and sex subgroups. A total score of 25 or above (in the ranges from 0 to 82) was used as a cut-off score.<sup>21</sup> Approximately 58% ( $n = 224$ ) of the sample exceeded the cut-off score. Results of multivariate analyses of variance found that girls reported significantly higher scores than boys in Total Anxiety ( $F_{1, 384} = 6.2, p < 0.05$ ), Separation Anxiety ( $F_{1, 384} = 9.24, p < 0.01$ ), Social Anxiety ( $F_{1, 384}$

= 4.29,  $p < 0.05$ ), and School Avoidance ( $F_{1, 384} = 8.56$ ,  $p < 0.01$ ) and all effect sizes were considered small according to psychological standards.<sup>30</sup>

### Reliability

Cronbach's alpha coefficients were calculated for each subscale and for the total scale score to assess the reliability of the scale in terms of internal consistency.

The  $\alpha$  coefficient for the total scale was 0.88. The five subscales varied from 0.45 to 0.80, with only School Avoidance being lower than the usual cut-off point of 0.70 (see Table 3).

### Convergent validity

Convergent validity was then computed to assess the correlation between the SCARED and the Internalizing

**Table 1** - Distribution of responses for the Screen for Child Anxiety Related Emotional Disorders (SCARED)

No.	Item	n	%
40	I feel nervous when I am going to parties, dances, or any place where there will be people that I don't know well. SC	323	83.6
35	I worry about how well I do things. GD	320	82.9
18	When I get frightened, my heart beats fast. PN	317	82.1
31	I worry that something bad might happen to my parents. SP	317	82.1
39	I feel nervous when I am with other children or adults and I have to do something while they watch me. SC	297	77.0
32	I feel shy with people I don't know well. SC	292	75.7
33	I worry about what is going to happen in the future. GD	288	74.7
29	I don't like to be away from my family. SP	283	73.3
41	I am shy. SC	281	72.8
26	It is hard for me to talk with people I don't know well. SC	265	68.7
8	I follow my mother or father whenever they go. SP	263	68.1
3	I don't like to be with people I don't know well. SC	251	65.0
10	I feel nervous with people I don't know well. SC	243	63.0
22	When I get frightened, I sweat a lot. PN	239	61.9
11	I get stomach aches at school. SH	233	60.4
37	I worry about things that have already happened. GD	232	60.1
23	I am a worrier. GD	229	59.4
20	I have nightmares about something bad happening to me. SP	225	58.3
14	I worry about being as good as other kids. GD	222	57.5
5	I worry about other people liking me. GD	214	55.4
7	I am nervous. GD	212	55.0
19	I get shaky. PN	204	52.9
2	I get headaches when I am at school. SH	200	52.0
21	I worry about things working out for me. GD	176	45.6
30	I am afraid of having anxiety (or panic) attacks. PN	171	44.3
17	I worry about going to school. SH	169	43.8
4	I get scared if I sleep away from home. SP	167	43.3
16	I have nightmares about something bad happening to my parents. SP	164	42.5
25	I am afraid to be alone in the house. SP	163	42.2
1	When I feel frightened, it is hard to breathe. PN	163	42.2
15	When I get frightened, I feel like things are not real. PN	163	42.2
24	I get really frightened for no reason at all. PN	160	41.5
28	People tell me that I worry too much. GD	155	40.2
36	I am scared to go to school. SH	147	38.1
9	People tell me that I look nervous. PN	145	37.5
6	When I get frightened, I feel like passing out. PN	129	33.4
13	I worry about sleeping alone. SP	124	32.1
12	When I get frightened, I feel like I am going crazy. PN	123	31.8
34	When I get frightened, I feel like throwing up. PN	110	28.5
27	When I get frightened, I feel like I am choking. PN	91	23.6
38	When I get frightened, I feel dizzy. PN	91	23.6

% = percentage; GD = Generalized Anxiety; n = frequency; PN = Panic Disorder or significant somatic symptoms; SC = Social Anxiety; SH = School Avoidance; SP = Separation Anxiety.

Problem subscale of the SDQ. The results showed that the two scales were significantly and strongly correlated ( $r = 0.74$ ,  $p < 0.001$ ).

### Factor analyses

We then performed CFAs in order to examine the stability of the two factor models. Specifically, model 1 corresponds to the theoretical model proposed by the original authors<sup>5</sup> and is composed of 41 items and 5 factors. Model 2 corresponds to the results of our reliability analysis and previous psychometric studies,<sup>8,23</sup> and is composed of 37 items and 4 factors, with School Avoidance excluded. Model fit was examined using the comparative fit index (CFI), the incremental fit index (IFI), in which values of 0.90 or higher indicate a good fit; and the root mean square error of approximation (RMSEA), in which values of 0.08 or lower indicate

an acceptable fit.<sup>31</sup> Table 4 indicates that neither factor model generated an acceptable fit. Results for both model specifications suggested that SCARED did not factor totally onto the five subscales or the four subscales, as specified in earlier studies.

An EFA was conducted on 37 of the items of the SCARED using maximum likelihood estimation to examine its underlying dimensional structure. Analysis of the data identified six factors with eigenvalues greater than 1, whereas a scree plot indicated that up to four factors were interpretable. We then forced four-, five-, and six-factor solutions using both an oblique and orthogonal solution, and the most interpretable factor solution was the four-factor orthogonal. The four-factor model explained 42.08% of variance. The criteria adopted for retaining items were item loadings exceeding the 0.40 cut-off and at least three conceptually related items on

**Table 2** -Mean and standard deviation for total sample and sex subgroups

	Boys (n = 99)		Girls (n = 287)		Total (n = 386)		F	Effect size
	Mean	SD	Mean	SD	Mean	SD		
PN	6.03	3.88	6.83	4.02	6.62	3.99	2.94	ns
GD	6.87	3.28	7.01	4.20	6.97	4.14	0.09	ns
SP	5.17	3.67	6.31	3.04	6.02	3.25	9.24*	0.34
SC	6.14	3.09	6.94	3.40	6.74	3.34	4.29 <sup>†</sup>	0.25
SH	1.89	1.68	2.42	1.51	2.28	1.57	8.56*	0.33
Total score	26.10	10.16	29.51	12.22	28.63	11.80	6.2 <sup>†</sup>	0.30

GD = Generalized Anxiety; ns = not significant; PN = Panic Disorder or significant somatic symptoms; SD = standard deviation; SH = School Avoidance; SP = Separation Anxiety; SC = Social Anxiety.

Effect sizes were computed for Cohen's d.

\*  $p < 0.01$ ; <sup>†</sup>  $p < 0.05$ .

**Table 3** - Internal consistency of the Screen for Child Anxiety Related Emotional Disorders (SCARED)

Scale	$\alpha$	No. of items
PN	0.75	13
GD	0.72	9
SP	0.70	8
SC	0.80	7
SH	0.45	4
Total score	0.88	41

GD = Generalized Anxiety; PN = Panic Disorder or significant somatic symptoms; SH = School Avoidance; SP = Separation Anxiety; SC = Social Anxiety.

**Table 4** - Fit indices for the hypothesized model

Model	$\chi^2$	df	CFI	IFI	RMSEA	90%CI
1	4273.79*	769	0.469	0.473	0.109	0.106-0.112
2	3506.58*	623	0.506	0.509	0.110	0.106-0.113

90%CI = 90% confidence interval; CFI = comparative fit index; df = degrees of freedom; IFI = incremental fit index; RMSEA = root mean square error of approximation.

\*  $p < 0.001$ .

each factor.<sup>32</sup> One item was dropped (“I get shaky”) because it loaded onto none of the four factors. The first factor clearly tapped Generalized Anxiety. The second factor primarily consisted of Social Anxiety items. The third factor contained six (of the seven) Separation

Anxiety items. The final factor captured mostly items about Panic Disorder. The factor loadings ranged in magnitude from 0.41 to 0.77. The factors were analyzed as subscales and had the following coefficients: 0.87, 0.82, 0.70, and 0.68, respectively (see Table 5).

**Table 5** - Exploratory factor analysis with Varimax rotation for the Screen for Child Anxiety Related Emotional Disorders (SCARED)

No.	Item	Factor			
		1	2	3	4
33	I worry about what is going to happen in the future.	0.77			
35	I worry about how well I do things.	0.69			
23	I am a worrier.	0.65			
37	I worry about things that have already happened.	0.62			
16	I have nightmares about something bad happening to my parents.	0.58			
12	When I get frightened, I feel like I am going crazy.	0.58			
21	I worry about things working out for me.	0.56			
28	People tell me that I worry too much.	0.56			
20	I have nightmares about something bad happening to me.	0.55			
30	I am afraid of having anxiety (or panic) attacks.	0.53			
7	I am nervous	0.51			
6	When I get frightened, I feel like passing out.	0.50			
15	When I get frightened, I feel like things are not real.	0.43			
32	I feel shy with people I don't know well.		0.76		
40	I feel nervous when I am going to parties, dances, or any place where there will be people that I don't know well.		0.74		
41	I am shy.		0.74		
26	It is hard for me to talk with people I don't know well.		0.61		
3	I don't like to be with people I don't know well.		0.59		
9	People tell me that I look nervous.		0.51		
24	I get really frightened for no reason at all.		0.49		
10	I feel nervous with people I don't know well.		0.44		
25	I am afraid to be alone in the house.			0.65	
4	I get scared if I sleep away from home.			0.61	
29	I don't like to be away from my family.			0.57	
8	I follow my mother or father wherever they go.			0.55	
13	I worry about sleeping alone.			0.53	
31	I worry that something bad might happen to my parents.			0.49	
39	I feel nervous when I am with other children or adults and I have to do something while they watch me.			0.46	
18	When I get frightened, my heart beats fast.				0.57
1	When I get frightened, it is hard to breathe				0.56
5	I worry about other people liking me.				0.56
22	When I feel frightened, I sweat a lot.				0.55
14	I worry about being as good as other kids.				0.52
27	When I get frightened, I feel like I am choking.				0.50
34	When I get frightened, I feel like throwing up.				0.42
38	When I get frightened, I feel dizzy.				0.41
	Eigenvalue	5.29	4.14	3.09	3.04
	Variance	14.29	11.20	8.36	8.23
	Mean	8.66	6.62	5.76	5.14
	Standard deviation	5.59	3.64	2.98	2.81
	Factor-total score correlation	0.86*	0.77*	0.61*	0.68*
	Internal consistency	0.87	0.82	0.70	0.68

Factor loadings in the table are arranged according to their magnitude with the largest value at the top. Any loadings below 0.40 were suppressed. Kaiser-Meyer-Olkin = 0.759;  $\chi^2_{666} = 6279.293$ ;  $p = 0.000$ ; \*  $p < 0.001$ .

## Discussion

The present study aimed to characterize the psychometric properties of the SCARED in a community sample of children and adolescents in Malaysia. Overall, item frequencies showed that social anxiety was the most commonly endorsed of the SCARED categories. This outcome is probably because of the collectivist orientation, or allocentric focus, in Asian societies.<sup>27</sup> Those in collectivistic cultures tend to have lower assertive skills and more concern about how their behaviors and performance impact others, and this may evoke anxiety in social situations. On the other hand, items related to panic and somatic symptoms such as the feeling of being smothered, the feeling of going crazy, and dizziness were the least frequently endorsed items in this sample. One possible explanation is the sample. To reiterate, the present study used “pure” community samples, in which the experience of panic attack, commonly involving physical somatic symptoms, should be far less likely.<sup>10,19</sup> Anecdotal evidence on different age groups also appears to show adults more likely to report panic disorder/somatic complaints than their child counterparts.<sup>14</sup> Additionally, the mean scores for total anxiety obtained in this sample can also be compared with previous normative data. Our data reveal a mean score of 28.63 (SD = 11.80), which is lower than observed in Saudi Arabian children and adolescents,<sup>18</sup> but higher than in Western samples.<sup>21</sup> The elevated scores in non-white samples could be in part attributable to the fact that they are living in cultures which favor inhibition, compliance, and obedience. This is likely to increase their levels of anxiety.<sup>33</sup> Nevertheless, this is an area that needs further exploration to help determine whether this potential explanation is the core cause of this discrepancy.

Considering the conventional cut-offs for this scale, the results revealed that a large proportion of the sample (58%) reported anxiety symptoms that were above the threshold value (scores greater than or equal to 25), indicating a need for further clinical assessment.<sup>21</sup> Although previous studies have proved that the SCARED is able to discriminate between children with an anxiety disorder and those with non-anxiety-related disorders,<sup>7,21,26</sup> our prevalence rate is 2-3 times higher than the global estimates.<sup>34</sup> While the findings may support the theory that anxiety disorders often emerge during childhood and adolescence,<sup>3</sup> contextual factors may also help to explain high rates of anxiety among this sample. In one study,<sup>35</sup> the risk for anxiety disorders among city dwellers was higher than among non-city dwellers. Given that the current sample was recruited from a large city, they hypothetically

may experience more anxiety symptoms. Moreover, previous studies of non-diagnosed community samples have also found that children report significantly more anxiety symptoms than their parents.<sup>6,19,20</sup> Based on these findings, screening of both children and parents is recommended, regardless of their ages. Moreover, in another community sample study,<sup>36</sup> the sensitivity and specificity of the SCARED was uniformly high (> 0.80%), but specificity was below the recommended minimum cut-off for adequate discrimination (> 0.70), which may lead to overestimation of the presence of diagnoses.<sup>31</sup> Future research could revisit clinical cut-offs or consider including structured interviews during assessment to avoid false positives.

There were also sex differences in Total Anxiety, Separation Anxiety, Social Anxiety, and School Avoidance. Girls rated themselves more highly in these aspects than boys, which may be seen as stereotypical of evolutionary-based sex differences.<sup>5-8</sup> Girls are supposed to be intimate, emotional, and softer, whereas boys are supposed to be brave and strong. These findings provide evidence for the utility of the SCARED for identifying sex differences in anxiety disorders. Reliability analyses showed that both total SCARED score and subscale scores had good internal consistency. Consistent with findings from a wide array of existing studies, with Italian twins,<sup>8</sup> Chinese children,<sup>6</sup> African-American adolescents,<sup>24</sup> and Saudi Arabian children and adolescents,<sup>18</sup> the School Avoidance subscale was not found to be reliable. One possible reason for this is that the School Avoidance subscale does not appear to be part of the same construct as other anxiety disorders, nor it is not classified under the DSM-categorization, even if its symptoms are closely associated with anxiety disorders.<sup>5,21</sup> Additionally, a significant correlation was obtained between the SCARED and the Internalizing subscale of the SDQ, lending support to the SCARED’s convergent validity. This is consistent with the anxiety literature demonstrating a positive link between the two measurements.<sup>5,7,18,21,26</sup>

Using CFA, the original five-factor solution specified by the scale’s authors<sup>5,21</sup> provided a poor fit to the data. The goodness of model fit was mildly improved (albeit the fit still remained poor) when the School Avoidance items were not included in the analysis. By means of EFA, a four-factor orthogonal model was found to be the most interpretable factor solution. A careful inspection of the retained items revealed that the majority of items were loaded onto their respective factors. Factor 1 comprises mostly generalized anxiety items; Factor 2 comprises mostly social anxiety items; Factor 3 comprises mostly separation anxiety items; and Factor 4 comprises mostly panic attack items. These findings may lend support

to previous studies showing that comorbidity among anxiety disorders is common, since many symptoms of anxiety disorders are not exclusively specific to that disorder.<sup>1,2</sup> The variance (42.08%) of the four factors found in this study is higher than the variance (36.3%) of the four factors reported in a previous study.<sup>7</sup> Each of the newly defined factors proved to have good reliability to warrant further evaluation. The consistency of these findings, both in the extant literature and in the present study, leads us to conclude that the SCARED as a whole is more psychometrically robust when the School Avoidance subscale is excluded.<sup>6,8</sup> We therefore suggest that School Avoidance be excluded from future studies using the SCARED.

This study has some limitations. First, there are biases involved in the selection of the sample, because it was not randomly selected from the general population. This convenience sampling may therefore limit generalizability of the findings and it is not clear to what extent the results of this study are generalizable. Future studies might aim to replicate the present study in order to provide additional information on the psychometric qualities of this scale. Specifically, other measures of social anxiety could be included to enable a more thorough examination of the concurrent validity of the SCARED and more samples would be beneficial in assessing the degree to which the current findings are replicable.

## Conclusion

Although some of the instrument's psychometric properties were different from those observed in prior studies, the SCARED nevertheless appears to be useful for screening for anxiety disorder symptoms in community samples. It is evident that the present study not only highlights some important differences in SCARED scores and factor structure in a Malaysian sample compared to prior studies, but also adds to anxiety research on the psychometric qualities of this scale. To conclude, the present study provides a "new" version of the SCARED for use in Malaysia. However, it is important to note that SCARED is a screening tool, rather than a diagnostic tool. Other forms of psychological assessment are still needed in order to make an accurate diagnosis.

## Disclosure

No conflicts of interest declared concerning the publication of this article.

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