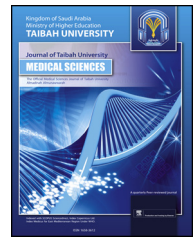




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Educational Article

Psychometric properties of the Secondary School Stressor Questionnaire among adolescents at five secondary schools



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المخلص

هدف البحث: تهدف هذه الدراسة إلى تقييم البناء، والتقارب ومصداقية التمايز من استبانة ضغوطات المدارس الثانوية الثالثة بالإضافة إلى الاتساق الداخلي بين المراهقين في المدارس الثانوية بماليزيا.

طرق البحث: أجريت دراسة مقطعية على ٧٠٠ طالب من المدارس الثانوية في خمس مدارس ثانوية. استخدمت العينة العشوائية الطبقية لاختيار المدارس والمشاركين. وأجري التحليل العاملي التاكديدي لدراسة البناء، والتقارب، ومصداقية التمايز. كما أجري تحليل الثقة لتحديد الاتساق الداخلي.

النتائج: أظهرت النتائج أن نموذج الستة عوامل الأصلي ذو ٤٤ بنداً فشل في تحقيق قيم مقبولة من صلاح المؤشرات الجيدة، مشيراً إلى ضعف ملائمة النموذج. بينما أظهر نموذج الخمسة عوامل الجديد من استبانة الضغوطات الثالثة ذو ٢٢ بنداً مستوى مقبولاً من صلاح المؤشرات الجيدة للدلالة على صلاح النموذج. وكانت قيمة "ألفا كرونباخ" الشاملة للإصدار الجديد من استبانة الضغوطات الثالثة ٩٣،٠٠، بينما تراوحت الأبنية الخمسة من ٦٨،٠٠ إلى ٩٤،٠٠. وتراوحت القيم الدقيقة المركبة لكل بناء بين ٦٨،٠٠ و ٩٣،٠٠ مشيرة إلى مستوى عالي من الرضا عن صحة التقارب.

الاستنتاجات: لم تدعم الدراسة صحة البناء للنموذج الأصلي من استبانة الضغوطات الثالثة. وجدنا أن الإصدار الجديد من استبانة الضغوطات الثالثة أظهر أدلة أكثر إقناعاً للصحة والدقة لقياس ضغوط المراهقة. وهناك حاجة للبحث المستمر للتحقق من وتعظيم اعتماد القياسات النفسية لاستبانة الضغوطات الثالثة عبر المؤسسات والجنسيات.

الكلمات المفتاحية: الضغوطات؛ المراهقين؛ طلبة المدارس الثانوية؛ استبانة ضغوطات المدارس الثانوية؛ خصائص القياسات النفسية

Abstract

Objective: This study aimed to evaluate the construct, convergent, and discriminant validity of the Secondary School Stressor Questionnaire (3SQ) as well as its internal consistency among adolescents in Malaysian secondary schools.

Methods: A cross-sectional study was conducted on 700 secondary school students in five secondary schools. Stratified random sampling was used to select schools and participants. The confirmatory factor analysis was performed to examine its construct, convergent, and discriminant validity. The reliability analysis was performed to determine its internal consistency.

Result: The results showed that the original six-factor model with 44 items failed to achieve acceptable values of the goodness of fit indices, indicating poor model fit. A new five-factor model of 3SQ with 22 items demonstrated acceptable level of goodness of fit indices to signify a model fit. The overall Cronbach's alpha value for the new version 3SQ was 0.93, while the five constructs ranged from 0.68 to 0.94. The composite reliability values of each construct ranged between 0.68 and 0.93, indicating satisfactory to high level of convergent validity.

Conclusion: The construct validity of the original version of 3SQ was not supported. We found the new version 3SQ showed more convincing evidence of validity and reliability to measure stressors of adolescents. Continued research is required to verify and maximize the psychometric credentials of 3SQ across institutions and nationalities.

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Keywords: Adolescents; Psychometric properties; Stressors; Secondary school students; 3SQ

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Introduction

In the growing up process, adolescents experience stress and these experiences are precious as they may promote the positive psychological development, and thus augment overall mental health development. Schultz suggested that youthful stress evolves out of child-perceived threats to his or her security, self-esteem, way of life or safety.¹ These demands may be physical, physiological, or psychological,² or a mixture of these. Children as young as 6 years old are aware of psychological pressure in their lives.³ Although they are exposed to significant levels of stress, children may lack of experience and maturity to recognize stress, and ability to cope effectively with it.⁴ Several researchers have highlighted that the existence of stress can be utilized fruitfully to build higher levels of future resiliency towards psychological distress.⁵ D'Aurora and Fimian stated that restricted and controllable levels of stress provide challenges and an enthusiasm for living.⁶ Unfortunately, the prevalence of psychological distress among adolescents is high, for examples the reported prevalence of psychological distress among Canadian adolescents was 27%,⁷ among US adolescents was 17.7%–18.4%,⁸ among Indian adolescents ranged from 2.6% to 35.6%,⁹ among United Arab Emirates adolescents was 22.2%,¹⁰ among Saudi Arabian adolescents was 35.5%¹¹ and among Malaysian adolescents was over 26%.^{12–14} The prevalence was higher than the reported figure of general population which was less than 18.8% in between 2000 and 2001.^{15,16} In addition to that, it was reported that about 10.2% of girls and 7.5% of boys having considered suicide without having attempted, while 3.6% of all adolescents reported suicide attempts.⁸ It should be reminded that poor mental health during this period has been linked to mental health problems in adulthood.^{17,18} Therefore, mental health plays a vital role to determine the overall wellbeing.¹⁹ World Health Organization (WHO) estimated that mental problems will be the second contributor to the burden of diseases in 2020.²⁰ WHO expected that the figure of mental health problems among adolescents population will be as high as 20%. Studies have shown that excessive and chronic exposure to psychological pressure may lead to many unwanted consequences either at personal or professional level.²¹ Reflecting on this situation, it is impractical for schools to intervene individually for every distressed adolescent. Therefore, early identification of stressors that may put them at risk for developing undesirable consequences is essential. Among the major stressor reported by the previous surveys seem to be linked with academic matters.^{12–14} In fact, students who perceived academic as causing moderate to high stress were at 16 times higher risk to develop psychological distress than those who perceived academic as causing nil to

mild stress.¹³ These facts suggest that there is a growing of psychological pressure on adolescents in the school. Thus, there is a crucial need for schools to identify sources of stress among adolescents so that early intervention could be done. Among the existing psychological health instruments, the Secondary School Stressor Questionnaire (3SQ) is a new and promising screening tool to screen potential sources of stress among adolescents. Unfortunately, to the author knowledge, only one study²² reported its validity and reliability despite its potential. The 3SQ was found to be valid based on exploratory factor analysis that is not sufficient to support its validity, reliable as its Cronbach's alpha value was 0.90, simple, consumes less time and easy to be answered.²² From that notion, further research with more robust statistical method is necessary to verify its validity and reliability as well as to optimize its role and usefulness as a screening tool for potential stressors specifically for adolescents in secondary schools.

In general, validity refers the capability of an evaluation tool to measure outcomes that it planned to evaluate,^{23–26} whereas reliability refers to the extent of reproducibility or consistency of a measurement at different time and occasions.²⁵ Reliability can be estimated by internal consistency and stability.²⁵ The internal consistency of an evaluation tool is evaluated by a single administration while the stability is evaluated by multiple administrations at different intervals.²⁵ Validity can be appraised by content (i.e. content validity), construct (construct validity), relations with other variables (i.e. predictive validity and discriminant validity) and criterion (i.e. convergent and divergent validity).^{23,25,26} Content validity is achieved when an evaluation tool has sufficient items and adequately covers on relevant attributes to be measured based on a blueprint.^{23,25,26} Construct validity is achieved when an evaluation tool able to make a distinction between different constructs of attributes.^{25–28} An evaluation tool is considered to have convergent validity when it shows a relationship with other evaluation tools that measure similar attributes.^{23–26} Divergent validity is considered when an evaluation tool does not show a relationship with other evaluation tools that measure different attributes.^{23,25,26} Discriminant validity is described as the ability of an evaluation tool to distinguish between those people who have obvious trait and those who do not.²⁵ It is noteworthy that reliability and validity are essential qualities that an evaluation tool must be evaluated to ensure psychometrically credible.^{25,29}

This study aimed to evaluate the construct, convergent, and discriminant validity of the 3SQ as well as to evaluate its internal consistency among adolescents in Malaysian secondary schools. This study aimed to answer 4 questions which include: 1) Do the 3SQ's constructs fit to data? 2) Do items measuring similar constructs strongly converged on each other? 3) Do items measuring different construct diverged from each other? And 4) Do the 3SQ's items demonstrate high level of internal consistency?

Materials and Methods

A cross-sectional study was conducted on secondary school students in the 2010 academic session at five secondary schools in a state of Malaysia. The schools' curriculum follow the Malaysian National Curriculum for Secondary School

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