

Adaptation and validation of the Depression, Anxiety, and Stress Scale (DASS21) among Students of the University of Colombo.

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Objectives: The main objective of the study is to adapt and validate the Depression Anxiety Stress Scale (DASS) 21 in to Sinhalese. Specific objectives were, to translate the DASS 21 English version; assess the content and consensual validity; pre-test; assess construct validity and assess reliability of the Sinhala version of the DASS 21.

Literature review: The WHO emphasizes that mental health is not just the absence of a mental disorder, but also the overall wellbeing of the individual. From this perspective, mental health includes an individual's ability to enjoy life and procure a balance between life activities and efforts to achieve psychological resilience. Psychological health conditions such as depression, anxiety, and stress are common, and they in turn play a vital role in the quality of physical health. The Global Burden of Disease Survey (BDS) estimates that by the year 2020, depression will be the second most prevalent disorder (Murray & Lopez, 1996). Timely identification of such mental health issues would result in the ability to provide appropriate target based interventions. During the adolescent period, many undergo major transitions, most of them unique to their developmental stage that cause them significant stress. These consequences may lead to the development of psychiatric disorders during early adulthood (Thalagala, 2004). Among these adult groups, university students are an extremely vulnerable group to develop mental health issues due to their academic and social context (Kurupparachchi, & Williams, 2002).

Unfortunately, there is a dearth of valid and reliable instruments to assess depression, anxiety, and stress among people in Sri Lanka. Most of the standardized global instruments available to measure depression, anxiety, and stress are designed to assess these disorders independently. These symptoms rarely occur in isolation. Thus, validating a scale that can identify the presence of all the three symptoms- stress, anxiety, and depression together, is useful for both researchers and practitioners of mental health in Sri Lanka's busy clinic settings.

Research Design and Methodology: It is a cross-sectional, correlational, and factor analysis study. The study population was Sinhala speaking students between 18 to 35 years attending the University of Colombo. Selections of the participants (N=232) were done by random sampling method.

The instrument: The DASS-21(Lovibond&Lovibond 1994) is a self-reported, single instrument that identifies and assesses the three negative emotional states (depression, anxiety, & stress) with maximum discrimination between depression and anxiety.

Translation process: A standard and systematic procedure was followed to translate the original version of the DASS 21 in to the Sinhala language (Neuman 1997,Sumathipala& Murray 2000). Content and consensual validity was established by following a Delphi process (Jones & Hunter, 1995). The DASS 21 Sinhala version was pre-tested among the target population ($N=18$; $n = 6$ declared, $n=12$ undeclared) (De Vaus, 1991) similar to the main study sample. The proportion of students per faculty was; Arts (63%), Medicine (51%), Science (52%), Management & Finance (15%), Law (22%), and Education (29%). Prior to conducting the study, the principal researcher highlighted the ethics of the study, and obtained written consent from each of the participants. The study tools consisted of the DASS 21 Sinhala version, Perceive Stress scale (PSS), General Health Questioner 28 (GHQ-28), Patient Health Questioner (PHQ) and the demographic questionnaire were administered respectively. The ethics review committee of the University of Colombo approved the study, and permission to conduct the study was obtained by the respective faculty deans.

Findings and Conclusion: *Results:* The internal consistency of the depression, anxiety, and stress subscales of the DASS 21 Sinhala version were 0.83, 0.76 and 0.80, respectively. The contrasted group technique found that psychological wellbeing (i.e., measured by the GHQ-28) was significantly lower for those with symptoms of depression, anxiety and stress than those who did not report such symptoms. The DASS 21 Depression scale has a strong significant correlation with PHQ depression sub scale and the PASS stress scale (*Pearson's* correlation $1 > .601$ and $.455$); there was a contradictory negative correlation with PHQ anxiety ($P > .004$). DASS anxiety had a positive correlation with the PHQ depression, anxiety and the PSS ($1 > .544$, $.473$ and $.333$). DASS stress scale had significant positive correlation with PHQ depression and the PSS ($P > .558$ and $.477$). DASS stress scale correlated with the PHQ anxiety scale ($1 > .169$) but it was not significant. There is a corresponding increase in the PHQ and PSS depression ratings, except the PHQ anxiety ratings. The confirmatory factor analysis found that the current data fit the intended model satisfactorily. The factor structure of the DASS Sinhala version was similar to that of the original DASS 21.

The final DASS 21 Sinhala version retained all items as per the original DASS 21 with minor revisions to a few terms and response alternatives to achieve age and cultural appropriateness, whilst being mindful of keeping the items as similar in contextual meaning as possible to the original version.

Limitations of the study: Due to the semester system of the university, the sample sizes of each faculty were disproportionate. *Recommendations:* The presence of students from other

universities across the country would have given a better representation of national normative data. It is also recommended that further research replicate this study among other ethnic groups and different populations (clinical and general).

Key words: DASS 21, Reliability, Validity

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