**Abstract**: Background and objectives: The omnipresence of stress and depression among university students is a cause for concern, as it can have adverse consequences on all aspects of their life. Understanding the role of social support as a protective factor within this context, may well be vital to the enhancement of overall wellbeing among students. The main aim of the present study was to examine the moderating effect of perceived social support on the relationship between stress and depression. Methods: A cross-sectional. Conducted to garner data from 254 university students for hierarchical multiple regression. Structural equation modeling analysis. Results: Firstly, the present study replicated the frequently reported positive relationship between stress and depression. Secondly, an inverse association between social support and depression was also depicted. Finally, the results also supported an interaction between perceived social support and stress in predicting depression among students. Conclusion: In sum, the results of the current study may well augment our understanding of the role of perceived social support in combating stress and depression among students, and thereby convey important implications for intervention strategies tailored to this demographic.

**Key Words**: Stress, Depression, Perceived social support, Moderation analysis, University students.

**Introduction**: It is certainly a widely-held perception that the academic environment can foster high stress and competitiveness. The perception of stress, and its deleterious effect on health, occurs when individuals are faced with a physical or psychological situation that they do not have the means to properly cope with. It has however, also been noted that most individuals under stress do not become depressed, and sometimes depression may develop without prior stress. Stress and depression may adversely affect those who suffer from it, with repercussions in cognitive, vocational and/or social functioning, which may not augur well for students. A small but growing body of research literature has indicated that psychosocial factors such as social support may play a major role in buffering the negative impact of stress on mental health outcomes, including depression. More importantly, social support has been viewed as protective among youth. Perceived social support which is defined as an individual's potential access to social support resources, that is to say, an individual's belief that support is available if needed, has been repeatedly linked to positive psychological and health outcomes.

Over the years, a major emphasis in most research was to test hypotheses as to whether psychosocial factors such as social support would be effective in influencing one's ability to cope with stress, and to test its efficacy in alleviating the negative impact on physical and mental health outcomes. Although several studies among the general population have lent credence to its beneficial role, not many investigations have enquired into the role of social support and its implications for students. Hence, the main objective of the current study was to investigate the interrelationship between stress, depression and social support, in order to achieve a better understanding of the causal associations, among this demographic group. Specifically, the study aimed to examine the moderating role of perceived social support on the relationship between stress and depression among university students in Malaysia.
Methodology

Participants and procedure
A cross-sectional survey, utilizing convenience sampling technique was implemented to garner data from undergraduate students of a public university in Malaysia. Before commencing data collection, students were briefed about the nature of the research and assured about the anonymity of their responses. Written consent was procured from students who volunteered to participate, prior to distribution of the self-administered questionnaire in the classroom. The survey received approval from the University Research Committee. The self-report English language questionnaire consisted of three components. Socio-demographic aspects of students, such as age and gender, were included in part 1. The Multidimensional Scale of Perceived Social Support (MSPSS) was incorporated in part 2, and the Depression Anxiety and Stress (DASS-21) items were included in part 3.

Instruments
The MSPSS is a brief measure of subjectively assessed social support. This self-report scale contains 12 items designed to evaluate perceived social support from three sources, namely, family (FA), friends (FR), and significant others (SO). Each source is assessed using four specific questions, and rated on a 7-point Likert scale ranging from 1 (very strongly disagree) to 7 (very strongly agree). A total score was obtained by summing all of the items, wherein scores ranged from 12 to 84. Lower scores denoted lower perception of social support, while higher scores implied higher perception of social support. Excellent internal consistency values have been reported for the total score (0.91), as well as for each of the three subscales (0.90 to 0.95).

The DASS-21 is a short version of the original 42-item questionnaire designed to measure the three negative emotional states of depression, anxiety and stress. This self-report instrument consists of 21 items, offering response categories on a 4-point Likert-type scale ranging from 0 (Did not apply to me at all) to 3 (Applied to me very much or most of the time). Respondents had to indicate the extent to which each statement applied to them over the last week. The questionnaire is separately scored as three 7-item subscales comprising of Depression, Anxiety, and Stress. Based on the manual guidelines, scores from each subscale were summed up and multiplied by two to suit the original 42-items. The DASS-21 was utilized in this study due to its brevity, which ensured completion in lesser time. Moreover, excellent internal consistency for the three subscales (0.80 < α < 0.91) have been indicated by several studies. Nonetheless, to meet the objectives of the current research, only the Stress and Depression subscale scores were incorporated for further analysis. Based on the manual guidelines, the DASS severity ratings for depression, range from normal (0 - 9), mild (10-13), moderate (14-20), severe (21-27), and extremely severe (28+). The severity ratings for stress, range from normal (0 - 14), mild (15-18), moderate (19-25), severe (26-33), and extremely severe (34+).

Statistical analysis
Data analysis was conducted by Statistical Program Social Sciences (SPSS version 22). Descriptive and inferential statistics were implemented for data screening. Hierarchical multiple regression analysis as recommended by Baron and Kenny was performed to test the moderating effect of social support on stress and depression. Prior to testing for moderator effects, the predictor and moderator variables were standardized to reduce problems associated with multicollinearity between the interaction term and main effects. In step 1, the predictor variable (stress) was entered into the regression model. In step 2, the moderator variable (social support) was added. In step 3, the interaction of stress x social support was entered into the model. A significant change in the R² for the interaction term indicates a significant moderator effect. Data was tested for 1000 bootstrap samples using the 95% confidence interval, wherein significance occurs when zero is not included in confidence interval. Moderation was considered significant at an alpha level of 0.05. Additionally, Structural Equation Model (SEM) analysis was also performed to test and compare results. AMOS (version 22) was employed for building the model and EXCEL was used to interpret graph.

Results
Sociodemographic findings showed that a total of 254 undergraduate students participated in the study. Of these, 35% were males and 65% were females. Participants were between the ages of 20 and 24 years (mean age [M] = 21, standard deviation [SD] = 0.92).

The results of the regression analysis are presented in Table 1. The first step (without interaction), F (1, 252) =277.32, p<0.05, demonstrated that stress significantly predicts depression. The second step (with social support as moderator), F (2, 251) =159.96, p<0.05, was also significant. The third step (with stress X social support), F (3, 250) =115.61, p<0.05, showed a significant interaction and accounted for more variance. The finding, AR²=0.021, p<0.05, indicated that social support was a potential significant moderator of the relationship between stress and depression.

To further evaluate the interaction effect of stress and perceived social support for depression, a simple slopes graph was plotted, and has been depicted in Figure 1. The analysis revealed that social support inhibits the positive relationship between stress and depression. Specifically, at lower levels of stress, students with low social support exhibited high depression than those with high social support. Whereas, despite higher levels of stress, students with high social support demonstrated low depression.

<table>
<thead>
<tr>
<th>Model 1:</th>
<th>β Unstandardized</th>
<th>β Standardized</th>
<th>t</th>
<th>Sig</th>
<th>F</th>
<th>R²</th>
<th>AR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>.523</td>
<td>.607</td>
<td>15.3</td>
<td>0.00</td>
<td>277.3</td>
<td>.52</td>
<td>.52</td>
</tr>
<tr>
<td>Model 2:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support</td>
<td>-.576</td>
<td>-.199</td>
<td>4.57</td>
<td>0.00</td>
<td>159.9</td>
<td>.56</td>
<td>.03</td>
</tr>
<tr>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 3:</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Interaction</td>
<td>-.854</td>
<td>-.152</td>
<td>3.52</td>
<td>0.00</td>
<td>115.6</td>
<td>.58</td>
<td>.02</td>
</tr>
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</tr>
<tr>
<td></td>
<td>Note: p &lt; .05</td>
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</tr>
</tbody>
</table>

Figure 1: Relationship between stress and depression with the moderating effect of social support.
The model constructed for SEM analysis has been portrayed in Figure 2. Findings indicate that social support moderates the relationship between stress and depression, with the overall model explaining 13.36% variance in depression. Moreover, as seen in Table 2, all SEM estimates were found to be significant and similar to the regression model.

**Table 2: Summary of estimates.**

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression ← Support</td>
<td>-0.576</td>
<td>0.125</td>
<td>4.509</td>
<td>***p &lt; .05 (two-tailed)</td>
</tr>
<tr>
<td>Depression ← Stress</td>
<td>-0.473</td>
<td>0.039</td>
<td>13.407</td>
<td>***</td>
</tr>
<tr>
<td>Depression ← Z_int</td>
<td>-0.854</td>
<td>0.241</td>
<td>3.542</td>
<td>***</td>
</tr>
</tbody>
</table>

**Discussion**

As an intrinsic part of their educational environment, university students may encounter unique situational challenges or stressors that may well be detrimental to their physical and mental wellbeing. Inherent to this demographic, is the existence of a subtle yet complex relationship between stressful situations and vulnerability to depressive symptomatology. The preponderance of negative outcomes during this crucial period in student lives, in addition to its cascading consequences, may potentially have an adverse effect on the trajectory of their future life. In order to buffer or weaken the deleterious impact of stress and depression, coping resources such as social support, have been identified as efficacious assets for fostering adaptation among students facing stressors. Understanding and becoming familiar with the role of social support is essential in order to augment our current knowledge. Therefore, the current study endeavored to analyze the moderating role of social support in the relationship between stress and depression.

Results from the current study indicated a significant positive correlation between stress and depression ($r = 0.72$, $p < 0.05$), demonstrating that stress is an imperative variable that influences depression among university students. This finding is consistent with several other studies which have inferred positive associations between stress and depression.\(^{13,14,15}\)

Correlational analysis within the present study also revealed a significant inverse relationship between stress and social support ($r = -0.42$, $p < 0.05$), indicating that students who perceived low social support had high levels of depression. Substantiating this interpretation was the premise by Stic et al., which acknowledged that deficits in parental support (but not peer support) may predict future increases in depressive symptoms and onset of major depression.\(^{16}\) Likewise, a prior correlational study conducted amongst a non-clinical adolescent sample, which tested the hypothesis of an inverse correlation between perceived social support and depression, also resulted in an affirmation of the association amid the two variables.\(^{17}\) Furthermore, several recent studies too have established similar conclusions,\(^{18,19}\) thereby emphasizing the inferences derived from the current study.

Finally, results of the present study revealed that the interaction between perceived social support and stress moderated depression amongst the students. Hence, it can be purported that, psychosocial factors such as perceived social support, can influence the relationship between stress and depression. This is in accordance with the stress-buffering hypothesis which postulates that perceived social support ameliorates the adverse effects of stressful situations by acting as a protective psychosocial factor for individuals experiencing high levels of perceived stress.\(^{20}\) Therefore, the present findings are consistent with extant research literature, in proposing that social support decreases the risk for depression.

**Conclusion**

Overall, perceived social support appears to be critically significant within the context of stress. Students who are able to utilize social support do not, on average, experience increases in depressive symptoms in stressful situations. In this way, perceived social support may provide a vital disruption to the linkage between stress exposure and depression. In sum, the results of the current study may well augment our understanding of the role of perceived social support in combating stress and depression among students, and thereby convey important implications for intervention strategies tailored to this demographic group.

**References**


