

## Economic Evaluation of Stress Management Intervention for Undergraduate Economics Students

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**Key words:** Economic evaluation, stress management intervention, undergraduate economics students

**Abstract:** Academic-related stress is widespread among undergraduate students and associated with high costs for Nigerian society. Stress Management interventions (SMIs) employing emotional coping skills appear promising for students with stress and stress-related issues. However, evidence for their cost-effectiveness is scarce in developing economies. The study aimed at appraising the economic utility of a stress management intervention designed for undergraduate economics students. The study adopted a randomized control trial design to ascertain the economic value of a stress management intervention for undergraduate economics students. A sample of 300 undergraduate economics students with elevated symptoms of perceived stress (Perceived Stress Scale = 22) was assigned to either the SMI or a Waitlist Control Condition (WLC). Results suggest that presenting an SMI which employs emotional coping skills to assist stressed undergraduate economics students has the probability of being cost-effective compared with WLC.

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Page No.: 2186-2190

Volume: 15, Issue 10, 2020

ISSN: 1816-949x

Journal of Engineering and Applied Sciences

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## INTRODUCTION

The concept of stress as a topic has been studied more in medical education than any other field. A recent Google Scholar search located more studies on stress and medical students, than engineering students, agricultural

students and economics students. Professionals and educators in the field of economics must reason from the research regarding stress and medical students with less concentration on stressors that are unique to medical students. Among undergraduate students, severe stress has generally been linked to a range of factors. The academic

expectations as well as the curriculum are in general more demanding than those of college. Students may feel weighed down and strained for time. Competition from peers who are academic stand outs may result in self-doubts. The apparent need to concentrate almost entirely on classes may vary with attempts to meet up with the family hassle<sup>[1]</sup>. A different branch of the adjustment process may be changing location away from a familiar environment to a new city and new institution. Close to this is the forfeiting of important avenues of social support as well as family and friends. Additionally, Silver and Glicker<sup>[2]</sup> made a report concerning the emotional and verbal abuse that some students go through under faculty and staff. Additional stress may be experienced by women<sup>[3]</sup>.

Notwithstanding the fact that stress is a general phenomenon, economics students have a number of exclusive stressors which may be emotional, cognitive, physical, short-term, long-term, social or situational in nature. By recognizing the stress common to economics students, experts can better identify the warning signs of stress and assist students in coping with or make available treatment for those stress symptoms. The volume of material economics students must learn and memorize as well as the pace at which they are anticipated to do so, adds to overload. Students commonly point out time management problems and shortfall in study skills as main contributors to their stress. Some students reported that these skills shortfall were not noticed until they got into university, possibly because they are now handling more challenging materials and have fewer time to make up for shortfalls in their study skills.

The practice of learning to calculate, evaluate and solve arithmetic issues surrounding the discipline creates stress pending when these skills are polished and students become more confident of their capacity to treat pain management problems<sup>[4]</sup>. In fact, knowledge gathered in teaching principles of economics has it that most students get into the course thinking that every market transaction has a winner and a loser. It would seem that a student who is expecting a winner and a loser in all social dealings is likely to be less cooperative<sup>[5]</sup>. This level of reduced interaction may result in high level of stress. For many economics students, learning of that mutual benefit is sometimes possibility may be a more far-reaching alteration in their understanding than a repetition of the already well-known dictum that people are mostly selfish. Again this is a major adjustment for many students. Although, it is a positive adjustment, it may pose some level of stress which manifests as functional disorders for which these students are perceived as less cooperative and selfish by other students. Hirshleifer<sup>[6]</sup> thinks that economists have an accepting attitude towards people. Students come to this state of mind after years of

undergoing teaching and training in economics. The conflict arising from differences in faculty teaching and student learning styles also plays apart in increasing stress among students. Economics students are at the risk of heightened stress when they lack high emotional intelligence or strong skills in emotional competence, due to interpersonal difficulties<sup>[7]</sup>. In all field of academic endeavor, psychological problems cause professional inefficiency. Yezer<sup>[8]</sup> opined that problem denial was the usual rationale for persons who had contravened ethical or legal norms. The stressors that add to professional inefficiency or breaking of ethics should be an aspect of future study.

Emotion regulation skills have proven to be important and successful in a wide range of mental disorders such as anxiety and depression<sup>[9]</sup>, however, they are still largely unappreciated in research on Stress Management Interventions (SMIs). From a hypothetical point of view, championing emotion-focused and problem focused coping skills according to Lazarus's model<sup>[10]</sup> as two main program gears in one intervention is good. However, SMIs employing emotional coping skills only, appear promising for students with stress and stress-related issues. Though, this approach has not yet been initiated, this study is designed to fill this gap in research by investigating a SMI for economics students based on emotion regulation by considering its cost-effectiveness.

## **MATERIALS AND METHODS**

This economic evaluation study was approved by the Research Ethics Committee of the Faculty of Education, University of Nigeria, Nsukka. The established Ethical Principles and Code of Conduct of American Psychological Association were also adhered to by the researchers. The study also complied with the Declaration of Helsinki. In addition, the researchers followed guidelines from for cost-effectiveness and economic evaluation study<sup>[11, 12]</sup>.

This study is a health-economic evaluation with a 6-month time frame from a societal point of view together with a 2-arm Randomized Controlled Trial (RCT) to ascertain how economical the SMI for economics students with elevated stress levels is in comparison with a Wait List Control Condition (WLC) with access to treatment as usual. To be included in the study, participants were to be 18 years or older, currently undergraduate economic students and scored 22 or above on the Perceived Stress Scale (PSS-10). Participants with heightened level of stress were selected. Three hundred participants (women 201/men 99) were randomly assigned to the Stress Management Intervention (SMI) group and the Wait List Control (WLC) group at a ratio of 1:1. The allocation list is produced using random allocation software<sup>[13]</sup> which

randomly allocated participants to either study group or control group. The list is handled by an independent researcher not involved in the study. This researcher does not have information about the participants apart from the participant's trial ID numbers and had to randomize the participants according to the incoming informed consent form. The SMI attempts using emotion regulation in approaching stress among students. The intervention is composed of 8 sessions composed of modules for psycho-education (session 1), time management (sessions 2 and 3), emotion regulation (sessions 4-6), planning for the future (session 7) and a booster session (session 8). In addition, participants could choose optional modules covering different topics for example, rumination and worrying, psychological detachment from work and sleep hygiene. Each module requires just about 45-60 min to complete. Participants were encouraged to complete<sup>[1-2]</sup> modules in a week. Transfer tasks such as homework assignments were incorporated into the intervention to encourage participants in integrating acquired skills into daily life. Participants received non-therapeutic feedback by a Coach after each completed module. Coaches had a degree in psychology and feedbacks were on the bases of a standardized manual on feedback writing. Participants could also go for an additional coaching together with the SMI such as short relaxation exercises. A detailed description of the SMI though internet-based instead of face-to-face, can be found elsewhere<sup>[14]</sup>. The clinical effectiveness of the SMI's has been positively appraised in a series of randomized control trials (RCTs)<sup>[14-17]</sup>. The level of perceived stress was estimated by the PSS-10<sup>[18]</sup>. Cronbach alphas showed internal consistency range of 0.70-0.91 over different measurement points 19. Self-reported measures of stress (PSS-10) was collected at baseline (T1), post-treatment (T2) and 6-month follow-up (T3).

## RESULTS AND DISCUSSION

Results of the study revealed that 15.67% (47/300) of participants did not complete the 6-month follow-up assessment. The rate of dropout between the groups was 17.3% (26/150) for the SMI condition and 14% (21/150) for the WLC condition. Costs were estimated in part according to the guidelines of Kraut<sup>[20]</sup>; Bock *et al.*<sup>[21]</sup>. We included unit costs for psychological experts. Costs acquired from domestic assistance or informal care by family and friends was estimated using the substitution method. These costs were on the bases of the average gross monthly salary earned by a domestic worker according to Akanle *et al.*<sup>[22]</sup>. The mean baseline total cost was N 113,366 (US \$292). The providers of the SMI intervention projected the current market price of the intervention at N 10,482 (US \$27) per participant. This

flat tariff covers all expenses for developing and hosting the intervention plus coaching of the participants. The average treatment costs (T2) by study condition showed that cost of intervention for the SMI group [SMI: N 66,000 (US \$170)] was less than WLC group [N69,883 (US\$180)]. The average 6-month accumulated per-participant costs by study condition showed that cost of intervention for the SMI group [SMI: N92,012 (US\$237)] was less than WLC group [N158,790 (US \$409)]. As can be seen, this study focused on the economic evaluation of stress management intervention for undergraduate economics students targeted at reducing perceived stress compared with WLC from the societal point of view. The intervention had a considerable prospect of being more economical in comparison with the WLC condition. Some proof exists for the economic benefits of stress management and interventions to reduce depressive symptoms in students and employees. Nevertheless to the best of our knowledge, this study is the first to consider the economic evaluation of SMI employing emotional coping skills only for economics students with elevated stress levels. Brennan *et al.* evaluated stress management intervention for first-year medical students<sup>[14]</sup>. Brennan found that it is both beneficial and feasible to proffer stress management intervention to students. Hedman *et al.*<sup>[23]</sup> implemented behavioural stress management with iCBT for the treatment of severe health anxiety and reported reduced costs but was not deemed cost-effective<sup>[23]</sup>. Jacobsen *et al.* evaluated the costs of a self and professional administered stress-management intervention not delivered over the internet in patients undergoing chemotherapy balanced with normal care<sup>[24]</sup>. Lower costs and statistically higher quality of life outcomes were observed in the intervention group<sup>[24]</sup>.

The following limitations of this trial must be acknowledged. Self-reported costs and effects could have resulted in social desirability bias. A wait list control group devised with unlimited access to treatment as usual was chosen which makes participants to be less willing to engender health-related behaviour changes and hence over-accentuates effects. The majority of the sample was female. The gender one-sidedness might limit the generalizability of study outcomes. Finally, the employment of emotion-focused coping skills interventions does not result in improved schooling conditions such as better equipped classrooms and laboratories that could cause less schooling strain. Nevertheless, the potential of school environment-related interventions is often not fully utilized and thus such interventions are not systematically implemented. Therefore, we advocate for a combined implementation to design healthy schooling conditions. The outcomes of this study sustain the idea that SMI utilizing emotional

coping skills could be a promising cost-effective approach in lessening the negative effects of persistent stress in school. Intervention costs were majorly driven by psychologists who acted as Coaches. Long-term costs caused by constant stress including mental health disorder onsets or staff turnover, were not taken into consideration. Future attempts should explore the long-term economic effects of SMIs that make use of emotional coping skills only. The sample majorly consisted of female students. Future studies should focus on the general Nigerian student population regarding recruitment, execution and diffusion.

### CONCLUSION

This research established that SMI employing emotional coping skills only has high chance of being more economical in dropping stress levels when compared with WLC. Thus, the outcomes of this study sustain the idea that SMIs utilizing emotional coping skills could be a promising cost-effective approach in lessening the negative effects of persistent stress in school.

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