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Educational Article

A DEAL-based intervention for the reduction of depression, denial, self-blame and academic stress: A randomized controlled trial

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الملخص

أهداف البحث: تقييم فعالية طريقة "ديل" التداخلية على أعراض الاكتئاب لطلاب كلية الطب، واستراتيجيات التأقلم والضغوط المدركة.

طرق البحث: أجريت تجربة عشوائية متوازية على طلاب كلية طب حكومية في ماليزيا. وضمت ١٧١ طالبا للدراسة بعد أخذ موافقتهم للمشاركة في الدراسة. وأكمل منهم ١٥٣ طالبا الدراسة بنجاح. ونظمت ورشة عمل تعليمية لطلاب كلية الطب لمدة ٤ ساعات صممت بالاعتماد على طريقة "ديل". وتم قياس الاكتئاب، واستراتيجيات التأقلم والضغوط المدركة بناء على مقياس "بيك" للاكتئاب، واستبانة "كوب" وضغوط الطلاب الموجزة على التوالي.

النتائج: تم اختيار ١٧١ طالبا من كلية الطب بصورة عشوائية (مجموعة التحكم = ٨٣ طالبا ومجموعة التدخل = ٨٨ طالبا). واستبعد ١٨ طالبا بسبب انسحابهم المبكر من الدراسة قبل ٣٢ أسبوعا، وبقي في الدراسة ١٥٣ طالبا (التحكم = ٨٠ والتدخل = ٧٣) للتحليل الإحصائي. أظهرت النتائج انخفاضا ملحوظا في أعراض الاكتئاب والنكران، واللوم الذاتي والإجهاد الأكاديمي في مجموعة التدخل مقارنة بمجموعة التحكم.

الاستنتاجات: إن نتائج الدراسة تدعم التأثير الإيجابي للتدخل المعتمد على طريقة "ديل" على صحة طلاب الطب النفسية. ويمكن اعتبار طريقة "ديل" التدخلية طريقة واعدة للاعتماد من قبل كليات الطب لأنه يمكن تطبيقها في وقت قصير، وتدريب ومدربين أقل، وبتكلفة مالية قليلة.

الكلمات المفتاحية: الإجهاد الأكاديمي; طريقة ديل; استراتيجيات التأقلم; الاكتئاب; التعليم الطبي

Abstract

Objective: This study aimed to evaluate effectiveness of a DEAL-based based intervention on medical students' depression symptoms, coping strategies and perceived stressors.

Methods: A parallel randomized controlled trial was conducted on a government medical school in Malaysia. A total of 171 medical students consented to participate in the study. A 4-h educational workshop that was designed based on the DEAL model was conducted on the medical students. Depression, coping strategies and perceived stressors were measured by Beck's Depression Inventory, Brief COPE and Medical Student Stressor Questionnaire respectively. The mixed model ANCOVA was applied to determine the effect of intervention. Partial eta squared ($\eta^2_{partial}$) was used to estimate effect size.

Results: 171 medical students were randomized into study groups by draw lots (control = 83 and intervention = 88). 18 medical students withdrew from the study before 32nd week, leaving 153 medical students (control = 80 and intervention = 73) for analysis. The intervention group significantly experienced lower depression symptoms ($p = 0.017$, $\eta^2_{partial} = 0.037$), less frequent of denial ($p = 0.002$, $\eta^2_{partial} = 0.063$), less frequent of self-blame ($p = 0.002$, $\eta^2_{partial} = 0.064$) and lower perceived academic stress ($p = 0.009$, $\eta^2_{partial} = 0.044$) than the control group.

Conclusion: The results support the positive impacts of the DEAL-based intervention on the medical students' mental health. It is a promising intervention to be adopted by medical schools due to it consumes minimal

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amount of time, money, training and man power as well as simple to be implemented.

Keywords: Academic stress; Coping strategies; DEAL model; Depression; Medical education

Introduction

The medical curriculum has been designed to produce academically competent, skillful and professional doctors for the main purpose to serve people. Having said that, this purpose may be inhibited by several facets of medical training that may lead to unwanted consequences on medical students' mental health. Studies have reported that the mental health of students declines and stays poor during their medical training.[1–5] The sources of stress affecting medical students' mental health are related to the medical training[6–8] and the top three sources are examination, large amount of content to be learnt and lack of time to review what they have been learnt.[4,6,7]A recent paper has shown that medical students who suffered from high to severe stress academically were 16 times more likely to develop psychological distress than those who suffered mild to moderate stress.[6]It is worth mentioning that studies reported approximately 5%–37.5% of medical students across stages of medical training were reported to suffer from depression,[9–14] and about 14% of medical students had suicidal thoughts and 6% out of 14% planned to commit suicide during medical training.[15] The prevalence of depression reported by those studies seems to be higher than the general population which was 2.1%–3.1% as reported in a previous survey.[16] It should be noted that poor mental health might lead to many unfortunate consequences either at the individual level such as poor academic achievement and inadequate personal development or at the professional level such as feeling cynical, inadequate and unsatisfied with one's career, developing poor relationships with the faculty, and providing poor patient care.[8,10,17] This information shows that the mental health of medical students has reached an alarming point that urgently calls for 'medication'. Several studies have echoed teaching self-care and stress management skills to tomorrow's doctors as it is essential to prevent the fatal consequences of unfavorable medical training atmosphere on mental health.[18–20]

Dealing with stressors depends on how persons cope with it. Carver and colleagues have proposed 15 dimensions of coping in 1989: five dimensions assess conceptually distinct aspects of problem-focused coping (active coping, planning, suppression of competing activities, restraint coping, seeking of instrumental social support); five additional dimensions assess aspects of what might be viewed as emotion focused coping (seeking of emotional social support, positive reinterpretation, acceptance, denial, turning to religion); the last set of five dimensions assesses coping responses that perhaps are less useful, which is also known as dysfunctional or avoidant coping strategies (focus on and venting of emotions (venting), behavioral disengagement, mental disengagement (self-distraction), humor, substance use).[21,22] Several studies have reported the relationship between mental health and coping strategies among students. There are several instances of how 1) distressed students were reported to use denial and behavioral disengagement as coping strategies significantly more frequent than their non-distressed colleagues, while the non-distressed students used positive reframing significantly more frequent than the distressed students[23]; 2) self-blame was associated with psychological distress[24]; 3) distressed medical students have a greater tendency to use self-distraction, venting of emotion, denial, humor, behavioral disengagement and self-blaming as coping strategies compared to their non-distressed colleagues[25]; and 4) distressed young students (i.e. adolescents) tended to use negative coping strategies such as self distraction, denial, behavioral disengagement, and self blame, while non-distressed students tended to use positive coping strategies such as planning.[26]These coping strategies if used effectively and appropriately to specific stressful encounters may buffer unwanted consequences on mental health.[27]

Studies have revealed interventions conducted on medical students have important favorable results on several important aspects of health.[18–20] The reported favorable results range from positive student feedback and health biomarkers.[18,19] In spite of these encouraging results, several shortcomings should be addressed in future research which are related to duration of follow up, research method (i.e., sample size, distribution of study subjects across medical training phases, sampling method andrandomization method) and the theoretical basis of stress management that was developed.[18,19] In addition to this, there is no evidence available to support the effectiveness of brief interventions (i.e. required less than two days) on the medical students.[18] So far, only three papers have reported on the effectiveness of brief interventions and none of them were based on randomized controlled trial studies.[28–30] Furthermore, most interventions required a substantial amount of time and resources, which makes it difficult for medical schools to implement such programs.[18,31] Therefore, there is a need for an effective brief intervention that consumes minimal amount of time and resources and that could be easily integrated in the academic schedule. With this study, we aim to overcome the shortcomings by selecting study subjects across different phases of medical training using random sampling for selecting study subjects, calculating proper sample size and designing a brief intervention based on a theoretical model which is the DEAL model.[32–34]

The DEAL model consists of four components which are **D**etection of stressors, **E**valuation of stressors, **A**ction towards stressors and **L**earning from stressors through self-reflection.[32–35] Based on the DEAL model, four guiding principles are set to 1) teach students to detect problems early and have a positive perception toward the problems, 2) teach students to appraise problems positively and appropriately, 3) teach students to cope with problems positively and 4) teach students to learn from problems for