

Original Articles

Coping Strategies among First and Third Year Medical Students in a Malaysian Public University

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Abstract:

Background: Medical students lead a stressful life and therefore the coping strategy is very important for them to alleviate the stress. The objective of this study was to explore the coping strategy among the first year and third year medical students and also to identify any significant difference between genders and study-years.

Materials & methods: This cross-sectional study involved first and third year medical students of University Kebangsaan Malaysia of session 2013/2014. Coping strategy was explored using the 'Coping Inventory for Stressful Situations' (CISS) which consist of 48-items where 16 under task-oriented, 16 under emotional-oriented and 16 under avoidance-oriented coping. A five-point Likert' scale ranging from '1=not at all' to '5=very much' was used to rate the items.

Results: Task oriented coping was found the most common strategy among all students while emotion oriented was the least. First year students scored significantly higher than third year showing their best effort to adapt a new environment with insignificant difference between genders.

Conclusions: Task-oriented coping strategy of the students is a good sign of problem solving skills. Though majority of the students adapt this method of coping, still there are other methods in practice. Medical school should focus for growing awareness about the positive coping methods in response to stress. This is necessary for the long term benefit of the students as well for better service to the nation.

Keywords: Coping strategies; medical students; public university; Malaysia.



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Introduction:

Medical students suffer a higher rate of stress^{1,2} and it was found that medical education and training directly contribute to the development of depression.³ The consequences of the stress affect their health and professional efficiency in the form of decreased attention and memory with reduced learning ability, reduced problem-solving capacity, interruption on decision-making skill and reduced ability to establish strong doctor-patient relationship.⁴⁻⁶ It has been shown that the sources of stress in medical students come from three major areas which are academic pressure, social issues and financial problems.^{7, 8}

In stressful situation, students adopt a number of coping strategies to reduce their stress. These coping strategies are the acts or thoughts that people adopt to overcome the internal and external demands posed by a stressful

encounter.⁹ It is the “cognitive and behavioral efforts” that a person employ to manage stress. Generally coping strategies are categorized as emotional-focused and problem-focused.¹⁰ Problem-focused coping deals with the problem or stressful situation by targeting the cause and consequently directly reducing the stress. They are task oriented and the strategies include ‘taking control’, ‘information seeking’ and ‘evaluating the pros and cons’. Problem-focused coping acts best as it removes the stressor by dealing with the root cause of the problem and provided a long-term solution. However, they work best when the person can control the source of stress such as exams, work based stressors etc. Problem focused approach will not work in any situation where it is beyond the individual’s control to remove the source of stress. On the other hand, emotion-focused coping strategies include emotional responses, self-preoccupation and fantasizing reactions which are effective in uncontrollable situations.⁹⁻¹¹

Studies showed that first year and third year medical students are more stressful compared to the other study year students. First year students being displaced from family and friends and adapting to a new learning environment causes them to be stressed. On the other hand, third year medical students start their clinical year and frequently rotate to different work environment in the hospitals which put extra pressure on them.¹² It has been found that the stress level in medical students of Malaysia is as high as 56%.¹³ Concurrent studies at Universiti Kebangsaan Malaysia Medical Centre (UKMMC) showed the stress prevalence rate among first year students were 49.5% and among third year students were 47.7%.¹⁴ It is important to know the coping strategy of the students in order to develop the awareness among the students. It was found that high levels of alcohol consumption and illicit drug use as a coping strategy among the UK medical students was related with high anxiety and is a major cause for concern.¹⁵ By knowing the coping strategy of the students, support system can be enhanced to increase their awareness about the stressors and thus be able to relieve the stress among the students.

The objective of this study was to investigate the coping strategies among the first and third year medical students and to compare any significant differences between the

Materials and Methods:

This was a cross-sectional study involving first and third year medical students of UKMMC session 2013/2014. A total of 234 medical students were chosen by stratified random sampling technique. Coping strategies of the participants were investigated using ‘Coping Inventory for Stressful Situation’ (CISS) questionnaire.^{16,17}

Instrument

The CISS questionnaire consists of task-oriented coping, emotion-oriented coping and avoidance-oriented coping.

This inventory has successfully overcome the weakness of unsatisfactory psychometric properties of other measures. Continuously higher reliability levels were obtained in studies evaluating psychometric properties of CISS and the instrument has potential to serve as an observer-report instrument as well as a self-report measure.^{16,18} Therefore, this present study examined the coping strategies using the CISS instrument. In this instrument, task-oriented coping involves dealing directly with the stressful situation to reduce or remove the stressor. Emotion-oriented coping involves tending the emotions surrounding the event. An individual using this coping style may respond to a difficult situation by becoming emotionally distressed or engaging in fantasy activities. Avoidance-oriented coping is characterized by escape strategies, in the form of distraction and social diversion. Here, the affected person ignores the stressor thereby leaving the problem unresolved. In distraction, the person distracts himself to other situations such as shopping and in social diversion, seeks interaction with other persons.^{16,17} The CISS consist of 48-item and classified into task-oriented, emotional-oriented and avoidance-oriented; each consists of 16 items. For Avoidance, it can be further subdivided into 2 subscales; distraction (8 items) and social diversion (5 items) and another 3 items were not classified in distraction or social diversion scale. The items were scored on a five-point Likert scale, ranges from ‘1=not at all’ to ‘5=very much’. Higher score on anyone of the 3 subscales represents the most used coping method for that person.^{16,17} Demographic data of the participants such as gender and year of study were also collected together with CISS.

Before administering the questionnaire, written consent was obtained from the participants. They were explained about the purpose of study and assured them about the confidentiality of the result as well as participation would not be affect anyway on their academic progress. They were given required time to complete the questionnaires before collection. Data was then compiled and analyzed using Statistical Package for Social Sciences (SPSS) version 20. The scores of the coping style were presented as mean ± SD. Independent student t-test was used to find any significance difference of the scores of different coping strategies between first year and third year students as well as between male and female students.

Results:

Out of 234 participants 231 were filled in and returned the questionnaire giving a response rate of 99%. There were total 99 (43%) pre-clinical first year students and 132 (57%) third year clinical students. Male students were 77 (33%) while females were 154 (67%).

Table I showed the distribution of year and gender wise mean scores of different task oriented coping strategies among the students. The highest-ranking item was ‘Do what I think is best’ in both the study year as well as in both

Table I : Distributions of item wise task-oriented mean coping scores among the respondents

| Item No. | Task-oriented Coping items | First Year Mean \pm (SD) | Third Year Mean \pm (SD) | Male Mean \pm (SD) | Female Mean \pm (SD) |
|-------------|---|-------------------------------|-------------------------------|-------------------------|---------------------------|
| 1 | Schedule my time better | 3.17 \pm 0.909 | 3.38 \pm 0.909 | 3.35 \pm 0.920 | 3.44 \pm 0.887 |
| 2 | Focus on the problem and see how I can solve it. | 3.60 \pm 0.846 | 3.81 \pm 0.846 | 4.00 \pm 0.800 | 3.82 \pm 0.848 |
| 6 | Do what I think is best | 3.87 \pm 0.814 | 4.08 \pm 0.814 | 4.18 \pm 0.886 | 4.15 \pm 0.917 |
| 10 | Outline my priorities. | 3.66 \pm 0.987 | 3.87 \pm 0.987 | 3.67 \pm 1.083 | 4.00 \pm 0.941 |
| 15 | Think about how I solved similar problems. | 3.52 \pm 0.869 | 3.73 \pm 0.869 | 3.82 \pm 0.791 | 3.84 \pm 0.844 |
| 21 | Determine a course of action and follow it. | 3.36 \pm 1.013 | 3.57 \pm 1.013 | 3.78 \pm 0.982 | 3.63 \pm 0.988 |
| 24 | Work to understand the situation. | 3.52 \pm 0.984 | 3.73 \pm 0.984 | 3.88 \pm 0.961 | 3.86 \pm 0.823 |
| 26 | Take corrective action immediately. | 3.33 \pm 0.768 | 3.52 \pm 0.768 | 3.66 \pm 0.845 | 3.55 \pm 0.817 |
| 27 | Think about the event and learn from my mistakes | 3.76 \pm 0.857 | 3.97 \pm 0.857 | 3.97 \pm 0.931 | 4.10 \pm 0.770 |
| 36 | Analyze the problem before reacting. | 3.67 \pm 0.869 | 3.88 \pm 0.869 | 3.97 \pm 0.891 | 3.99 \pm 0.806 |
| 39 | Adjust my priorities. | 3.59 \pm 0.873 | 3.80 \pm 0.873 | 3.50 \pm 1.066 | 3.83 \pm 0.914 |
| 41 | Get control of the situation. | 3.45 \pm 0.823 | 3.71 \pm 0.823 | 3.77 \pm 0.883 | 3.77 \pm 0.814 |
| 42 | Make efforts to get things done. | 3.73 \pm 0.883 | 3.94 \pm 0.883 | 3.90 \pm 0.070 | 4.12 \pm 0.837 |
| 43 | Come up with several different solutions to the problem. | 3.37 \pm 0.920 | 3.58 \pm 0.920 | 3.90 \pm 0.962 | 3.87 \pm 0.817 |
| 46 | Use the situation to prove that I can do it. | 3.17 \pm 0.909 | 3.34 \pm 0.909 | 3.83 \pm 0.872 | 3.70 \pm 0.908 |
| 47 | Try' to be organized so I can be on top of the situation. | 3.48 \pm 0.886 | 3.69 \pm 0.886 | 3.78 \pm 0.890 | 3.78 \pm 0.857 |
| Total score | | 62.80 \pm 8.66 | 59.60 \pm 9.66 | 60.66 \pm 13.83 | 61.45 \pm 13.79 |

gender. 'Think about the event and learn from mistake' was the second highest ranking item in both years, while 'Focus on the problem and see how I can solve it, and 'Make efforts to get things done' was the 2nd highest ranking item among the male and female students respectively. Among the lowest ranking item 'Take corrective action immediately' and 'Schedule my time better' was common in both the years and both genders.

Table II revealed the avoidance oriented coping strategies. Both year and gender wise highest ranked item was "Talk to someone whose advice I value". The 2nd highest ranked item among male students was 'Think about the good times I've had' while among females and among both year students were "Treat myself to a favorite food or snack". The lowest scoring items were "Window shop" and "Go to a party" for both year and both gender.

Table II: Distributions of item wise avoidance-oriented mean coping scores among the respondents

| Item No. | Avoidance- oriented coping items | First Year Mean \pm (SD) | Third Year Mean \pm (SD) | Male Mean \pm (SD) | Female Mean \pm (SD) |
|-------------|---|-------------------------------|-------------------------------|-------------------------|---------------------------|
| 3 | Think about the good times I've had | 3.76 \pm 1.021 | 3.50 \pm 1.122 | 3.45 \pm 1.167 | 3.72 \pm 1.011 |
| 4 | Try to be with other people. | 3.39 \pm 1.058 | 3.58 \pm 1.042 | 3.39 \pm 1.042 | 3.54 \pm 1.039 |
| 9 | Window shop. | 2.88 \pm 1.438 | 2.73 \pm 1.386 | 2.50 \pm 1.319 | 2.96 \pm 1.317 |
| 11 | Try to go to sleep. | 3.42 \pm 1.230 | 3.57 \pm 1.167 | 3.48 \pm 1.201 | 3.51 \pm 1.201 |
| 12 | Treat myself to a favorite food or snack. | 3.66 \pm 1.135 | 3.70 \pm 1.217 | 3.58 \pm 1.170 | 3.73 \pm 1.188 |
| 18 | Go out for a snack or meal. | 3.59 \pm 1.195 | 3.48 \pm 1.175 | 3.58 \pm 1.170 | 3.73 \pm 1.188 |
| 20 | Buy myself something. | 3.28 \pm 1.422 | 3.19 \pm 1.255 | 3.29 \pm 1.334 | 3.22 \pm 1.347 |
| 23 | Go to a party | 2.04 \pm 1.332 | 2.12 \pm 1.242 | 2.44 \pm 1.376 | 1.90 \pm 1.205 |
| 29 | Visit a friend. | 3.11 \pm 1.228 | 3.15 \pm 1.129 | 3.28 \pm 1.227 | 3.06 \pm 1.155 |
| 31 | I spend time with a special person. | 3.11 \pm 1.428 | 3.10 \pm 1.277 | 3.18 \pm 1.393 | 3.07 \pm 1.296 |
| 32 | Go for a walk. | 3.40 \pm 1.277 | 3.30 \pm 1.172 | 3.38 \pm 1.280 | 3.34 \pm 1.200 |
| 35 | Talk to someone whose advice I value. | 3.86 \pm 1.050 | 3.87 \pm 0.886 | 3.69 \pm 1.033 | 3.96 \pm 0.895 |
| 37 | Phone a friend. | 3.14 \pm 1.421 | 2.95 \pm 1.203 | 3.06 \pm 1.350 | 3.05 \pm 1.301 |
| 40 | See a movie. | 3.21 \pm 1.486 | 3.31 \pm 1.308 | 3.33 \pm 1.429 | 3.23 \pm 1.382 |
| 44 | Take some time off and get away from the situation. | 3.51 \pm 1.128 | 3.55 \pm 1.058 | 3.52 \pm 1.173 | 3.54 \pm 1.052 |
| 48 | Watch TV. | 3.21 \pm 1.493 | 3.14 \pm 1.382 | 3.15 \pm 1.456 | 3.19 \pm 1.436 |
| Total score | | 52.57 \pm 11.78 | 52.25 \pm 10.23 | 52.20 \pm 20.16 | 52.58 \pm 19.21 |

Table III showed the emotion oriented coping scores where the highest ranking item was “Wish that I could change what had happened or how I felt”, which was common in both year and gender. However, the lowest ranking item is different between the two groups. In first year it was “Freeze, and not know what to do” while in third year it was “Tell myself that it is really not happening to me” and “Become preoccupied with aches and pains”. Male students rated the lowest item ‘Become very upset’ and female students ‘Freeze, and not know what to do’.

Table IV showed the total mean score of the different coping strategies used by the first and third year medical students.

Task oriented coping was the most commonly used coping method followed by avoidance and then emotion oriented strategy among the students of both year. The mean score of task oriented coping strategy was 62.80 ± 8.66 for first year and 59.60 ± 9.66 for third year students. The emotion oriented coping style was the least used and the mean score was 43.44 ± 11.30 for first year and 42.42 ± 9.51 for third year. Significant difference was observed in the task oriented coping strategies between first and third year medical students ($p=0.022$). No significant difference was observed among avoidance oriented and emotion oriented strategy between the first and third year students.

Table III. Distributions of item wise emotion-oriented mean coping scores among the respondents

| Item No. | Emotion-oriented coping items | First Year Mean \pm (SD) | Third Year Mean \pm (SD) | Male Mean \pm (SD) | Female Mean \pm (SD) |
|-------------|---|-------------------------------|-------------------------------|-------------------------|---------------------------|
| 5 | Blame myself for procrastinating | 3.51 \pm 1.149 | 3.00 \pm 1.052 | 3.24 \pm 1.147 | 3.10 \pm 1.185 |
| 7 | Become preoccupied with aches and pains. | 2.58 \pm 1.135 | 2.22 \pm 1.057 | 2.70 \pm 1.188 | 2.34 \pm 1.010 |
| 8 | Blame myself for having gotten into this situation. | 2.50 \pm 1.316 | 2.47 \pm 1.110 | 2.62 \pm 1.264 | 2.50 \pm 1.176 |
| 13 | Feel anxious about not being able to cope. | 3.15 \pm 1.229 | 3.22 \pm 0.974 | 3.32 \pm 1.077 | 3.21 \pm 1.103 |
| 14 | Become very tense. | 2.83 \pm 1.147 | 2.86 \pm 1.097 | 2.85 \pm 1.171 | 2.93 \pm 1.101 |
| 16 | Tell myself that it is really not happening to me. | 2.34 \pm 1.110 | 2.22 \pm 1.049 | 2.51 \pm 1.124 | 2.25 \pm 1.043 |
| 17 | Blame myself for being too emotional about the situation. | 2.61 \pm 1.264 | 2.47 \pm 1.136 | 2.54 \pm 1.22 | 2.63 \pm 1.182 |
| 19 | Become very’ upset. | 2.31 \pm 1.207 | 2.44 \pm 1.205 | 2.28 \pm 1.176 | 2.52 \pm 1.221 |
| 22 | Blame myself for not knowing what to do. | 2.60 \pm 1.306 | 2.57 \pm 1.145 | 2.72 \pm 1.206 | 2.60 \pm 1.228 |
| 25 | “Freeze” and not know what to do | 2.04 \pm 1.165 | 2.23 \pm 0.959 | 2.26 \pm 1.131 | 2.16 \pm 1.026 |
| 28 | Wish that I could change what had happened or how I felt. | 3.57 \pm 1.091 | 3.40 \pm 1.033 | 3.55 \pm 1.101 | 3.54 \pm 1.048 |
| 30 | Worry about what I am going to do. | 2.76 \pm 1.194 | 2.89 \pm 1.030 | 2.78 \pm 1.229 | 2.93 \pm 1.056 |
| 33 | Tell myself that it will never happen again. | 3.05 \pm 1.168 | 2.96 \pm 1.125 | 3.23 \pm 1.130 | 2.98 \pm 1.114 |
| 34 | Focus on my general inadequacy | 2.93 \pm 0.877 | 2.94 \pm 0.909 | 3.20 \pm 0.953 | 3.02 \pm 0.857 |
| 38 | Get angry. | 2.31 \pm 1.273 | 2.25 \pm 1.101 | 2.42 \pm 1.295 | 2.30 \pm 1.124 |
| 45 | Take it out on other people. | 2.35 \pm 1.181 | 2.28 \pm 1.109 | 2.32 \pm 1.241 | 2.42 \pm 1.098 |
| Total score | | 43.44 \pm 11.30 | 42.42 \pm 9.51 | 44.54 \pm 18.65 | 43.43 \pm 17.96 |

Table IV: Comparison of total mean scores of different coping strategy between first and third year medical students

| Coping strategies | Mean coping strategy scores \pm SD | | p value |
|--------------------|--------------------------------------|---------------------|---------|
| | First year students | Third year students | |
| Task oriented | 62.80 \pm 8.66 | 59.60 \pm 9.66 | 0.022 |
| Avoidance oriented | 52.57 \pm 11.78 | 52.25 \pm 10.23 | 0.609 |
| Emotion oriented | 43.44 \pm 11.30 | 42.42 \pm 9.51 | 0.826 |

Table V showed the total mean score of the different coping strategies between male and female students. The mean score of task oriented coping style was 60.66 ± 13.83 for male and 61.45 ± 13.79 for female students. The emotion oriented, least used coping style mean score was 44.54 ± 18.65 for male and 43.43 ± 17.96 for female students. The results showed no significant difference between male and female participants regarding the task, avoidance and emotion oriented coping styles ($p=0.596$, $p=0.872$, $p=0.228$).

Table V : Comparison of total mean scores of different coping strategies between male and female

| Coping strategies | Mean coping strategy scores \pm SD | | <i>p</i> value |
|--------------------|--------------------------------------|-------------------|----------------|
| | Male | Female | |
| Task oriented | 60.66 \pm 13.83 | 61.45 \pm 13.79 | 0.596 |
| Avoidance oriented | 52.20 \pm 20.16 | 52.58 \pm 19.21 | 0.872 |
| Emotion oriented | 44.54 \pm 18.65 | 43.43 \pm 17.96 | 0.228 |

Discussion:

The present study was conducted at a public university in Malaysia to assess the coping strategies among medical students. Coping with stress is dynamic and ongoing process for the survival, growth and maintenance of the individual integrity.¹⁹ The results of this present study showed that the task oriented coping was the mostly used coping method among the students irrespective of the study-year and gender. Earlier studies showed that there is gender difference in terms of using the coping strategies²⁰ where male dominates task oriented coping and female dominates emotion oriented coping.²¹ Our present study showed task oriented coping style was dominant in both male and female (Table I). Gender wise no significant difference was observed in the coping styles between male and female students (Table V).

Although both the study-years showed highest use of this task oriented coping method, significant difference was observed between the first and third year medical students (Table IV). First year students scored more than the third-year students. This revealed that the first-year students are trying more at solving the problem than the attempt made by the third-year students. Actually, the first-year students need to work hard to accommodate their new learning environment in a situation when they stay away from their family and friends. In the new learning environment, they are faced with human cadaver dissection, need to master a large volume of information in a competitive environment with constant pressure of examination and assessment, experienced with traumatic events such as death and dying etc. and all these

activities put a huge pressure on them.²² Highest task oriented coping score among first year students of UKM Medical Centre is a good sign that they put their main emphasis on the task or planning for problem solving. They accepted their responsibility in this new environment and planned to solve the problem by themselves. If they are unable to do this, it may lead to anxiety, and stress among them. On the other hand, third-year students being already spend two years, were adjusted more than the first-year students. But still they face different types of problem such as new clinical posting and dealing directly with the patients. The task oriented coping method that they followed is the best way to solve the problems. The highest-ranking items identified in the task oriented coping were 'do what I think best' and 'learn from mistake' in both the study year. Gender wise no significant difference was noted in the task oriented coping strategies among the students.

The next common coping strategy adapted by both study year students and by gender was the avoidance oriented coping (Table II) which is aimed at avoiding the stressful situation via distracting oneself with other situations or tasks or via social diversion as a means of alleviating stress. This strategy may offer temporary relief from a problem. But this is a non-productive coping strategy and does nothing to resolve the problem. This coping is even harmful because it leads to dysfunctional life. Study in India showed that this coping strategy was predominant among the interns and significantly higher compared to first, second and third year MBBS students.²³ It is mentioned that this coping is more prevalent among the female than male students.²⁴ However, in this present study, though gender wise it is higher in female students, but no significant difference was observed between male and female students.

The emotional coping strategy was the least common method adapted by the medical students of both study years (Table III). The highest-ranking item in this subscale was similar in both year and gender: 'Wish that I could change what had happened or how I felt'. It is well known fact that the emotion oriented coping is less effective as the avoidance oriented strategies because they do not produce any change in the triggering circumstances.²⁵ The emotional reactions such as blaming the self, getting angry, getting tense, fantasizing, and day dreaming etc. sometimes increases the stress to become very upset or tense. Study among the first-year psychology students in a French university showed that emotion oriented coping was positively related to depression. Previous study had shown that students who adapt task oriented or active coping style have lower levels of psychological distress.²⁶ Participants who scored high in

the emotion oriented coping might get benefit from counseling strategies that utilize cognitive-behavioral therapies to provide insights into why emotions, automatic thoughts, and irrational beliefs are never the best way to solve stressful problems.²⁷ This study gives some insight about the emotional coping strategy users in UKM who might get benefit by active counseling.

Currently much emphasis has been given to the appreciation of the stresses in medical school and improvement of the quality of life through intervention such as stress reduction classes, informal support and mentoring program during medical training.^{5,8} Malaysia is a multicultural country where the education system at the medical school is well equipped to meet the challenges of diversity.²⁸ In Malaysia, intervention program for medical students' well being has shown that students are able to cope with stressors especially the academic stressors.²⁹ In UKM Medical Centre, students are exposed to a number of activities to cope well with stress through a 'Personal and Professional Development (PPD)' module over the whole period of five years.³⁰

This study showed although the most adapted method of coping was task oriented, still there were other methods in practice. Therefore, there is a need for the development of awareness among the students which is the ultimate message from this research. University counseling staffs need to give more attention to help students to adapt the stressful situation. The role of the educational managers is very important in helping students in managing stress in a more effective way for their long-term benefits. The results of the present study may provide a thought to develop more prevention projects addressed to future physicians to improve their quality of life during their study period.

In conclusion, task oriented coping was the most common coping method among the students irrespective of year of study and gender. This coping style was significantly higher among the first-year student which is a good sign for first year students meaning their emphasis to adapt to the new environment. There was no significant difference of the coping strategies between male and female students. This study finding showed that there is a prospect for the educational managers to provide counseling for those people who seek emotional oriented coping strategy. Further emphasis should be focused for growing more awareness about the positive coping methods in response to stress, as it is necessary for the long-term benefit of the students as well for better service to the nation.

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Conflict of interest: None.

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