Journal of Advances in Medicine and Medical Research

32(3): 1-10, 2020; Article no.JAMMR.55086
ISSN: 2456-8899
(Past name: British Journal of Medicine and Medical Research, Past ISSN: 2231-0614, NLM ID: 101570965)

Interprofessional Undergraduate Analytical Study on Anger Management

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Authors' contributions

This work was carried out in collaboration among all authors. Author HL designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript, final approval of version to be published. Authors SKS, CSY, YV and MNNH equally managed data collection, the data analysis, advised for initial draft of manuscript, revised it critically for important intellectual content. Authors NNT, HHKS and ALA equally managed the literature searches, data analysis and final draft of manuscript. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JAMMR/2020/v32i330377
Editor(s):
(1) Dr. Sandra Aparecida Marinho, Paraíba State University (Universidade Estadual da Paraíba - UEPB), Brazil.
Reviewers:
(1) Faika Şanal Karahan, Usak University, Turkey.
(2) Shyue Chuan Chong, Universiti Tunku Abdul Rahman Kampar Campus, Malaysia.
Complete Peer review History: http://www.sdiarticle4.com/review-history/55086

Original Research Article

Received 28 December 2019
Accepted 02 March 2020
Published 11 March 2020

ABSTRACT

Introduction: Anger has been defined in many ways from "a negative, phenomenological (or internal) feeling state" to "a basic emotion in which the function is to provide the organism with motivated capacities to overcome obstacles". Anger has been the subject of many discourses and its vehemence in many religions and cultures. The study aimed to determine the ability of anger management among different gender and factors associated with anger management.
Methods: This is a cross-sectional prospective study. The validated 'Quality of Life' questionnaire from University of Washington, Seattle Washington, United Sates of America and Novaco Anger Scale from Mental Health America of Northern Kentucky & Southwest Ohio (WHOQOL-BREF)

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were used for students' perception on anger management. Quantitative data were analyzed using Epi Info Version. 7 Software.
Results: The total of 358 students participated in this study. There is a significant association between anger management among different ethnicity.
Conclusion: Gender was not a significant factor in anger management, it was probably due to equal opportunity among male and female in acquiring education, application for scholarships and usage of education facilities. Gender equality had a big impact in enhancing the good anger management properties.

Keywords: Anger management; causal relationship; gender; precipitating factors.

1. INTRODUCTION

Anger has been defined in many ways from "a negative, phenomenological (or internal) feeling state" [1] to "a basic emotion in which the function is to provide the organism with motivated capacities to overcome obstacles" [2]. Anger has been the subject of many discourses as well as its vehemence in many religions and cultures [3,4]. Anger usually comes with a reason, and seldom a good one [5]. The emotion and physical responses through which anger is projected rely heavily on one's interpretation, which sprout the question of genders and their tendencies to get angry or unleash wrath.

While the causal relationship is rather unequivocal, anger has been associated with depression and irritability [6]. As studies point out to female preponderance for depression, one might quickly jump into conclusion that women would also have higher tendency to display tantrums [1] Women do not have problems with anger, they just manage it differently [7]. It is suggested that the brain structures of girls' and boys' develop at different rates [8], with females reaching peak values of brain volumes earlier than males [9]. Most research for new medications are conducted on male volunteers and male animals exclusively, because it was believed that the female brain shows wildly erratic results during various phases of the menstrual cycle [8]. However, a stereotypical scenario for women is when a woman gets mad and she cries. This may be interpreted as emotional and irrational, whereas men's anger is sometimes recognized as strength and aggressiveness [7]. Men are therefore more conspicuously perceived as more irritable, unstable and angrier than women. The evidence seems clear, violence and aggression belong to the domain of men [10]. However, in four comprehensive reviews of the literature, the authors in each instance argued that the conclusion of men who are always more aggressive than women cannot be substantiated [11-14]. The study aimed to determine the ability of anger management among different gender and factors associated with anger management.

2. METHODS

2.1 Study Design

This study was an analytical cross-sectional study which compared ability of controlling the anger among students with different demographic backgrounds. The study was done from 20th to 24th of October 2014 among students of Melaka Manipal Medical College (MMMC) to compare the anger management between genders considering factors such as age, ethnicity, marital status, types of household, family background, parent(s)' marital status, students' monthly allowance and the quality of life.

2.2 Study Settings and Sampling

In this study, students from Bachelor of Medicine & Bachelor of Surgery (M.B.B.S), Bachelor of Dental Surgery (B.D.S) and Foundation in Science (F.I.S) were recruited to participate. The sample size was calculated with the total student population of 1173, with 5% margin of error set with 95% confidence interval. Attrition rate of 20% was taken into consideration and the final sample size for this study was calculated as 358.

2.3 Data Collection

2.3.1 Sampling method

2.3.1.1 Preparation phase

The validated 'Quality of Life' from WHOQOL-BREF [15], June 1997, US Version, University of Washington, Seattle Washington, United Sates of America *and* Novaco Anger Scale [16,17] from Mental Health America of Northern Kentucky & Southwest Ohio were used for the

data collection. The permissions to use the questionnaires were obtained from the original developer. The informed consent was obtained from the respondents prior to the data collection.

The willingness of co-researchers was taken to distribute the questionnaire and explain the procedure of data collection to respondents. The questionnaire was prepared to be distributed.

2.3.1.2 Implementing phase

The questionnaires were distributed by co-researchers during students' lunch break. After then, questionnaires were collected directly from the class representatives before the next lecture class began. Total of 370 responded questionnaires were obtained, however, 11 incomplete responses were discarded. Finally, total of 358 responses were included for the data analysis in this research.

Inclusion criteria: The inclusion criteria in this study was the participants must be students of MMMC, any gender, ethnicity and nationality.

2.4 Data Analysis

The questionnaire consists of socio-demographic profile, household, current accommodation, family background, monthly allowance, quality of life assessment and anger assessment using Novaco Anger Scale. In the quality of life component, students were asked to select options from 'very poor', 'poor', 'neither poor nor good', 'good' and 'very good' to assess their perception towards the current level of satisfaction towards life. Using the Novaco Anger Scale, all students were requested to rate the precipitating factors and/or stressor from 0 to 4, "0- if you would feel little or no annoyance", "1- if you would feel a little irritated", "2- if you would feel moderately upset", "3- if you feel quite angry", "4- if you would feel very angry" [17]. Data obtained from questionnaires were analyzed using Epi Info Version. 7 Software. These data were analyzed using t-test, chi square test and ANOVA accordingly. The central tendency and dispersion of the data were obtained.

3. RESULTS

Table 1 showed the respondents were mostly of BDS students and MBBS students (78.2%) (already exposed in medical field). Non-medical students (FIS students-not exposed to medical knowledge) were only 21.8%. Approximately two-third of the study participants were females (67.9%). Regarding ethnicity, Chinese participants were 37.7% follow by Indian (30.5%), Malay (24.3%) and other ethnicity (7.5%). Majority of the respondents are single (82.4%). A large number of respondents (74%) stated that they do not find current accommodation inconvenient. Majority of the respondent's parents were married (92.5%). Per monthly allowance for students ranging from RM500-1000 (45.2%), RM100-500 (25.4%), more than RM1000 (24.9%), and less than RM100 allowance (4.5%). The respondent's quality of life score ranged from 52-70. Students were more likely overly calm in 71% of them, meanwhile, 25.1% showed good and 3.9% showed poor anger management which was overly irritable in nature (Table 1).

Gender variation among students showed Indians are 1.8 times likely to have good anger management when compared to Chinese students, whereas, Malay students are 1.7 more likely to have good anger management than Chinese. In addition, students in other ethnic groups are 1.2 more likely to have good anger management than Chinese as well. There is significant relation between Indians ethnicity and anger management (P value < 0.05) (Table 2).

4. DISCUSSION

In this study, females show a better anger management than males. We also took some other factors into considerations which included medical students or non-medical students, monthly allowance, quality of life, marital status, number of family members, and the presence of disabled person at home. The result from this study also showed that a high percentage of students in this institution had rather calm emotions which were regarded as "impossible to achieve" based on Novaco Anger Scale. This finding corresponded to the similar study conducted by Peter Boman from James Cook University which titled "Gender Differences in School Anger" [18], while the study was also directed to examine the expression of anger and the coping mechanism between genders whether it is positive or negative. Women and men have more similarities than differences in their expression about emotions [19]. Another study also suggested male and female did not seem to differ in how emotionally they felt. Both male and female felt anger emotions equally [20]. However, there was no significant gender differences in anger management in this study, probably due to equal opportunity among male

and female in acquiring education, application for scholarships, and usage of education facilities, therefore gender equality might have a big impact in enhancing the good anger management properties.

One study reported considerable differences in emotional expressions among ethnicity [21]. Various ethnic groups do appear to possess somewhat different ideologies as to how male and female should behave [20]. But there is no information about Malaysian ethnicity on anger management ability. One study reported that the difference between ethnic and cultural influences on emotion might be more apparent in countries that were more ethnically homogeneous [21]. For Malaysia, which is a multi-racial country, cultural influences might play a big role in determining the expression of anger and anger management. In this study, Indians showed significant association with anger management abilities whereas Chinese, Malays and other ethnicities did not. This might be due to the practice of Yoga or meditation and cultural believes that helped them to calm their souls and emotions.

Table 1. Demographic characteristics of participant (n=358)

Variables	n (%)
Study programme	
Medical programme	280 (78.2)
Non-Medical programme (BDS and FIS)	75 (21.8)
Gender	
Male	115 (32.1)
Female	243 (67.9)
Ethnicity	
Malay	87 (24.3)
Chinese	135 (37.7)
Indian	109 (30.5)
Others	27 (7.5)
Marital status	
Single	295 (82.4)
Married	3 (0.8)
In a Relationship	60 (16.8)
Presence of disabled person at home	
Yes	19 (5.3)
No	339 (94.7)
Inconvenient at current accommodation	
Yes	93 (26.0)
No	265 (74.0)
No. of family members (Mean ± SD)	5.3 ± 1.5
Marital status of parent(s)	
Married	331 (92.5)
Separated	7 (1.9)
Divorced	6 (1.7)
Deceased	14 (3.9)
Monthly allowance	
<RM100	16 (4.5)
RM100-Rm500	91 (25.4)
RM500-RM1000	162 (45.2)
>RM1000	89 (24.9)
Quality of life score (Mean ± SD)	61.9 ± 8.2
NOVACO anger scale score	
Poor (Calm)	254 (71.0)
Good Management	90 (25.1)
Poor (Irritable)	14 (3.9)

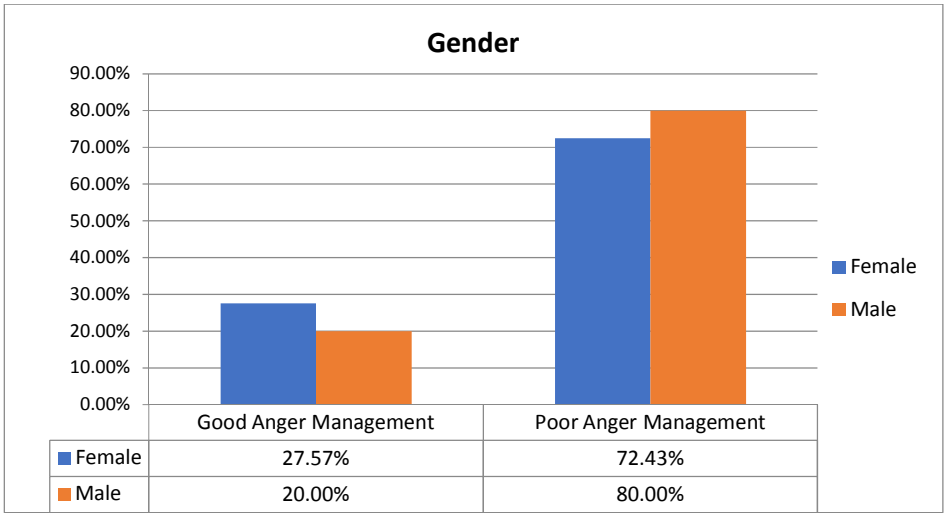

Fig. 1. Percentage of students according to gender and corresponding Novaco Anger Management Scale grading

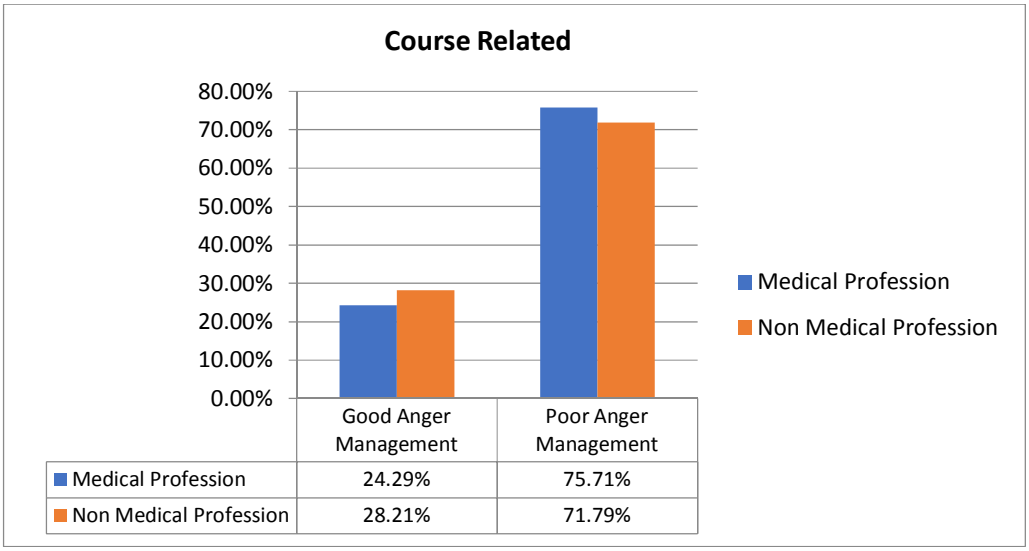

Fig. 2. Courses taken and grading of the Novaco anger scale

The result revealed that the number of students who had disabled person in the family were actually more anger management control than the number of students who do not. Generally, stress from the added demands of disability in family life can negatively affect the health and functioning of family members [22]. Numerous studies report that there was all increased risk of psychological and behavioral symptoms in the family members of persons with disabilities [23-25]. However, this routine of helping the disabled person everyday had increased the endurance and emotional threshold towards them and over the time, it might be the reason to which presence of disabled person in the family has observational positive association to good anger management [24,26].

An interesting finding was observed that medical students as compared to non-medical students had a poorer anger management ability because as a medical professional, one had to deal with all sorts of unforeseen circumstances which were very emotionally challenging and stressful, which over the time should have trained medical students to be more capable to manage anger and other bad emotions. Studies had shown that medical students experience a high level of

Table 2. Qualitative analysis among good anger management and poor anger management

Independent variables	Poor anger management n=268 (74.9) n (%)	Good anger management n=90 (25.1) n (%)	OR (95% CI)	Chi-square	P value
Gender					
(Female)	176 (65.6)	67 (74.4)	1.5 (0.9 – 2.6)	2.38	0.123
Course related					
(Non-Medical Profession)	56 (21.0)	22 (24.4)	1.2 (0.7 – 2.2)	0.50	0.480
Ethnicity					
Chinese (Reference)	109 (40.7)	26 (28.9)	1.00		
Indian	76 (28.4)	33 (36.7)	1.8 (1.0 – 3.3)	3.99	0.046*
Malay	62 (23.1)	25 (27.8)	1.7 (0.9 – 3.2)	2.68	0.101
Others	21 (7.8)	6 (6.7)	1.2 (0.4 – 3.3)	0.12	0.724
Marital status					
In a Relationship (Reference)	47 (17.5)	13 (14.4)	1.00		
Single	219 (74.2)	76(84.4)	1.2 (0.6 – 2.4)	0.45	0.505
Married	2 (0.8)	1 (1.1)	1.8 (0.2 - 21.5)	0.23	0.536**
Type of household					
Own House	217 (81.0)	73 (81.1)	1.0 (0.5 – 1.9)	0.00	0.976
Presence of Disabled Person at Home	13 (4.9)	6 (6.7)	1.4 (0.5 – 3.8)	0.44	0.586**
Inconvenient at Current Accommodation	67 (25.0)	26 (28.9)	1.2 (0.7 – 2.0)	0.53	0.467
Marital status of parent(s)					
Separated (Reference)	6 (2.2)	1 (1.1)	1.00		
Deceased	9 (3.4)	5 (5.6)	3.3 (0.3 – 36.1)	1.05	0.613**
Divorced	5 (1.9)	1 (1.1)	1.2 (0.1 – 24.5)	0.01	1.000**
Married	248 (92.5)	83 (92.2)	2.0 (0.2 – 16.9)	0.43	1.000
Monthly allowance (RM)					
500-1000 (Reference)	123 (75.9)	39 (24.0)	1.00		
<100	11 (4.1)	5 (5.6)	1.4 (0.5 – 4.4)	0.40	0.548**
100-500	68 (25.4)	23 (25.6)	1.1 (0.6 – 1.9)	0.05	0.831
>1000	66 (24.6)	23 (25.6)	1.1 (0.6 – 2.0)	0.10	0.756

** p-value <0.05, ** Fisher Exact Test*

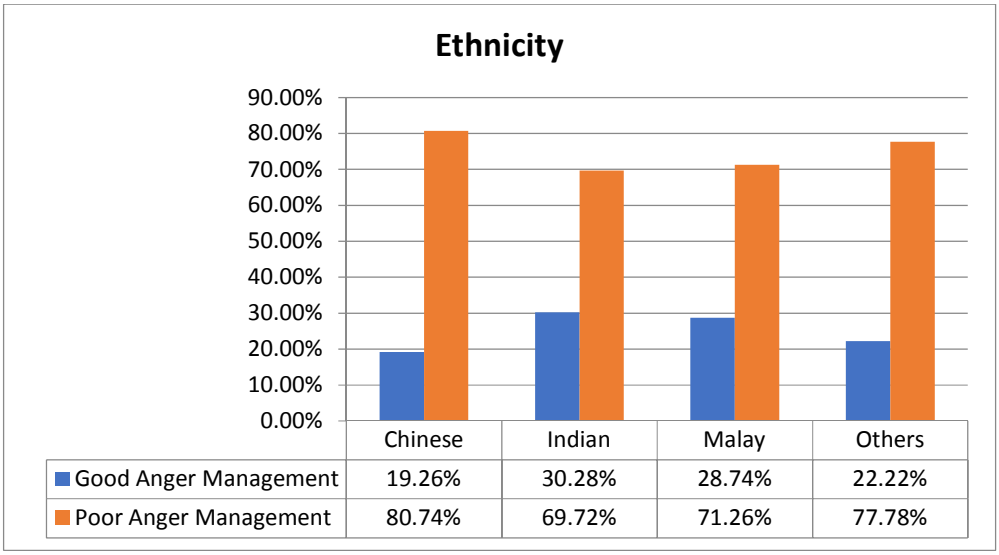

Fig. 3. Percentage of students with good anger management and poor anger management among ethnic groups

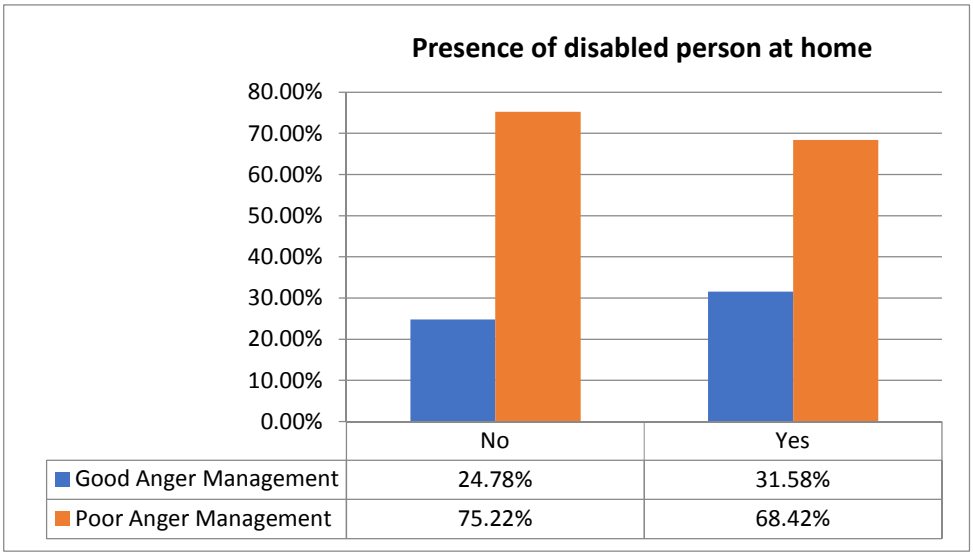

Fig. 4. Percentage of students with or without disabled family member(s) living at home and corresponding grading on the Novaco Anger Management Scale

stress during their undergraduate course [27-31]. Stress causes many people to be easily irritable and sometimes downright angry [32]. A high prevalence of stress among medical students is a cause of concern as it may impair behavior of students, diminish learning, and ultimately affect patient care after their graduation.

However, a few studies found out that women managed their anger more frequently compared to men. In other words, men were more expressive of anger at the workplace [33]. Using Multi-Dimensional Anger Scale (MDAS), gender differences in terms of the different dimensions was seen [34]. These studies and others had reported significant gender differences in the expression of anger, showing that boys were more likely to express their anger physically in comparison to girls [35]. Regarding anger management, females were more likely to have positive coping mechanisms which were all of passive in nature. For example, females were

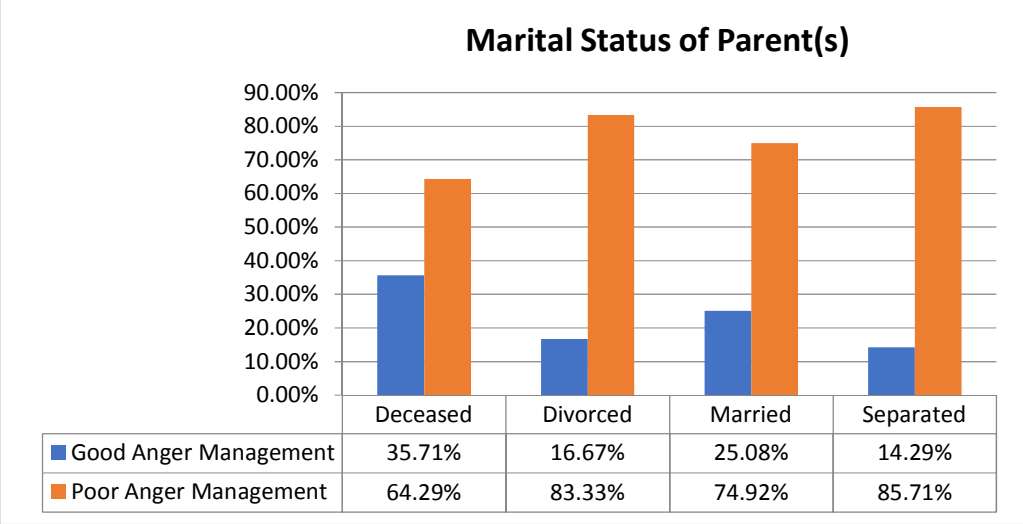

Fig. 5. Percentage of students with the following marital status of parent(s) and its correlation to the grading on the Novaco Anger Management Scale

more likely to share their feelings or talk things over with someone else when angry. On the other hand, males were more likely to possess destructive coping mechanisms.

5. STUDY LIMITATION

This study has some limitations such as students' self-assessment might have potential for information bias. Since it was cross-sectional study, the findings could not capture the changes of anger management overtime according to the study year.

6. CONCLUSION

We cannot rely solely on self-report measures to tell us how men and women deal with anger. Rather, a combination of observational, self-report and physiological measures should be used in assessing anger. Notably, friends were cited as the most significant source of anger among medical students. Interestingly, many of the students have anger episodes that last a day on average, while a huge majority stated that they found it "somewhat difficult" to concentrate on their work, study, and relationships. All these may be because medical students are deprived of having enough time to deal with certain emotions (anger included) due to their hectic schedule. If such students are regularly monitored by the institution, their problems could be minimized by regular assessment of their nature of well-being as they are vulnerable to undergo various forms of stress especially when they are away from their hometown.

In conclusion, gender was not associated with anger management, however, ethnicity was found to be associated with it. Besides, a research study should consider on power status, gender role in the study population, which might alter the anger management properties. Since all the undergraduates from MBBS, BDS and FIS are doctors to be, it would be good to have anger management classes included in the curriculum. Doctors upholding as good role model for the medical students is also a very helpful approach, and hopefully through day to day practices, hectic life of a doctor will not affect one's emotion and cause psychosocial disorders, and indirectly improve the patients' care.

CONSENT AND ETHICAL APPROVAL

Verbal and written consent was obtained from the authorized owner of the validated questionnaires measuring the 'Quality of Life' from WHOQOL-BREF, June 1997,US Version, University of Washington, Seattle Washington, United Sates of America [15] and Novaco Anger Scale from Mental Health America of Northern Kentucky & Southwest Ohio [17]. Ethical approval was granted from the Medical Research Ethics Committee, Melaka-Manipal Medical College.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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