

Mediating Effects of Coping on Stress and Health Outcomes in Undergraduate Medical Students

Dr. Sinku Kumar Singh¹

School of Educational Sciences, Swami Ramanand Teerth Marathwada University, Nanded Maharashtra¹

Abstract:

Background of the problem: Coping were mediators in the relationship between perceived stress and Health outcomes.

Objectives: The purpose of this study was to assess the mediating effect of coping on the relationship between stress and health outcomes.

Methods: Total 735 medical students from different medical college in were selected for data analysis of the study. For measure the level of stress, Gadzella's (1991) Students-life Stress Inventory (SSI) was used. In assessing the Health outcomes, the Medical Outcome Study: Short-form 36 (MOS SF-36) that was developed by Ware, Snow, Kosinski, Gandek (1993) was used and The Ways of Coping-Revised (WOC-R) Scale was used to measure coping of the students.

Results: The result reveals that Health outcome was not regressed on the predictor Academic stress and Academic stress was not significantly associated with Health outcome.

Conclusion: Mediation effect of coping variables, health outcomes was not regressed on ways of coping and academic stress.

I. INTRODUCTION

Academic stress is a Psychological problem that negative impact of medical student's health outcomes. Academic Stress was found to be a part of students' life and could give impact on how students cope with the demands of academic life Saipanish(2013). The students are under significant training stress which can cause subjective distress and influence health outcomes (Singh2015). Medical students are known to be the victims of tremendous academic stress Saipanish(2013). Stress is prevalent among medical professionals, and that is also true for the medical students who have very busy and demanding schedule. Medical students experience high stress at predictable due to academic commitments, financial pressures, and lack of time management skills. When stress is perceived negatively or becomes excessive, it can affect both health and academic performance. Coping strategies can be defined as types of conscious adaptive responses consistently applied to a broad range of stressful events (Kohn, Hay & Legere, 1994). Positive coping and negative coping are diametrically opposed coping styles. Individuals who apply a positive coping style (eg, active coping, humor, and reframing) take constructive actions and create opportunities for growth in response to stress (Wood, Joseph & Linley. 2007). In the work setting, positive coping can generate positive emotions and behaviors that lead to improved outcomes ((Lazarus, Folkman 1984). In contrast, negative coping is characterized by a more emotion-focused coping style that could minimize distress through negative ways as focusing on negative thoughts (eg, rumination) and attempts to escape stressful situations (eg, avoidance and denial).

II. METHODS

Target population:

The target population in the study was the medical students of both male and female. Also, part of the target population was students who have been studying in Bachelor of medicine and Bachelor of surgery or equivalent Degree. The primary data was collected through inventory and demographic information from the 1000 thousand medical students of selected medical colleges of India. After screening of questionnaires 735 medical students from different medical college in India were selected for data analysis of the study. The data was collected from Govt. Medical College Aurangabad, Govt Medical College, MGM Medical College, Aurangabad, Medical College Latur, Shankarao Chavan Medical College Nanded, Government Medical College Akola and Punjab Rao Deshmukh Medical College Amravati.

Tools of the study:

Demographic information: The demographic information was collected through respondents in the form of different descriptive tests. The demographic information about, age, sex, daily smoking etc. was obtained before seeking responses.

Academic stress: For assessment of Academic Stress, the Student-life Stress Inventory (SSI) (Gadzella, 1991) was used. The inventory reflected students’ life stress experiences. It consisted of 51 items describing five categories of stressors (Frustrations, Conflicts, Pressures, Changes and Self-imposed) and four categories of reactions to stressors (Physiological, Emotional, Behavioral, and Cognitive appraisal). Responses to the 51 items were made on a 5-point Likert scale from 1=never, 2=seldom, 3=occasionally, 4=often, and 5=most of the times.

Health outcomes: In assessing the Health outcomes, the Medical Outcome Study: Short-form 36 (MOS SF-36) that was developed by Ware, Snow, Kosinski, Gandek (1993) was used. It assesses eight health concepts including: Perceived general health (5 items); Physical functioning (10 items); Social functioning (2 items); Bodily pain (2 items); Vitality (4 items); Physical role (4 items); Emotional role (3 items); and Mental health (5 items). It provides a comprehensive view of a person’s health status.

Coping: The Ways of Coping-Revised (WOC-R) Scale was used and it was developed from a study of the ways of coping college students used to deal with an examination (Folkman & Lazarus, 1988). It included 66-items in the questionnaire asking about the cognitive and behavioural strategies that students used to deal with the internal and/ or external demands of a stressful situation encountered, which were referred to as academic stress in the current study. Items were rated by a 4-point Likert scale. There are eight subscales including Problem-focused coping, PF (11 items); Wishful thinking, WT (5-items); Detachment D (6-items); Seeking social support, SS (7-items); Focusing on the positive, POS (4-items); Self-blame, B (3-items); Tension reduction, TR (3-items) and Keep to self, KS (3-items).

Mediating effects of coping on stress and health outcomes: To provide evidence for the mediation, the following steps were taken: i) Stress is related to mediating components, Coping; ii) The mediating components coping is related to health outcomes; and iii) the mediating components coping reduces the regression coefficient of stress on Health outcomes.

Data processing:

The collected data was analyzed as a whole. The data was checked for accuracy and completeness and was coded and put up into the SPSS Descriptive statistics for all studied variables, Regression analysis, was considered statistically technique throughout the study and the level of significant was set-up at 0.05 level.

Results of the study

The results concerning this are presented in the form of tables. For the sake of convenience and methodical presentation of the results, following order has been adopted.

Table –1 Demographic information of medical students

Sr.No.	Demographic information	Medical Students (735)
		Percentage (%)
1	Daily Physical Exercise	18.77 % (138)
2	Use of Internet	100.00%
3	Daily smoking	09.11%(67)
4.	Any Chronic Disease	6.12% (45)

Table-1 indicates the percentage of Demographic information of medical students.

Table – 2 Rate of overall level of stress of Medical students

Sr. No.	Rate of stress	Medical students (No.735)
1.	Mild	48.57 % (357)
2.	Moderate	34.55%(254)
3.	Severe	16.87 % (124)

Table-2 shows the rate of overall level of stress of medical students.

Table – 3 Regression analysis for the mediating effects of coping variables on stress and health outcomes

Testing Steps			
T	Unstandardized coefficients		Standardize coefficients
	B	Std.Error	Beta (β)
Step 1			
Outcome: health			
Predictor: Coping	1.501	0.162	-.14
Step 2			
Outcome: ways of coping			
1. Problem-focus coping	0.01	0.008	-.004
2. Wishful thinking	0.009	0.011	.031
3. Detachment	0.021	0.011	.078
4. Seeking social support	0.006	0.010	.023
5. Focus on positive	-0.027	0.015	-.081
6. Blame to self	0.013	0.020	.026
7. Tension reduction	0.55	0.018	.121
8. Keep to self	0.004	0.010	-.14
Predictor: Coping			
Step 3			
Outcome: health			
Mediator: ways of coping			
1. Problem-focus coping	.001	0.008	0.004
2. Wishful thinking	.010	0.011	0.37
3. Detachment	.020	.011	0.71
4. Seeking social support	0.008	0.010	0.32
5. Focus on positive	.026	0.15	-.79
6. Blame to self	0.011	0.020	-0.022
7. Tension reduction	.055	0.018	0.121
8. Keep to self	0.002	0.010	-0.006
Predictor: Coping	1.63	0.004	-0.12

Table- 3 shows the Regression analysis for the Mediating effects of Coping Variables on Academic stress and Health Outcomes. The result shows the health outcome was not regressed on the predictor academic stress (Step 1). Academic stress was not significantly associated with health outcome ($\beta = -.14$). The requirement for mediation in Step 1 was not met. Next, to establish that academic stress was related to the proposed mediator ways of coping, the eight different ways of coping were not regressed on academic stress (Step 2). To test for the mediation effect of coping variables, health outcomes was not regressed on ways of coping and academic stress (Step 3).

III. DISCUSSION

There are several study are available in the literature regarding Studies on students' Academic stress and health but there is no studies have been done regarding **Mediating effects of coping on stress and health outcomes in undergraduate medical students so far**. The result revealed that, 38.23% medical students engaged in daily physical exercise/sporting activity, whereas 100.00% medical students used internet. 18.77% medical students reported that they have smoked, while 6.12% medical students suffered from chronic disease. Result reveals that 48.57% Indian medical students reported mild stress, 34.55% medical students reported moderate stress and 16.87% medical students reported severe level of stress. The stress and health were mediated by coping, the procedure first time suggested by Baron and Kenny (1986). In this study, the result reveals that Health outcome was not regressed on the predictor Academic stress and Academic stress was not significantly associated with Health outcome. Furthermore, the mediation effect of coping variables, Health outcomes was not regressed on ways of Coping and Academic stress. In contrast, coping style was found to mediate positive emotions and mental health among postdoctoral research fellows (Gloria CT, Steinhardt 2016). Ding et.al reported that coping style mediated the relation between psychological capital and burnout among Chinese nurses. Baron-Kenny's technique in the mediating model, perceived stress has been shown to have not only a direct but an

indirect effect on psychological distress. Both positive coping and negative coping were mediators in the relationship between perceived stress and psychological distress. Positive coping was found to partially mediate the relationship between perceived stress and psychological distress, Negative coping also partially mediated this stress–distress relationship. coping styles correctly handle stressful events (Wood,2007). Three general strategies or styles of coping with stressful situations have been identified by Kohn et al. (1994): (a) problem-focused coping, directed at remedying a threatening or harmful external situation; (b) emotion-focused coping including ventilating, managing, or relieving one's emotional response to such a situation; and (c) avoidance-focused coping involving attempts to remove oneself mentally or even physically from threatening or damaging situations. Research by Kohn et al. (1994) found that both problem-focused and emotion-focused coping were significantly related to positive adaptation to stress, while avoidance-focused coping was related to both positive and negative adaptation to stress. Other researchers (Bowman & Stern, 1995; Dunkley et al., 2000; Oakland & Ostell, 1996) have found a strong positive correlation between number of hassles and avoidant coping. However, all types of coping strategies have been found to moderate stressful experiences.

Limitations

A limitation of this study is that it reflects the findings of some medical college; the data was collected in selected medical colleges hence, the results may not be generalized to other institutions in the country. Academic stress, Self-efficacy, Coping, Health outcomes and Demographic form and its causes were self-reported by medical students that may have resulted in some reporting bias. To keep the student data-collection time within reasonable limits, information on Academic stress, Self-efficacy, Coping and Health outcomes were also self-reported and no special psychometric instruments were used to measure it.

REFERENCES

- [1]. Bowman G, & Stern, M. (1995). Adjustment to occupational stress: The relationship of perceived control to effectiveness of coping strategies. *Journal of Counseling Psychology*, 42, 294- 303.
- [2]. Ding Y, Yang Y, Yang X, et al. The mediating role of coping style in the relationship between psychological capital and burnout among Chinese nurses. *PLoS One* 2015;10:e0122128.
- [3]. Dunkley D. M. (2000).The relation between perfectionism and distress: Hassles, coping, and perceived social support as mediators and moderators. *Journal of Counseling Psychology*, 47(4)437-453.
- [4]. Folkman S. & Lazarus R. S. (1988) *Manual for the Ways of Coping Questionnaire*. Palo Alto CA: Consulting Psychologists Press.
- [5]. Folkman, S. (1986). Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology*, 50(5):992-1003.
- [6]. Gloria CT, Steinhardt MA. Relationships among positive emotions, coping, resilience and mental health. *Stress Health* 2016;32:145–56.
- [7]. Kohn P. M. & Gurevich M. (1990). The inventory of college students recent life experiences: A decontaminated hassles scale for a special population. *Journal of Behavioral Medicine*, 13, 619-630.
- [8]. Kohn P.M. & Legere J. J. (1994) Hassles, coping styles, and negative well-being. *Personality and Individual Differences*, 17(2) 169-179.
- [9]. Kohn, J. P., & Frazer, G. H. (1986). An academic stress scale: Identification and rated importance of academic stressors. *Psychological Reports*, 59, 415-426.
- [10]. Kranz, P. (2008). Perceived Stress by students in pharmacy curriculum. *Education* .129 (1). 71-78.
- [11]. Lazarus RS, Folkman S (1984). *Stress, Appraisal, and Coping*. New York: Springer;
- [12]. Oakland S. & Ostell A. (1996) *Measuring coping: A review and critique*. *Human Relations*, 49(2)133-155
- [13]. Richards KC (2010) Self-care and well-being in mental health professionals: the mediating effects of self-awareness and mindfulness. *J Mental Health Couns*, 32(3):247–64.
- [14]. Richards KC, Campenni CE, Muse-Burke JL (2010) Self-care and well-being in mental health professionals: the mediating effects of self-awareness and mindfulness. *J Mental Health Couns*, 32(3):247–64.
- [15]. Saipanish R. (2003) Stress among medical students in a Thai medical school. *Med Teach*.;25:502–6.
- [16]. Singh S.K (2015) level of academic stress between thai and indian medical students. *entire research* 2015. vol 7(iv) 108-115. 09755020.
- [17]. Singh S.K (2015b).Psychological well-being between thai and indian medical student. *aayushi international interdisciplinary research journal (aiirj)* 2015 nov. vol.2 (9).
- [18]. Ware, J.E., Snow, K.K., Kosinski, M., & Gandek, B. (1993). *SF-36 health survey manual and interpretation guide*. Boston, Mass.: Health Institute, New England Medical Center
- [19]. Wood AM, Joseph S, Linley PA. Coping style as a psychological resource of grateful people. *J Social Clin Psychol* 2007;26:1076–93.