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## Original Article: Student Research

# Sense of coherence and self reported health amongst medical students: A cross sectional study

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## ABSTRACT

**Background:** In late 70s, Antonovsky proposed a salutogenic theory. This theory was based on the assumption that the human environment causes stress, and sense of coherence could serve as a stress-resisting resource. This study examined association between sense of coherence and self rated health of medical students. The aim of this study was to determine the association between sense of coherence and self reported health among medical students.

**Methods:** This was a cross-sectional analytical study conducted among medical students. The study tool used was a pre-designed, pre-tested, structured and self administered questionnaire (SOC scale and the SF 12 version 2 self-rated health measure). 172 medical students participated in the study. The data collected was entered into Microsoft Excel and analyzed using SPSS 20. All students were educated about sense of coherence after the study. **Results:** Among the respondents, there were 99 (57.6%) female students, and 73 (42.4%) were male. The mean age of the students was 20.8 + 1.20 years. The mean ( $\pm$ SD) SOC scale score was 56.15 ( $\pm$ 7.83). The mean self rated health score was 53.52 ( $\pm$ 7.11). Pearson's  $\chi^2$  test was used to determine the association and there was significant association between students SOC and self reported health ( $p < 0.000$ ).

**Conclusion:** There is a significant association between score of sense of coherence scale and self rated health among medical students.

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## Introduction

The first international conference on health promotion, held in Ottawa defined health promotion as a process of enabling the individuals to increase control over their health, improve their health in order to reach a state of complete physical, mental and social well-being and to lead an active and productive life.<sup>1</sup> With the present globalization and urbanization, the ability to manage stress is characterized by rapid social changes which are essential for the maintenance and development of health.

In the late seventies, Antonovsky proposed a salutogenic theory.<sup>2</sup> This theory was based on the assumption that the human environment causes stress and sense of coherence (SOC) could serve as a stress-resisting resource, providing prerequisites for a good life.

Sense of coherence is a core concept of salutogenic theory. It is defined as "a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli, deriving from ones internal and external environment in the course of living are structured, predictable and explicable (comprehensibility), (2) the resources are available for one to meet the demands posed by these stimuli (manageability) and (3) these demands are challenges, worthy of investment and engagement (meaningfulness)".<sup>3</sup>

Medical education is perceived as being stressful, and a high level of stress may have a negative effect on cognitive functioning and learning of students in a medical school. Apart from this, medical students face multiple challenges other which are peculiar in their age group and lifestyle. During the final year they are stressed not only because of the examinations but also about future career in various specialties.<sup>4</sup> The negative effects of various stressors faced by these students can be overcome by improving the Sense of coherence. Studies determining the effects of Sense of coherence on university student's health have found that it is associated with healthy living habits, better self-rated health, mental and physical well-being.<sup>5,6</sup> The salutogenic model has an important role to play in formulation of health promotion programmes.

This study examined association between sense of coherence and self rated health of medical students in Western Maharashtra. An additional advantage of this study was to make the medical students aware of the concept of sense of coherence which is one of the most pertinent needs for the future education of health professionals. Adoption of salutogenic framework would be a valuable foundation for doctors engaged in health promotion. In the recent past, multiple studies have highlighted that use of sense of coherence characteristics in the salutogenic model can make the health promotion programmes more meaningful.<sup>7,8</sup>

## Material and methods

- This was a cross-sectional analytical study conducted among medical students of various colleges of Western Maharashtra. The data was collected during an inter college festival held in the month of Nov 2016. Institutional Ethical

Committee clearance was taken. Participation in this study was voluntary. Informed consent was taken from all the participants. A questionnaire with two sections was specifically designed for the study. The first section consisted of the SOC scale<sup>9</sup> and second section consisted of SF 12 version 2 self-rated health measure.<sup>10</sup> As per previous literature<sup>11</sup> the Cronbach's alpha for SOC ranges from 0.70 to 0.92 and test-retest correlation for SF 12 scale was 0.89 and 0.76.<sup>12</sup> The questionnaires were distributed and the identity of student was not asked for in the questionnaire. To assess SOC of each student, Antonovsky's short thirteen-item scale covering the three main subcomponents of SOC: comprehensibility, manageability, and meaningfulness was used. Every question was scored, which ranged from 1 to 7 points. Negatively worded questions were reverse-scored so that a high score indicated a strong SOC. The total sum ranged from 13 to 91. The SF-12 version 2 scale was used to assess self rated health. It comprises of 12 questions organized into 2 components, Physical Health and Mental Health. The total sum ranged from 12 to 56. Higher scores indicate better physical and mental health. A mean split (high and low SOC scores and SF12 scores) was used to create groups for comparison of associations between the SOC Scale and SF 12 self reported health scale. A total of 172 medical students participated in the study. Specific time duration was given to answer all the questions. The students were allowed to enquire any clarifications with the investigator. The data thus collected was entered into Microsoft Excel and analyzed using SPSS 20 software. Pearson's  $\chi^2$  test was used to determine the relationships between the SOC Scale and self reported health of medical students. Kappa co-efficient was calculated to determine the degree of agreement between the two scales: SOC and SF 12 scale. Interpretation of kappa was done as poor (<0.20), fair (0.20–0.40), moderate (0.40–0.60), good (0.60–0.80) and very good agreement (0.80–1.00).

All students were educated about sense of coherence after the study.

## Results

Among the respondents, there were 99 (57.6%) female students, and 73 (42.4%) were male. The mean age of the students was  $20.8 \pm 1.20$  years (range 18–24). Urban and rural distribution of participants was 106 (61.6%) and 66 (38.3%) respectively. Majority 123 (71.5%) were a part of nuclear family and remaining 40 (23.2%) from joint family and 09 (5.2%) were from three generation family.

### SOC scale (Table 1)

The mean ( $\pm$ SD) SOC scale score was 56.15 ( $\pm$ 7.83). Mean scores for each question had a range from 3.18 to 5.25. Question 7 had the greatest mean score and question 11 had the lowest mean score of all items. Standard deviations (SD) scores ranged between 1.32 and 1.75. Question 6 showed the lowest SD and Question 9 had the largest SD. Mean score for Comprehensibility subscale was 20.81 with a SD = 5.21. Manageability subscale mean score was 15.97 and a

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