

## **Prevalence of Stress and Sense of Coherence (13-Items) Among Dental Students in Chennai: An Institution Based Study**

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### **ABSTRACT:**

**Background:**The Sense of Coherence (SOC) scale is a common tool in medical and dental fields of study. When determining an individual's orientation and internal strengths, a sense of coherence is thought to be a useful term. In contrast to the pathogenic model suggested by Antonovsky, a well-developed sense of coherence (SOC) is indeed a positive psychology personality trait that promotes optimal adjustment in a number of domains of functioning. There are three components to determine stress- Meaningfulness, Manageability and compressibility. This study investigates the prevalence of stress and sense of coherence 13-items) among dental students in Chennai.

**Materials and methods:**A cross-sectional study with random sampling. A convenience sample size of 100 were selected. A structured close ordered questionnaire covering demographic characteristics, speciality, preferences and factors that influenced career preferences, All the responses were collected and exported in SPSS version 2.3 software. Descriptive

status was used for data summarisation and presentation. Mean difference in SOC-score with outcome variables was assessed using T-test and anova. Statistical significance level was set as 5%.

**Results:** The result shown in SOC subscales there is no variation among gender i.e., almost males and females have the same ability of sense of coherence ( $p = 0.077$ ) to deal with stress. But on accommodation days scholars have the highest ability to cope up with stress than hostellites ( $p = 0.078$ ). The reliability and validity of the study was assessed and was found to be adequate for this population

**Conclusion:** The current research and previous literature both point to the fact that psychological distress, such as stress, anxiety, and depression, is extremely common among medical students. More research is needed to uncover the causes of such high rates of mental illnesses, as well as confirmatory methods to validate the current study's results.

**Keywords:** Sense of coherence(SOC), stress, anxiety, depression ,Innovative analysis.

**Running title:** Prevalence of stress and sense of coherence(SOC) among dental students.

## INTRODUCTION:

The Sense of Coherence (SOC) scale is a common tool in medical and dental fields of study. When determining an individual's orientation and internal strengths, a sense of coherence is thought to be a useful term. Despite its extensive usage in clinical studies and psychometric tests, there is no unambiguous proof of its validity and reliability in certain areas(1). SOC represents a person's resources and allows them to handle stress, focus on internal and external resources, and respond to stressors in a healthy manner(2). Sense of Coherence (SOC), according to Antonovsky, is an internal resource that helps people cope with stress. In contrast to the pathogenic model suggested by Antonovsky, a well-developed sense of coherence (SOC) is indeed a positive psychology personality trait that promotes optimal adjustment in a number of domains of functioning (3).

In India, a new dentist's chances of surviving on his own after graduation are slim to none. The fierce rivalry among dentists has reached unparalleled heights, instilling a sense of insecurity in recent graduates. The current situation poses a significant threat to the professional reputation of recent dental graduates, and the number of dentists who attempt suicide is on the increase, with unemployment and a feeling of helplessness being the primary causes. It is past time for India's dental council and government to take all appropriate steps to strengthen the state of dentistry and dentists in the country before all hope is lost (4).

There are three components to determine stress- Meaningfulness, Manageability and compressibility. Manageability is a component that gives a complete knowledge of demand, as well as the availability of the resources available to meet it. The more this aspect is present, the more people understand the specific demands that are placed on them and believe that they have the resources to meet them successfully (5). Compressibility is a feature that shows whether or not a market or environmental issue makes sense for the individual facing or handling it. The greater the existence of this aspect, the more people regard environmental requirements or demands as problems worth spending time and effort to resolve(6). Meaningfulness is a feature that helps you to comprehend how others view the universe. People tend to see fact, both internal and external, as organised, consistent, and explicable the more this aspect is present, allowing them to mobilise the appropriate and required resources to adequately meet the requirements or demands of the setting(Hittner, 2006). The SOC scale does not appear to have been extensively scientifically tested, and further testing is needed for both versions, especially the 13-item version.

Furthermore, psychometric testing of the SOC scale is usually performed among dental students to be appropriate. (7–15),(16),(17),(18,19),(20),(21),(22–26). This study was to investigate the prevalence of stress and sense of coherence (13-items) among dental students in Chennai.

## MATERIALS AND METHODS:

**Study Design:** A cross-sectional study was conducted among 100 first year dental graduates in a private dental institution.

**Survey Instrument:** A structured close ordered questionnaire covering demographic characteristics, speciality, preferences and factors that influenced career preferences, ethical aspects. There are three components of SOC - comprehensibility (consist items: 2, 6, 8, 9, and 11), Manageability (items: 3, 5, 10, and 13), and Meaningfulness (items: 1, 4, 7, and 12). The SOC total score ranges 13 to 91. The demographic items include age, gender, accommodation. Sense of coherence has 13-items and each response was rated from 1-7 which represents the level of sense of coherence. Criteria for inclusion are a selected batch of dental students who gave their consent to participate in the study were included. Criteria for exclusion are dental students on extended leave (>1 month) due to health or personal reasons, as well as dental students whose enrollment has been cancelled and they are no longer part of the daily batch, and were not allowed to study.

**Statistical analysis:** All the responses were collected and exported in SPSS version 2.3 software. Descriptive analysis was used for data summarisation and presentation. The mean Degree association was measured using T-test and anova to assess the significance level with  $p < 0.05$ .

**Ethical Aspect:** The study was approved by the institutional ethics committee before starting the study.

## RESULTS:

A total of 100 first year dental students participated in this survey. In demographics more than half of the respondents were female (62.2%) and others male (37.8%). More than half of the respondents were dayscholars (77.3%) and others were hostelites (22.7%). The result shown in SOC subscales is that there is no variation in gender i.e., almost all males and females have the same ability of sense of coherence. But on accommodation days scholars have the highest ability to cope up with stress than hostelites. Statistics based on year shows no significant value ( $p = 0.081$ ). In the total study, there was no consistent trend in the association between the 13 items that could reinforce either convergent or exceptionally troublesome. The 13 item associations were looked at separately for each age group, but the same result was found: no consistent trend that could be interpreted as proof of the instrument's construct validity. The correlation matrices are not seen due to space constraints, but the correlation matrix for the entire sample shows the instrument's construct validity.

Table-1: This table shows the mean comparison of SOC scores among students in various course-years. The total mean value of SOC is 57.18 and the total standard deviation is 14.58. The p value is 0.081 which is not statistically significant ( $p > 0.05$ ).

| Year     | N   | Mean    | Std.Deviation | p     |
|----------|-----|---------|---------------|-------|
| 1st year | 22  | 60.2727 | 14.28680      | 0.081 |
| 2nd year | 17  | 49.8824 | 14.44335      |       |
| 3rd year | 20  | 54.1000 | 11.42896      |       |
| 4th year | 23  | 58.5652 | 16.38687      |       |
| FDS      | 19  | 61.7368 | 13.97952      |       |
| Total    | 101 | 57.1881 | 14.58610      |       |

Table-2: This table shows the mean comparison of SOC scores among gender. The total mean value of SOC in males is 58.16 whereas in females is 56.06 and the total standard deviation in males is 12.44 whereas in females is 16.78. The p value is 0.077 which is not statistically significant( $p>0.05$ ).

|     | Gender | No. | Mean    | Std.deviation | p     |
|-----|--------|-----|---------|---------------|-------|
| SOC | Male   | 54  | 58.1667 | 12.44118      | 0.077 |
|     | Female | 47  | 56.0638 | 16.78561      |       |

Table-3: This table shows the mean comparison of SOC scores among accommodation. The total mean value of SOC in days-scholars is 57.89 whereas in females 55.35 and the total standard deviation in days-scholars is 14.95 whereas in hostelites 13.66. The p value is 0.077 which is not statistically significant( $p>0.05$ ).

|     | Accommodation | No. | Mean    | Std.deviation | p     |
|-----|---------------|-----|---------|---------------|-------|
| SOC | Days-scholar  | 73  | 57.8904 | 14.95415      | 0.078 |
|     | hostelite     | 28  | 55.3571 | 13.66860      |       |

## DISCUSSION:

The result shown in SOC subscales there is no variation in gender i.e., almost males and

females have the same ability of sense of coherence. But on accommodation days scholars have the highest ability to cope up with stress than hostelite. These findings were compared to those of a number of previous studies conducted in India and other countries. The construct validity of the SOC scale among older people was analysed, and the results revealed that the instrument lacked acceptable construct validity. The tests of discriminant and convergent validity, as well as the analysis of factor structure, did not fully support Antonovsky's SOC theory. Despite the fact that the correlation with Significance improves discriminant and convergent validity, the method had acceptable construct validity in other measures(1).

Stress has been linked to anxiety, depression, and other psychological symptoms, all of which could have a negative impact on an academic performance of students. Medical students' stress is a worldwide problem. Previous studies were done with the prevalence of stress among medical students in the Bangladesh population. Stress has been linked to anxiety, depression, and other psychological symptoms, all of which could have a negative impact on an academic performance of students. Medical students' stress is a worldwide problem. Because Bangladesh is a developing country, there is a good chance that their medical students are under more stress(27)

Some studies have also shown that females are more likely than males to suffer from depression, anxiety, and stress, this factor may contribute to the much greater prevalence of psychological anxiety. Because the transition from high school to university is difficult, it may be one of the many factors contributing to the increased prevalence of stress, anxiety, and depression for undergraduate students(28). Such a high rate of depression is a significant problem for medical education and the medical school environment, and it could lead to illness and deaths later in life. Depression in students puts them

at a significant disadvantage in a variety of areas of life, resulting in social isolation and problems with family harmony(29).

There have been few previous studies on the construct validity/factor structure of the SOC scale, no firm conclusions can be drawn. Söderhamn and Holmgren's study found acceptable validity, whereas Larsson and Kallenberg discovered that the factor structure did not match the SOC theory(30). Furthermore, the participants in the study were significantly older and likely trailer, so they may have been too sick or tired to participate. As a result, the result is likely to portray a slightly skewed positive picture of older people's daily lives, and thus should be applied to younger and healthier elderly people. The sample size and relatively high response rate(31).

## CONCLUSION:

The current research and previous literature both point to the fact that psychological distress, such as stress, anxiety, and depression, is extremely common among medical students. More research is needed to uncover the causes of such high rates of mental illnesses, as well as confirmatory methods to validate the current study's results.

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