Factors Related to Sense of Coherence Among Dental Students at Istanbul University

Kadriye Peker, Ph.D.; Gülçin Bermek, Ph.D.; Omer Uysal, Ph.D.

Abstract: The salutogenic model suggests that generalized resistance resources (GRRs) promote the development and maintenance of a strong sense of coherence (SOC), which is a health-promoting factor. This study examined associations between GRRs (sociodemographic characteristics, social support, stress, health practices, and self-rated health) and a strong SOC among dental students at Istanbul University. Data were collected from a convenience sample of 566 students using questionnaires including a sociodemographic section, the SOC scale, the Perceived Stress Scale, the Multidimensional Scale of Perceived Social Support, self-rated health, and health practices. Data were analyzed using descriptive statistics, t-test, chi-square test, and binary multiple logistic regression. Students were classified into a low or strong SOC group by a median split procedure, based on their total score on the SOC scale (median=56, range=22 to 91). Univariate statistics showed that students with a strong SOC reported lower stress levels, higher social support levels, better self-rated health, brushing their teeth more frequently, lower sugar intake between meals, and less frequent smoking than students with a low SOC. Multivariate statistics indicated that being a nonsmoker and having better self-rated health, higher social support levels, lower stress levels, and lower sugar intake between meals were the most important predictors of strong SOC. Taking into account the factors that reinforce a strong SOC may help dental educators develop health promotion programs and create supportive environments for maintaining dental students’ health.

Dr. Peker is Research Assistant, Department of Dental Public Health, Faculty of Dentistry, Istanbul University, Capa-Istanbul, Turkey; Dr. Bermek is Professor, Department of Dental Public Health, Faculty of Dentistry, Istanbul University, Capa-Istanbul, Turkey; and Dr. Uysal is Assistant Professor, Department of Medical Statistics and Informatics, Medical School, Bezmialem Vakif University. Direct correspondence and requests for reprints to Dr. Kadriye Peker, Department of Dental Public Health, Faculty of Dentistry, P.O. Box 34093, Istanbul University, Capa-Istanbul, Turkey; 90-212-414-20-20, ext. 30325 phone; 90-212-531-22-30 fax; kpeker@istanbul.edu.tr.

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As part of the wider movement for Healthy Settings, a number of universities have begun to apply a settings-based approach to health promotion within the context of higher education.1 Universities have a responsibility to work towards increasing students’ capacity to master their health and to create a supportive healthy environment for students’ personal, academic, and social development. In recent years, the salutogenic model as a theoretical framework has been widely applied in health promotion research.2–4 This theoretical framework focuses more on people’s resources and capacity to promote health than the former focus on understanding the nature of disease and its associated risk behaviors.4

Empowerment of individuals to gain greater control over decisions and actions that affect their health is an important strategy for health promotion.5 Empowerment is closely related to the key concepts of the salutogenic model: Sense of Coherence (SOC) and General Resistance Resources (GRRs).6 SOC is a health-promoting psychological resource that strengthens one’s capacity to deal with environmental strain and the dynamic feeling of confidence enabling the person to apply the GRRs to cope with stressful situations.2–4 University students are in a dynamic transition period of human development, and they are faced with a variety of both developmental tasks and potential stressors that can affect their health and lifestyle.1 During this period, the negative effects of new stressors on students’ health may be buffered through the SOC and the GRRs, which can be found in both the immediate and distant environment of every student. Antonovsky also pointed out that SOC occurs in a formational period and is developed in the first decades of life.4 For these reasons, this period is a particularly significant one for the development of SOC. Studies investigating the effects of SOC on university students’ health have found that SOC is associated with healthy living habits,7–10 self-rated health,11 mental and physical well-being,12,13 and stress and social support.14,15 Furthermore, the salutogenic model has been used as a tool for learning process and school development,16,17 as well as for
the development of health promotion strategies and programs.\textsuperscript{18-21}

Studies have found that stress becomes increasingly important after the commencement of the dental course and that high workload and stress may also affect the student’s health and lifestyle.\textsuperscript{22-24} Antonovsky stated that individuals’ existing state of stress and ability to ease tension can affect both the use of their GRRs and the development of their SOC.\textsuperscript{4} Along the health continuum from ill health to optimal health, the direction of movement of an individual is determined by the interplay of opposing forces of environmental threats, the individual’s resistance, and the strength of one’s SOC. It is known that a strong SOC might help to prevent stress and can facilitate the selection of resources and behaviors that are culturally appropriate and efficient for achieving health.\textsuperscript{25} Thus, the movement towards health of an individual may occur through the strengthening of SOC, the successful application of GRRs, and the development of a health-enhancing environment.\textsuperscript{4}

In recent years, a number of studies have suggested that the practical application of the salutogenic model to health promotion programs and health policy development may benefit from taking into account SOC-related characteristics.\textsuperscript{18,26-28} Recent studies conducted on medical students and other health professions students have reported that additional research is necessary to determine the factors that are related to SOC during education.\textsuperscript{10,12,13}

To implement effective health promotion programs for dental students, there is a need to determine their global orientation and resistance resources with reference to their health potential during their dental training. Therefore, the aim of this study was to investigate the associations of the GRRs with a strong SOC among dental students. Its theoretical framework was based on the salutogenic model proposed by Antonovsky.\textsuperscript{4} This model focused on abilities and capacities to deal with potential stressors in conflict situations through its strength of adaptability and can be described as a stress resource-oriented theory that has its main focus on resources and hopes to maintain and improve an individual’s movement towards health.\textsuperscript{2,4,29} SOC, a core concept of salutogenic theory, is posited by Antonovsky\textsuperscript{4} to be a crucial variable in the alleviation of stress and the maintenance of health. It is described as a thinking way and 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 one’s internal and external environment are structured, predictable, and explicable (comprehensibility); 2) resources are available to meet the demands posed by these stimuli (manageability); and 3) these demands are challenges, worthy of investment and engagement (meaningfulness).\textsuperscript{4} The formation and enhancement of SOC are largely determined by the GRRs such as sociodemographic characteristics, personality characteristics, predispositions, social supports, health practices, and the individual’s state of health.\textsuperscript{4,27,28}

The salutogenic model has served as a theoretical framework in studies on health since its introduction in 1987.\textsuperscript{29} SOC research to date has fallen into two main categories: studies that examine the effect and function of SOC, and those that examine the correlation of the GRRs with SOC.\textsuperscript{28} A number of studies investigating the effects of SOC on health found that SOC is strongly associated with mental and physical well-being\textsuperscript{10,12,13,18,29} and with oral health status.\textsuperscript{30-32}

Some studies on the association of the GRRs with SOC found that SOC was associated with sociodemographic factors such as older age,\textsuperscript{33,34} being male,\textsuperscript{33-35} family education level,\textsuperscript{15} and childhood living conditions.\textsuperscript{27,35} Psychological predispositions such as stress experience\textsuperscript{4,12,14,15,36} and optimism\textsuperscript{8} correlated with SOC. In addition, SOC was associated with social support\textsuperscript{14,15,27,28} and personality characteristics such as self-efficacy,\textsuperscript{8,28} self-esteem,\textsuperscript{7} and coping skills.\textsuperscript{14} It has been reported that SOC is associated with general health\textsuperscript{7,10,26,37,39} and oral health behaviors,\textsuperscript{30,31,39,41} as well as with an individual’s state of health.\textsuperscript{11,29,41,42} Based on the salutogenic model of Antonovsky and other previous studies, in our study we distributed the most frequently reported SOC-related variables like the GRRs to the following five categories: sociodemographic characteristics; social support; stress level as the psychological predispositions; oral and general health behaviors as health practices; and self-rated health as a subjective indicator of the individual’s state of health.

**Methods**

This cross-sectional descriptive survey was conducted at the Faculty of Dentistry, Istanbul University, and dental students from both preclinical (years 1 and 2) and clinical years (years 3, 4, and 5) of the curriculum participated. The survey took place during the first week of May 2009. This period was chosen to avoid stressful periods such as midterm and final examinations because the study aimed to identify the usual pattern of students’ health behaviors.
Participation in this study was voluntary. Students at all five academic years were asked to remain after class if they were willing to complete a survey. The questionnaires were distributed during class by a research assistant involved in teaching the students. The students were instructed not to write their name or identification number on their questionnaire. The responses to the questionnaire were self-reported by the participants. The questionnaires were completed anonymously. The study was approved by the ethics committee of Istanbul Faculty of Medicine.

A questionnaire with two sections was specifically designed for the study. The first section contained questions on the demographic characteristics (including gender, age, level of education, marital status, place of residence, and family monthly household income). The second section consisted of the SOC scale, the Multidimensional Scale of Perceived Social Support, the Perceived Stress Scale, self-rated health measure, and self-reported oral and general health behaviors.

Each student’s SOC was assessed using Antonovsky’s short thirteen-item scale derived from the original twenty-nine-item Orientation to Life Questionnaire covering the three main subcomponents of SOC: comprehensibility, manageability, and meaningfulness. Every item was scored on one unitary scale, which ranged from 1 to 7 points. Negatively worded items were reverse-scored so that a high score indicated a strong SOC. Mean SOC scores were calculated for each individual. The total sum ranged from 13 to 91. When calculating the SOC score, subjects with missing values for more than three SOC items were treated as missing. If a subject had three or fewer missing values on the SOC items, missing values were replaced by the mean value of the remaining SOC items of that subject. The SOC scale was translated into Turkish by Lajunen and his research team (unpublished manuscript), and this translation was used in our study. For the reliability of the Turkish translation of the SOC-13 version, Lajunen reported the reliability coefficient as 0.78 for the Turkish population. This version has been used in earlier studies in Turkey, and therefore it was not considered necessary to pilot test the scale for this study. Previous studies found that this scale had acceptable internal consistency coefficients ranging from 0.77 to 0.80. In this sample, Cronbach’s alpha for the whole scale was 0.76.

Social support was assessed using the Multidimensional Scale of Perceived Social Support. This scale consists of twelve items, each scored on a Likert scale from 1 (disagree very strongly) to 7 (agree very strongly). Addition of the twelve item scores provides a total score for overall social support. The higher scores refer to high social support. Validation of the Turkish version of the scale was performed by Eker et al. in Turkey. For this sample, coefficient alpha was 0.75.

Perceived stress was measured using the ten-item Perceived Stress Scale. Each item is rated for the past month on a five-point rating scale (1=never to 5=very often). In scoring the measure, the four positive items were reversed scored, and then all the items were summed (range from 0 to 40). A higher total score indicates greater stress. Validation of the Turkish version of the scale was performed by Örücü and Demir in Turkey. The coefficient alpha in our study was 0.79.

Self-rated health was measured by a single item: “How do you rate your general health at present?” with possible ordinal responses of excellent, very good, good, fair, and poor. Because relatively few dental students rated their health as excellent or very good (6.2 percent) or poor (6.7 percent), this variable was subsequently dichotomized into Good (excellent, very good, and good) and Bad (fair and poor). Self-rated health reflects the presence or absence of health-improving resources as postulated by Antonovsky’s theory. According to this theory, the person’s resources, the demands, and the environmental resources are perceived to be in balance when self-rated health is good. This question had previously been found to be a reliable and valid measurement of subjective health status.

Students’ health practices were collected using self-report questionnaires consisting of oral and general health behaviors as defined in previous studies. General health behavior was assessed by four items that inquired about smoking status, frequency of physical exercise, using alcoholic beverages, and daily sleep time. Oral health behaviors consisted of five items related to the toothbrushing frequency, use of dental floss, dental attendance pattern, frequency of between-meals sugar intake, and use of fluoride mouthwash. For analyses, all behavioral variables were dichotomized to indicate health-promoting and health-damaging practices. Sociodemographic variables used in this study were gender, age, place of residence, level of education, marital status, and monthly family income.

The data were analyzed using SPSS version 11.5 for Windows (SPSS, Inc., Chicago, IL, USA). The normality of the variable distribution
was assessed using the Kolmogorov-Smirnov test, which showed that the assumption of normality was confirmed. Chi-square tests were used for categorial variables, and the independent sample t-test for continuous variables was done. Finally, a binary logistic regression analysis with stepwise backward elimination (likelihood ratio) was applied to determine the relationship between the dependent variable and independent variables. The dependent variable was strong SOC. All possible GRRs were used as independent variables. Estimates of model fit (Omnibus test) and odds ratios (ORs) with their corresponding 95 percent confidence intervals (CIs) were computed.

In all statistical analyses, the significance level was set to p<0.05. For cross-tabulation and logistic regression analysis, the total SOC-13 sum scores were dichotomized based on a median split yielding students having strong SOC scores (>56) (1) and students having low SOC scores (≤56) (0). The independent variables were transformed into dichotomous variables as follows: gender as females (1) vs. males (0); place of residence as family home (1) vs. dormitory or rented apart (0); marital status as single (1) vs. married (0); level of education as clinical years (1) vs. preclinical years (0); self-rated health as good (1) vs. bad (0); toothbrushing frequency as twice a day and more often (1) vs. once a day or less often (0); using dental floss as use (1) vs. don’t use (0), dental attendance patterns as regular dental check-up at least once a year (1) vs. symptom-oriented (0); using a fluoride mouthrinse as use (1) vs. don’t use (0); daily frequency of between-meals sugar intake as none to once a day (0) vs. twice or more (1); smoking as nonsmoker (1) vs. smoker (0); consumption of alcoholic beverages as none (1) vs. sometimes or every day (0); exercise as at least three times a week (1) vs. less often (0); and daily sleeping time as 7 hours or more (1) vs. less than 7 hours (0). Monthly family income, age, perceived stress, and social support were entered as continuous variables in the model.

Results

From a total of 809 dental students, 605 (75 percent) completed the questionnaire. Of the total, 204 (25 percent) were not in the study as 162 (20 percent) were absent on the day of the survey and forty-two (5 percent) did not want to participate. Only twenty-one of 605 (3.5 percent) had one or two unanswered items on the SOC scale. If a subject had ≤3 missing values on the SOC items, they were replaced by the mean value of the remaining SOC items of the individuals as previously described by researchers. Thirty-six students were excluded because they did not complete any question in the behavioral and sociodemographic section of the survey, leaving results from 566 students available for analysis.

Among the respondents, there were 310 (54.8 percent) female students, and 44.7 percent (n=253) were living at home with their families. There were 324 (57.2 percent) students in the clinical years. The mean age was 21.05±1.62 years (range 17–26 years), and all students were single. The mean monthly family income was Turkish Lira 2383.83 (or US$1678) monthly. In terms of assessed health behaviors, 22.8 percent (n=129) visited dentists regularly for checkups, 69.8 percent (n=395) brushed their teeth twice a day or more often, 92.4 percent (n=523) consumed sugar-added products two or more times per day, 26.1 percent (n=148) were smokers, 45.2 percent (n=256) consumed alcoholic beverage, 52.3 percent (n=296) reported less than seven hours of sleep, and 62 percent (n=351) rated their health as good.

The distribution of the SOC scale scores was compatible with a normal distribution, whereas the distributions of the Perceived Stress Scale and the Multidimensional Scale of Perceived Social Support were not normally distributed. The mean (±SD) SOC scale score was 56.89 (±10.68) and the mean (±SD) scores for the Perceived Stress Scale and the Multidimensional Scale of Perceived Social Support were 26.36 (±7.09) and 55.15 (±12.84), respectively.

No significant association was found between students’ SOC and sociodemographic variables (Table 1). Students with a strong SOC reported lower levels of stress (p<0.001), higher levels of social support (p<0.001), better self-rated health (p=0.001), brushing their teeth more frequently (p=0.008), sugar intake between meals less frequently (p=0.009), and smoking less frequently (p<0.001) than those with a low SOC.

Stepwise binary logistic regression analyses were performed to examine the association of the GRRs with higher SOC scores. In the final model, after removing non-significant variables, only five variables were found to be associated with higher SOC scores. This model indicated a good fit (Omnibus test: chi-square=278.81, p<0.0001) and with correct classification of 76.1 percent of the students. Students with a strong SOC were more likely to be...
<table>
<thead>
<tr>
<th>GRR Variable</th>
<th>Low SOC (≤56) Number (Percentage)</th>
<th>Strong SOC (&gt;56) Number (Percentage)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Male</td>
<td>132 (51.6%)</td>
<td>124 (48.4%)</td>
<td>0.655</td>
</tr>
<tr>
<td>Female</td>
<td>154 (49.7%)</td>
<td>156 (50.3%)</td>
<td></td>
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<tr>
<td><strong>Level of education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preclinic</td>
<td>127 (52.5%)</td>
<td>115 (47.5%)</td>
<td>0.423</td>
</tr>
<tr>
<td>Clinic</td>
<td>159 (49.1%)</td>
<td>165 (50.9%)</td>
<td></td>
</tr>
<tr>
<td><strong>Place of residence</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Family home</td>
<td>123 (48.6%)</td>
<td>130 (51.4%)</td>
<td>0.413</td>
</tr>
<tr>
<td>Dormitory/other</td>
<td>163 (52.1%)</td>
<td>150 (47.9%)</td>
<td></td>
</tr>
<tr>
<td><strong>Dental attendance</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Regular dental checkup</td>
<td>61 (47.3%)</td>
<td>68 (52.7%)</td>
<td>0.402</td>
</tr>
<tr>
<td>Symptoms-oriented</td>
<td>225 (51.5%)</td>
<td>212 (48.5%)</td>
<td></td>
</tr>
<tr>
<td><strong>Toothbrushing</strong></td>
<td></td>
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</tr>
<tr>
<td>≥twice a day</td>
<td>185 (46.8%)</td>
<td>210 (53.2%)</td>
<td>0.008</td>
</tr>
<tr>
<td>≤once a day</td>
<td>101 (59.1%)</td>
<td>70 (40.9%)</td>
<td></td>
</tr>
<tr>
<td><strong>Dental flossing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use</td>
<td>55 (45.1%)</td>
<td>67 (54.9%)</td>
<td>0.174</td>
</tr>
<tr>
<td>Don’t use</td>
<td>231 (52.0%)</td>
<td>213 (48.0%)</td>
<td></td>
</tr>
<tr>
<td><strong>Daily between-meals frequency of sugar intake</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twice or more</td>
<td>267 (51.1%)</td>
<td>256 (48.9%)</td>
<td>0.009</td>
</tr>
<tr>
<td>None to once</td>
<td>13 (30.2%)</td>
<td>30 (68.9%)</td>
<td></td>
</tr>
<tr>
<td><strong>Use of fluoride mouthrinse</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use</td>
<td>22 (48.9%)</td>
<td>23 (51.1%)</td>
<td>0.818</td>
</tr>
<tr>
<td>Don’t use</td>
<td>264 (50.7%)</td>
<td>257 (49.3%)</td>
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</tr>
<tr>
<td><strong>Smoking</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smokers</td>
<td>97 (65.5%)</td>
<td>51 (34.5%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Nonsmokers</td>
<td>189 (45.2%)</td>
<td>229 (54.8%)</td>
<td></td>
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<tr>
<td><strong>Exercise</strong></td>
<td></td>
<td></td>
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<tr>
<td>≥three times a week</td>
<td>101 (53.2%)</td>
<td>89 (46.8%)</td>
<td>0.374</td>
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<tr>
<td>≤two times a week</td>
<td>185 (49.2%)</td>
<td>191 (50.8%)</td>
<td></td>
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<tr>
<td><strong>Sleeping</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>≥7 hours</td>
<td>138 (51.1%)</td>
<td>132 (48.9%)</td>
<td>0.792</td>
</tr>
<tr>
<td>&lt;7 hours</td>
<td>148 (50.0%)</td>
<td>148 (50.0%)</td>
<td></td>
</tr>
<tr>
<td><strong>Alcohol consumption</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>149 (48.1%)</td>
<td>161 (51.9%)</td>
<td>0.197</td>
</tr>
<tr>
<td>Sometimes or every day</td>
<td>137 (53.5%)</td>
<td>119 (46.5%)</td>
<td></td>
</tr>
<tr>
<td><strong>Self-rated health</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bad</td>
<td>127 (59.1%)</td>
<td>88 (40.9%)</td>
<td>0.001</td>
</tr>
<tr>
<td>Good</td>
<td>159 (45.3%)</td>
<td>192 (54.7%)</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived stress</strong></td>
<td>30.50±6.62</td>
<td>22.07±4.57</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Perceived social support</strong></td>
<td>48.19±11.78</td>
<td>62.25±9.59</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>21.12±1.60</td>
<td>20.97±1.63</td>
<td>0.247</td>
</tr>
<tr>
<td><strong>Family monthly income</strong></td>
<td>2337.41±1292.62</td>
<td>2429.21±1806.62</td>
<td>0.486</td>
</tr>
</tbody>
</table>
| TL=Turkish Lira; SD=standard deviation

*aStatistical evaluation by chi-square test.

*bStatistical evaluation by t-test.
nonsmokers (OR=1.54, 95 percent CI=1.19 to 1.97), to report better self-rated health (OR=1.37, 95 percent CI=1.10 to 1.71), to perceive higher social support (OR=1.04, 95 percent CI=1.01 to 1.07), to be less likely to perceive high levels of stress (OR=0.79, 95 percent CI=0.73 to 0.85), and to have higher between-meals sugar intake (OR=0.67, 95 percent CI=0.44 to 0.99) than those with a low SOC (Table 2).

Discussion

This cross-sectional study demonstrated that a strong SOC was associated with being a nonsmoker, having better self-rated health, higher levels of social support, lower levels of stress, and higher between-meals sugar intake. To our knowledge, this is the first study exploring the associations of the GRRs with SOC among dental students. In this study, significant associations were found between a strong SOC and the GRRs except sociodemographic factors, consistent with previous studies indicating that psychosocial resources, health practice, and health status rather than sociodemographic factors were associated with SOC. A recent systematic review by Eriksson and Lindström found that the SOC was strongly associated with self-rated health because it seems to be a health-promoting resource that strengthens resilience and develops a positive subjective state of health. Similarly, we found that a strong SOC was associated with good self-rated health, consistent with early studies conducted on adults and university students.

The relationship between SOC and health behaviors was supported by recent studies, indicating that university students with higher SOC scores are more likely to engage in health-promoting behaviors and less likely to engage in health-damaging behaviors. The results of the multivariate analysis demonstrated that only two behaviors were strongly associated with a strong SOC taking all predictive factors. Consistent with the results of previous studies conducted on adults and university students, we found a strong SOC was strongly associated with a low frequency of between-meals sugar intake. In addition, students with a strong SOC were more likely to be nonsmokers, consistent with previous studies suggesting that people with a low SOC are more prone to react to stress with smoking and that the SOC is a protective factor with regard to smoking among university students. These findings may provide additional support for the link between the concept of SOC and a healthy environment. There are smoking areas in our school despite a smoking ban. In addition, there is no dining hall for student use in our school. Therefore, our students have to take their meals in the dining hall of Istanbul Medical School. To decrease the impact of these detrimental environmental factors on students’ health, smoking cessation programs and school dining services should be developed.

Consistent with previous studies, we found that a strong SOC was strongly associated with lower levels of perceived stress and higher levels of perceived social support. These findings support Antonovsky’s theory that an individual with a strong SOC is more likely to feel less stress and to have more social support as a stress-coping strategy.

It should be noted that we found no significant differences in SOC levels between preclinical and clinical dental students in this cross-sectional study. This may be due to the traditional teacher-centered approach to education.
education at our school. It is known that students’ SOC can be enhanced using student-centered education and learning methods to increase their problem-solving and critical thinking skills and their capacity to use available resources. In the short run, it is impossible to see the practical application of problem-based learning in our school due to a lack of organizational structure. Thus, the health enhancement program based on active learning approaches should be planned by dental educators to increase students’ SOC, as well as problem-solving skills.

The findings from this study may provide baseline information to develop health enhancement programs according to our students’ needs.

There are several limitations to this study that should be taken into account when considering these findings. The study was conducted in one of the three dental schools in Istanbul, limiting the generalizability of the results and the conclusions. Data were collected via self-report questionnaires, which might have introduced a social desirability bias. The cross-sectional design did not explain causation and changes over time in SOC. Follow-up studies conducted on university students found that students’ SOC changed over time. These results lend additional support to the salutogenic theory that SOC is dynamic by nature and varies in different life situations. Kuuppelomäki and Utriainen reported that the changes observed in SOC were not associated with the changes in health behaviors such as smoking, alcohol consumption, and physical activity in health care students, whereas Carmel and Bernstein found that SOC scores decreased over time because of increased stress during medical training. Thus, longitudinal follow-up studies are needed to evaluate whether there are any connections among changes in SOC, health behaviors, and stress in dental students.

Dental students are faced with stressful events that might affect their learning ability, academic performance, and physical and mental well-being. The researchers suggest that stress management programs should be integrated into dental curricula to help improve students’ coping skills and equip them to deal more effectively with the stressors they face. Studies of dental students have recommended prevention of stress and intervention via various methods, including ways of supporting students, counselling services, stress reduction methods, and revising criteria for admission. In a randomized trial, mindfulness training was shown to significantly increase SOC, which enables the selection of the most appropriate coping strategy to deal with the stressor. Lovas et al. suggest that a mindfulness-based program could be an effective stress management intervention for dental students because such a program helps to improve students’ sense of well-being by increasing awareness and receptivity to the changing nature of life. Thus, dental students would likely benefit from boosting their SOC, which would result in perceiving stressors as more manageable and nonthreatening and having more flexible responses to stress by making use of coping resources. Composed of comprehensibility, manageability, and meaningfulness, the SOC has been associated with coping strategies and skills in previous studies.

Future studies are needed to identify the impact of students’ SOC on their coping strategies and skills. It may be beneficial for dental educators and guidance counselors to identify the types of interventions that are effective in reducing stress in dental students. A strong SOC in our study was associated with higher levels of perceived social support, consistent with previous studies suggesting that a individual with a strong SOC is more likely to feel less stress and to have more social support as a stress-coping strategy. Future studies are needed to determine which components of social support are most important for the positive development of SOC and how social support buffers stress among dental students.

Conclusions

Our dental students’ SOC is strongly associated with the GRRs including self-rated health, perceived stress, perceived social support, and health practice to maintain and develop their health. The SOC scale could be used as a screening tool by university guidance counselors and dental educators to identify students with a low SOC. Taking into consideration the factors that reinforce a strong SOC may help faculty administrators and dental educators to develop health promotion strategies and to create a supportive environment for maintaining students’ health. This study should be regarded as the first in a series of epidemiological studies describing the concept of SOC and its determinants in Istanbul dental students, in which the next step will be to study the relationship among students’ SOC, coping strategies, perceived social support, and perceived stress and to evaluate the effects of planned health enhancement program including stress management on students’ SOC, stress levels, and health.
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