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Assessment of correlation of sense of coherence with oral health behaviours in general population in Western Maharashtra

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Abstract

Introduction: Sense of Coherence (SOC) is the main constituent of the Salutogenic theory. It evaluates the individual's capability to use existing resources in order to overcome difficulties and cope with life stressors to perform healthy behaviour and stay well.

Materials and Methods: A questionnaire study was conducted among general population to assess correlation between SOC and oral health behaviours. The structured, self-administered, close-ended questionnaire was designed to collect the data which consists of three parts and comprised of 26 questions related to SOC and oral health behaviours. The reliability and validity of the questionnaire were calculated. Statistical analysis was done using descriptive statistics.

Results: Out of 270 study participants, the mean SOC was found about 53.56. Around 82% of the population used toothbrush and toothpaste as the oral hygiene method. Approximately 62% of the population rinsed their mouth after every meal and 54.8% of the population used a combination of horizontal, vertical and circular movements to brush their teeth.

Conclusion: The high level of SOC was associated with good oral health behaviours such as frequency of brushing, time of brushing, use of oral hygiene aids, etc. Hence, the SOC can be a determinant of oral health-related behaviours.

Keywords: sense of coherence, salutogenesis, oral health behaviour, stress, oral hygiene

Introduction

Health has been regarded as the absence of disease. However, it has been recognized that the social, psychosocial, economic, and cultural factors influence health. This holistic concept implies that all sectors of the society influence health and emphasizes on promotion and protection of health [1]. Salutogenesis as a framework focuses on discovering the causes of health rather than the causes of illness. Antonovsky *et al.* differentiated salutogenesis from pathogenesis. Theory of salutogenesis, has two core concepts such as generalized resistance resources and Sense of Coherence (SOC) [2]. The SOC reflects a person's view of life and capacity to respond to stressful situations. The SOC consists of three elements like comprehensibility, manageability, and meaningfulness. The SOC is the global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that the stimuli from one's internal and external environments in the course of living are structured, predictable, and explicable; the resources are available to one to meet the demands posed by these stimuli; and these demands are challenges, worthy of investment and engagement. The SOC can promote a person's awareness of oral health and that people with stronger SOC usually have better oral health-related behaviours [3]. In the field of oral health, the incidence of chronic diseases such as dental caries and periodontitis is not only related to biological factors but may also be influenced by the SOC concept [4]. Individuals who have a stronger SOC are more intended to attend regular dental check-ups, clean their teeth more often, and have healthier dietary habits as compared to their counterparts who have lower levels of SOC [5]. Literature has reported significant correlations between SOC and dental care behaviour and perceived oral health, albeit less so with regard to the patients' clinical status [6].

The SOC is associated with overall quality of life and oral health. It has been stated that individuals with high SOC are more likely of not presenting impact on their oral health quality of life [7]. However, few numbers of studies have been carried out in Western Maharashtra on the correlation between SOC and oral health behaviours. Therefore, the aim of the study was to assess the correlation between SOC and oral hygiene behaviours in this region.

Materials and Methods

A questionnaire study was conducted among the general population in the Western Maharashtra region. The study was aimed to understand the correlation between Sense of Coherence (SOC) and oral health behaviours among general population. The participants were selected based on the following inclusion criteria: i) Age group above ten years, ii) person using Email or other social media platforms, iii) people willing to participate and the exclusion criteria being: i) mentally challenged people, ii) physically challenged people. The input parameters for sample size calculation were as follows: 80% power of the study, alpha error 0.05, effect size 0.3, and degree of freedom as 5. The calculated sample size was 260 using G*Power software version 3.1.9.2 (Heinrich Heine University, Düsseldorf). The final considered sample size was around 270. The SOC-related data were obtained using the short version of Antonovsky’s SOC scale.⁸ The convenient sampling technique was used in the study. A questionnaire was pretested and validated among 20 subjects to check reliability and validity and these subjects were not included in final analysis. The structured, self-administered, closed ended questionnaire was designed to collect the data which consisted of three parts and comprised of 26 questions. The first part consisted of demographic data such as name,

age and gender. The second part consisted of questions based on Antonovsky’s scale (short), and the third part consisted questions based on oral health behaviours. The reliability statistics were calculated and Cronbach’s Alpha value was 0.694. The questionnaire was designed on Google forms (Google LLC, Mountain View, California, United States) and the link was distributed among the general population via Email, WhatsApp, and other social media platforms (Instagram, Telegram, LinkedIn etc). Informed consent was taken from all the participants and a brief introduction was given about the study. Data collected were entered in a spreadsheet (Microsoft Excel 2018). Statistical analysis was done using descriptive statistics using Statistical Package for the Social Science (SPSS) 23.0 version software (IBM Chicago, Illinois, United States). The p-value was set at 5%.

Results

In Table 1, the male participants were 39.6% and the female participants were 60.4%. In Table 2, around 48% of the participants feel that doing the things they do every day is a source of deep pleasure and satisfaction. Around 41% of the participants had never experienced a feeling that they would rather not endure. In Table 3, out of 270 study participants, the mean SOC was calculated and found to be 53.56. In Table 4, oral health behaviour of general population was assessed, around 82% of the population used toothbrush and toothpaste as the oral hygiene method. Approximately 60% people used mouthwash as an additional oral hygiene aid and 82.6% of the population brushed their teeth in morning before/after breakfast. Around 58% of the population used fluoridated toothpaste and 49% people replaced their toothbrush after three months.

Table 1: Demographic details of study participants (N= 270).

Sr. No.	Particulars	Responses	Number (N)	Percentage (%)	Total N (%)
1	Gender	Male	107	39.6	270 (100)
		Female	163	60.4	
2	Age (years)	18 to 65	270	100	

Table 2: Questions and responses of Antonovsky’s Scale of Sense of Coherence

Sr. No.	Questions	Scale Responses	Number (N)	Percentage (%)	Total N (%)
1	Do you have the feeling that you really don't care about what is going on around you?	1	11	4.1	270 (100)
		2	21	7.8	
		3	38	14.1	
		4	73	27	
		5	53	19.6	
		6	38	14.1	
		7	36	13.3	
2	Has it happened in the past that you were surprised by the behaviour of people whom you thought you knew well?	1	48	17.8	270 (100)
		2	45	16.7	
		3	53	19.6	
		4	66	24.4	
		5	34	12.6	
		6	22	8.1	
		7	2	0.7	
3	Has it happened that people whom you counted on disappointed you?	1	6	2.2	270 (100)
		2	27	10	
		3	34	12.6	
		4	56	20.7	
		5	67	24.8	
		6	43	15.9	
		7	37	13.7	
4	Until now your life has had:	1	3	1.1	270 (100)
		2	14	5.2	

		3	25	9.3	
		4	59	21.9	
		5	69	25.6	
		6	59	21.9	
		7	41	15.2	
5	Do you have the feeling that you are being treated unfairly?	1	19	7	270 (100)
		2	28	10.4	
		3	38	14.1	
		4	68	25.2	
		5	44	16.3	
		6	42	15.6	
		7	31	11.5	
6	Do you have the feeling that you are in an unfamiliar situation and don't know what to do?	1	21	7.8	270 (100)
		2	25	9.3	
		3	47	17.4	
		4	55	20.4	
		5	42	15.6	
		6	61	22.6	
		7	19	7	
7	Doing the things you do every day is:	1	10	3.7	270 (100)
		2	22	8.1	
		3	33	12.2	
		4	76	28.1	
		5	57	21.1	
		6	48	17.8	
		7	24	8.9	
8	Do you have very mixed-up feelings and ideas?	1	38	14.1	270 (100)
		2	34	12.6	
		3	56	20.7	
		4	61	22.6	
		5	44	16.3	
		6	25	9.3	
		7	12	4.4	
9	Does it happen that you experience feelings that you would rather not have to endure?	1	27	10	270 (100)
		2	16	5.9	
		3	41	15.2	
		4	74	27.4	
		5	54	20	
		6	40	14.8	
		7	18	6.7	
10	Many people, even those with a strong character, sometimes feel like losers in certain situations. How often have you felt this way in the past?	1	23	8.5	270 (100)
		2	32	11.9	
		3	47	17.4	
		4	50	18.5	
		5	51	18.9	
		6	52	19.3	
		7	15	5.6	
11	When certain events occurred, have you generally found that:	1	17	6.3	270 (100)
		2	26	9.6	
		3	56	20.7	
		4	74	27.4	
		5	44	16.3	
		6	39	14.4	
		7	14	5.2	
12	How often do you have the feeling that there is little meaning in the things that you do in your daily life?	1	25	9.3	270 (100)
		2	32	11.9	
		3	39	14.4	
		4	61	22.6	
		5	46	17	
		6	44	16.3	
		7	23	8.5	
13	How often do you have feelings that you are not sure you can control?	1	18	6.7	270 (100)
		2	27	10	
		3	49	18.1	
		4	67	24.8	
		5	33	12.2	
		6	59	21.9	
		7	17	6.3	

*Q1, 2, 5, 6, 8, 9, 10, 12, 13: Scale response 1, 2, 3 = Very often/Always

4 = Neutral

5, 6, 7 = Rarely/Never

*Q3: Scale response 1, 2, 3 = Never

4 = Neutral

5, 6, 7 = Always

*Q4: Scale response 1, 2, 3 = No clear goals

4 = Neutral

5, 6, 7 = Very clear goals and purposes

*Q7: Scale response 1, 2, 3 = A source of pain and boredom

4 = Neutral

5, 6, 7 = A source of deep pleasure and satisfaction

*Q11: Scale response 1, 2, 3 = You underestimated/overestimated the situation

4 = Neutral

5, 6, 7 = You assessed the situation correctly

Table 3: Mean of SOC

Parameter	Frequency	Average SOC
Mean of SOC	270	53.56

Table 4: Oral Health Behaviour Questionnaire

Sr. No.	Questions	Responses	Number (N)	Percentage (%)	Total N (%)
1	Oral hygiene method used	Toothbrush & toothpaste	222	82.2	270 (100)
		Only toothpaste	14	5.2	
		Dantmanjan	15	5.6	
		Datoon	15	5.6	
		Any other	4	1.5	
2	Additional aids used for cleaning teeth	Mouthwash	151	55.9	270 (100)
		Toothpick	49	18.1	
		Dental floss	40	14.8	
		Any other	30	11.1	
3	Frequency of toothbrushing	Occasionally	27	10	270 (100)
		Once a day	117	43.3	
		Twice a day	115	42.6	
		More than twice a day	11	4.1	
4	Time of brushing	Morning before/after breakfast	223	82.6	270 (100)
		Noon after lunch	28	10.4	
		Night before going to bed	19	7	
5	Duration of brushing	Less than one minute	30	11.1	270 (100)
		One minute	65	24.1	
		Two minutes	104	38.5	
		More than two minutes	63	23.3	
		Any other	8	3	
6	Toothpaste used	Fluoridated	156	57.8	270 (100)
		Non-fluoridated	27	10	
		Herbal	50	18.5	
		Don't know	37	13.7	
7	Type of toothbrush used	Hard bristle	38	14.1	270 (100)
		Soft bristle	121	44.8	
		Medium bristle	95	35.2	
		Don't know	16	5.9	
8	Toothbrush replaced after	One month	52	19.3	270 (100)
		Three months	132	48.9	
		Six months	43	15.9	
		When bristles wear out	38	14.1	
		Any other	5	1.9	
9	Do you rinse your mouth after every meal?	Yes	168	62.2	270 (100)
		No	28	10.4	
		Sometimes	74	27.4	
10	Direction of brushing strokes	Horizontal	56	20.7	270 (100)
		Vertical	21	7.8	
		Circular	45	16.7	
		Combination of above	148	54.8	

Discussion

The SOC is a psychosocial factor that enables people to manage tension, identify, and mobilize resources to promote effective coping by finding solutions in a health promotion manner. The SOC is a resource for achievement and

maintenance of good health. The relationship between SOC and health outcomes has been investigated in many studies, but its relationship with oral health has been found only in a few studies.¹ Therefore, the present study was designed to investigate the correlation of SOC with oral health behaviours

among population of Western Maharashtra. In the current study, SOC-13 item questionnaire was used, which is a short version of the SOC-29 item. This scale was tested and validated, and has an advantage over the full version, i.e., it takes less time to complete^[1]. Therefore, the short version of SOC (SOC-13) questionnaire was employed in this study. In this particular study, the female population was comparatively higher (60%) than the male population (~40%). Majority of the population was in age group of 18 to 25 years. Oral health behaviour of general population was assessed, 82.2% of the population used toothbrush and toothpaste as the oral hygiene method. Around 61% of the population were inclined towards the fact that up until now their life has had very clear goals and purposes. The studies done by Freire *et al.* and Bernabé *et al.* revealed that a stronger SOC was significantly associated with better oral health behaviours^[9, 10]. Henceforth, in the present study, oral health behaviours were taken into account to know whether SOC influences oral health behaviours among Indian population. The study done by Lindmark *et al.* revealed that only tooth-brushing frequency was significantly related with SOC. However, previous studies have shown that strong SOC is associated with tooth-brushing^[11]. Previous literature found that the subjects with higher SOC have good oral health than subjects with weak SOC. This might be due to the fact that higher SOC among study subjects made them maintain good periodontal status^[12, 13]. In another study, it was found that good oral health behaviours and good periodontal status were associated with stronger SOC^[1]. The present study has certain limitations such as age-group comparison could not be done. The study was done mostly among people visiting dental hospital and may present with bias; hence, the results cannot be generalized. Furthermore, further investigations should be done among large group of populations to know how SOC is related to oral health and even among all the applicable age-groups.

Recommendations

1. There is a need for further longitudinal research to shed light on this association through a life course approach as improving SOC in the early stages of life while it is under development may have significant impact on an individual's life course and wellbeing.
2. Further research is also required to see if it is possible to introduce SOC as a psychological construct that could be considered in oral health models.

Conclusion

The SOC was positively correlated to all oral health behaviours. The high level of SOC was associated with good oral health behaviours such as frequency of brushing, time of brushing, use of oral hygiene aids, etc. Therefore, the SOC can be a determinant of oral health-related behaviours.

References

1. Kommuri SR, Dolar D, Suhas K, Bandari SR, Madupu PR. Correlation of Sense of Coherence with oral health behaviours, socioeconomic status, and periodontal status. *Journal of Indian Society of Periodontology*. 2016;20(4):453-59.
2. Sally F, Deborah D, Jenny B, Jan T. Sense of Coherence and Childbearing: A Scoping Review of the Literature. *International Journal of Childbirth*. 2014 September;4(3):1-4.
3. Ankit S, Sweta S, Ajithkrishnan CG, Pratik BK, Hemal P, Abhishek G. Caregiver's Sense of Coherence: A

predictor of oral health-related behaviours of autistic children in India. *Contemp Clin Dent*. 2019 April-June;10(2):197-202

4. Shaikh IA, Kudlur MS, Chandra VSR, Krishna RVS, Kumar, Srinivasulu G, *et al.* Impact of Sense of Coherence on oral health among bus drivers: A cross-sectional study. *J Int Soc Prev Community Dent*. 2018;8(2):145-52
5. Maryam E, Lucas GA, Parvaneh B, Humam S, Carlos FM, Maryam A. Impact of Sense of Coherence on Oral Health Behaviours: A Systematic Review. *PLoS One*. 2015;10(8):e0133918
6. Ulla WB, Anette W, Ulrika S, Magnus H. Oral health-related quality of life, Sense of Coherence and Dental Anxiety: An epidemiological cross-sectional study of middle-aged women. *BMC Oral health*. 2012;14:1-4
7. Rosane SD, Victor NF, Monica Maria CdO, Claides A. Sense of Coherence and impact of oral health on quality of life in adults and elderly in Southern Brazil. *SciELO Brazil*. 2018;25(4):1-4.
8. Antonovsky A. The structure and properties of the Sense of Coherence scale. *Soc Sci Med*. 1993;36:725-33.
9. Bernabé E, Kivimäki M, Tsakos G, Suominen-Taipale AL, Nordblad A, Savolainen J, *et al.* The relationship among Sense of Coherence, socio-economic status, and oral health-related behaviours among Finnish dentate adults. *Eur J Oral Sci*. 2009;117:413-18.
10. Freire MC, Sheiham A, Hardy R. Adolescents' Sense of Coherence, oral health status, and oral health-related behaviours. *Community Dent Oral Epidemiol*. 2001;29(3):204-12
11. Bernabé E, Watt RG, Sheiham A, Suominen-Taipale AL, Uutela A, Vehkalahti MM *et al.* Sense of Coherence and oral health in dentate adults: Findings from the Finnish health 2000 survey. *J Clin Periodontol*. 2010;37:981-7.
12. Lindmark U, Hakeberg M, Hugoson A. Sense of Coherence and its relationship with oral health-related behaviour and knowledge of and attitudes towards oral health. *Community Dent Oral Epidemiol*. 2011;39:542-53.
13. Ayo-Yusuf OA, Reddy PS, van den Borne BW. Adolescents' Sense of Coherence and smoking as longitudinal predictors of self-reported gingivitis. *J Clin Periodontol*. 2008;35:931-7.
14. Ayo-Yusuf OA, Reddy PS, van den Borne BW. Longitudinal association of adolescents' Sense of Coherence with tooth-brushing using an integrated behaviour change model. *Community Dent Oral Epidemiol*. 2009;37:68-77.