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Original Research Article

Parental education and attitude of young adults towards their oral health - A cross-sectional study

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ABSTRACT

Background: Socioeconomic factors are linked with the prevalence and burden of oral diseases, particularly in socially marginalized groups and developing countries. The Kerala health model shows the relevance of education and its direct link to attitudes towards health. We studied the relevance of the educational level of parents on the oral health attitude of 17–25-year-olds. The objective was to examine the relationship between parents' education and oral health attitude, frequency of dental visits, self-rated oral health (SROH), refrainment from dental health care, awareness of follow-up treatment, and effect of female literacy on offspring's oral health attitudes.

Materials and Methods: College students in Kerala, who were 17-25 year-old were administered questionnaires either web-based via Google forms or paper-and-pencil-based, among a randomly selected sample of college students. The questionnaire sought information on parents' educational levels, SROH, oral care services and awareness regarding oral health. Univariate and bivariate analysis with Chi-squared test was done using SPSS.

Results: About 939 students participated in the survey. Among them, 60.7% were females and 39.3% were males and 84.5% were undergraduate and 15.5% were postgraduate students.

Conclusion: Frequency of visiting a dentist, SROH, visit to a dentist on recall, and necessary for follow-up and dental visit were associated with father's and mother's level of education. Level of education of parents was associated with off-spring's perception of oral health, and dental visit factors.

1. Introduction

The overall concept of health includes a wider philosophical perspective and has evolved over the decades which includes medical and non-medical dimensions.[1] Scientific research, intersectoral collaboration, and policy-making along with better public awareness contribute to health.[2] Socioeconomic dimensions of health and socioeconomic indicators are mandatory for the implementation and monitoring people's health of any nation.[1] Based on the WHO Global Oral Health Programme, focus is given to oral diseases and conditions of orofacial complex, which can in turn directly affect the quality of an individual's life. Oral diseases are still highly prevalent in socially marginalized societies, particularly developing countries according to many epidemiological surveys.[2–4] Particularly, in middle and low-income countries, factors such as lack of healthcare facilities, affordability of healthcare services, health program, personal interest or perspective on oral health are taken into consideration. The prevalence, expenditure, and overall burden of oral diseases on individual and society has been studied and found that there are barriers to providing and in accessing oral health care in the socially marginalized societies.[5]

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Socioeconomic disparities in oral health have been investigated with regard to education, age, occupation, and lifestyle.[6] Social inequalities of a population should be understood to improve and implement better oral health programs/facilities.[7] Studies on awareness, attitude toward oral health and diseases in individuals of lower socioeconomic status (SES), excluding education shows its effect on underprivileged.[3] Income variations seems to show similar results, unlike the education level, when comparing results from different countries.[7] This makes income a better socio-economic status indicator and most widely used in studies.[8] Literature review shows how dental attendance, refrainment from treatment, and low SROH are mostly associated with unemployability.[9]

Longevity, education, and command over resources are the dimensions of Human Developmental Index (HDI). Education is a better investment for promoting equality and increasing the phase of development, therefore making it an essential measure of HDI. Studies from developing countries show increased health service utilization and better health indicators associated with increased female literacy rate.[10] Kerala, a southern state of India, has a higher GDP against the national average and that of developing countries. Kerala is a state with great unemployability, however, its indicators such as life expectancy, infant mortality, fertility rates, immunization coverage, and institutionalized deliveries during pregnancy conceptualizes how education has heightened health awareness.[11,12] Kerala's literacy rate is 96.2%, while the literacy rate of India is 77.70%, according to 2021 census. The female literacy rate of Kerala is 95.2% compared to overall India of 70.3%.[13] Kerala's prime developmental focus is on education, health, environment, housing, ayurvedic, homeopathic medical systems and its educational systems, which resulted in the well-known Kerala Health Model. The health model continued to be relevant during the outbreak of the COVID-19 pandemic and is said to be an ongoing model.[14] The high female literacy rate, teacher-student ratio, enrolment ratio, low dropout rate, health accessibility, and affordability of healthcare services has shown to have a positive impact on the health of people in the state.[15]

Education has a direct link with healthier habits including exercising, a healthy diet, abstinence from smoking and drinking, and having regular health check-ups, which directly improves the health of an individual. A higher educational level is related to less unemployability, better economic conditions, better socio-psychological resources, and healthier lifestyles.[16] Education is found to improve cognitive ability, realizations of the detrimental effect of smoking and drinking, better understanding of health innovations and modern healthcare practices.[17] Furthermore, studies show parental knowledge and education can influence the oral health practices, and awareness of the offspring which can lead to better utilization of health care services.[18] SES and health have a linear relationship and individuals with a higher level of education have better self-rated oral health (SROH).[19] Literature on education as a variable of SES, showed the association to be stronger between lower education level and refrainment from dental treatments.[20] Most of the literature reviews based on children and adolescent groups shows the impact of parental education on the oral health attitudes. However, the association of parents education with oral health behaviour of teens and young adults is less studied.[4,21] To the best of our knowledge the relationship between the oral health behaviour of young adults and parents education has not been examined. Thus, the study aimed to determine the relationship between parental education and attitude of young adults towards oral health and oral health behaviour of 17-25-year-old students attending college in Kollam, Kerala. The oral health behaviour and attitude in terms of frequency of dental visits, SROH, reasons for refrainment from dental treatment, awareness on following of instruction from dentist, necessity of follow-up treatment and the impact of female literacy on oral health attitude of offspring.

2. Materials and Methods

The cross-sectional study was conducted among 17-25-year-old undergraduate students, enrolled in four degree and engineering colleges in Kollam, Kerala. Ethical committee clearance was obtained from Srinivas Institute of Dental Sciences, (2022/3/1-25). Data collection was done from March 2022 to May 2022 after obtaining permission from college authorities at Kollam, Kerala.

Considering an estimated population of 6756 students, sample size estimation was done using Epi info version 3, which showed that minimum 364 samples were required. Stratified cluster random sampling technique was followed, the sample size was calculated by setting confidence interval at 95% such that the true value obtained had around ±5% marginalized error.

Informed consent was obtained from all participants. The questionnaire included details such as name, age, gender of the student, educational levels of student (participant), mother, father. Questions on oral health behaviour and attitude such as frequency of dental visits, Likert scale response on SROH, dental treatment refrainment reasons, approach towards following of dentist instructions and awareness on necessity of follow up treatment were included. Validation of questionnaire was done by sending the Google forms via WhatsApp and email to around 40 students via staffs. Responses were verified and questionnaires were redistributed as online Google forms and printed copies by contacting the respective teachers via WhatsApp and a total of 307 online responses were received. Following that, printed questionnaires of around 800 were distributed through teachers, and were collected

and entered manually in excel to get a total sample size of 940. The missing values were less than 10%, excluding which the final sample size of 931 was achieved.

Statistical analysis was done using IBM SPSS Statistics 22.0 to obtain frequency tables and crosstabs. Univariate, and bivariate analyses were done in order to find the significance between father's and mother's educational levels and oral health attitude or behaviours of offspring. The level of significance was set at 0.05. The manuscript was drafted by following the STROBE reporting guidelines for cross-sectional study.

3. Results

Table 1 presenting the gender wise distribution of the participants based on the current educational level showed a higher number of male undergraduate students than female undergraduate and all postgraduate students. Table 2 comparing the educational level of both parents showed higher number of mothers with above secondary education in contrast with fathers with below secondary level of education.

The distribution of each oral health attitude and behaviour with the parent's educational level is shown in Table 3 and Table 4. Offspring who were more likely to visit dentist 2 times a year had father and mother with an education level of degree/diploma. Greater frequency of dental visits was seen in off springs whose mother's educational level was post-graduation. Higher SROH was more likely to be seen in secondary level of father's education and degree/diploma level of mother's education. Higher number of offspring who opted dental treatments as not important had mothers and fathers with an educational level of secondary. Moreover, it was less likely for offspring to opt for long waiting period as refrainment reason whose parents had educational level of degree/diploma. Greater proportion of offspring who were likely to follow dentist instructions had parents with an educational level of secondary and degree and a higher number seen with respect to the mother's educational level. Higher number of off springs were likely to find follow up necessary in case of secondary level father's educational and degree level mother's education.

4. Discussion

This study was conducted to investigate the relationship of parental education and oral health attitudes and behaviours of young adults in the state of Kerala that is known for its high literacy rate but a paradoxical health model. There are no previously conducted studies on young adults' oral health attitudes in this southern state of India. From the results, it is clear that, there was increased frequency of dental visits, better SROH, greater willingness to follow dentist instructions, better awareness on follow up treatment with increasing number of years of parental education. The higher female literacy and its association with the oral health attitudes of young adults was evident.

Ostrove et al. showed education as one among the SES indicators which can influence health through environmental, psychological, behavioural pathways.[22] Liangwen et al. suggested that higher parental education was associated with better oral health habits and greater frequency of dental visits.[4] Bhat et al. showed how lower socioeconomic status is associated with poor oral health habits, poor SROH and severity of oral health diseases.[23] The influence of parental education on young adults' frequency of dental visits and SROH is evident in the findings of this study, where higher frequency of dental visits and better SROH was seen with higher educational level of parents. In general, there were greater number of mothers enrolled in higher education than fathers. Furthermore, frequency of dental visits was higher and better SROH was seen in secondary and degree level of parental education. Hakeberg et al. have shown the correlation between monetary dimensions of SES with dental visits and refrainment from dental treatment.[24] On contrary to this, the current study findings demonstrate significant correlation between educational level of parents and refrainment from dental treatment. Offspring with degree and secondary level of parental education were more likely to refrain from dental treatment due to financial reason or even lack of awareness. Thus, higher level of education of parents has significant association with the refrainment reasons opted by the student; hence, indicating the importance of literacy without taking into consideration the financial aspect. Soldani et al. suggested oral hygiene advice can change patient's attitude, behaviour towards health and can contribute to improved oral health.[25] Leonard et al. suggested that long term dental visiting, improved dental attendance patterns can result in better oral health.[26] Similar findings were seen in this study showing how education of parents can have an impact on the following of instructions given by dentist and awareness on follow-up treatment. Degree and post graduate level of both the parents can make offspring more willing to follow instructions given by the dentist and the offspring had better awareness on importance of follow up treatment.

Limitations of the study includes the lack of responses digitally obtained. The indirect factors that determine heath oriented behaviours of young adults including media and peer influence are not taken into consideration. Parental education has influence on the upbringing of the offsprings health oriented behaviour or decisions made by young adults. Literacy in general may improve knowledge on health and disease, and thereby leading to better awareness on health and higher utilisation of health care services. The importance of health literacy in reducing burden caused by non-communicable disease is supported.[27]

Table 1: No of undergraduate and postgraduate students based on gender

	Undergraduate student	Postgraduate student
Male	350 (94.9%)	19 (5.1%)
Female	443 (77.7%)	127 (22.3%)

Table 2: Parental educational level

Educational Level	Fathers- education	Mothers- education
Post-graduation	68 (7.2%)	84 (9.0%)
Degree/Diploma	312 (33.2%)	348 (37.2%)
Secondary School	376 (40.0%)	374 (40.0%)
Primary School	166 (17.7%)	117 (12.5%)
Less than primary	17 (1.8%)	13 (1.4%)

Table 3: Fathers educational level and oral health attitude

	Fathers educational level n (%)					Chi-square (p value)
	Post-graduation	Degree/Diploma	Secondary	Primary	Less than primary	
Frequency of visits to dentist						
Two times a year	2(5.3%)	18(47.4%)	14(36.8%)	4(10.5%)	0(0.0%)	
Once a year	11(18.0%)	20(32.8%)	22(36.1%)	6(9.8%)	2(3.3%)	
Less than once a year	1(2.3%)	17(39.5%)	17(39.5%)	6(14.0%)	2(4.7%)	30.890(0.014)
Only when there is problem	42(7.3%)	198(34.3%)	224(38.8%)	107(18.5%)	7(1.2%)	
Never been to a dentist	10(4.7%)	57(27.0%)	98(46.4%)	41(19.4%)	5(2.4%)	
Self-rated oral health						
Excellent	4(3.7%)	39(35.8%)	45(41.3%)	19(17.4%)	2(1.8%)	
Very good	29(5.9%)	153(31.2%)	203(41.3%)	97(19.8%)	9(1.8%)	
Good	30(12.6%)	83(34.7%)	93(38.9%)	30(12.6%)	3(1.3%)	31.508(0.012)
Fair	2(3.2%)	24(38.1%)	18(28.6%)	17(27.0%)	2(3.2%)	
Poor	1(7.7%)	2(15.4%)	9(69.2%)	1(7.7%)	0(0.0%)	
Reasons for refrainment from treatment						
Less time	17(10.4%)	56(34.1%)	59(36.0%)	32(19.5%)	0(0.0%)	
Dental treatments are expensive	10(6.3%)	56(35.0%)	66(41.3%)	22(13.8%)	6(3.8%)	29.698(0.003)
It is not important	20(5.1%)	124(31.6%)	166(42.3%)	75(19.1%)	7(1.8%)	
Long waiting period	11(14.3%)	13(16.9%)	34(44.2%)	19(24.7%)	0(0.0%)	
Following of dentist instructions						
No	6(8.5%)	13(18.3%)	34(47.9%)	16(22.5%)	2(2.8%)	
Yes	55(7.7%)	244(34.1%)	280(39.1%)	125(17.5%)	12(1.7%)	9.932(0.270)
Don't know	6(4.7%)	45(35.4%)	51(40.2%)	24(18.9%)	1(0.8%)	
Necessary to go for follow-up						
No	5(5.9%)	14(16.5%)	47(55.3%)	17(20.0%)	2(2.4%)	
Yes	54(8.2%)	232(35.3%)	244(37.1%)	116(17.7%)	11(1.7%)	19.968(0.010)
Don't know	7(4.1%)	56(33.1%)	74(43.8%)	31(18.3%)	1(0.6%)	

Table 4: Mother's educational level and oral health attitude

	Mothers educational level n (%)					Chi-square (p value)
	Post-graduation	Degree/Diploma	Secondary	Primary	Less than primary	
Frequency of visits to dentist						
Two times a year	4(10.5%)	18(47.4%)	16(42.1%)	0(0.0%)	0(0.0%)	
Once a year	12(19.7%)	20(32.8%)	25(41.0%)	4(6.6%)	0(0.0%)	
Less than once a year	2(4.7%)	17(39.5%)	21(48.8%)	2(4.7%)	1(2.3%)	33.225(0.007)
Only when there is problem	53(9.2%)	226(39.2%)	210(36.4%)	80(13.9%)	8(1.4%)	
Never been to a dentist	13(6.2%)	64(30.3%)	102(48.3%)	29(13.7%)	3(1.4%)	
Self-rated oral health						
Excellent	7(6.4%)	47(43.1%)	41(37.6%)	13(11.9%)	1(0.9%)	
Very good	41(8.4%)	160(32.7%)	213(43.5%)	70(14.3%)	6(1.2%)	
Good	29(12.1%)	160(44.4%)	83(34.7%)	18(7.5%)	3(1.3%)	32.074(0.010)
Fair	4(6.3%)	22(34.9%)	22(34.9%)	13(20.6%)	2(3.2%)	
Poor	1(7.7%)	4(30.8%)	7(53.8%)	0(0.0%)	1(7.7%)	
Reasons for refrainment from treatment						
Less time	15(9.1%)	65(39.6%)	65(39.6%)	18(11.0%)	1(0.6%)	
Dental treatments are expensive	14(8.8%)	61(38.1%)	69(43.1%)	12(7.5%)	4(2.5%)	16.986(0.150)
It is not important	32(8.2%)	133(34.0%)	158(40.4%)	64(16.4%)	4(1.0%)	
Long waiting period	11(14.3%)	28(36.4%)	30(39.0%)	6(7.8%)	2(2.6%)	
Following of dentist instructions						
No	7(9.9%)	21(29.6%)	31(43.7%)	11(15.5%)	1(1.4%)	
Yes	69(9.7%)	261(36.5%)	286(40.0%)	89(12.4%)	10(1.4%)	7.463(0.488)
Don't know	7(5.5%)	58(45.7%)	48(37.8%)	13(10.2%)	1(0.8%)	
Necessary to go for follow-up						
No	4(4.7%)	23(27.1%)	44(51.8%)	13(15.3%)	1(1.2%)	
Yes	70(10.7%)	253(38.6%)	243(37.0%)	82(12.5%)	8(1.2%)	15.655(0.048)
Don't know	9(5.3%)	61(36.1%)	78(46.2%)	19(11.2%)	2(1.2%)	

5. Conclusion

Practical approach towards prevention and control of non-communicable diseases involves the actions taken against risk factors. Further, research is required to investigate the consequences of individual health determinants and healthy literacy on long term health at individual and society level. More evidence on the significance of education on health indicators of community, especially the developing countries is required. School health education, health promotion and implementation of health programs in all educational level can contribute to improved awareness and better approach of individuals towards health. Implementation of health education in school level can significantly contribute to better health of current and upcoming generations. Furthermore, integration of health literacy as part of general education can reduce improve the oral health behaviour of adults of younger age in developing countries. [27]

6. Source of Funding

This study did not receive any funding from any source.

7. Conflict of Interest

Authors declare no conflict of interests.

8. Authors' Contributions

Parvathy Krishnan contributed to conceptualization of the study, design, data acquisition and analysis; interpretation, drafted the manuscript, revised and gave the final approval.

Sreevidya Bhat contributed to data analysis, conceptualization of the study, design, data acquisition and analysis; interpretation, critically revised the manuscript and gave the final approval.

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