



## International Journal of Current Research and Academic Review

ISSN: 2347-3215 Special Issue-5 (April-2018)  
Journal home page: <http://www.ijcrar.com>



### Psychological Implication of Oral Health among Adolescents

D. Prasanna Prabhu and V. Santhana Karthikeyan\*

Department of Psychology, Presidency College, Chennai-05, Tamil Nadu, India

\*Corresponding author

#### KEYWORDS

Health behaviour;  
health belief; health  
promotion

#### A B S T R A C T

Oral health is an essential aspect of general health, as such, oral health knowledge is considered to be an essential prerequisite for health related practices (Carneiro *et al.*, 2011). The purpose of this study was to adopt a quantitative cross sectional approach to assess the level of oral disease, knowledge and oral health behaviors and attitudes of adolescents, in relation to their oral health status. The main aim was to assess the level of oral disease, knowledge and oral health behaviors and attitudes of the students, in relation to their oral health status. The purpose of this study was to assess the level of oral health knowledge, behaviors, and practices among adolescents in Chennai, in relation to their oral health status. The theoretical framework of this study was based on the health belief model. A cross-sectional study was conducted to collect data using a close-ended questionnaire as well as oral examination (dental caries and periodontal diseases) of the adolescents. A total stratified sample of 30 adolescents in which 15 are male and 15 are female will be included in this study. Simple 't' tests will be used to analyze the data. According to the results of the study, the levels of dental caries and periodontal diseases were relatively low. The social change implications of this study can be the development and incorporation of oral health promotion programs into their curriculum.

#### Introduction

The mouth is the major gateway to the body; whatever affects oral health may also affect general health (Nyamuryekung, 2012).

Oral health is an essential aspect of general health, as such, oral health knowledge is considered to be an essential prerequisite for health related practices (Carneiro, 2011).

#### Health

The World Health Organization (WHO) stated that, health is the state of complete physically.

Psychologically (mentally), socially, spiritually and emotionally wellbeing and not merely the absence of any diseases (ailments) or infirmity (deformity).

### **Psychological health**

The American Psychological Association (APA) and British Psychological Society (BPS) stated that, the psychological health or health psychology is defined as the study of psychological and behavioural processes in health, illness and health care. It is mainly concerned with both physical and psychological health.

### **Health behaviour**

Kasl and Cobb defined health behavior as an any activity undertaken by a person who believes himself to be healthy for the purpose of preventing disease or detecting disease in an asymptomatic stage.

### **Health Belief Model**

The health belief model (HBM) is a psychological health behavior change model developed to explain and predict health-related behaviors, particularly in regard to the uptake of health services.

### **Oral health**

The United Kingdom Department of Health stated that, the oral health is a standard of health of the oral and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general wellbeing.

Singh *et al.*, (2012) explained that the most common oral health issues across the world are tooth decay, periodontal disease, and halitosis. There are various environmental and life style factors such as nutritional status, smoking, alcohol, poor oral hygiene, stress, and systemic conditions linked to the oral diseases.

### **Health promotion**

Health promotion is the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behaviour towards a wide range of social and environmental interventions.

### **Theoretical framework of the study**

The theoretical background for this study was drawn from the health belief model (HBM). This is the most widely used psychological approach to explain health related behaviors in response to diagnosed illness, particularly compliance with a medical regimen (Stretcher and Rosenstock, 1997). The health belief model demonstrates how individuals weigh up the advantages and disadvantages of health behavior before taking action (Stokes, Ashcroft and Platt, 2006). The health belief model was developed in the 1950s by social psychologists Hockbaum, Rosenstock, and Kegels working in the United Areas of Public Health Services. The model was adapted to explore a variety of long term and short term health behaviors; it focuses on the attitudes and beliefs of individuals. The core assumption of the health belief model is based on the understanding that a person will take a health related action if that person feels that a negative health condition can be avoided or has a positive expectation that by taking a recommended action, he or she will avoid a negative health condition.

The health belief model is one of the most frequently used tools in health seeking behavior research. A link between this model and the research topic is that it will be used to interpret the obtained information on what is known, believed, and done in relation to oral health as far as the

population under study is concerned (Haq *et al.*, 2012).

### **Application of health belief model**

The health belief model has been used to develop effective interventions to change health-related behaviors by targeting various aspects of the model's key constructs. Interventions based on the health belief model may aim to increase perceived susceptibility to and perceived seriousness of a health condition by providing education about prevalence and incidence of disease, individualized estimates of risk, and information about the consequences of disease (e.g., medical, financial, and social consequences).

Interventions may also aim to alter the cost-benefit analysis of engaging in a health-promoting behavior (i.e., increasing perceived benefits and decreasing perceived barriers) by providing information about the efficacy of various behaviors to reduce risk of disease, identifying common perceived barriers, providing incentives to engage in health-promoting behaviors, and engaging social support or other resources to encourage health-promoting behaviors. Furthermore, interventions based on the health belief model may provide cues to action to remind and encourage individuals to engage in health-promoting behaviors. Interventions may also aim to boost self-efficacy by providing training in specific health-promoting behaviors, particularly for complex lifestyle changes (e.g., changing diet or physical activity, adhering to a complicated medication regimen). Interventions can be aimed at the individual level (i.e., working one-on-one with individuals to increase engagement in health-related behaviors) or the societal level (e.g., through legislation, changes to the physical environment).

### **Aim**

The aim was to assess the level of oral disease, knowledge and oral health behaviors and attitudes of the students, in relation to their oral health status.

### **Objectives of the study**

#### **Descriptive questions of the study**

What is the oral health status (dental caries and periodontal diseases) of adolescents?

What is the level of knowledge on the causes and preventive measures of oral diseases among adolescents?

What are the behaviors / attitudes (e.g., frequency and reason of dental visit, brushing and flossing frequency and consumption of food with sugar content) of adolescents towards dental health?

#### **Inferential question of the study**

What are the influences on demographic factors (age, gender, educational qualification, family monthly income, number of siblings in the family, type of family and residential area), level of oral health knowledge, as well as oral health behavior and attitudes of adolescents and their oral health status?

#### **Research problem of the study**

How oral health knowledge factors will influence on oral health behaviour.

How oral health knowledge factors will modify the oral health attitude.

In what way, health belief factors will modify the health behaviour pattern.

How oral health knowledge aspects will influence with oral health practice.

How the oral health practice can be enrich the level of health promotion.

### **Research hypotheses of the study**

There is no significant relationship between demographic factors and oral health status (knowledge, attitude and practice) among adolescents.

There is no significant relationship between demographic factors and oral hygiene index (Debris index and Calculus index) among adolescents.

There is no significant relationship between demographic factors and Caries index (Decay, missing and filled teeth index) among adolescents.

### **Variables of the study**

The independent variables are demographic factors, oral health status (knowledge, attitude and practice).

The dependent variable was the oral hygiene factors and health promotion status.

### **Data collection procedure**

In this research study the data collection process was nearly completed in one week. First, prior permission got from the Head Mistress, Government Higher Secondary School, Avadi, Chennai – 600 072. She permitted to collect the data from S.S.L.C and Higher Secondary students. Both genders were taken for this study. In this study, 4 persons were male students and 4 persons were female students. Totally 8 students were collected in this school. Next, I got the permission from Head of the

Department, Department of Economics, Dharmamurthi Rao Bahadur Calavala Cunnan Chetty's Hindu College, Avadi, Chennai – 72.

Totally 8 students were collected, in this 8 students, 4 were male students and rest of the students were female in gender. Finally I collected the data from nearby residential area totally 16 schools and college students were included in this study. Simple Random method was implied. Purposive sampling techniques were implied. The total sample size was 32, in that sample 16 were male students and 16 were female students.

### **Tools used for this study**

Demographic factors.  
Oral Health Questionnaire.

### **Oral health examination**

Oral Hygiene Index (Debris Index and Calculus Index).

Dental caries Index (Decay, Missing and Filled Teeth Index).

The tools used for the study was organized into four sections Section - A regarded information on demographic factors of respondents (age, gender, educational qualification, family monthly income, number of siblings in the family, type of family and residential area). Section - B included information on dental health knowledge. Six questions were used to elicit knowledge and the response followed a four way Likert's scale format, 1-strongly disagree 2-disagree 3-agree 4-strongly agree. Section - C had five questions related to attitude towards dental health. Section - D had six questions that elicit information on practices towards dental health and the response followed a four way Likert's scale

format, (a) Once a day (b) twice a day (c) sometimes a week and (d) never.

### **Oral/clinical examination**

Oral epidemiological data was collected after obtaining by the clinical examinations in the various schools and college students were carried out using mouth mirror number 23 Shrepherd's hook, straight explorer and tweezers.

The Simplified Oral Hygiene Index was founded by John C. Greene and Jack R. Vermillion in 1964. It was used to classify and assess oral hygiene status. It is composed of the combined Debris Index and Calculus index, each of these indexes is in turn based on 12 numerical determinations representing the amount of debris or calculus found on the buccal and lingual surfaces of each of three segments of each dental arch.

The Dental Caries Index of Decay Missing and Filled Teeth Index (DMFT) were found by World Health Organization (WHO, 1987) was used to determined prevalence of periodontal disease among the participants. In brief, in order to compute DMFT score at individual level, total of D+M+F teeth was calculated, for example if D = 3, M = 2, F = 5, then DMF = 3+2+5 = 10.

### **Data analysis and interpretations**

All data were imported into Statistical Package for Social Studies (SPSS), to find out the mean and standard deviation of demographic factors of adolescents. Next Pearson's Product Moment Correlation Analysis was applied for demographic factors and oral health factors of knowledge, attitudes and practice and to find out the significant relationship between each variable. Finally 't' test was applied for the

above factors and find out the level of significance. Similarly demographic factors and oral hygiene index of debris index, calculus index and then dental caries index of decay, missing and filled teeth index were analyzed by the previous procedure.

Table 1 shows that t-value of the demographic factors and oral health factors of knowledge, attitude and practice. It was found that the gender wise difference was there with respect to knowledge and practice. Age and educational qualification were significant difference with respect to knowledge only. Family income and number of siblings in the family were highly significantly differing with respect to knowledge, attitude and practice.

The type of family was significantly differing with knowledge and practice only. In the same way, residential area was found to be significantly different with knowledge and practice only.

The table 2 shows that the demographic factors like gender, age, educational qualification, family monthly income, number of siblings in the family, type of family and residential area were not having significant relationship with oral hygiene index of debris index, calculus index and then dental caries index of decay, missing and filled teeth index.

In that above table shows that the debris index and calculus index were not having significant relationship with demographic factors but the dental caries index of decay, missing and filled teeth index were highly significant relationship with demographic factors of residential area.

The correlation value was .621, it was highly significant relationship at 0.01 level (2-tailed).

**Table.1** ‘t’ test between demographic factors and oral health factors of knowledge, attitude and practice among adolescents

S. No	Demographic Factors	‘t’ Value of oral health factors		
		Knowledge	Attitude	Practice
1	Gender	3.458*	2.675	3.304*
2	Age	3.091*	2.175	2.897
3	Educational Qualification	3.091*	2.175	2.897
4	Family Monthly Income	4.443**	3.744**	5.358**
5	Number of Siblings in the family	5.578**	4.497**	5.036**
6	Type of Family	3.712*	2.820	3.570*
7	Residential area	4.910**	2.823	3.483*

\*correlation is significant at the 0.05 level (2-tailed).

\*\*correlation is significant at the 0.01 level (2-tailed).

**Table.2** Shows that the correlation between demographic factors and Oral hygiene Index and Decay, Missing and Filled Teeth Index

S. No	Demographic Factors	Oral hygiene Index		Dental caries Index
		Debris Index	Calculus Index	DMFT Index
1	Gender	-.168	-.177	.199
2	Age	.153	.161	-.124
3	Educational Qualification	.153	.161	-.124
4	Family Monthly Income	-.230	-.118	-.181
5	Number of Siblings in the family	-.102	-.046	.039
6	Type of Family	.254	.302	.166
7	Residential area	-.153	.132	.621**

\*\*correlation is significant at the 0.01 level (2-tailed).

**Fig.1** Shows that ‘t’ test based on Demographic factors and Oral health factors among Adolescents

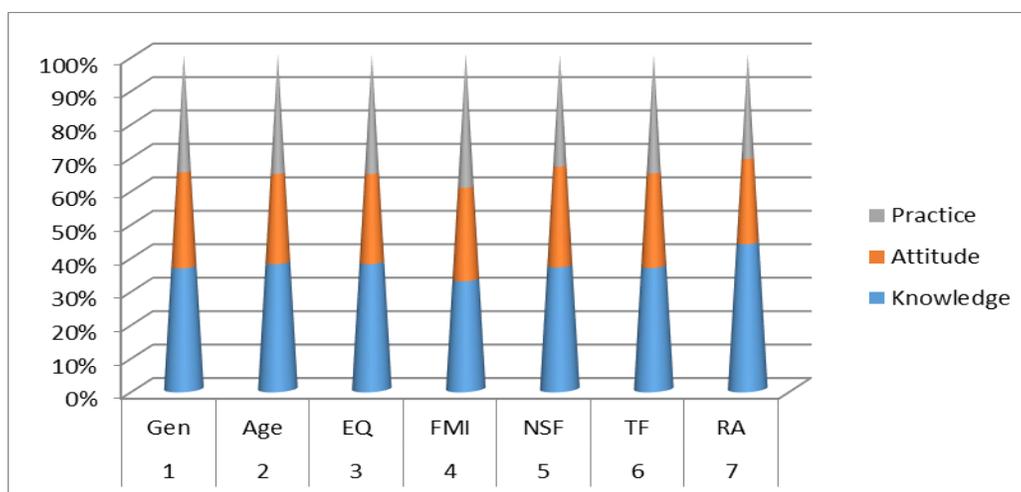
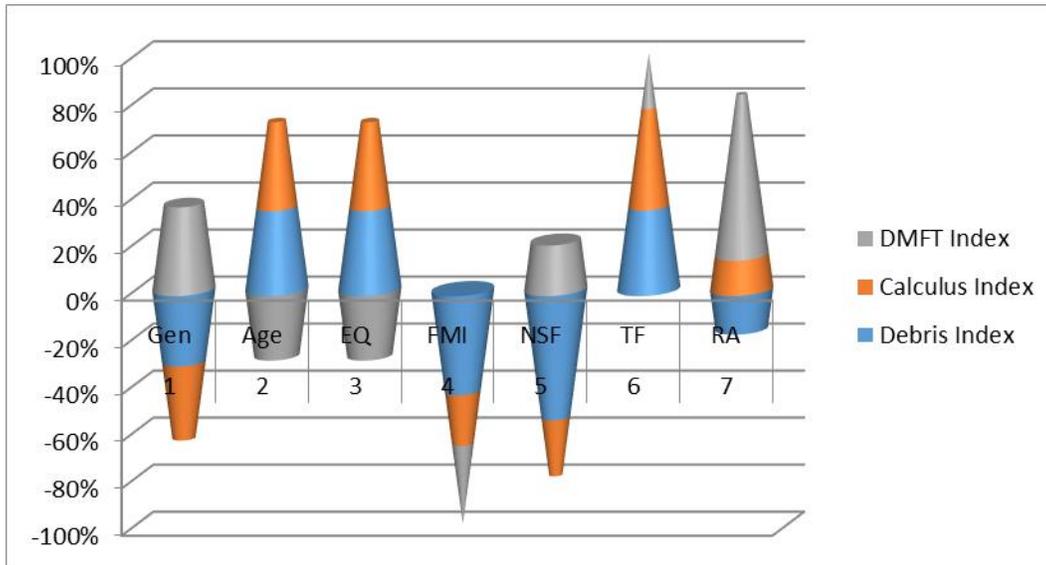
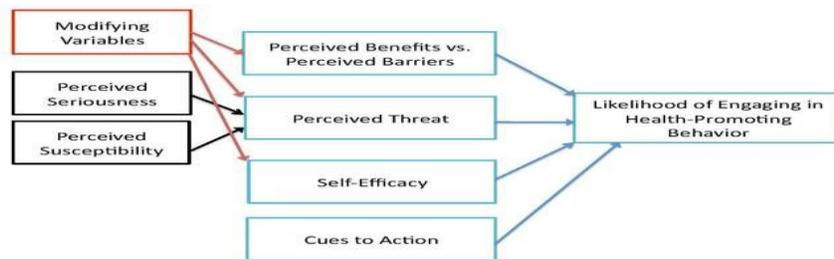


Fig.2 Shows that the correlation between demographic factors and Oral hygiene Index of Debris Index and Calculus Index and Decay, Missing and Filled Teeth Index



### The Health Belief Model



Health belief model chart (Oral hygiene as an example)							
<b>Modifying Variables</b> (age, gender, race, economy, siblings and residential area)	<b>Perceived Severity</b> + <b>Perceived Susceptibility</b>	+	<b>Perceived benefit</b> - <b>Perceived barriers</b>	+	<b>Cues to Action</b>	=	<b>Taking action</b> (or not)
(base score for this person's health)	(base score as to the belief that lack of oral hygiene will harm one's health)		(base score for oral hygiene)				

## **Results and Discussion**

The results of the study were the correlation between demographic factors and oral health factors of knowledge, attitude and practice. Here the gender was significant relationship with knowledge and practice. Age and educational qualification were significant relationship with knowledge only. Family income and number of siblings in the family were highly significant relationship with knowledge, attitude and practice. The type of family was significant relationship with knowledge and practice only. In the same way, residential area was also highly significant relationship with knowledge and practice only.

The demographic factors correlated with oral hygiene index of debris index, calculus index and dental caries index like decay, missing and filled teeth index. It was concluded that the debris index and calculus index were not significant relationship with demographic factors but the decay, missing and filled teeth index were highly significant relationship with demographic factors of residential area of the correlation value was.621, it was highly significant relationship with 0.01 level (2-tailed).

Most of the adolescents had satisfactory knowledge on the causes on various preventive measures of oral diseases, such as, knowing that it is necessary to brush the teeth before breakfast in the morning and last thing at night, to avoid intakes of foods and drinks that contains sugar, to go for dental check-up at least once in a year, and that it is possible to prevent oral diseases by brushing, flossing and avoiding sugar.

Most of the adolescents had positive attitudes towards their oral health status, as the majority of them either strongly agreed or agreed that caring for the mouth is as

important as caring for other parts of the body, and that it is important to brush the teeth in the morning after breakfast and last thing in the night.

A significantly high knowledge, positive attitudes and sound practices of oral health were detected among the examined adolescents. This may likely be the reason for the low levels of dental caries and periodontal diseases observed in this study.

Oral health is an essential aspect of general health, as such, oral health knowledge is considered to be an essential prerequisite for health related practices. According to the results of the study, there was a low level of dental attendance and use of flossing and professional fluoridation, although there was a high knowledge, positive attitude and sound practices of dental health in general. Adolescents in Chennai face challenges regarding their oral health, because of the daily high consumptions of sugary foods and drinks and because of poor oral hygiene, which predispose them to dental caries and periodontal diseases. Good oral health behavior and attitude plays a fundamental role for general wellbeing by preventing common oral diseases, such as dental caries and periodontal disease. The behavior / attitude include regular tooth brushing and flossing, preventive measures such as fluoridation and sealants, healthy nutritional habits and regular visit to the dentists.

## **References**

- Abigail N. Adams and Carly T. McKenzie (2015), Oral Health Beliefs of Alaska Native Dental Patients, University of Alabama.
- Akam Mustafa Hasan and Mardin Othman Abdulqadir (2017), Assessment of knowledge, attitude and practices of personal and oral hygiene among undergraduate university students in

- Sulaimani city. *Kurdistan Journal for Applied Research*, 2(2), July 2017, kjar.spu.edu.iq, P-ISSN: 2411-7684 – E-ISSN: 2411-7706.
- Anna-Lena Eostberg, Marit S. Skeie, Anne B. Skaare and Ivar Espelid (2016), Caries increment in young children in Skaraborg, Sweden: associations with parental socio-demography, health habits and attitudes.
- Areai, D. M., Thomson, W. M., Foster Page, L. A., Denny, S. J., Crengle, S., Clark, T. C. Koopu, P. I. (2011). Self-reported oral health, dental self-care and dental service use among New Zealand school adolescents: findings from the Youth 07 study. *New Zealand Dental Journal*, 107 (4), 121-126.
- Arun, K. P. P., Shankar, S., Sowmya, J., and Priyaa, C.V. (2010). Oral health knowledge, attitude and practice of school adolescents of KSR Matriculation School, Thiruchengode. *Journal of Indian Academy of Dental Specialists*, 1(1), 4-11.
- Carneiro, L., Kabulwa, M., Makyao, M., Mrosso, G., and Choum, R. (2011). Oral health knowledge and practices of school adolescents Tanga, Tanzania. *International Journal of Dentistry*.
- Cheah, W. L., Tay, S. P., Chai, S.C., Bong, C. S., Lugmanul, H. B., and Zhuleikha, B. J. C. (2010). Oral health knowledge, attitude and practice among school adolescents in Kuching Sarawak, *Archives of Orofacial Sciences*, 5(1), 9-16.
- Chukwu, O. (2012). A keynote address delivered by the Honorable Minister of Health Prof. C.D. Onyebuchi Chukwu on the occasion of celebration of the 2nd national oral health week / national oral health policy launch, held at Transcorp Hilton Hotel, Abuja.
- Ehizele, A., Chiwuzie, J., and Ofili, A (2011). Oral health knowledge, attitude and practices among Chennai primary school teachers. *International Journal of Dental Hygiene*, 9, 254-260.
- Health at Fact Expert (2013). Health belief model: Understanding it. Retrieved from <http://health.factexpert.com/473-health-belief-model.php>
- Humagain, E. (2011). Evaluation of knowledge, attitude and practice (KAP) about oral health among level adolescents of rural Nepal – A questionnaire study. *Webmed Central Dentistry*, 2(3).
- Joanne CY Chan, Luzy SH Chin (2015), Oral health knowledge and psychological determinants of oral health behavior of nursing students.
- Johnson John Omale (2014) Oral Health Knowledge, Attitudes, and Practices among Secondary School Students in Nigeria, Walden Dissertations and Doctoral Studies, Walden University.
- Kolawole, K. A., Oziegbe, E. O., and Bamise, C. T. (2011). Oral hygiene measures and the periodontal status of school children. *International Journal of Dental Hygiene*, 9, 143-148.
- Lee CY, Ting CC, Wu JH, Lee KT, Chen HS, Chang YY (2017), Dental visiting behaviours among primary school children: Application of the health belief model, *Int J Dent Hyg*.
- Markowitz, K., Fairlie, K., Ferrandiz, J., Nasri-Heir, C., and Fine, D.H. (2012). A longitudinal study of occlusal caries in Newark New Jersey school children: influence between initial dental finding and the development of new lesions. *Archives of Oral Biology*, 57, 1482-1490.
- Mehta, A., and Kaur, G. (2012). Oral health-related knowledge, attitude and practices among 12-year-old school children studying in rural areas of Panchkula, India. *Indian Journal of Dental Research*, 23(2), 293.
- National Institute of Dental and Craniofacial Research (n.d.). Periodontal diseases: causes, symptoms and treatment.
- Nosayaba, O. P. (2011). The Alma-Ata declaration: An appraisal of primary

- oral health care three decades later. *Health Policy*, 99, 255-260.
- Ogbu, I., Okoro, I., and Ugwuja, E., I. (2012). Well water fluoride in Enugu. *The International Journal of Occupational and Environmental Medicine*, 3(2), 96-98.
- Olusile, A.O. (2010). Improving low awareness and inadequate access to oral health care: the role of dentists, the government and non-governmental agencies. *Medical Journal*, 51(3), 134-136.
- Oulis, C.J., Berdouses, E.D., Mamai-Homata, E. and Polychronopoulou A. (2011). Prevalence of sealants in relation to dental caries on the permanent molars of 12 and 15-year-old adolescents. A national pathfinder survey. *BMC Public Health*, 11, 100, doi: 10.1186/1471-2458-11-100.
- Patcharaphol Samnieng, Hatairat Lekatana (2016), Oral Health and Quality Of Life among Elderly in Thai.
- Rahmati-Najarkolaei F, Rahnama P, Gholami Fesharaki M, Behnood V (2016), Predictors of Oral Health Behaviors in Female Students: An Application of the Health Belief Model.
- Ralf Schwarzer, Agata Antoniuk, Maryam Gholami (2014), A brief intervention changing oral self-care, self-efficacy, and self-monitoring.
- Ramesh Kumar, S. G. Aswath Narayanan, M. B. Jayanthi, D. (2017), Comparison of oral hygiene status before and after health education among 12–18 year old patients, Department of Public Health Dentistry, Tamil Nadu Government Dental College and Hospital, Chennai, Tamil Nadu, India.
- Ravaghi, V. Holmes, R. D. Steele, J. G and Tsakos, G. (2016), The impact of oral conditions on children in England, Wales and Northern Ireland 2013.
- Rustvold, S. R. (2012). Oral health knowledge, attitude and behavior: Investigation of an educational intervention strategy with at-risk females (Doctoral dissertation).
- Saadu, L., Musa, O. L., Abu-Saeed, K. and Abu-Saeed, M. B. (2012). Knowledge and practice on oral health among Junior School Adolescents in Ilorin West Local Government Area.
- Soben Peter (2009) *Essentials of Preventive and Community Dentistry (Public Health Dentistry)*, 4<sup>th</sup> edition – ISBN – 81 – 86809 – 15 – 5.
- Syed E. H., Rahman, M., Itsuko, K., Mutahara, M., Kayako, S., Tsutsumi, A., & Mostofa, M. G. (2016), Effect of a school-based oral health education in preventing untreated dental caries and increasing knowledge, attitude, and practices among adolescents in Bangladesh. *BMC Oral Health*.
- Walker K, Jackson R (2015), the health belief model and determinants of oral hygiene practices and beliefs in preteen children: a pilot study.
- Yan Zhang, Yanling Wang and Ying Ji (2016). Gender differences in the pathways of family factors influencing children's oral health behaviours: a cross-sectional study of primary school students in Beijing, China.

**How to cite this article:**

Prasanna Prabhu, D. and Santhana Karthikeyan, V. 2018. Psychological Implication of Oral Health among Adolescents. *Int.J.Curr.Res.Aca.Rev. Special Issue-5: 93-102*.