ORAL HEALTH EDUCATION IN THE CLASSROOM AND IT'S INFLUENCE ON COMPETENCIES AND HEALTH HABITS OF YOUNG ADULTS IN SRI LANKA

EDUCAÇÃO EM SAÚDE BUCAL NA SALA DE AULA E SUA INFLUÊNCIA NAS COMPETÊNCIAS E HÁBITOS DE SAÚDE DE JOVENS ADULTOS NO SRI LANKA

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Abstract: The prevalence of Oral Health (OH) problems among the young adults in Sri Lanka is at a high level (Institute of Oral Health, 2018). The competencies on oral health obtain at the school may have a significant impact on the oral health habits of the new generations. The aim of this study is to investigate influence of science and health education in the school environment on the level of competencies and health habits towards OH among young adults in Sri Lanka. Survey design was followed to undertake the study. Both qualitative and quantitative (mixed) approaches used to conduct this study. Seven Dental Clinics were conveniently selected and from those seven clusters of dental clinics 107 young adults (15 years to 25 years) were selected randomly. Seven dentists and five science and health subject teachers were selected purposively. Questionnaire was used to collect data from young adults. Further on, in depth interviews with dental practitioners as well as science and health subject teachers were conducted to review both the vulnerability of the issue and how far the classroom education could influence the OH of students when they grow up as young adults. Statistical analysis method for quantitative data and thematic analysis method for qualitative data were used to identify the results. These results show that OH competencies are lower in young adults of Sri Lanka and school education on OH can significantly effect on improving the OH of individuals. OH education given to the students at the classroom is very important, because this awareness would help them lifelong to improve their quality of life free of many common oral heath burdens.

Keywords: Oral Health Education. School Education. Health Habits. Young Adults.

Resumo: A prevalência de problemas de saúde bucal (OH) entre os jovens adultos no Sri Lanka está em um nível alto (Institute of Oral Health, 2018). As competências em saúde bucal adquiridas na escola podem ter um impacto significativo nos hábitos de saúde bucal das novas gerações. O objetivo deste estudo é investigar a influência da educação em ciências e saúde no ambiente escolar sobre o nível de competências e hábitos

de saúde em relação à OH entre jovens adultos no Sri Lanka. O desenho da pesquisa foi seguido para realizar o estudo. Abordagens qualitativas e quantitativas (mistas) usadas para conduzir este estudo. Sete clínicas dentárias foram convenientemente selecionadas e, desses sete grupos de clínicas odontológicas, 107 adultos jovens (15 a 25 anos) foram selecionados aleatoriamente. Sete dentistas e cinco professores de ciências e saúde foram selecionados propositalmente. Questionário foi usado para coletar dados de adultos jovens. Mais adiante, entrevistas em profundidade com dentistas e professores de ciências e saúde foram conduzidas para revisar a vulnerabilidade do problema e até que ponto a educação em sala de aula poderia influenciar a OH dos alunos quando eles crescessem como jovens adultos. Para a identificação dos resultados utilizou-se o método de análise estatística para dados quantitativos e o método de análise temática para os dados qualitativos. Esses resultados mostram que as competências de OH são mais baixas em jovens adultos do Sri Lanka e a educação escolar em OH pode afetar significativamente a melhoria da OH dos indivíduos. A educação de OH dada aos alunos em sala de aula é muito importante, porque essa consciência os ajudaria ao longo da vida a melhorar sua qualidade de vida livre de muitos fardos de saúde orais comuns.

Palavras-chave: Educação em saúde bucal. Educação escolar. Hábitos de saúde. Jovens adultos.

1. Introduction

1.1.   Background of the Introduction

World Health Organization (WHO) (2021), states that the Oral Health (OH) is a key indicator of overall health, well-being, and quality of life of individuals. It encompasses a range of diseases and conditions that include dental caries, periodontal (gum) disease, tooth loss, oral cancer, oral manifestations of HIV infection etc. It also states that there is a proven relationship between oral and general health. While it is being stated this matter, the National Oral Health Survey in Sri Lanka 2015/16 conducted by Ministry of Health, Nutrition and Indigenous Medicine (2018) highlights that the individual's percentage of loss of periodontal attachment is about 99.3% in the age group of 15years. It also reveals that many other OH problems such as dental caries, bleeding gums, calculus are at high percentages with the increasing ages of years in the Sri Lankan context. Numerous previous studies have been conducted on investigating OH issues among individuals and preventive measures. But an exploration on contribution of school classroom education on the level of competencies and health habits towards better OH practices

among young adults was deficient in the Sri Lankan research context. Hence this study can be considered as an attempt to fill that research gap. Furthermore, findings of this study can be useful on reducing OH burden among individuals in Sri Lanka which is considered as a key indicator of the health, as stated by the WHO.

1.2. Oral Health

Number of research have emphasized that the OH is one of the vital concerns of the lives of young adults. Young children are more sensitive to various impacts of oral conditions on their quality of life. Their current quality of life and development may have their ultimate impact and cause a dramatic effect on their social skills and education (Nallaperuma et al., 2020).

1.3. School Education

A comprehensive health education program is an important part of the curriculum in most schools. Starting in kindergarten and continuing through high school, it provides an introduction to the human body and to factors that prevent illness and promote or damage health (Teaching Health Education in School - HealthyChildren.Org, n.d.). A study conducted in Bangladesh, among school aged adolescents from grade 6–8 indicates, that OH education (OHE) intervention was effective in increasing i) knowledge, ii) attitude, and iii) practices towards oral health; it also significantly reduced the prevalence of untreated dental caries (Syed, 2016).

1.4. Oral Health habits of Young Adults

Dental professionals suggest that treatment for periodontal diseases includes good oral hygiene practices and regularly scheduled professional teeth cleanings. It is being emphasized that effective oral hygiene usually includes twice daily brushing and regular flossing.

Accordingly, knowledge, awareness and practicing good OH habits could promote decrease in these OH related problems among individuals.

2. Aim of the Study

The aim of this study is to investigate influence of science and health education in the school environment on the level of competencies and health habits towards OH among young adults in Sri Lanka

2.1. Objectives of the Study

i. To assess the competencies and health habits in relation to OH of young adults (15 to 25 years of age) in Sri Lanka.

ii. To identify the contribution of school education on improving competencies and health habits relative to OH of children.

iii. Seeking the avenues in which the school education can be utilized to help students to improve their competencies about OH habits.

3. Methodology

Survey design is used to conduct this study and both quantitative and qualitative (mixed) approach was followed to conduct the study. "Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e. g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration" (Schoonenboom, 2017). Primary data were gathered from three types of respondents namely young adults (15 to 25 years of age), school science and health subject teachers and dental practitioners. Secondary data were collected from the National Oral Health Surveys, teacher instruction manuals and textbooks of science and health to elicit the conclusions.

Table – 1: **Objectives, Population, Participants, and Data Analysis Techniques of the Study**

Objectives	Population	No of participants	Method of Analysis
To assess the competencies and health habits in relation to OH of young adults (15 to 25 years of age) in Sri Lanka.	Young adults (15 to 25years) In the Western Province	107	Statistical Method
To identify the contribution of school classroom education on improving competencies and health habits relative to OH of children.	Science and Health Teachers	05	Thematic Analysis
Seeking the avenues in which the school classroom education can be utilized to help students to improve their competencies about OH habits.	Dental Professionals	07	Thematic Analysis

3.1. Sampling Techniques and Data Collection

Seven Dental Centers in the Western province were conveniently selected and 107 young adults who visited were randomly selected. A multiple-choice questionnaire with 20 questions made using google form application was administered to the respondents using a tab to ensure hundred percent responding.

Open-ended, structured interview was conducted to collect data from five science and health subject teachers. The same approach was used to gather data from seven dentists who have more than 20 years' experience in the field and consult an average of more than hundred young adults per month.

3.2.   Analysis of Data and Results

The use of sequential methods of exploratory analysis disclosed greater complexity and depth of understanding of the phenomena than would have been achieved with one method alone. Therefore, statistical data analysis techniques of descriptive, Chi-square and Wilcoxon sign rank were used with the aid of computer software package SPSS. The thematic analysis was conducted categorizing the data in to four main themes. Both these quantitative and qualitative domains examined further through a method of narrative analysis and used for inducement of the conclusions of the study.

4. Data Analysis and Interpretation of the Findings

Collected data, analyzed descriptively using descriptive statistics such as frequency count and percent distribution, correlation. The outcome was used to describe the respondents' profile in relation to competencies and OH habits in tables below.

4.1.   Knowledge and Awareness about Oral Health

Knowledge is facts, information, and skills acquired through experience or education, the theoretical or practical understanding of a subject. Awareness is perceiving, knowing, feeling, or being conscious of events, objects, thoughts, emotions, or sensory patterns (Hasa, 2016).
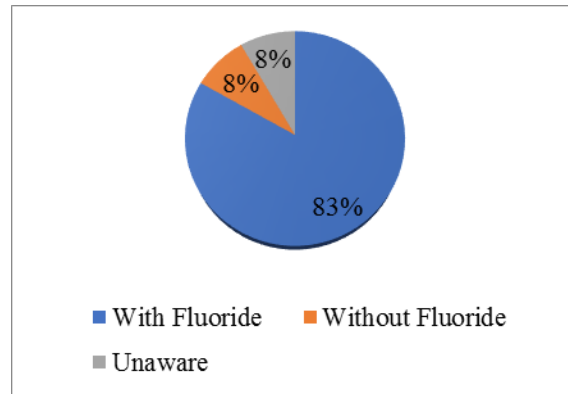
Figure – 1: **Type of the Toothpaste Used by Participants**

According to above figure – 1, 83% of the respondents are knowledgeable on the tooth paste with fluoride is best to use. It shows majority of participants have proper knowledge about the quality of the toothpaste.
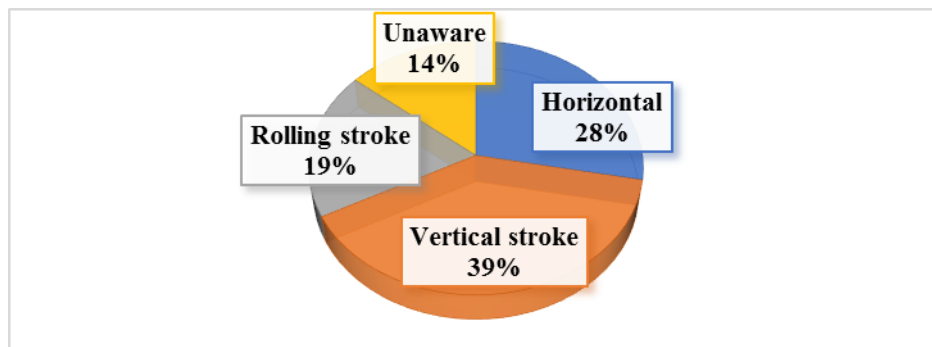

Figure - 2: **Correct Brushing Techniques**

Figure – 2 explores the correct brushing technique of vertical stroke is given only by 39% of the total respondents and the results show that majority are not aware on the correct brushing techniques. Even though majority of participants have proper knowledge about the type of toothpaste they do not have proper skills about the correct brushing techniques.
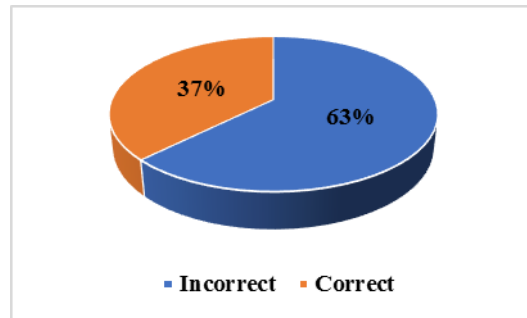
Figure – 3: **Identifying Parts of Tooth**

According to figure – 3, the correct identification of the parts of tooth is failed by majority (63%) of participants. It shows that the theoretical aspects have not been retained. According to this finding can say that an effective learning outcome has not been obtained from the school education.
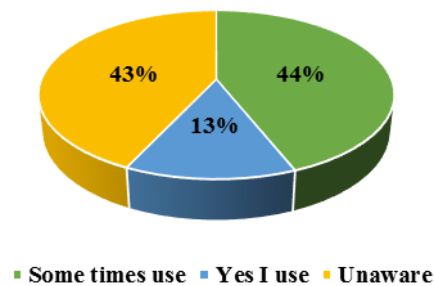

Figure – 4: **Use of Dental Flossing**

Figure – 4 illustrates 43% of the participants do not know about flossing and only a 13% of participants use this technique for cleaning teeth. However, 44% of participants responded that they are not aware on the use of dental flossing, and it confirmed the lack of education in relation to the OH is case for this problem.
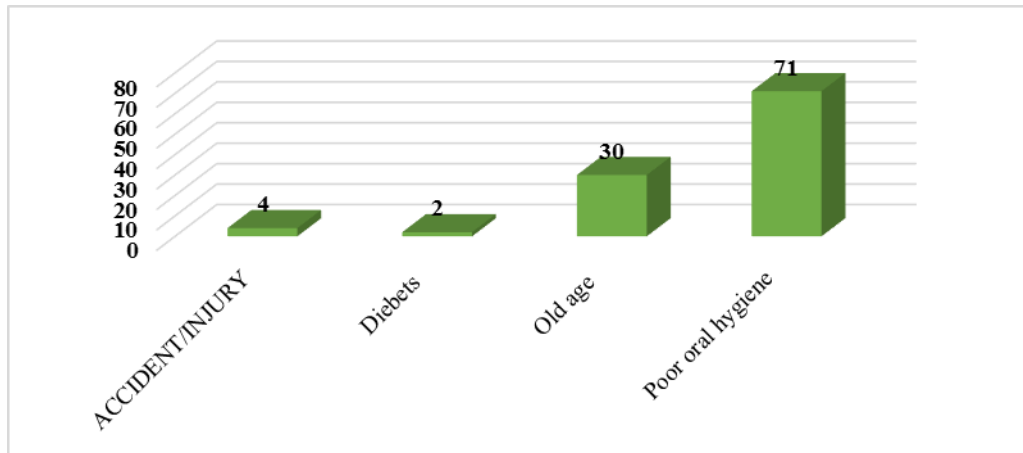
Figure – 5: **Knowledge on Cause for Loosing Teeth**

Figure – 5 the knowledge on most common cause for loosing teeth was correctly identified by the participants. Accordingly, 71% of participants responded poor oral hygiene is cause for loosing teeth, 30% of participants stated old age is the reason for the teeth loosing and this denotes that a considerable number of students are lacking the knowledge on main cause for loosing their teeth.
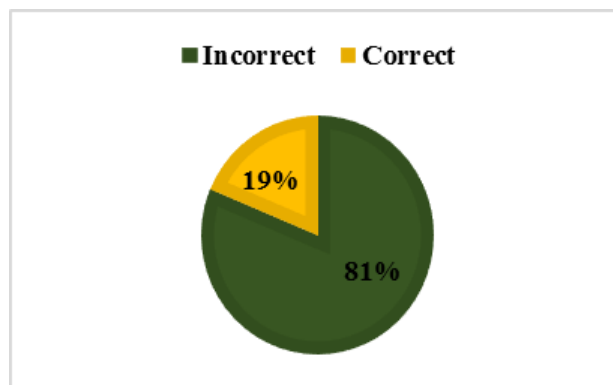

Figure – 6: **Knowledge on OH Disorders**

Figure - 6 illustrates a question based on the knowledge on OH disorders this question was answered incorrectly by many of the participants and it is 81%. Results of this question denotes that respondent's knowledge on OH disorder inadequate.
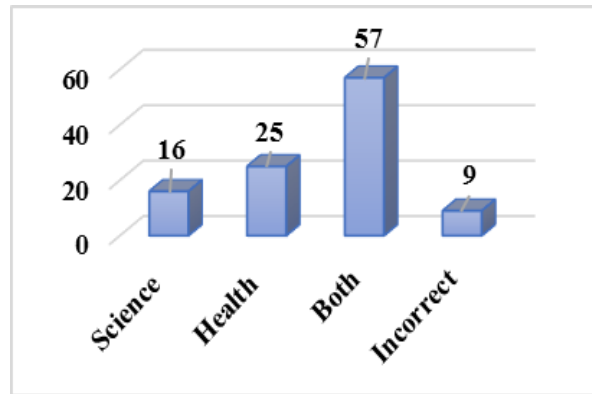
Figure – 7: **Awareness of the Subject which OHE**

According to figure – 7, awareness of the subject which OHE is provided at the school education is positive and most of them were conscious about the fact. Accordingly, 57% of participants answered both science and health, 25% of participants health and 16% of participants science. It shows about the subject knowledge of the participants.
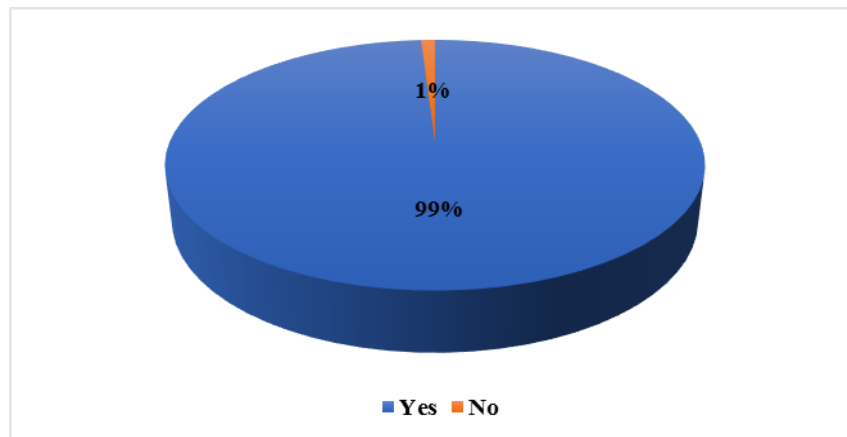
4.2.   **Good Oral Health Habits**

Figure – 8: **Brushing Habits**

According to figure – 8, 99% of the participants have a habit of daily brushing of teeth and it confirmed they have good habit in relation to the OH.
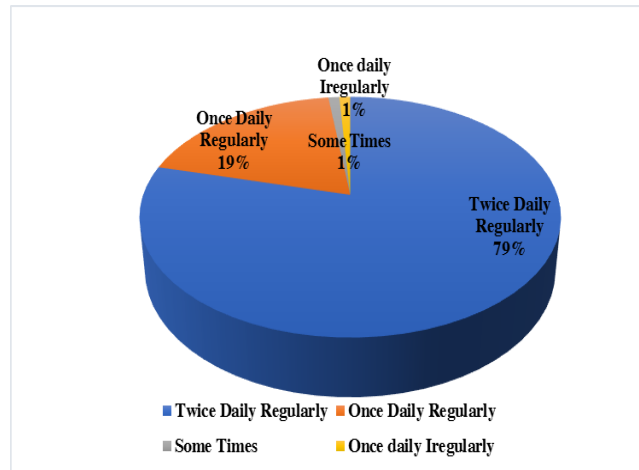
Figure – 9: **Brushing Time**

Figure – 9 explore the majority of participants have regular brushing habits. Accordingly, twice daily regularly is 79% of participants and 21% of participants brushing once daily regularly and it shows participants brushing habits is at a satisfactory level.
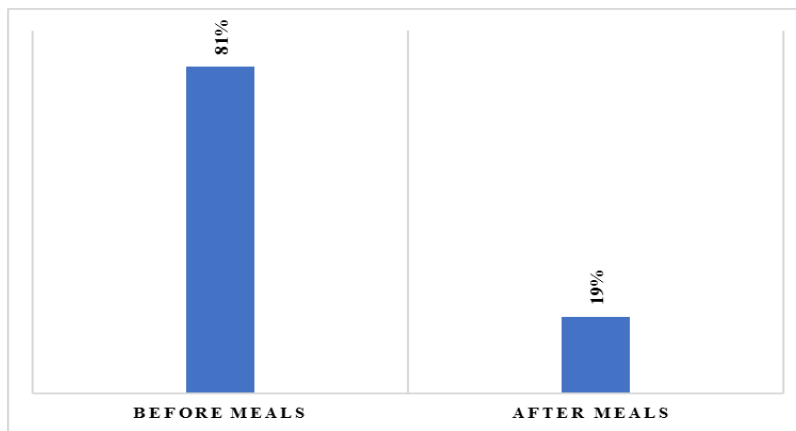

Figure – 10: **Brushing Before Meals and After Meals**

According to the figure – 10, majority (91%) of the participants have brushing habits before meals it may negatively affect their OH. However, 19% of participants have brushing habits after meals.
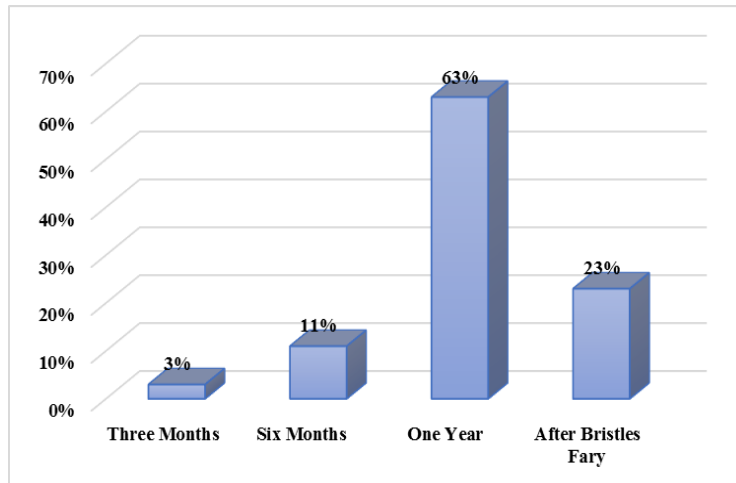
Figure – 11: **Changing Brush**

Figure – 11 illustrates only a 3% of the participants have a habit of changing the brush once in three months, 11% of participants changing their brush once in six months, 63% of participants changing their brush once in a year and 23% of participants change their brush after bristles are damaged. It shows majority of participants are unaware of the importance of changing brush.

4.3.   Chi-Square Test

Chi-Square test is used to analyze the categorical data to find out the any significant differences among the school aged respondents (15– 19 years) and school left respondents (20 – 25 Years). Since the p values of the aspects such as daily brushing habit, regularity of brushing, instance of brushing, techniques, use of dental floss, toothpaste, sweet consumption, staining due to coffee/tea, oral diseases, bleeding gums, tooth decay, labeling, dental checkups, subject matter are greater than the alpha value (0.05). From this it can be concluded with 95% confidence that there isn't a significant relationship between two age groups in relation to the aspects mentioned here and new facts have not been acquired by them other than what they have obtained from the school education.

A significant relationship was noticeable only in two factors namely habit of brushing techniques & most common cause for loosing teeth between the two age groups which were compared here and tabulated in the table 3 below.

Table 1 : Chi Square Test

	Value	df	P Value
Person Chi-Square	10.667	3	.014
	9.911	3	.019

4.4. Wilcoxon Sign Rank Test

An ordinal set of responses obtained from the respondents were analyzed by Wilcoxon sign rank test and the result is displayed in the table 4 below.

Table 2: Participants remark over contribution of School Education on their OH knowledge, awareness, and habits

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The median of RES_SFFI_KNOW_SCL equals 4.	One-Sample Wilcoxon Signed Rank Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

According to the table - 4, since the P value of the one sample of Wilcoxon is less than alpha value and therefore it can be concluded that respondent's agreeableness on a sufficient OHE is gained from school is equal to 4. But according to the figure below 50% of the respondents did not agree or strongly agree. This is sort of an ambiguous situation where student's paradigm is to perceive that they are aware but in reality, it is not.
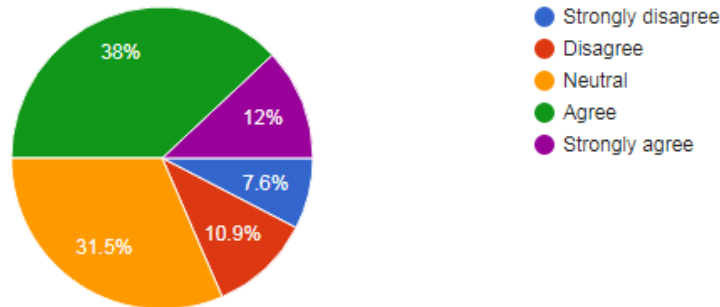
Figure – 13: **Respondents agreeableness on a sufficient OHE is gained from school**

4.5.   Thematic Analysis

The data gathered from the dental professionals and Science/Health teachers were categorized under four main themes and outcomes were analyzed in relation to the objectives of the study.

It was revealed that the most common presenting complaint of the majority of the young adults is dental caries. All the dental professionals stated that improper consumption of sweets is the main cause for the complaint and further elucidate that the knowledge, awareness and OH habits of young adults are at a low level. They highlighted young adults should very well be educated by means of models, activities, seminars, workshops during their schooling time in the formal education system. Science and Health teachers stated that under OHE the subject content is limited to a few anatomical aspects and only for a few OH habits in the classroom level. All the respondents have emphasized that present conduct is inadequate to develop OH habit and awareness. A cross examination of the OH of students is also not being conducted in the 1 to 11 years of education system. Activity based experiences, OH day, competitions and awareness programs implementing in the school education system were among the suggestions made by the teachers.

5. Conclusions and Recommendations

This research aimed to explore the OHE given at the school classroom level and its effectiveness OH of young adults of Sri Lanka through investigating their knowledge, awareness and health habits. This study also focused on investigating how much OHE is infused into the Science and Health teaching and Learning process. A thorough qualitative analysis was performed using interview data with dental professionals and teachers, seeking the avenues in which the school classroom education can be utilized to improve OH habits of the students. From the survey it is found that the individuals of this age range have some knowledge on certain aspects related OH but more important aspects such as brushing techniques, oral disorders which are directly associated with the good OH are lacking. In the school curriculum, especially in Health subject some OH related aspects are incorporated. But the attention given for a positive behavioral change is not adequately addressed. There is an essential need to raise OH awareness among students through education since it is a key indicator of overall health of individuals. As recommended by the professionals the classroom education must comprise authentic learning experience rather than rote learning on OHE, this could help the students to benefit lifelong. A similar study should be conducted in other provinces also, to make the study more generalized. Future researchers could also investigate on the effectiveness of many authentic activities at classroom level on improving OH of students in Sri Lanka.

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