International Journal of Social and Development Concerns

ISSN 2524-1478 (Online)

Vol. 7 | Social and development concerns in Africa (c)
Vol. 7 Article 9 | September 2019

(An International Publisher for Academic and Scientific Resources)

THE ROLE OF DENTAL HEALTH EDUCATION ON THE QUALITY OF LIFE AMONG ADOLESCENTS IN KIBRA SUB-COUNTY, NAIROBI CITY COUNTY, KENYA

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Abstract: *The objective of this study was to investigate the role of dental health education on the quality of life among adolescents in Kibra Sub-County, Kenya. The population figures for Kibera range widely, from 500,000 to 1,000,000, and it is estimated that one in four Nairobi residents reside here. Disproportionate stratified simple random sampling and purposive sampling techniques were used to come up with 100 respondents and 5 key informants. From the findings, all the respondents agreed to have been trained with 78% and 85% stating to have been trained by their parents and teachers at school respectively on dental hygiene. Further, 89(89%) were aware of tooth brush as tooth cleaning device. Tooth/gum pain 56(73.2) was the major dental problem which made study participants seek medication. On teeth cleaning techniques on the quality of life among adolescents in Kibra Sub-County, 92% of the respondents used tooth brush device to clean their teeth, while 21% of the respondents used chewing stick to brush their teeth. 85% brushed the teeth daily while 12% of the respondents brushed their teeth 2-3 times a week. 41% said dental problem makes them unable to bite hard foods, 42% stated that dental discomfort created pain and lack of sleep. It was recommended that the County government of Nairobi through ministry of health are recommended to address problem facing dental health care services and mostly in informal settlement by allocating more equipment and human personnel and also Nairobi County should put preventive and promotive health care programs in order to address the oral health disease at early stages. Further study was recommended on the burden of selected oral diseases, their determinants and oral health related quality of life.*

Key Words*: Dental health education, quality of life, adolescents*

1.1 Study back ground

Oral health is defined by the World Health Organization (WHO) "as being free of chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) dis-ease, tooth decay and tooth loss, and other diseases and disorders that affect the mouth and oral cavity". Nowadays, dental caries and periodontal diseases are two of the most prevalent dis-eases worldwide, and, simultaneously, easily preventable with simple primary prevention methods. They are the main cause of dental loss and therefore are considered an important public health issue that affects children, adolescents, adults and the elder. There is no standard definition of adolescent. Adolescents are defined very broadly as youths between the ages of 10 to 18. Healthy adolescent development includes self-awareness, positive behaviors, goal setting and achievement, successful transition into adulthood, and good health-related quality of life, trust, optimism, and meaning in life. However, early adolescence coincides with the middle-school years, a period of transition from the total social and economic dependence of a child to relative independence with more contacts/exchanges with others and more access to licit and illicit drugs.

Adolescence is an imperfect transition period and it is a time of great physical, emotional, and social changes. However, the awareness of adolescents on the importance of health is low. It has been reported that adolescents form behaviors and attitudes toward health during this period, which may last for a lifetime. In addition, the beliefs or behaviors of adolescents on health are closely related to their lifelong quality of life. Dental caries occurs frequently and periodontal disease may start during adolescence, thus active oral care is necessary. Research has shown that many adolescents have a high risk for a wide range of health-related difficulties: poor living environment, poor social relationships, unhealthy behaviors (use of tobacco/ alcohol/cannabis/hard drugs, obesity, and involvement in violence), poor physical health, poor psychological health, suicidal behaviors, sustained violence (physical/verbal violence and sexual abuse), and involvement in violence.

Results from the National Epidemiologic Survey conducted in Brazil in 2010 showed an overview of access to oral health services of adolescents between 15 and 19 years old. It is still unsatisfactory: 13.60% have never been to the dentist, with the lowest prevalence of teenagers that have never been to the dentist in the Southern region of the country (5.00%) and the highest values in the Midwest region (19.40%). Based on these considerations, this study aimed to evaluate the dental health practices among the youth in Kibra. Dental caries can be very distressful, as it can cause pain, dysfunction, inability to concentrate, and poor school attendance (Jackson et al, 2011; Krisdapong et al, 2013). Thus, it can have a negative impact on the life of an individual and can hamper their ability to succeed. Based on the 1984 National Health Interview Survey data, it was reported that children and adolescents less than 18 years had approximately 5 million restricted activity days, more than 1.6 million days in bed, and more than 1.7 million missed school days as a result of acute dental conditions (Waldman, 1987).

Oral pain is a very common symptom of oral health conditions. It surely affects negatively individual´s daily life activities and social functioning. The risk of development of oral diseases is strongly related to the life-style and daily habits. Poor oral health can have a considerable effect on children's performance in school, quality-of-life and their success in later life. Children who

suffer from poor oral health are 12 times more likely to have more restricted-activity days including missing school than those who do not.

1.2 Statement of the problem

Dental health is closely related to the quality of life, including the demographic factors, psychological factors, oral hygiene management, oral health behavioral factors and socioeconomic factors. The teeth have an important part in oral health that should be emphasized, and continuous care is required to prevent oral diseases. This has to be achieved through individual initiatives and discipline. Adolescence is an imperfect transition period and it is a time of great physical, emotional, and social changes. However, the awareness of adolescents on the importance of health is low. It has been reported that adolescents form behaviors and attitudes toward health during this period, which may last for a lifetime. In addition, the beliefs or behaviors of adolescents on health are closely related to their lifelong quality of life. Dental caries occurs frequently and periodontal disease may start during adolescence. This impacts on how adolescents interact with others, school attendance and self-esteem in the essence that if well maintained, the esteem is heightened, if not, the contrary. The reason for the varying opinions is that the item of oral health is not only related to the objective oral health status, but it is also complexly influenced by socio-cultural factors and the degree of oral health awareness, an aspect which has not been well embraced in the area of study. Various researchers have generally focused on women's health, healthcare provision, HIV and AIDS prevention and sanitation. No researcher has focused on dental health, especially the role of dental health on the quality of life among adolescents in Kibra Sub County. This was established from literature searches from websites, libraries and assessment of healthcare reports. Therefore, this necessitated the study.

1.3 Specific Objectives

To assess the role of dental education on the quality of life among adolescents in Kibra Sub-County

1.4 Justification of the study

Dental caries remains a major oral health disease affecting children world-wide. While the prevalence and severity of dental caries in most industrialized countries have declined substantially in recent years, in developing countries like Sub-Saharan Africa the prevalence is predicted to increase (WHO, 2012). This disparity between industrialized and developing countries has been attributed to preventive oral health care programs adopted by the former and changes in dietary habits coupled with inadequate exposure to fluorides in developing countries. According to the World Health Organization (WHO) the prevalence of dental caries among school aged children is estimated to be as high as 90% in some countries (Petersen et al, 2005). For adolescents, poor oral health can have negative impacts on quality of life and academic performance at school. Apart from causing chronic pain and discomfort, untreated dental caries can impact daily activities in terms of play, sleep, eating and school activity.

Many people living in poor urban areas experience that they practice personal hygiene such as brushing teeth, bathing the body although not as frequent as it is desired. Lack of resources, such

as water, results in poor hygiene levels; toilets cannot be washed and there is not enough water to shower (Mahasneh and Sawsa 2001.) Kibra Sub County is not left behind in this.
The study hence sought to bring to notice the role of dental health practices on the quality of life among adolescents in Kibra Sub County, in an attempt to the betterment of their QoL. This shall be achieved by examining the role of education/ awareness, influence of teeth cleaning techniques and the role of dental care on the quality of life of adolescents.

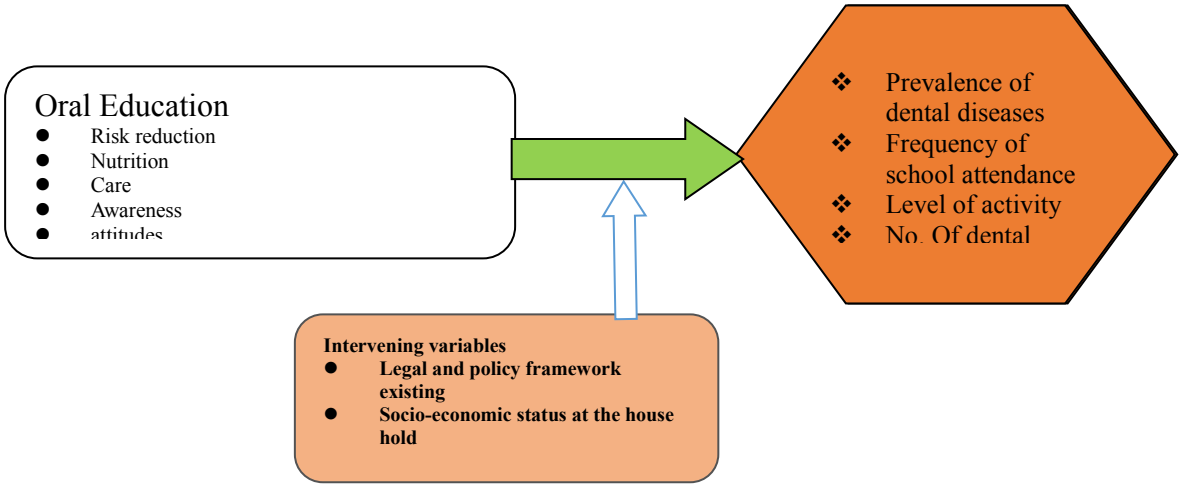
1.5 Significance of the study

It was speculated that the study would be significant as the findings of this study would be relevant towards policy making and implementation by the government as well as the activities of non-governmental organizations. This would aid policies focused towards improving the quality of life of youth and adolescents, not only in Kibra, but also all over Kenya. It would help present the role dental health practices played in the QoL of adolescence, hence creating a basis for education and awareness on the subject.

1.6 Scope and delimitation of the study

The study was limited among the adolescents in Kibra Sub County from the villages namely Kianda, Soweto, Kisumu Ndogo, Lindi, Laini saba, Silanga, Makini and Mashimoni. This was for purposes of avoiding geographical constraints that would hamper the study and limiting the cost of carrying out the study. The study focused on adolescents aged 10- 20 years, as it was normally during this age category that pubescence was at its peak, and that dental hygiene had a bigger role to play in the adolescents' quality of life. Sampling was therefore adopted and properly done to ensure that the findings were generalizable.

1.7 Conceptual framework



Source: ***Author, 2018***

1.8 Literature review

Theoretical review

Social Cognitive Theory (SCT) started as the Social Learning Theory (SLT) in the 1960s by Albert Bandura. It developed into the SCT in 1986 and posits that learning occurs in a social context with a dynamic and reciprocal interaction of the person, environment, and behavior. The unique feature of SCT is the emphasis on social influence and its emphasis on external and internal social reinforcement. SCT considers the unique way in which individuals acquire and maintain behavior, while also considering the social environment in which individuals perform the behavior. The theory takes into account a person's past experiences, which factor into whether behavioral action will occur. These past experiences influences reinforcements, expectations, and expectancies, all of which shape whether a person will engage in a specific behavior and the reasons why a person engages in that behavior.

Bandura (1989) states the underlying principles that this theory was derived from, "Persons are neither autonomous agents nor simply mechanical conveyers of animating environmental influences." This statement made by Bandura shows how people are influenced by the environment, but are also self-aware, and are able to self-direct their actions rather than being solely driven by external influences.

According to Bandura (2005), Health habits are not changed by an act of will. Self-management requires the exercise of motivational and self-regulatory skills. Self-regulation models differ somewhat in particulars, but they are rooted in three generic sub-functions. These include self-monitoring of health-related behavior and the social and cognitive conditions under which one engages in it, adoption of goals to guide one's efforts and strategies for realizing them, and self-reactive influences that include enlistment of self-motivating incentives and social supports to sustain healthful practices.

This theory therefore informs the study in the sense that dental practices are as a result of learning from friends, parents, peer and media. The environment in Kibra constituency also influences the tendency of dental hygiene among adolescents. The area suffers shortage of facilities like water, which influences general body hygiene, and given that adolescent is a critical age, some of them suffer dental caries, that impact on their school going. They hence lead a life of lowered self-esteem, may not interact with their friends effectively, as some even lose their teeth. Dental hygiene mostly result from self-motivation to do so, otherwise a person may not follow up adolescents and tell them to brush their teeth or avoid some foods.

Empirical review

Hygiene is commonly known as cleanliness or conditions and practices that serve to promote or preserve health. A population that does not take into consideration hygiene is at risk of infection and illness. Improved housing, improved nutrition and improved hygiene are the essential components for the war against infectious diseases. (Greene, 2001.) Many people living in poor urban areas experience that they practice personal hygiene such as brushing teeth, bathing the body although not as frequent as it is desired. Lack of resources, such as water, results in poor hygiene levels; toilets cannot be washed and there is not enough water to shower (Mahasneh and Sawsa 2001.)

According to Karanja & Nganga (2008), Awareness and access to sanitation and hygiene leads to the reduction of child mortality and combats diseases of maternal health as well as increases in the

economic output and, hence, eradicates poverty. As a result of poverty eradication, women's empowerment as well as gender equality is achieved. In addition, universal primary education is attained and quality of life is improved which combats diseases. By implication therefore, education and awareness creation on are key towards the improvement of dental health practices among adolescents.

According to new definition developed by the FDI World Dental Federation oral health is multi-faceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow, and convey a range of emotions through facial expressions with confidence and without pain, discomfort, and disease of the craniofacial complex. Further attributes consider oral health as fundamental to health, quality of life and is influenced by the individual's changing experiences, perceptions, expectations, and ability to adapt to circumstances (Glick et al, 2017).

In 2008, the General Health Directory of Portugal (DGS-Portugal) presented the last nationwide study of the prevalence of oral diseases. In this study, it is shown that the decayed, missing and filled teeth index (DMFT index) among adolescents aged 12 and 13 years, was 1.48 and 3.04 respectively. The prevalence of dental caries increased with age and was also higher among the poorer socio-economic classes. This national study also revealed that only 63% of Portuguese adolescents, aged 15 years old, referred to do tooth brushing more than once a day, only 25% use dental floss and 85% attended to a dental appointment in the last 12 months. This study demonstrates the need for better oral health education among the adolescents and their family in order to improve the national oral health indicators. Other studies demonstrate high prevalence of dental caries among children and adolescents worldwide.

Dental caries remains one of the most common childhood diseases in Saudi Arabia, and it is considered as a major public health problem among children (Gandeh & Milaat, 2000). In spite of the improvement in health-care sector, past few decades have shown secular trends toward increase in Decayed Missing Filled tooth (dmft/DMFT) and caries prevalence rates (Al-Ansari, 2014). Apart from dental caries, studies have also reported the prevalence of oral injuries, dental plaque accumulation, and gingival disease, malocclusion, temporomandibular disorders among children and adolescents in Saudi Arabia. Poor oral health can have adverse effect on children's performance in school, and later, it may affect their self-esteem and accomplishments in life. In addition, children with poorer oral health were more likely to suffer dental pain, miss school, and show under performance in school. Oral disease can lead to loss of more than 50 million school hours annually (Jackson et al, 2011; Maharani et al, 2017) Hence, oral health of the children should be given utmost priority while considering community programs in Saudi Arabia.

Knowledge refers to the capacity to obtain, retain, and use information; a mixture of comprehension, experience, judgment, and skill. It is apparent that individuals with strong knowledge of oral health exhibit better oral care practice. Further studies have shown that correct oral health education can help to inculcate good oral health-care practices (Ab-Murat, 2006). According to Stillman-Lowe, oral health education refers to "any learning activity which aims to improve individuals" knowledge, attitudes, and skills relevant to their oral health.

Review by Nakre and Harikiran (2013) disclosed that the oral health education is an effective tool in enhancing knowledge, attitude, and practices toward oral health in decreasing plaque

accumulation, bleeding gums, and caries increments (Nakre et al, 2013) Recent systematic review and meta-analysis pointed out that the conventional oral health educational exercises are successful in reducing plaque without diminishing gingivitis. It was observed that there is inadequate evidence in preventing dental plaque-related diseases within the school condition. However, school oral health educational programs have demonstrated successful outcomes in improving knowledge.

Although the term health-related quality of life (HRQoL) has no strict definition, there is consensus that it is a multidimensional construct capturing people's perceptions about aspects that are important in their daily lives (Slade, 2002). The World Health Organization defines quality of life as an "individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (WHO, 1993).
The concept of HRQoL has become well-established in health services research, health economics and epidemiology (Slade, 2002). It is no longer considered as a secondary outcome to complement biologic and clinical markers of disease (Slade, 2002). The concept has gained widespread recognition, putting it at the forefront of public health policy (Slade, 2002). QoL improvement was listed as the first of the two major goals for the U.S. population in Healthy People 2010 (US Department of Health and Human Services: Healthy People 2010). Oral Heal

The World Health Organization defines health as "a complete state of physical, mental and social well-being and not just the absence of disease and infirmity" (Preamble to the Constitution of the World Health Organization, Official Records of the World Health Organization, no. 2). This definition of health is holistic and complies with the contemporary concepts of health and health-related quality of life. The concept of HRQoL originates from both the WHO definition of health, as well as some theoretical models of disease/disorder. These concepts link the biological variables related to disease conditions or symptoms with the self-perceived health and quality-of-life outcomes, thereby integrating biophysical and psychosocial concerns (Locker et al, 2004). Some of the theoretical/ explanatory models are discussed below.

The measures used to assess oral-health-related quality of life (OHRQoL) are very useful and provide essential information for assessing the treatment needs of individuals and populations. They help in making clinical decisions and in evaluating interventions, services and programs (Jokovic et al, 2006). The use of OHRQoL measures has led to a shift from the traditional dental/medical criteria toward a more patient-centered, biopsychosocial approach to oral healthcare. OHRQoL assessment has become central to dental research, as it has implications for oral health disparities and access to care (Sischo and Broder, 2011).
The effectiveness of increased knowledge transforming into actual behavior change is vast. It has been widely accepted that knowledge alone may not necessarily develop positive attitudes or change of behavior. Hence, knowledge in conjunction with other external factors such as family situations, peer influences, local customs and cultural values, social influences, and availability of resources are needed to affect the behavior. Therefore, it is difficult to expect provision of knowledge alone could bring required health gains. Knowledge can be received and retained for many years through well-structured educational programs to influence the behavior (Mayer, 2003).

In Kenya, Oral health care services are provided by both public and private institutions. A greater proportion of oral health care providers work in the urban centers making oral health care services difficult to access for majority of the Kenyan population. Provision of basic oral healthcare is capital intensive. This translates to a high cost in provision of oral health care. There is need for quality oral health care that is affordable, accessible and acceptable. The current dentists: population ratio is 1:42,000 which is far below the WHO recommended ratio of 1:7, 0006. A scrutiny at the provision and distribution of dental equipment in the public health facilities indicate that most are not functional while the supply of dental materials is erratic.
Most public health facilities in Kenya have no adequate physical infrastructure for dental clinics. This should be addressed at the earliest so that each public health facility has a dental clinic that can address dental health needs of the local population. Considering that health is now a devolved function, it is expected that the County governments will take up this challenge.

1.9 Methodology
The study took place in the Kibera sub county, Nairobi Kenya, which is the world's oldest and second largest slum settlement. Kibera slum lies on the southeast corner of Nairobi and is composed of 10 sub-locations, sub-divided into multiple villages.The population figures for Kibera range widely, from 500,000 to 1,000,000, and it is estimated that one in four Nairobi residents reside here. The settlement covers an area of about 2 square kilometers. A railroad track runs through the center of Kibera, which is commonly considered a boundary separating the poorest and most dangerous parts of Kibera below the tracks, from the relatively "better off " parts of Kibera above the tracks. Kibera is home to multiple ethnic groups, who tend to dominate within specific villages.

The study was conducted in four sub-locations, chosen to reflect the various ethnic groups residing in Kibera. Two sub-locations were selected below the railroad tracks (Gatwekera and Laini Saba); one above (Makina), and one sub-location that is dissected by the tracks (Kibera sub-location).ach sub-location is divided into enumeration areas (EA's) by the Kenya. Central Bureau of Statistics (CBS).Kibera is characterized by lack of basic services and infrastructure such as adequate access to water, sanitation, solid waste management, roads and footpaths, storm drainage, electricity and public lighting etc. Housing units are semi-permanent in nature, and often reflective of the high population densities. The inhabitants of Kibera live on less than two dollars a day. Often they do not have enough money to pay the school fees or buy food and medicine or any other basic need.

Sample size and Sampling technique
A sample is a smaller number or the population that is used to make conclusions regarding the whole population.Cohen, Manion and Morison (2007) state that it is adequate to take 10.0% to 20.0% of the total population for a large and small population respectively. Sampling is the process through which a sample is extracted from a population (Alvi, 2006). This is the procedure a researcher uses to gather people, places or things to study. It is a process of selecting a number of individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire group (Orodho and Kombo, 2002).Two sub-locations were selected below the railroad tracks (Gatwekera and Laini Saba); one above (Makina), and one sub-location that is dissected by the tracks (Kibera sub-location).All households under the four locations were identified. Twenty five households in each selected sub location were

randomly identified. A house hold was considered eligible for the study if it had an adolescent member aged between 10 to 18 years. Where a house hold had more than one adolescent aged between 10 and 18, random sampling method was used to select only one adolescent in each house hold. Therefore, each sub location produced twenty five adolescent giving a total of one hundred adolescents [25 x 4= 100 respondndts].Key informants involved Dental officers and community oral health officers and they were interviewed till a saturation point was reached.

Table 1: Sample size for respondents

Source: Researcher's formulation, 2019

Sub –county	Sampling technique	Sample size
Gatwekera	Disproportionate stratified simple random sampling and purposive sampling	25
Laini Saba	Disproportionate stratified simple random sampling and purposive sampling	25
Makina	Disproportionate stratified simple random sampling and purposive sampling	25
Mashimoni	Disproportionate stratified simple random sampling and purposive sampling	25
Total		**100**

Methods and Instruments of Data Collection

The study used structured questionnaires and unstructured interview guide to gather data from the adolescents and key informants (dental officer and community oral health officer). The questionnaires were used since it had the potential of reaching out to a large group of respondents within shortest time (Donald &Delno, 2016), they also offers sense of security as respondents who wished not to reveal their identity were not be forced to do so. The questionnaires were quantitative in nature.

1.10 Study findings

The main objective of the study sought to determine the extent to which dental education had influenced the quality of life among adolescents in Kibra Sub-County. Oral education to children is very important. The aim of education to children is to impart knowledge on the causes of disease and teeth decay. It further gives knowledge on disease prevention measures and hoe w to seek adequate treatment as well as proper nutrition. Respondents were asked to state the education level of the family father figure. The rationale for this question was to determine the education level of the male figure in the family, this could be either the father, step father, guardian or any other male. Education level of him was important because they are key determinants of adolescent dental hygiene behavior and therefore heir education level could greatly influence their decisions. Findings were presented in table 2.

Table 2: Education level of the father figure

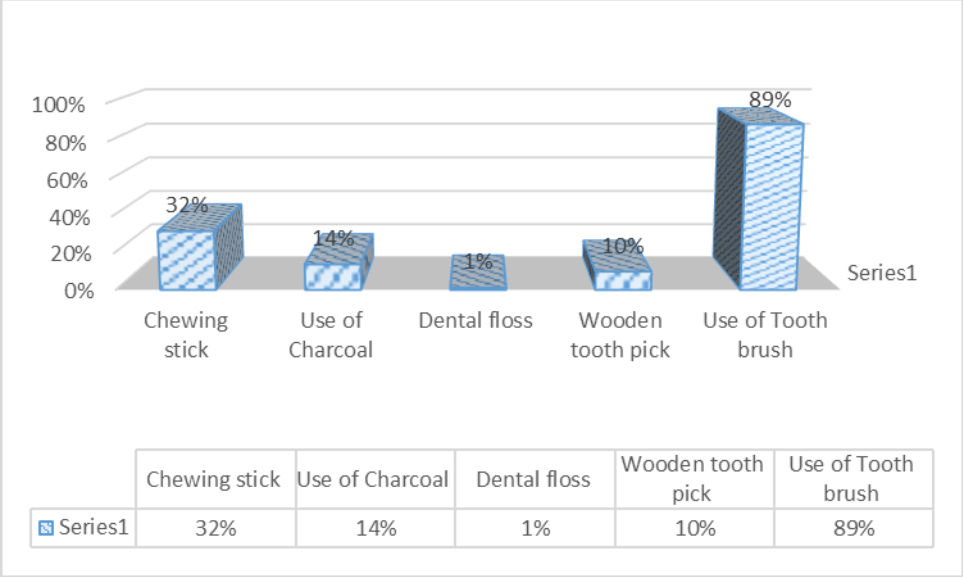
Education level	Frequency	Percent (%)
No education	0	0.0
Primary	17	18.3
Secondary	23	24.7
Tertiary	13	14.0
I don't know	37	39.8
No father figure in the family	3	3.2
Total	**93**	**100**

Source: field data 2019

According to table 2, the greatest number of the respondents 37(40%) were not aware of the their father figures' education level.23 (25%) of the respondents' father figure had secondary education level, 17(18%) had primary education level, 13(14%) had attained tertiary education while 3(3%) said they had no father figure. Almost all the father figures had at least gone to school. Education level has direct influence on the level of hygiene behavior passed from parent to adolescent. A fairly big number of the parents/guardians 39% had at least gone past primary education. This implied that the family heads were literate enough to pass a positive hygiene behavior to their adolescents.

Respondents were examined whether they had been trained on dental hygiene before. All of them agreed to have been trained with 78% and 85% stating to have been trained by their parents and teachers at school respectively, 10% stating to have learned from Community oral health officer while 22% stated to have learned from Dental officer. This implied that majority of the respondents had learned dental hygiene behavior from their parents/guardians. Therefore, families and schools were very key institution in determining the child's dental hygiene practice. The findings concurred with a Study done by Ab-Murat, (2006), which found that correct oral health education can help to inculcate good oral health-care practices The researcher sought to examine the teeth cleaning technique which the respondents were aware of. The aim of the question was to determine whether the resecher had knowledge on various practices of tooth brushing technique. In this regard, gathered data was analyzed, summarized and presented in figure 2.

Figure 2: Teeth cleaning technique which respondents you are aware of



Source: field data 2019

Findings displayed in figure 4.3 shows that majority of the respondents 89(89%) were aware of tooth brush as tooth cleaning technique, 32(32%) were aware of chewing stick as teeth cleaning technique, 14(14%) were aware of charcoal as teeth cleaning technique, another smaller group 10(10%) was aware of wooden tooth pick as tooth cleaning technique while only 1% of the respondents was aware of dental floss s teeth cleaning technique. Even though the responds ware aware of several different teeth cleaning techniques, majority of the respondents ware of plastic tooth brush. The researcher assumed that urban setting and growing up in city is what influenced majority of the respondents to know the plastic tooth brush which is commonly used in urban setting unlike other techniques. The respondents were asked to state their last time to visit dentist. The aim of the question was to understand responds' behavior towards responding to dental problem once sick. It also aimed to estimate how often the respondents were affected by dental problem. Results were displayed in table 3.

Table 3: last time to visit a dentist

Responses	**Frequency**	**Percent (%)**
I have never had dental problem	24	26.9
3 months ago	8	9.0
4 – 7 months ago	12	13.5
8 – 12 months ago	15	16.9
More than year ago	20	22.5
I don't remember	10	11.2
Total	**89**	**100**

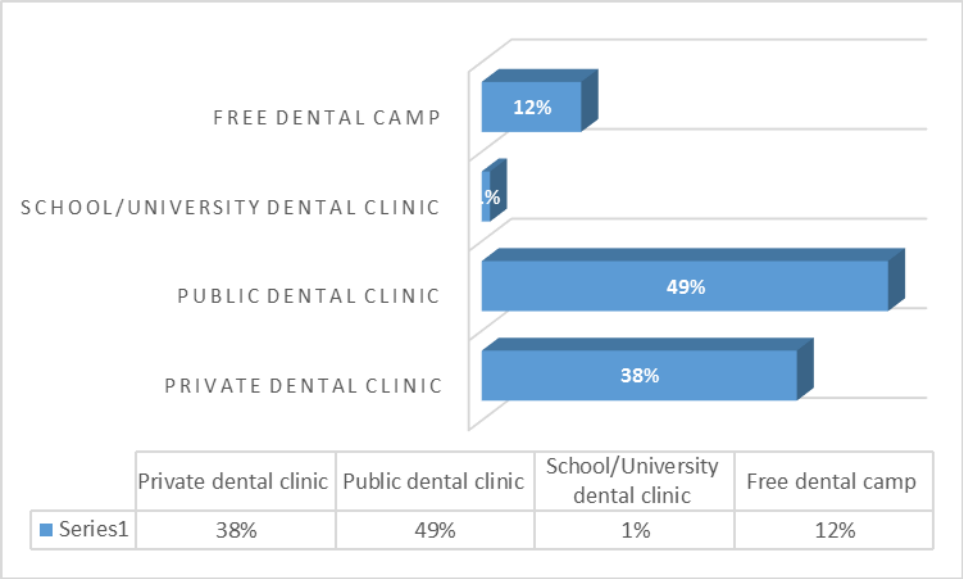
Source: field data 2019

According to findings in table 3, 24(27%) of the respondents had never had dental problem so there was no need to visit a dentist. 20(23%)had visited a dentist more than a year ago, 15(17%) had visited dentist 8-12 months ago, 12(14%) had visited dentist 4-7 months ago, 10(11%) could

not remember their last time to visit a dentist while only 8(9%) had visited dentist 3 months ago. This showed that respondents attempted to visits dentist once they dental problem. However, only 23% of the responds had visited dentists between the date of data collection and 7 months ago. The researcher assumed that study participants never got dental problem more often. .Further assumption was that respondents might be affected by dental problem but instead of visiting the dentists they seek other treatment alternatives in the community.

The researcher examined the study participants by asking them the type of dental facility they went once sick. The intention of the question was to investigate different study participants' healthy seeking behavior once sick. According to the findings displayed in figure 4.4 below, 49% of the respondents went to public dental clinic, 38% went private dental clinic, and 12% went to free dental camp while a very little percentage 1% had went to school dental clinic. This implied that chances of study participants to go to a public dental clinic was higher compared to other types of dental facilities. The researcher assumed that respondents preferred public dental clinic probably because they were cheaper than the other. They also preferred public dental clinic because may they were the ones which were available in the local area unlike other types of dental clinics. Findings were presented in figure 3

Figure 3: Type of dental facility used



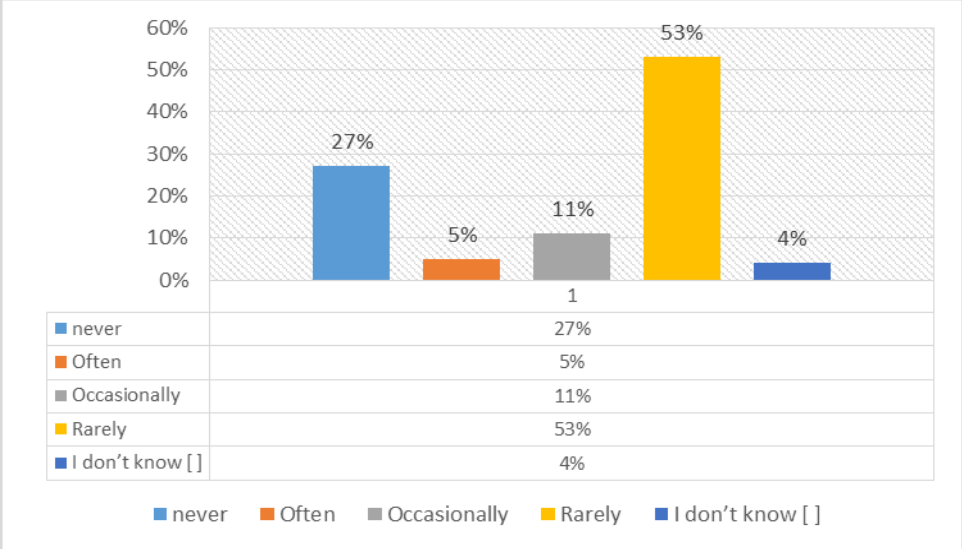
Source: field data 2019

The researcher went further and asked the reasons which had made the respondent visiting a dentist. The question aimed to understand various dental problem which makes the study respondents visit dentist. As revealed by the findings, Tooth/gum pain 56(73.2) was the major dental problem which made study participants seek medication. Other reasons which made the respondents visit dentist were consultation 8(10.4 %), Follow up treatment 5(7.2%) and Routine checkup 7(9.2%).This findings concurred with WHO report which found that majority of the respondents visited dentist majorly because of tooth or gum problem. Oral health is an essential component of a person's health. The findings strongly concurred with World Health Organization (WHO, 2014), who stated that about 60 percent to 90 percent of children and nearly every adult in the world have dental cavities. In Kenya the prevalence of oral diseases is not different from

the WHO report. In a report titled "Oral Health in Kenya" by Kaimenyi (2004), the prevalence of periodontal diseases was 0- 10% while that of dental caries varied according to age between a decayed, missing, filled teeth index(DMFT) of 0.8(5-15years) to5.8 (15-59years).
Respondents were asked to indicate reasons for not visiting dentist some times when they got sick. The researcher intended to understand some of the excuses which respondent gives for not going to seek medication while sick. The study found that 51(57.3%) of the respondents' Parents had no money to pay for such services, 26(29.2%) of the study participants failed to go to hospital because of fear of losing their teeth, 31(34.8%) were afraid of painful treatment, 13(14.6%) was due to unfriendly health workers while 24(27%) had never had dental problem before so there was no reason to visit the dentist.

Respondents were asked to state how often they experienced tooth ache. The question aimed to investigate how often did the researcher experience teeth discomfort. As findings in figure 4.5 reveals, 53% of the study participants indicated that they experienced dental problem rarely, 27% said they had never experienced tooth discomfort,11% said they experienced it occasionally, 5% said they experienced it often while only 4% said they do not know. This implied that most of the study respondents were rarely affected by dental discomfort. Study findings were displayed in figure 4.5.

Figure 4: Previous Experience in tooth ache rate



Source: field data 2019

Perception and attitudes determines how a sick person is likely to respond to the sickness once it comes. Respondents were asked to state some of their general perception and attitudes about costs associated with dental treatment. Responses were presented in table 4

Table 4: General perception and attitudes about costs associated with dental treatment

Responses	Frequency	Percent (%)
It is affordable/cheap	19	20.0
It is expensive	49	51.6
It is free	10	10.5
I don't know	17	17.9
Total	**95**	**100**

Source: field data 2019

According to the findings displayed in table 4, most of the respondents 52% had the perception that dental treatment was expensive, 20% had the perception that dental treatment was affordable, 11% had the perception that dental treatment was free while 18% had no idea. This implied that among many perception reported by the respondents, most of the respondents believed that dental treatment was expensive.

Moreover, Respondents were asked, to state the advantages of oral education. Among the advantages given were Helping adolescents understand proper nutrition for health teeth 34%.Traningon oral education had enable children understand proper diets which help n dental healthy. It was further stated that dental education helps adolescents understand proper teeth cleaning techniques 71%.This one implied that children got to understand different ways of cleaning teeth either by use of plastic tooth bush, wooden tooth brush, chewing wood, use of charcoal among others. Helps understand proper teeth cleaning habits 51% and creating awareness on dental diseases risks and preventive measures 62%.Teeth cleaning habits referred to the behavior of cleaning teeth regularly while dental disease risks referred to the possible dental infection which are likely to affect adolescent in case of improper teeth cleaning technique.

1.11 Conclusion

After carrying out this study, it was concluded that, dental health education was key in health education among the adolescents and consequently their well-being.

1.12 Recommendations

a) The County government of Nairobi through ministry of health are recommended to address problem facing dental health care services and mostly in informal settlement by allocating more equipment and human personnel.
b) Nairobi County should put preventive and promotive health care programs in order to address the oral health disease at early stages.

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