

FACTORS INFLUENCING IMPLEMENTATION OF DENTAL HYGIENE AWARENESS PROJECTS IN PUBLIC PRIMARY SCHOOLS IN EMBU COUNTY, KENYA

Mary Wanjiru Munene

Masters of Art in Project Planning and Management, University of Nairobi, Kenya

Dr. Josephine Ngunjiri

School of Continuing and Distance Education, Kenya

©2018

**International Academic Journal of Information Sciences and Project Management
(IAJISPM) | ISSN 2519-7711**

Received: 30th November 2018

Accepted: 5th December 2018

Full Length Research

Available Online at:

http://www.iajournals.org/articles/iajisp_m_v3_i3_23_44.pdf

Citation: Munene, M. W. & Ngunjiri, J. (2018). Factors influencing implementation of dental hygiene awareness projects in public primary schools in Embu County, Kenya. *International Academic Journal of Information Sciences and Project Management*, 3(3), 23-44

ABSTRACT

Dental caries is the most common chronic disease of children aged 5 to 17 years - five times more common than asthma. The main purpose of this study was to investigate factors influencing implementation of dental hygiene awareness projects in public primary schools in Embu County, the study will focus on following variables; To determine how stakeholder participation, availability of finances, top management and human resource influenced implementation. The research employed mixed research methodology. The participant in this study was the head teachers, teachers, and employees and dental practitioners. The target population in this study was 334 participants and a sample size of 182. The main instrument of data collection in this study was questionnaires and interview schedules. The items in the piloting of instruments were done using 10% of the sample population. Quantitative data was analysed using descriptive statistical methods as depicted by the use of mean and standard deviation and inferential statistics that helped to make conclusions. Quantitative data was chronologically arranged with respect to the questionnaire outline to ensure that the correct code will be entered for the correct variable. Data was then cleaned, tabulated and analyzed with the aid of Statistical Package for Social Sciences (SPSS 21.0). The data was presented using tables and written discussions. The expected outcome

of this study is that it's hoped that the recommendations would go a long way towards the improvement of the oral health. The findings showed that 73 respondents (40.6%) say that stakeholder participation influences to a very low extent in the implementation of the project while 57 respondents (31.7%) say that the influence is to a low extent but 50 respondents (27.8%) say that the influence is to a moderate extent. It was evident from the responses gathered that stakeholder participation is not considered to be a major determining factor in the dental awareness project. The findings show that 59 respondents (32.8%) said that availability of finances influences to a moderate extent in the implementation of the project while 121 respondents (67.2%) agree to a great extent. None of the respondents said that there is a low extent of influence. The findings show that 26 respondents (14.4%) said that top management support influences to a great extent in the implementation of the project while 154 respondents (85.6%) agree to a very great extent. The findings show that all the respondents were of the opinion that human resources are of great influence to the implementation of dental hygiene awareness projects. 89 respondents (49.4%) strongly agree that there human resources are a key asset in the project while 91 respondents (50.5%) agree as well.

Key Words: *implementation, dental hygiene awareness projects, public primary schools, Embu County, Kenya*

INTRODUCTION

Like most other diseases, oral diseases affect all people irrespective of their nationality, race, colour and creed (WHO, 1999). Oral health describes a standard of health of dental and related tissues which enable an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contribute to the general well-being. This is stressed further by the Commonwealth Dental Association (CDA) which states that “good oral health is an essential and important component of general health and it is a birthright of every individual in the world” (NOHP, 2002). The psychosocial impact of oral disease often significantly diminishes quality of life (WHO, 2003). Despite great achievements in the oral health of populations globally, problems still remain in many communities around the world. This is particularly among underprivileged groups in both developed and developing countries. Dental caries and periodontal diseases have historically been considered the most important global oral health burdens (WHO, 2003).

The precise burden of oral diseases in Kenya is unknown because there has never been any National Oral Health survey (NOHP, 2002). There is therefore no precise knowledge on the distribution pattern and magnitude of oral diseases in Kenya. However several epidemiological studies on oral diseases in Kenya have been carried out in the last few decades and these form the basis of the status of oral diseases in Kenya (NOHP, 2002). The two major causes of tooth loss in Kenya are dental caries and periodontal disease. Most of the studies on dental caries in Kenya have been carried out in the capital city, Nairobi. Dental caries has been cited as the most common cause of tooth mortality at Kenyatta National Hospital which is the largest hospital in Kenya (Kaimenyiet al., 1988) and the main cause of tooth loss in Kenya in general (Sanyaet al., 2004). Periodontal disease is present from the first decade of life to old age and results in tremendous economic and social burdens both to the individual and society. The disease has been reported as the second major cause of tooth loss at Kenyatta National Hospital (Kaimenyiet al., 1988) and in Kenya in general (Sanyaet al., 2004). Most of the teeth that have caries are reportedly extracted rather than filled (Ng’ang’a, 2000). Other diseases and conditions that affect the oral cavity include dental fluorosis, oral cancer, edentulism, cranial facial birth defects and malocclusion of teeth. Dental caries is the most common disease of mankind (Soben, 2006).

In Kenya, over the years, the demand for oral health has outstripped the financial provision from the exchequer. The majority of the oral health personnel, are dentists. The ratio of dentist to the general population in the public sector is 1:378,000 with only 20% in the rural areas and 80% in the urban areas. Those in the urban areas take care of only 10% of the country’s population (WHO, 1999). The number of registered dentists in Kenya is 700. When all the sectors are combined, the ratio of dentists to the general population is 1: 60,000. Different conservation methods can be used to prevent or treat dental disease. Oral health diseases such as dental caries constitute a major proportion of the health problem in Kenya. There is also an indication of more edentulous people above 50 years old mainly due to dental caries (NOHP, 2002). In this study

conservation methods were analyzed in two dimensions, those that an individual can practice in order to maintain good oral hygiene and those methods that can be instituted professionally. The factors that influence utilization of these different conservation methods were established.

By tradition, dentistry has been largely a reparative profession. However, reparative dentistry alone cannot bring about the control of dental disease. Plaque control is vital in maintenance of good oral health. At individual level the toothbrush and the chew stick are the basic instruments for maintaining good oral hygiene. They are the principal instruments in general use for accomplishing goals of plaque control (Soben, 2006). The use of dentifrices also plays a role in plaque control as they have abrasive properties. Dentifrices particularly toothpastes and mouthwashes are known to play a significant role as adjuncts to tooth brushing in plaque control procedures (Garcia-Godoy et al., 1990). Refined sugars also have a role in dental caries and inhibition of major dental problems can be realized by reducing its intake (Pine, 1997). High consumption of refined foods and snacks goes hand in hand with high prevalence of dental caries (Ngatia et al., 2001). Restorative dentistry at professional level is valuable in controlling dental caries. This also includes Atraumatic Restorative Treatment (ART) whereby carious tooth tissues are removed using hand instruments alone and restoring the cavity with an adhesive restorative material; usually glass ionomer (Pratipet et al., 1997). Other restorations include amalgam and tooth coloured fillings, crowns and inlays.

The prevalence of dental caries in Kenya is highest amongst the middle socio-economic groups and relatively few people have fillings (Ng'ang'a, 2000). Bearing in mind the effect loss of teeth has in determining the kind of nutrition one takes which in turn reflects the health status of an individual, it is important to establish why people continue losing teeth as if these conservation methods never existed therefore this study will investigate some of the factors that influence implementation of dental hygiene awareness projects in public primary schools in Kenya; a case of Embu county

STATEMENT OF THE PROBLEM

Dental caries is the most common chronic disease of children aged 5 to 17 years - five times more common than asthma KNOHP (2001). Many studies suggest that magnitude and severity of dental caries in primary and permanent teeth continue to be a major problem and should receive special attention. According to WHO 2010 Poor children have nearly 12 times more restricted activity days because of dental related illness than children from higher-income families. Dental caries may affect a child's eating habits and nutritional intake, potentially influencing growth and early childhood development and school readiness. Despite there being conservation methods in Kenya that can both prevent and restore tooth damage, most of the teeth that have caries are reportedly extracted rather than filled, thereby losing the masticatory functions of teeth (Ng'ang'a, 2000). The commonest cause of tooth mortality in Kenya is dental caries followed by periodontal disease (Sanyaet al., 2004). In 2015 National oral Health Survey revealed that dental

diseases affect about nine in 10 adults, with at least one form being a gum disease, In Kenya about eight children suffer from gum disease infections while nearly half of the have dental caries, which is breaking down of teeth due to bacteria invasion (East Africa Oral Summit 2016). Only a few studies have been done in the rural areas and none has been done in Embu County either. No study has been done on utilization of dental conservation methods. The studies that have been carried out show that relatively few fillings have been done (Ng'ang'a, 2000). Most of the teeth that have caries are reportedly extracted. It is therefore evident that there is an existing problem whereby the population continues to lose their teeth due to dental caries. With the dental caries being reported to be the main cause of tooth loss in Kenya (Sanyaet al., 2004), it is important to investigate the factors influencing implementation of dental hygiene awareness projects in public primary schools in Embu county. The study will look into the following variables; stakeholder participation; availability of finances; top management and human resources.

PURPOSE OF THE STUDY

The purpose of this study was to investigate factors influencing implementation of dental hygiene awareness projects in public primary schools in Embu County.

OBJECTIVES OF THE STUDY

1. To determine how stakeholder participation influence implementation of dental hygiene awareness projects in public primary schools in Embu County.
2. To establish the influence of availability of finances on implementation of dental hygiene awareness projects in public primary schools in Embu County.
3. To determine how top management influence implementation of dental hygiene awareness projects in public primary schools in Embu County.
4. To investigate how human resources influence implementation of dental hygiene awareness projects in public primary schools in Embu County

THEORETICAL REVIEW

The study will be guided by the following theories; Human Resource Management Theory and Theory of Reasoned Action. Human Resource Management Theory looks into practices into a set of internally consistent policies and practices designed and implemented to ensure that a firm's human capital contribute to the achievement of its business objectives (Delery & Doty, 1996). Likewise, Minbaeva (2005) viewed HRM practices a set of practices used by organization to manage human resources through facilitating the development of competencies that are firm specific, produce complex social relation and generate organization knowledge to sustain competitive advantage. These theory forms the basis of the study.

Theory of Reasoned Action will also guide this study. In this theory, a person's attitude toward a behavior consists of a belief that that particular behavior leads to a certain outcome and an evaluation of the outcome of that behavior. If the outcome seems beneficial to the individual, he or she may then intend to or actually participate in a particular behavior. Also included in one's attitude toward a behavior is their concept of the subjective norm. Subjective norm is a person's perception of what others around them believe that the individual should do. In its purest essence, subjective norm is a type of peer pressure. Whether or not a person participates or intends to participate in any behavior is influenced strongly by the people around them. These people may include friends or a peer group. People may also be inclined (or not inclined) to participate in a behavior based upon their desire to comply with others (Albarracín, 2001).

EMPIRICAL REVIEW

An Overview of Dental Hygiene awareness Projects

Oral health is an essential aspect of general health, as such, appropriate oral health attitudes and behavior are considered to be an essential pre-requisite for health related practices (Carneiro et al., 2011). In order to prevent common oral diseases, specific measures such as regular tooth brushing and flossing, fluoridation, sealants, healthy nutritional habits and regular dental attendance must be promoted and encouraged (Sa'adu et al., 2012). Oral diseases are among the most common diseases worldwide. In some countries, dental decay still impacts nearly 100% of adults and up to 90% of children. Toothaches are considered as one of the major reasons for absenteeism from schools in many countries, Kenya included. The consequences of poor oral hygiene are fatal, but this is largely preventable. Clinical data shows that twice-daily tooth brushing with fluoride toothpaste can reduce tooth decay by up to 50% in children. In this light there have been sustained efforts by the governments, through the departments of health to prioritize the issue of oral health among school going children. Moreover, the World Health Organization (WHO) advocates the use of Health Promoting Schools (HPS) as an effective avenue for promoting and protecting health in children. In addition, WHO defines a health promoting school as one that "constantly strengthens its capacity to as a healthy setting for living, learning and working." HPS provide classroom education and school-based activities that increase knowledge and develop behaviors that benefit the health of children.

In Canada, upon the recognition of the importance of oral health and the growing evidence of links between oral health status and several chronic conditions including diabetes, cardiovascular disease, respiratory disease and pre term deliveries, the federal government established the Office of the Chief Dental Officer of Canada in 2004 and, in 2005, developed its first national oral health strategy (Pihlstrom, 2005). The World Dental Federation represents approximately 1 million dentists and 200 national dental associations and specialist groups worldwide. Its vision is to lead the world to optimal oral health, which is a fundamental part of general health and well-being. It drives local oral health promotion and educational programmes in schools on the

importance of brushing twice daily with fluoride toothpaste. World recognized toothpaste brands have the logo appearing exclusively on the product packs. Across the world, the organization conducts focused global oral health promotion programmes adapted locally in all the countries. The 29 projects implemented across 27 countries saw the message 'brush twice daily with fluoride toothpaste' directly reach more than 41,000 people, including over 33,000 children. The impacts of these projects are significant improvements in the self-reported frequency of brushing, and that brushing day and night with fluoride toothpaste.

In Africa, Unilever Company, against a background of poor oral health caused by lack of fluoride toothpaste and scarce dental care, and with 95% of 11-14 year olds from low-income families suffering from untreated dental decay, has invested in awareness programmes to improve health. Unilever Company has aimed to reach 50 million people by 2020 with oral health improvement programmes to encourage children and parents to brush day and night. These programmes, by 2015, had reached 71 million people via innovative campaigns and partnerships. There are sustained efforts through campaigns and education programmes to develop good tooth brushing habits and thus improve dental hygiene. Singh (2012) also reported that dental caries constitute one of the major oral health problems among young children and adolescents in Nigeria, aged 12 and 15 years old, while its prevalence ranges between 30 and 45%, respectively.

The World Oral Health Day is marked on 20th March. This is celebrated every year to highlight the benefits of a healthy mouth and promote worldwide awareness of issues around oral health, an often neglected area of public health (WHO Report, 2015). In 2015, Unilever held events in 25 countries, directly reaching 450,000 people. Participants were invited to pledge to Brush Day & Night, more than 160,000 dental checks were carried out and over 10,000 children took part in competitions to test their creativity in encouraging tooth brushing. They visited primary schools, with the aim of inspiring children to brush day and night with their parents. The Brush Day & Night TV campaign ran in 13 countries in 2015, including Indonesia, Vietnam, France, Belgium, Nigeria, Cameroon, Egypt, Sri Lanka, Hungary and Croatia. It is important that everyone has a right to be educated regarding the prevention of oral diseases; this can be achieved through school-based oral health education programs, with the assistance of dental health professionals (Stuart, 2013). A study by Petersen (2004) in Nigeria concluded that the negative impacts of poor oral health include pain and suffering, functional impairment, and reduced quality of life. Petersen explained further that the level of awareness on the negative effects of poor oral health among students in Nigeria is low.

The World Health Organization (WHO) Health Promoting Schools initiative aims at achieving healthy lifestyles for the total school population by developing supportive environments conducive to the promotion of health. It offers opportunities for, and requires commitments to, the provision of safe and health enhancing social and physical environment (WHO Report, 2015). Health education supports personal and professional development through providing

information, education for health, and helping people to develop the skills needed to make healthy choices (Sa'adu, 2012). Integrated oral health education input into the national curriculum is essential to foster the development of the necessary knowledge, attitudes and skills to promote oral health. Oral health inequalities will only be reduced through the implementation of effective and appropriate oral health promotion policies (Petersen, 2009). To extend these improvements further and thereby reduce widening oral health inequalities therefore requires a strategic oral health promotion approach.

In 2016, ahead of the World Oral Health Day (WOHD), Unilever, through its Pepsodent toothpaste brand, in collaboration with Kenya Dental Association (KDA) launched a behavior change program for primary schools to improve oral hygiene among 1 million children across the country. The program was aimed to educate and empower school children in Kenya to be ambassadors of change towards adopting oral health practices in their families, especially, brushing every day so as to protect themselves and their families against dental problems. The Kenya Dental Association Chairman, Dr Andrew Wetende asserted that oral health is an integral part of body health. "If left untreated, dental diseases can cause severe pain, infection and negatively impact the quality of life, children's growth, school attendance and performance." He further called upon oral care stakeholders to join Unilever in the commendable job they were doing in the oral hygiene space through the initiative. He called upon all oral care stakeholders, to come together and have concerted and collaborative actions that deliver a mobilized maintained and strengthened agenda towards better oral health practices for children and adults in Kenya.

Stakeholder Awareness and Implementation of Dental Hygiene Awareness Projects

Stakeholders may have varied level of interest, involvement, and influence on the project. It is extremely important to identify all the stakeholders and manage them as they can have negative and positive influence on the project (McGrath, 2004). Denirag (2011) says that involving stakeholders in a participatory analysis and decision making around project development issues is an important operational method. Stakeholders may have varied level of interest, involvement, and influence on the project. It is extremely important to identify all the stakeholders and manage them as they can have negative and positive influence on the project (Engel, 2014).

There are three main types of stakeholders: Primary stakeholders - the people or groups that stand to be directly affected, either positively or negatively, by an effort or the actions of an agency, institution, or organization. Secondary stakeholders - are people or groups that are indirectly affected, either positively or negatively, by an effort or the actions of an agency, institution, or organization. Furthermore, there are key stakeholders, who might belong to either or neither of the first two groups, are those who can have a positive or negative effect on an effort, or who are important within an organization, agency, or institution engaged in an effort (Long, 2003).

Community participation is the active involvement of people from communities in support of project initiatives. Participation means the involvement of the people concerned in analysis, decision-making, planning and implementation. Sustainable project development requires a participatory approach. Health promotion involves working with people to prevent, prepare for, and respond to disasters so as to reduce risk, increase resilience and mitigate the impact of disasters on health. Community participation is the basis of successful health promotion. It is a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being (World Health Organization 1986).

Stakeholder participation is vital as both research and practical experience have shown that people are most committed to implementing programmes that they have helped plan (Ibiyemi, 2013). Community participation means the involvement of people from the earliest stages of the development process, as opposed to simply asking their opinion of project proposals that have already been developed, or for their contribution to the implementation of projects imposed from outside (Rowan-Legg, 2013). Participatory approaches have shown that involvement of the community can produce wide-ranging benefits (WHO, 2013). Communities can and should determine their own priorities in dealing with the problems that they face. The enormous depth and breadth of collective experience and knowledge in a community can be built on to bring about change and improvements to projects. When people understand a problem, they will more readily act to solve it and are able to solve their own problems best in a participatory group process (Engel, 2014).

To overcome conflicts of interest, health personnel must take care to understand the socioeconomic make-up of the community, its divisions, and its past history of self-help community projects (Atkinson, 2007). According to the World Health Organization, Communication of health information is most effective approach when implementing health awareness programmes. Broadly speaking, there are three main approaches: Person-to-person contact whereby captive audiences are found at schools or health centers where health workers and trained volunteers will be able to give advice. Meetings may be called for specific groups, or selected individuals may be brought together for focus group discussions on specific topics, and individual families may also be visited.

The influence of existing local groups or social organizations can be very useful in increasing the impact of the information. This direct approach, particularly if it involves some interaction between health workers and individuals, is most effective in tackling specific issues and encouraging particular changes in behaviour, and in checking that messages are seen as relevant and useful by the people concerned. Demonstrations are used. Teaching aids can also be used, with suitable teaching aids including printed materials, posters, films, slides, videos, murals,

flannel graphs and flip charts. These are useful for transmitting information and as support to the spoken word, but must be reinforced by interaction and personal contact with members of the target audience.

Using mass communication media such as radio, television, video, newspapers, placards and plays is an effective means of communicating information quickly to a large number of people and creating awareness of a problem or idea. Community participation in health awareness efforts is based on a number of principles including: participation in one's own health is a basic right to which all people are entitled and when health services are linked to local perceptions of needs and are managed with the support of local people, those services are more likely to achieve their objectives and be sustainable (Frandsen, 1986).

Availability of Finances and Implementation of Dental Hygiene Awareness Projects

Projects are about delivering change (Cleland, 2009). The sources from which the project directors acquire funds from has a great influence on the completion of the project (WHO, 2013). Funds are given out to a particular project after assessing the returns on cash flows from the investment (Sa'adu, 2012). Depending on the size of the project, long term or short term sources of financing can be used. Risk identification and allocation is a key component of project finance. A project may be subject to a number of technical, environmental, economic and political risks, which need to be assessed particularly in developing countries and emerging markets. Financial institutions and project sponsors may conclude that the risks inherent in project development and operation are unacceptable (Beck, 2013).

Health promotion exercises, dental healthcare included, can be encouraged on the health care market, for example through the introduction of financial incentives. Health promotion programs are implemented in various environments and at different levels, including the population, community, workplace, school, hospital and clinic. The programs are generally distinguished in population-level and individual-based interventions (DCPP, 2006). Health promotion is widely recognized as a cost-effective way to reduce the burden of disease and to improve population health (WHO, 2005; DCPP, 2006). Health promotion programs may contribute to controlling health problems hence health promotion must be enhanced within the health system and incorporated in health financing arrangements, subject to evidence about the cost-effectiveness of interventions and the available technical and institutional capacity in a country (Loe, 2000). Organizations are required to use funds wisely for the purpose intended and improve the living standards of the populations meant to benefit Lent, (2004). Good financial management practices demand that key management concepts and principles such as sustainability, accountability and transparency which are necessary for institutionalized formal procedures are put in place.

Financial Management on project performance will be one of the key challenges for corporations in the next decade: only those institutions that have sound financial structures and stable income

flows will be able to fulfil their multiple missions and respond to the current challenges in an increasingly complex and global environment Anthony and Young (2003). Sustainability in health promotion is achieved via efficiency in the way in which resources are utilized. According to Habeeb, (2013) financial management is the operation of an internal control system. Financial management of projects must be actively managed; it is an important part of the project management process and should be reviewed by the project manager, financial team, stakeholders and key project team members regularly (Weick, 2005). Financial management is one of the most important project management activities needed for the project to be delivered within the cost expectations laid down by the project's definition (Cleland, 2009). Good financial and accounting systems are paramount and it is essential that management has current, accurate, and relevant financial data to ensure sound decision-making (Backström, 2004). Internal controls should be robust and should be rigorously overseen (Young 2003).

It is necessary that financial controls are documented, assessed, revised, tested regularly and strengthened where necessary. A financial transaction control is a procedure that is intended to detect or prevent errors, misappropriations, or policy non-compliance in a financial transaction process (Fraudsen, 1986). Mawanda (2008) suggests that strong financial and accounting systems point to accountability. Accountability needs to be accurate and timely to aid sound decision making. Financial accountability is crucial in the implementation of projects. According to World Bank (2013) annual report, Kenya is ranked the third largest recipient of the World Bank funded projects. The World Bank's portfolio in Kenya consists of 24 active national and eight regional operations with a total commitment of US\$4.2billion. The projects are mainly focused on transport, energy, water, urban, health and social protection.

In conclusion, financial planning is an essential tool, whether in paper or computerized form Atkinson et al (2007). Financial worksheets enable project team members to identify all the major activities required to complete the project, as well as identifying the specific person responsible for ensuring that the activity is completed successfully, the estimated actual work time and the elapse time (e.g. period of days over which the work will take place since staff do not spend all their time on just one activity and the financial and material or other resources required for that activity, Bonner (2002).

Disbursement of funds is the most important aspect of project implementation. It is on this basis that scheduled project activities are translated into measurable outputs in the execution of the project objective. Before undertaking a project, all relevant cash flows associated with the undertaking must be ascertained with a fair degree of accuracy so that the desirable returns are achieved within the set time periods. Therefore all decisions made during project implementation invariably have financial implications hence the need for utmost care and diligence in arriving on the same. Moreover, funds must be clearly designated and committed to the project so as to ensure successful implementation of activities without the possibility of stalling and subsequent abandonment.

Management Support and Implementation of Dental Hygiene Awareness Projects

Top management support is crucial for the success of projects. Successful projects need the support of the executive management for the following reasons: To clarify strategic objectives. By setting the strategic objectives, the school authorities and the contractors can set new trends, leverage technology for success and deliver quality; to secure project funding; to secure project resources and to make the key decisions like allowing schedule overruns, approving funding allocation and to authorize scope changes.

According to Schultz (2009), management support for projects, the project manager and for any implementation is of great importance in distinguishing between their ultimate success and failure. Project management is seen as not only dependent on top management for authority, direction, and support, but as ultimately the conduit for implementing top management's plans for the organization or product (Beck, 2006) Effective project implementation is repeatable and requires a great deal of work to understand planning effort, team motivation, technical capabilities and project scope (Ashley et al, 2007). As study Mwadali (2006) found that inexperienced project managers, poor communication, poor monitoring and control systems negatively affect project management efficiency.

Effective communication by the top management in project implementation creates a common perception, changing behaviors and acquiring information (Brown 2011). A failure in communication can negatively impact the project (Ruuska, 2007). Project communication is an informative tool, which communicates to all relative groups what is happening in the project. Therefore, the importance of communication in the success of a project is immense. Careful communication planning and setting the right expectations with all the project stakeholders is therefore extremely important.

Lack of stakeholder engagement, communication, clear roles and responsibilities definition leads to project failure. Internal control processes promotes the effectiveness and efficiency of operations in the reliability of project outcomes (Gregory, 2005). A key component of the organizational capacity of the project includes establishing internal controls that comprehensively address the entirety of the support, administrative and logistic systems required for successful implementation. Poor or excessive internal controls reduce productivity, increase the complexity of systems, increase the time required to complete processes and add no value to the activities. For smooth project implementation, the implementers need to know what is and what is not legal in order to operate successfully.

Shared understanding without commitment may result in counter effort and negatively affect performance (Lynch, 1996). Projects success may fail if the projects do not enjoy support and commitment by the team responsible for overseeing the project. Top management involvement and commitment should be developed and maintained throughout the implementation process of

projects. In addition, as stated by (Noble, 1999) commitment is a central factor which directly influences project performance. Also, costs of supervision are mitigated if the project members are committed to their project tasks.

Focused effort by top managers in any project provides the required direction thus increasing the chances of successful project implementation through efficient project management and performance. Dissanayaka and Kumaraswamy (1999) stated that the knowledge that would influence potential performance enables project managers to pay special attention to control performance more effectively. The management should ensure that they have the right personnel with appropriate qualifications to manage their projects efficiently. In order to achieve this it is essential that the project manager and his team possess and display appropriate leadership and competence skills. Servant-leadership is a model that could contribute to overcoming many of the leadership challenges faced by organizational leaders (Demirag, 2011). A project's success is, in part, contingent on effectively managing the constraints of time, costs, and performance expectations.

However, project managers continue to face many challenges and problems concerning leadership, for example, leadership style, stress, uncertainty, motivation, learning, and teamwork Majid (2008). The success of a project depends more on human factors, such as project leadership, top management support, and project team, rather than on technical factors. The researchers found that the critical role of the project manager's leadership ability had a direct correlation to project outcomes Al-Rashid (2005).

Human Resources and Implementation of Dental Hygiene Awareness Projects

Human Resource Management is the process of utilizing all the individuals involved in the project effectively in order to get the best result for the project. This includes all the stakeholders of the project including the sponsors, customers, individual contributors, and all others (Wright, 1998). Organizations are increasingly looking at human resources as a unique asset that can provide sustained competitive advantage. The changes in the business environment with increasing globalization, changing demographics of the workforce, increased focus on profitability through growth, technological changes, intellectual capital and the never-ending changes that organizations are undergoing have led to increased importance of managing human resources (Devanna, 1981).

The efficiency of any organization depends to a large extent upon how effectively human resources are utilized (Nwachukwu, 1988). Staff competencies are the measurable or observable knowledge, skills, abilities, and behaviors critical to successful job performance. Bausch (2003) further stated that competence indicates sufficiency of knowledge and skills that enable someone to act in a wide variety of situations since each level of responsibility has its own requirements, competence can occur in any period of a person's life or at any stage of his or her career.

Competence of staff is necessary in achieving satisfactory performance in organization. Staff contributes greatly towards the success of any project (Fullan, 2005).

According to Hargreaves (2003), knowledge involves understanding facts and procedures. Traits are personality characteristics such as self-control and self-confidence that pre-dispose a person to behave or respond in a certain way. Skill is the capacity to perform specific actions: a person's skill is a function of both knowledge and the particular strategies used to apply knowledge (Gonzalez, 2003). Abilities are the attributes that a person has inherited or acquired through previous experience and brings to a new task. Abilities are more fundamental and stable than knowledge and skills.

Competence as one of many determinants of performance however, competence does not always predict the performance although a less competent workforce is less likely to provide quality services (Burnes 2004). Competence is defined in terms of someone's capacity to perform, performance is the resulting behavior. Ombuki (2004) further asserted that performance is something that people actually do that can be observed. The workforce in any organization should be able to prove their qualification and the qualification criteria should cover the following: Providing information showing that they are qualified in the field of the assignment; show ability to work in the factory; possess excellent communication and organizational skills and show a willingness to work with the factory.

RESEARCH METHODOLOGY

Research Design

A research design is a plan that is used to generate answers to research problems Orodho (2003). Descriptive survey research design was used in this study. The design describes more appropriately the nature of the phenomenon and examines action as they are or as they happen rather manipulation. According to Orodho (2005) descriptive survey research design enables the researcher to explain as well as explore the existing status of two or more variables of phenomenon or population.

Target Population

The study focused on Embu Level 5 Hospital project that targets children in public primary schools to create awareness of oral dental hygiene. There are projects in the county for example the Tenri project for creating awareness of dental hygiene but this study focuses on a particular project which is under Embu General Hospital for creating awareness in primary schools in the county. The target population comprised the following respondents; primary school head teachers, teachers, Employees, and Dental Practitioners. The study targeted a population of 50 primary schools (head teachers), 195 teachers, 79 employees and 10 dental practitioners.

Therefore the total target population consist of 334 respondents (Ministry of Education CGOE & EGH, 2016).

Sampling Procedure and Sample Size

This study used two types of sampling methods, first it used purposive sampling method to sample 50 primary schools in Embu West sub county so as to get a sample size of 10 primary schools representing head teachers the purpose of using this sampling method is that the researcher considers the purpose of the research by the knowledge she/he has of the population and by selecting the participant who provide relevant information. The second sampling method was simple random sampling method where teachers and employees will individually be chosen randomly and entirely by chance, such that each individual has the same probability of being chosen at any stage during the sampling process. According to Kothari (2001) a representative sample is one which is at least 10% of the population. To determine the sample size the study will employ Yamane (1967) formula for calculating sample sizes at 95% confidence level and $e = 0.05$. Where n is the sample size, N is the population size, and e is the level of precision. The sample size will be determined as follows;

$$n = \frac{N}{1+N(e)^2} n = \frac{334}{1+334(0.05)(0.05)} = 182$$

$$\frac{50}{334} \times (182) = 27 \text{ school head teachers} \quad \frac{195}{334} \times (182) = 105 \text{ Teachers}$$

$$\frac{79}{334} \times (182) = 43 \text{ Employees} \quad \frac{10}{34} \times (182) = 5 \text{ Dental Practitioners}$$

The total sample size for this study was 182 respondents.

Research Instruments

The main instrument of data collection in this study was questionnaires. The items in the questionnaire was structured (closed ended) and unstructured (open ended). The structured questions measured the subjective responses to clarify the objective responses and at the same time, enhance formulation of recommendations of the study.

Data Collection Procedures

The researcher sought for an introductory letter from the University of Nairobi in the school of Extra Mural and Authorization letters and research permit .This document enabled the researcher to secure an authorization letter from the county commission and county director of Education, in Embu County. This letter introduced the researcher to respondents before administering

questionnaires. The researcher then embarked on administering of data collection instruments to the sampled respondents. The instruments were collected the same day but in case the respondents were not present, the questionnaires were left and handed to the same respondents after two days.

Data Analysis Techniques

Data analysis is the process of bringing order, structure and meaning to the mass of information collected (Mugenda, 2003). Quantitative data was analysed using descriptive statistical methods as depicted by the use of mean and standard deviation. Use of likert scale items ensured that qualitative data is analysed as quantitative data. Quantitative data was chronologically arranged with respect to the questionnaire outline to ensure that the correct code was entered for the correct variable. Data was then cleaned, tabulated and analyzed with the aid of Statistical Package for Social Sciences (SPSS 21.0). The data was presented using tables and written discussions. Inferential data analysis will be done using multiple regression analysis. Multiple regression analysis will be used to establish the relations between the independent and dependent variables. Multiple regressions will be used because it is the procedure that uses two or more independent variables to predict a dependent variable. Since there are four independent variables in this study the multiple regression model generally assumes the following equation;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$$

Where: Y= Implementation of dental hygiene awareness projects; β_0 = constant; β_1 , β_2 , β_3 and β_4 = regression coefficients; X1= Stakeholder Participation; X2= Availability of Finances; X3= Top Management Support; X4= Human Resources; ϵ =Error Term

In testing the significance of the model, the coefficient of determination (R^2) will be used to measure the extent to which the Implementation of dental hygiene awareness projects is explained by the variations of the determinants. F-statistic will also be computed at 95% confidence level to test whether there is any significant relationship between implementation of dental hygiene awareness projects and the determinants affecting it.

RESEARCH RESULTS

The summary of findings is presented based on the four objectives of the study. The summary of findings based on objective one which was to determine how stakeholder participation influence implementation of dental hygiene awareness projects in public primary schools in Embu west sub-county.

The first objective was to determine how stakeholder participation influenced implementation of dental hygiene awareness projects in public primary schools in Kenya. These are further discussed in the following sub thematic areas. The respondents were asked if the parents were

involved whenever they had dental checkups and dentals clinics and this was the response. From the research, majority of the respondents revealed that 133 which was 73.9% of parents were always involved whenever there was their participation in dental checkups and also dental clinics whereas 26.1% were not informed when the checks up took place. This implies that majority of the parents were involved in the participation of dental hygiene awareness. A research on whether the pupils were the key stakeholders in the participation of dental hygiene awareness, out of the 180 respondents 130 of them which was 72.2% stated that the pupils were key stakeholders in this programs. A further 33 (18.4%) of the respondents community were uncertain about pupils being the key stakeholders. 8.8% which was 16 of the respondents population disagreed with the children being key stakeholders in the program. 1 of the respondents which was 0.6% strongly disagreed on children being key stakeholders.

The summary of findings based on objective two which was to establish the influence of availability of finances on implementation of dental hygiene awareness projects in public primary schools in Embu County. The second objective was to determine how availability of finances has influenced implementation of dental hygiene awareness projects in public primary schools in Kenya. These are further discussed in the following sub thematic areas: Research was carried out on the main source of finance to fund this awareness programs and the results were as follows: 33.9% of the respondents agreed that toothpaste companies were the major financers to this awareness programs, 29.5% were in support of the local hospitals being major funders while 18.4% agreed that fund raising was a source of income in raising the money, 9.4% were in support of rotary clubs being funders while the remaining 8.8% agreed that school fees was a major funders.

This section provides the analysis of findings and present various aspects of availability of finances and implementation of dental hygiene awareness projects in public primary schools in Kenya Based on the findings out of 180, 172(95%) agreed that finances are a major challenge for the successful completion of a dental awareness drive while the other 9 (5%) disagreed that finances are a major challenge for the successful completion of a dental awareness drive. Based on the analysis 167 out of the 180 which is (92.8%) agreed that the disbursement of funds is the most important aspect of project implementation whereas 13 (7.2%) disagreed that the disbursement of funds is the most important aspect of project implementation. Majority of the respondents which was 152 (84.4) out of the 180 respondents agreed that the project leads have set out clear frameworks on how the money should be disbursed, a further 28(15.6%) has disagreed on the fact that the project leads have set out clear framework on how the money should be disbursed.

The summary of findings based on objective three which was to determine how top management influence implementation of dental hygiene awareness projects in public primary schools in Embu county. Top management support in the dental hygiene awareness project does implementation of dental hygiene awareness projects in public primary schools in Embu west

sub- County. The findings show that 26 respondents (14.4%) said that top management support influences to a great extent in the implementation of the project while 154 respondents (85.6%) agree to a very great extent. When asked on the various aspects of top management leadership, the findings on the issue of whether the team has gone through training in the area of project show that 165 respondents (91.7%) say that the team has not taken training in project management while 15 respondents (8.3%) indicate that the team has undergone training in the field of project management.

According to the findings on the aspect of team motivation, 140 respondents (77.8%) say that the team is not highly motivated while 40 respondents (22.2%) indicate that the team is highly motivated for the project. Stakeholder engagement was also raised as an issue and the findings show that 46 respondents (25.6%) agree that there is emphasis laid on stakeholder engagement while 15 respondents (8.3%) are uncertain about the implication. 32 respondents (17.8%) disagree with the notion that there is emphasis laid on stakeholder engagement while 87 respondents (48.3%) strongly disagree that there is emphasis laid on stakeholder engagement.

On the aspect of whether there was an understandable stipulation of clear roles and responsibilities; the findings show that 57 respondents (31.7%) agree that there are clear roles and responsibilities while 110 respondents (61.1%) disagree on the issue and 13 respondents (7.2%) strongly disagree with the notion that there are clear roles and responsibilities in regards to project activities. The respondents were also asked whether they have a shared understanding of project objectives. The findings show that 23 respondents (12.8%) agree that there is shared understanding of project objectives while 78 respondents (43.3%) are uncertain about the issue and 79 respondents (43.8%) disagree with the notion. Funding was also looked at an aspect to see whether there is a timely approval. The findings show that 37 respondents (20.6%) disagree that there is timely approval of funding while 143 respondents (79.4%) strongly disagree. None of the respondents strongly agreed or agreed or were uncertain on this issue.

The summary of findings based on objective four which was to investigate how human resources influence the implementation of dental hygiene awareness projects in public primary schools in Embu west sub- county. Human resource project does implementation of dental hygiene awareness projects in public primary schools in Embu west sub- County. The findings show that all the respondents were of the opinion that human resources are of great influence to the implementation of dental hygiene awareness projects. 89 respondents (49.4%) strongly agree that there human resources are a key asset in the project while 91 respondents (50.5%) agree as well. None of the respondents disagreed or were uncertain on this issue. When asked about the extent of skill that the workers have, the findings show that 89 respondents (49.4%) strongly agree that there are highly skilled workers in the project while 91 respondents (50.5%) agree as well. The findings from the responses therefore indicate the utmost imperativeness of human resources as a major determining factor in the dental awareness project.

CONCLUSIONS

It can be concluded that top management support in the dental hygiene awareness project does implementation of dental hygiene awareness projects in public primary schools. Training of the staff members in the area of project management should be taken into key consideration as it will assist in better implementation in a professional manner. Team motivation is of key importance if the project is to have dedicated workers and effectiveness.

It can also be concluded that human resources influence the implementation of dental hygiene awareness projects in public primary schools. Human resources are a key asset in every workplace and project alike and hence should be given the utmost care and attention in maintaining them and seeing to it that the right environment is given so as to give the right attitude in working. Emphasis is also laid in having workers that are highly skilled for maximum effectiveness in achievement.

RECOMMENDATIONS

Stakeholder Participation: The study recommends that the ministry of health, NGOs, parents, teachers and dental professionals and all the relevant stakeholders should encourage and provide awareness in oral health education to primary schools. In addition, the study recommends that greater importance be placed on stakeholder engagement in the implementation of the project and to give clearer insight of the project aspects.

Availability of finances: The study recommends that the Ministry of Health places greater emphasis on dental hygiene awareness projects and sources and encourages more partners to implement similar programs in the country. Timely approval of funding is imperative to aid the implementation of activities that are cost implicative without the causing of delays.

Top Management Support: Roles and responsibilities should be clearly stipulated to avoid role confusion and ineffectiveness in the achievement of the project objectives.

Human Resources: The study recommends that all team members there should have a shared understanding of project objectives to ensure that they all are geared towards achieving a common goal.

REFERENCES

- A. Rowan-Legg, (2013) “Oral health care for children—a call for action,” *Paediatrics and Child Health*, vol. 18, no. 1, pp. 37–43,
Annual Report (2002). Ministry of Health, Thika District Hospital Annual Report 2002-2006.
Arthur, W. L. (1938). A history of dentistry, Lea and Febiger, Philadelphia, USA, pp 7, 231.

- Bajomo, A. S., Rudolph, M. J. and Ogonbodede, E. O. (2004). Dental Caries in 6, 12 and 15 year-old vanda children in South Africa. *East African Medical Journal* 2004; 81: 236-243.
- B. L. Pihlstrom, B. S. Michalowicz, and N. W. Johnson, "Periodontal diseases," *The Lancet*, vol. 366, no. 9499, pp. 1809–1820, 2005.
- CBS (1999). Central Bureau of Statistics, Office of the Vice President and Ministry of Planning and National Development, Kenya Demographic and Health Service.
- C. McGrath, H. Broder, and M. Wilson-Genderson, "Assessing the impact of oral health on the life quality of children: implications for research and practice," *Community Dentistry and Oral Epidemiology*, vol. 32, no. 2, pp. 81–85, 2004
- Chindia, M. L., Valderharg, J. and Ng'ang'a, P. M. (1992). Oral health habits and periodontal health among a group of university students in Kenya. *East African Medical Journal* 1992; 69: 337-340.
- Collins, W. J. N., Walsh, T. F. and Figures, K. H. (1999). A hand book for dental hygienists, 4th edition, Reed educational and professional publishing ltd, pp 230.
- Emberly, G. and Rolla, G. (1992). Clinical and biological aspects of dentrifices, Oxford University Press, pp 33.
- Esther, M. W. (1977). Practice of dental hygienist, 4th Edition, Henry Kimpton publishers, London, pp 308.
- Garcia-Godoy, F., Devizio, W. and Volpe, A. R. (1990). Effect of triclosan / Copolymer / Flouridedentrice on Plaque formation and gingivitis; A 7-month clinical study. *AMJ. Dent.* 1990; 3:S15-S26
- Jong, A. W. (1993). Community dental health, 3rd edition, Mosby Company, pp 3, 7.
- John, M. P. and Ronald, L. S. (2006). Craigs restorative dental materials 12th Edition, Mosby, Elsevier, St. Louis, Missouri, pp 173.
- Kaimenyi, J. T. (2004). Oral health in Kenya, *International Dental Journal* 2004; 54:378-382.
- Kaimenyi, J. T., Sachdera, P. and Patel, S. (1988). Cause of tooth mortality at the dental unit of Kenyatta National Hospital. *Odonto. Stomatol Trop.* 1988; 11(1): 17-20.
- Kassim, B.A., Noor, M.A. and Chindia, M. L. (2007). Oral health status among Kenyans in a rural arid setting: Dental caries experience and knowledge on its causes. *East African Medical Journal* 2007; 83:100-104.
- KNOHP (2001). Ministry of Health, Kenya National Oral Health Policy 2001-2004.
- Kothari, C.R. (2003). Research Methodology: Methods and techniques, 2nd ed. New Int'nal (P) Ltd, New Delhi.
- Macigo, F. G., Gathece, L. W., Guthua, S. W., Njeru, E. K., Wagaiyu, E. G. and Muli, T. K. (2006). Oral hygiene practices and risk of oral luekoplakia. *East African Medical Journal* 2006; 83: 73-78.

- Maina, S. W. and Ng'ang'a, P.M. (1991). Root canal treatment and pulpotomy in Kenya. *East African Medical Journal* 1991; 68:243-248.
- Manji, F., Fejerskov, O. and Baelum, V. (1989). Pattern of dental caries in an adult rural population. *Caries Research*. 1989; 23: 55 – 62.
- Matee, M. I. N., Scheutz, F., Simon, E. N. M. and Lembariti, B. S. (2006). Patients satisfaction with dental care provided by public dental clinics in Dar-Es-Salaam, Tanzania. *East African Medical Journal* 2006; 83:98-104.
- Mickenautsch, M. A., Vant, H. and Frencken, J. E. (2007). Oral Health Service Systems in Gauteng Province, South Africa. *East African Medical Journal* 2007; 84:178-182.
- Mugenda, O. M. and Mugenda, A. G. (1999). Research Methods: Quantitative and qualitative Approaches. Nairobi, Acts Press, pp 9, 57.
- Ng'ang'a, P. M. (2000). An overview of Epidemiologic and related studies undertaken on common dental diseases and conditions in Kenya. *African Oral Health Science* 2002 3: 103-110.
- Ngatia, E. M., Imungi, J. K., Muita, W. G. and Ng'ang'a, P. M. (2001). Dietary Patterns and dental caries in Nursery and school children in Kenya. *East African Medical Journal December* 2001; 78 12:673-677.
- NIDR (1989), Dentistry in the 21st century, proceedings of the international symposium on dentistry in the 21st Century, Berlin, September 10, 1989.
- NOHP (2002). Ministry of Health, National Oral Health Policy 2002-2012.
- Ohito, F., Opinya, G.N. and Wang'ombe, J. (1993). Dental caries and dental plaque in handicapped children in Nairobi, Kenya. *E. Africa Medical Journal* 1993 70: 71-77.
- Onyiaso, C. O. (2004). Oral habits among 7-10 year-old school children in Ibadan, Nigeria; an epidemiological survey. *East African Medical Journal* 2004; 81:16-21.
- Pine, C. M. (1997). Community Oral Health, Reed educational & professional publishing Ltd, pp 213.
- Pratip, P., Tacco, P., Yupin, S. and Evert, V. (1997). Manual for the Atraumatic Restorative Treatment, approach to control dental caries, WHO collaborating centre for Oral Health Services Research, Greningen.
- Robert, G. C. (1997). Restorative Dental Materials, 9th edition, Mosby, St. Louis, Boston, pp 6, 12, 22.
- Sanya, B. O., Ng'ang'a, P. M. and Ng'ang'a, R. N. (2004). Causes and patterns of missing teeth among Kenyans. *East African Medical Journal* 2004; 81:322-325.
- Simon, E. N. M., Matee, M. I. and Scheutz, F. (2008). Oral Health Status of Handicapped Primary School Pupils in Dar-Es-Salaam, Tanzania. *East African Medical Journal* 2008; 85:113-117.

- Simon, J. R. (1989). Dentistry in the 21st Century, A global perspective. Proceedings of the International symposium on dentistry in the 21st century, Berlin, September 1989.
- Soben, P. (2006). Essentials of Preventive and Community dentistry, 3rd Edition, Arya publishing, New Delhi, pp 12, 389.
- Styers, S. and Reynolds, N. J. (1977). Current concepts in dental hygiene, C. V. Mosby Company, pp 7.
- Wakiaga, J. M., Kaimenyi, J. T. and Kisumbi, B. K. (1996). Reasons underlying failure to seek dental treatment among Nairobi University students. *East African Medical Journal* 1996; 73:320-322.
- WHO (1978). Primary Health Care; Report of the International Conference on PHC, Alma Alta, USSR, 6-12th September 1978, Geneva.
- WHO (1999). Oral health in African Region, A regional strategy 1999-2005.
- WHO (1999). Oral health in the African region. A regional strategy 1999 -2008.
- WHO (2000). Oral Health Global Indicator for 2000.
- WHO (2003). The World Oral Health Report. Continuous improvement of oral health in the 21st century – the approach of the WHO Global Oral Health Programme.
- Wolinsky, L. E., Maina, S., Nachnani, S. and Ling, S. (1996). The inhibiting effect of Aqueous Azadirach ta Indica (Neem), extract upon bacterial properties influencing In Vitro plaque formation. *J. Dent. Res.* 1996; 75:816-822.