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THE EFFECTIVENESS OF CONSULTANT LED COMMUNITY BASED ORAL HEALTH CARE DELIVERY MODEL CONDUCTED IN COLOMBO MUNICIPAL COUNCIL AREA BY THE NATIONAL DENTAL HOSPITAL, SRI LANKA

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Abstract: Access to oral health services is considered to be a fundamental human right but hardly integrated into mainstream health care provision in many countries. In contrast, Sri Lanka offers an extraordinary public health care delivery model in which oral health care is integrated into the existing main stream public health care services. Against this backdrop, present description showcases establishment of a consultant-led, community based service delivery model by a National Dental Hospital to cater to high risk groups. A total of 864 diabetic patients, who attended diabetic clinics of National Hospital of Sri Lanka and who the residents of selected area, were screened for oral diseases of which 413 (47.8%) were referred for oral health care and 201 (48.7%) were provided with oral health care and oral health promotion. Moreover, 390 high caries risk children who attended selected preschools of Colombo Municipal Council (CMC) region were screened for dental caries and 260 (66.7%) were referred and 102 (39.2%) were treated. Furthermore, a total of 2447 pregnant mothers who attended antenatal clinics of CMC were educated on oral health and screened for oral diseases. Out of them, 1789 (73.1%) were referred for oral health care and 855(47.8%) treated. Consultant-led, community based service has catered to high risk target group of diabetic patients, preschool children and pregnant mothers who carry a high burden of oral disease. However, treatment coverage needs improvements by suitable interventions.

Keywords: mobile dental service, socially disadvantage people, diabetic, pregnancy

Introduction

Oral Health is equally important as general health because it affects physical, psychological, and social wellbeing of the people and oral health is defined as a multi-faceted health outcome that includes the ability to speak, smile, taste, touch, chew, swallow and convey a range of emotions through facial expressions with confidence, without pain, discomfort and disease of the craniofacial complex[1]. Furthermore oral health is a tipping point of many disease in early stages as well as it has a substantial effect on quality of life, causing pain, sepsis, and disruption to daily functions, including problems with eating, speech, and social interactions[2]. Moreover oral health has been recognized as a fundamental human right because of the contemporary definition of oral health reflects the WHO definition of health by recognizing the three moderating factors:

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"disease and condition status, physiological function, and psychosocial function (HR) The right to oral health can be realized when oral health systems are designed to align to address the issues in all social strata. Despite being largely preventable, oral diseases, including dental caries, periodontal disease, and oral cancers, are very common chronic conditions affecting 3·5 billion people globally[3].

In contrast, Sri Lanka as a lower-middle-income developing country offers an extraordinary public health care delivery model in which oral health care provision is integrated into the existing main stream public health care services[4] This comprised of a hierarchy of levels of care ranging from tertiary care to primary health care institutions. One of the world oral health survey has stated that there is limited access for the oral health services to the people who are have the poor socio economic status.[5].There are two domains, preventive and curative oral health care services are available in Sri Lanka and curative care has two main categories, general and specialized services. National Dental Hospital (NDH) which delivers the comprehensive dental care to the general public in free of charge is a tertiary care hospital in Sri Lanka. It provide out patient care, maxillofacial surgery, orthodontics, restorative dentistry, and public health dentistry[6]. It is evidenced that after analyzing the records of three years, (2017-2020 years) maintained by the National Dental Hospital (NDH) in Sri Lanka and there was a poor attendance of the patients to NDH from some areas of Colombo Municipal Council (CMC). Those areas are under the administration of Colombo Divisional Secretariat area which has highest population density as well as economically under privileged people[7] The annual reports of the school dental therapist have stated that comparatively there are a higher number of dental cries among children in those areas.

Furthermore Ayo Yosuf and others have stated that area based socio economic indicators should be considered when planning the interventions to improve the quality of oral health and eliminate the disparities[8]. As well as Uttara Amilani and others have concluded that low income is an independent risk factor for poor oral health (low income). Pregnant women are more susceptible to wide range of oral health conditions due to pregnancy gingivitis. Consequently it may be harmful to their health as well as the future of the baby[9].

Diabetic patients are the vulnerable group for the periodontal disease which has adverse effect of on their metabolic control[10].In spite of that Sukumaran Anil and others have stated that prevalence of dental caries among socially disadvantage early childhood is 85%[11].Therefore aforementioned groups were the primary target groups for the application of this treatment model.

Therefore public health dentistry unit of the NDH has initiated a specialized oral health care model for the people who live in a densely populated, resource constrained areas in the CMC area. This comprised of conducting oral health programmes for priority, high risk groups such as pregnant mothers, diabetic patients and preschool children[12] from socially disadvantaged, culturally diverse backgrounds. Present model offers need based, self-sustainable practice models of oral health care of affordable technology dominated by oral health promotion and oral disease prevention. The Consultant, postgraduate registrars and House Officers are actively engaged in comprehensive service delivery as well as stakeholder capacity building and empowerment. It provides a stark contrast to increasingly problem based, treatment dominated and technology-based dental treatment culture dominated by curative bias. Present model harnesses the global health mandates of common risk factor approach, life-cycle approach and intergenerational investment for oral health and health gain.

General Objective

To describe the the effectiveness of consultant led community based oral health care delivery model conducted in Colombo Municipal Council area by the national dental hospital, Sri Lanka.

Specific objectives

1. To conduct the community based oral health clinics headed by consultant in selected areas which have poor socio economic status in CMC area.

2. To conduct the oral health promotion activities in different settings in selected areas in CMC area.

Methodology

Database of treatment provision of NDH was analyzed and it was found that there was a significant localized disparity of attendance to treatment of the people from certain areas of CMC area. Those areas were prioritized for the application of new community based mobile dental clinics. Medical Officer of Health (MOH), Public Health Inspector (PHI) and Public Health Midwife (PHM) of the CMC area were cooperated to the programme. In spite of that Grama Niladari and religious leaders gave their fullest cooperation to sensitized and gather the people for the clinic centers. Apart from that community based organizations are utilized to disseminate the message to the people and public announcement was done with propaganda vehicles. The clinics were conducted in following CMC wards,

Mattakkuliya, Mahawaththa, Modera, Kotahena(East), Kotahena,(West), Grandpass, Kochchikade, Keselwaththa, Suduwella and Wanathamulla.

People were given the referral cards and advised to attend the clinics in regular basis (if necessary) at the NDH. Health Education programmes on good oral hygiene practices and dietary habits were done at the schools and preschools of selected CMC wards. The findings of the screening programmes are summarized as follows.

Results

Table 1 Oral disease among high risk community groups in selected CMC area

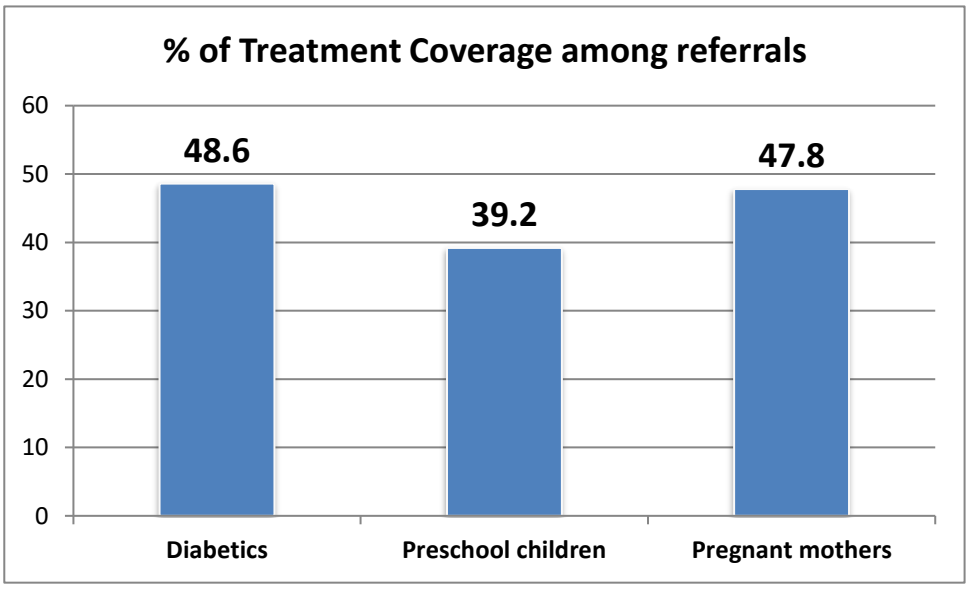
High risk group	Number of programmes, conducted	Percentage with oral diseases
Diabetic patients	30	47.8
Preschool children	08	66.7
Pregnant mothers	64	73.1

As shown in Table 1, in overall about 2/3rd of screened high risk groups were detected having oral diseases such as dental caries and periodontal disease. Moreover, the overwhelming majority (73.1%) of pregnant mothers had carious teeth and various issues with regard to their periodontal status. Among preschool children, 66.7% were detected having untreated early childhood dental caries which

is one of the most common chronic childhood disaese. Moreover, almost half of diabetic patients had periodontal disease and carious teeth.

The graphical presentation of the coverage of treatments in each risk group as follows,

Table-2 Treatment coverage among referrals



As illustrated in table-1, the treatment coverage for diabetic patients and pregnant mothers were 45.6% and 47.8% respectively. However, for preschool children the treatment coverage was lower than other two groups (39.2%).

Discussion

Despite advances in technology and knowledge on prevention and control of dental disaeses, dentistry is drifting away from tackling the common oral diseases: the global pandemic of public health importance by cost-effective, evidence based approaches[13][14].Moreover, the knowledge on disease prevention and control is not being translated to practice as required. Two main underlying determinates for such unsatisfactory situation could be lack of integration of oral health care into main stream health provision and predominantly dominating demand-based, curative care provision that does not include oral health promotion. Therefore, present description sheds light into this neglected public health need by introducing innovative approaches to tackle high oral disease burden among high risk groups such as diabetic patients, preschool children and pregnant mothers.

Attendance of the clinics of NDH has increased with people, particularly from the area where the new oral health model is implemented. It denotes that utilization of healthcare facilities by general public is increased and subsequently it is an indicator of the human development[15]. This initiation is a great facilitation of the people to easy access to oral health clinics and they adopt to go to the clinic for dental care in regular basis and this pave the way to create a good health seeking behaviour of the people. A previous study concluded that mobile dental service is a good service to isolate people due to numerous reasons and it remove the anxiety among certain people on dental health operations[16]. More over this service model address the language barriers, culturally inappropriateness and religious differences which are the limitations of accessibility of the institutionalized service.

In treatment-dominated, high-technology driven, interventionist approach in high income countries seemingly incapable of addressing the underlying causes of disease and unable to narrow down oral health inequalities[17]. Moreover, in many low-income and middle-income countries, the inherent limitations of westernized dentistry that is being practiced become unavailable, unaffordable, and inappropriate for the majority of their population especially for the poor and needy[18]. In contrast, the public oral health care delivery model of Sri Lanka and the present consultant led, community based oral health care delivery model are predominantly pro-poor and accessible. However, this model needs to be further improved and popularized.

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It is recommended that dental care systems should focus on greater health equity and maintaining and promoting oral health of people[14]. Accordingly, present oral health care delivery model involved in raising awareness of primary and secondary target groups for oral health.

Dietary counseling, oral hygiene advice, fluoride varnish and gel applications were integrated into routine treatment provision. Diabetes is a leading non-communicable diseases (NCDs) and there is accumulating research evidence on the adverse impact of untreated periodontitis on glycaemic control among diabetic patients[19].Further, common risk factors approach especially addressing sugar, alcohol, and tobacco consumption, and their underlying social and commercial determinants shared with a range of other NCDs. This approach was employed in oral health promotion among target groups and especially among diabetic patients. Therefore, present oral health care delivery model provided unique opportunities to promote their oral health status using common risk factor approach.

Access barriers to health care service are dominant in low income Asian countries[20]. This oral health service model addresses the access barriers of the people and they are convinced on the available service and familiarize with the dental care. Moreover another study stated that oral healthcare is an integral part of the metabolic control of diabetic patients because treatment of the periodontal disease help to control the metabolic syndrome[21].

Conclusions

Consultant-led, community based/outreach oral health care service catered to underserved high risk groups of diabetic patients, preschool children and pregnant mothers. The screening programmes detected 47.8%, 66.7% and 73.1% diabetic patients, preschool children and pregnant mothers respectively needing oral health care. However, treatment coverage was 48.6%, 39.2% and 47.8% for each high risk target group. Hence, treatment coverage by compliance to referrals needs improvements by suitable interventions and sustainable strategies.

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