

School Dental Preventive Program in National Guard Saudi Arabia

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Abstract

School dental preventive program SDPP is a recent development occurred in Ministry of National Guard Saudi Arabia to provide preventive and curative care to the school going age children. SDPP has started in 2007 and is providing education, preventive and curative treatment to more than 15000 children. The program also includes school surveys and education about healthy nutrition programs by rationalizing the consumption of sugar and the quality of food provided to children in schools and reducing sugars and sugar-sweetened beverages. The program also includes fluoride and pit and fissure sealants and restorations for decayed teeth along with teaching proper brushing technique. SDPP encourages the effective use of portable dental units for the delivery of preventive care to children in schools without the need for children to go to dental clinics. This report highlights the importance of preventive dentistry that should be encouraged and practiced worldwide.

Introduction

A good oral health is the state of mouth free of any disease affecting the oral cavity and its surrounding structures [1]. Oral health has remained as an integral part of an individual's general health and over all well-being [2-4]. Dental caries is the most prevalent chronic disease of all age [5]. Literature has linked more than 200 connections of oral disease with systematic diseases [5]. Thus it is important public health issue in both developed and developing countries. As the treatment of dental caries is expensive, it has become important to prevent the occurrence of this disease at primary level [6, 7].

In spite of the great triumphs in oral health, burden of oral health diseases remain high all over the world. This could be mainly because of the lack of acceptance of healthy oral habits that are crucial in controlling the most common oral diseases like, dental caries and periodontal disease which are mainly considered as behavioral disease [8]. Countries where the oral disease preventive programs have not been implemented, still remains in the shadow of high prevalence of dental caries [8].

In a study on dental caries prevalence among 12-14 year-old school children in Riyadh it was observed that of the total sample, only

6.3% were caries free indicating the caries prevalence to be 93.7% [9]. Study conducted in 2012 among 7-10 years old children of Abha reported 66.4 percent students had dental caries in first permanent molar (Rafi et al, 2012). In 2013 a cross-sectional study conducted among 6-8 years old students reported mean dmft index was 5.7 ± 4.2 [10]. A systematic review was conducted in 2012 reported that national prevalence of dental caries was 80 percent with mean dmft of 5.0, in primary dentition while in permanent dentition mean DMFT score was 3.5 [11]. In past a study was conducted in 2000 in Dental Clinic of the National Guard Hospital in Riyadh, Saudi Arabia. Total 272 students of age 5 -12 years old were selected. This study reported mean dmft = 3.8 ± 3.2 ; mean dmfs = 21.5 ± 15.7 ; mean DMFT = 2.0 ± 1.9 ; mean DMFS = 3.1 ± 3.7 [12].

Many program internationally are functioning with the aim of improving the oral health and they have achieved a good outcome with such measures, as the evidence of such programs are available for the countries like Europe, New Zealand, Australia, USA and Canada [13]. These programs include fissure sealant application, water fluoridation; hands-on demonstration of tooth brushing and many educational strategies and they all have supported the need of such programs for prevention of oral diseases [13-16]. Recently

in Saudi Arabia a community health interventional program was held to improve the oral health of children living in Tabuk, focused on the need of such programs at national in order to improve the oral health of Saudi children [17].

As the prevalence of dental caries are still high in Saudi Arabia and all above studies concluded that world health organization 2000 goals are still unmet in Saudi Arab and no functional preventive program is present in our region, the focus must be given on prevention of such preventable disease at primary level. In order to do so a program named School dental prevention program SDPP started in 2007. The aim was to improve the oral health of the National Guard school students. SDPP aims to provide preventive and curative care to more than 15000 school going children. SDPP evolved to provide preventive and curative treatment in order to reduce the health and economic burden.

Delivery of Care

The program begun on Tuesday June 5 2007 under the patronage of his Royal Highness Prince Mitib bin Abdullah, Minister of State, member of the Council of Ministers and Minister of the National Guard, guiding staff in giving the best preventive and remedial services to the children of Ministry of National Guard. SDPP aims to increase the awareness about dental health by educating children about healthy nutrition and merits and demerits of sugar intake. SDPP works as a team which includes a director which supervise the whole structure. Under the supervision of director there come unit head male and female, operational manager and reasearch assistant unit. Under the unit head six general dentists (3 males, 3 females), male and female hygienist and eight dental assistant (4 males and 4 females). Operational manager looks after all the senitary and hygiene related staff. Flow diagram is showing the hiarchy of SDPP structure (Fig 1).The program consist of four well prepared mobile clinics each one contain two well-equipped clinics with latest materials , in addition to Bader clinics in the housing of king Abdul-Aziz medical city that receive difficult cases for comprehensive dental care that cannot be treated in mobile clinics.

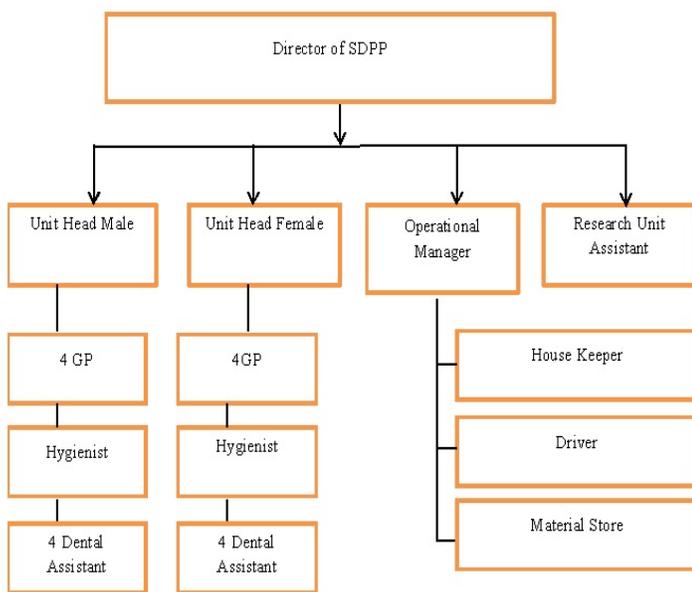


Figure 1: Proposed Structure

The team visits each school in morning and the minimum time to complete all the activities in one school takes 2-3 weeks at least. Each dentist looks pre-assigned five students and provides preventive care and simple fillings and if any extensive treatment like extraction, root canal or orthodontics is needed dentists referred them to Bader clinic arranged by SDPP unit head. Each dentist is encouraged to take 30 minutes for a particular student. Special referral system is there for medically compromised students, children with developmental, learning and behavioral problems. Also the referral system is allocated for children with congenital or acquired dental anomalies. Dental assistants are also assigned to disinfect and clean the unit before and after any procedure.

SDDP Services

Educational Services

SDPP provides following educational services; all students get oral health educational lessons, different forms of lectures are conducted to make the sessions interesting for students, it also provides free brochures related to oral health to all the students, also it provides proper burshing technique to all students and also supervises the burshing to ensure that student is doing it properly. Every year educational notes are revised to provide recent and authentic information to students. Nevertheless it appreciates the participation of teachers and parents along with students.

Preventive Services

The preventive services that SDPP provides include; preventive treatment is provided to all the students of age 6-7 years old after taking consent from both students and parent, dental sealent and flouride application as a preventive measure against caries is provided especially on premolars and molars to prevent pits and fissure caries. Nevertheless all treatment are provided after taking consent and all preventive procedures are done in school premises only.

Treatment-based Services

Treatment based services of SDPP include all dental treatments are provided except pulpotomy eand extraction and emergency treatment is provided to needed students only after taking proper consent from parents and students.

Social Activities and Achievments

SDPP has a crucial role in community level activities and team take part in different social event throughout the year. In the era of 2012 to 2014 many social activites have been conducted by SDPP that include participation Conference, social exhibition. Along with the conferences SDPP activities also included educational campaign. Also they are participating in Al janderia festivals for dental screening and educational programs. The huge achievements of SDPP include participation in social media, yearly book, brochures and a full functional website was lauched that provide easy access for members.

Outcome Measures (Intial Obseravations)

There are three treatment phases in SDPP

Phase I: Screening Phase

In the first phase screening for the first, second and third grade students of the primary national guard schools has been conducted. Initially 11 primary schools were covered and 1,927 students were screened.

Phase II : Preventive Phase

Second phase is about preventive measures. Initially 1108 students received pits and fissure sealants and fluoride application.

Phase III: Definitive Treatment

In phase three definitive treatment along with recall appointment was given to 1784 students. During the era of 2008 to 2015, 6786 students were got treated and 30494 students and pedo patients were seen and treated in B2 clinics between 2010-2015.

Mobile Dental Prevention Program

Statistics of year 2010 till 2015 were cummulatively seen to see the outcome of the mobile dental preventive program. The statistics show total 2322 students got fissure sealant in the era of 2010 to 2015 followed by 1800 students got class I kitac filling, 1332 got class II kitac filling and 1035 students got class I composite filling. During these years only 29 studnets got class II composite and 147 students got class I amalgam filling. Three hundren and twenty four students got class III filling and 282 got class V filling. Preventive reson resttoration was applied in 473 students while fluoride application was done on 546 students. Comparing pulpptomies and extractions 575 students got extraction during 2010 to 2015 and 982 stundets underwent pulpptomies. Total 3981 students were referred and 2739 cases were finished completely. (Figure 2)

SDPP Statistics: 2010-2015

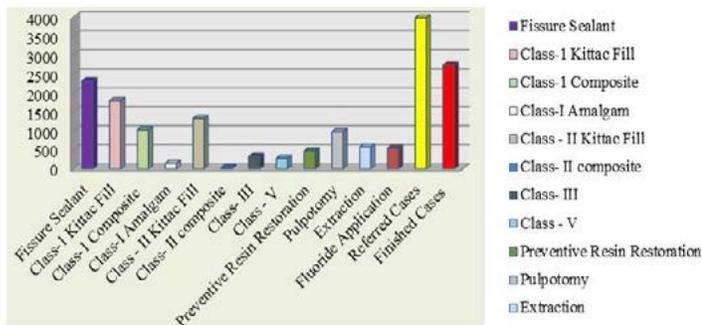


Figure 2: Statistics for mobile dental preventive program from 2010-2015.

Recommendations

Ongoing surverys should be conducted in order to estimate the level of preventive and disease level so that further techniques can be practiced and the evaluation of program can be conducted.

Conclusion

SDPP has emerged in the recent past and yet it has achieved some great goals and the recent achievements of 2012-2015 are very encouraging. As the prevalence of dental caries are still high in Saudi Arabia and world health organization 2000 goals are still unmet in Saudi Arab and functional preventive program like SDPP emerged with the aim of prevention at primary level and the activities are encouraging and is providing effective mean of education, prevention along with treatment [18].

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