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# Perspectives of School Nurses on Implementation of Asnani School Oral Health Program

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### ABSTRACT

Oral health of children has consistently been a key area of focus in public health. School oral health programs are effective and economical approaches to improve oral health of children. This research explores the School Nurses' (SN) perspectives on Asnani School Oral Health Program (ASOHP).

**Objectives:** (1) To access School Nurses' attitudes towards Asnani School Oral Health Program and manageability of workload assigned in ASOHP (2) To determine School Nurses' perspectives on ASOHP implementation and gain insights of service evaluation from their viewpoint. (3) To identify SN perceived barriers and elicit their recommendations to improve ASOHP operations.

**Materials and Methods:** An electronic survey was conducted for School Nurses of public primary schools in Qatar that had participated in ASOHP from November 2018 to March 2022 (n=153).

**Results:** 62 School Nurses completed the questionnaire. Response rate was 67.3%. 49 (79%) had reported that ASOHP was beneficial for the students, 60 SNs (97%) were satisfied with ASOHP. Nearly 9 out of 10 SNs reported that Asnani team was fulfilling their duties efficiently (87%). Perceived barrier reported by a few SNs was that the administrative duties in ASOHP were time consuming and they recommended delegating a specific school staff member for supporting ASOHP duties.

**Conclusion:** SNs attitude, perspectives and perceived barriers provide valuable insights that determine their satisfaction with ASOHP. It also reinforces the need of better SN collaboration for the success of ASOHP.

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### Introduction

School is often called a child's second home. Children spend most part of their day at school and acquire the knowledge and skills that foster their complete development to lead a productive life. To ensure health and wellbeing of students, most schools implement school health programs that include nursing, medical, mental, and other health services to facilitate positive health outcomes for students. The main advantage of such programs is that they secure to benefit the entire population of students at school. School nurses collaborate with health professionals and play a vital role in maintaining health of school students by engaging in various health programs [1]. School nurses are also the primary care givers in cases of any medical emergency, they identify early diseases outbreaks and make appropriate timely referrals from schools.

Oral health of children has always been a global priority due to the high prevalence of oral diseases, especially dental caries among this section of the population. In the Eastern Mediterranean region meta-analysis of data from 9 countries has reported high prevalence of caries i.e., 65% (45–85%) among children aged 5 years, 61% (50–72%) among 12 years old and 70% (64–75%) among 15 years old. The pooled prevalence was reported to be 66% (59–73%) for children aged 6–15 years [2]. It has been asserted that the reason for high caries prevalence is negative attitude of parents towards oral health, consumption of refined food and poor oral hygiene practices among children.

National Oral Health Survey in Qatar reported dental caries prevalence of 71.4% among 6-year-old children [3]. Higher prevalence (85%) has also been reported among school children

12-14 years old [4]. Dietary factors, poor lifestyle, low oral health knowledge and inconsistent oral hygiene practices have been reported to be primary contributing factors for poor oral health of school children in Qatar [5, 6].

Schools are ideal settings for delivery of oral health promotion and prevention services, as children are in the most influential stages of their life at school age and it is more likely that the oral hygiene practices, positive oral health attitudes and behaviors developed at school age will be retained for lifelong [7].

In November 2018, Asnani School Oral Health Program (ASOHP) was employed by Primary Health Care Corporation (PHCC) Qatar, as a comprehensive oral health promotion strategy to address the poor oral health and high prevalence of dental caries among children in Qatar [8]. Under this program school based oral screening and preventive dental treatment was delivered utilizing Mobile Dental Units at school premises to primary public school's students. The program was delivered by a team comprising of 7 Dentists, 4 Dental Hygienists and 12 Dental Assistants. 153 public schools had participated in the program until the time of this survey. Each of these schools had one full time school nurse who collaborated with the dental team for ASOHP.

Periodic evaluations of ASOHP is conducted to monitor the quality & performance of services and to identify areas for improvement. The evaluation framework includes Annual Key Performance Indicator (KPI) Report, numerous surveys e.g., satisfaction of Asnani team, parents of students in ASHP) to access the acceptability and impact of the program [9-11]. School nurses are important stakeholders who offer administrative and logistic support to the Asnani team for efficient implementation of ASOHP at school premises.

The main objectives of this research were to access school nurses' attitudes towards ASOHP and manageability of workload assigned in ASOHP, as well as to determine school nurses' perspective on ASOHP implementation, and gain insights of service evaluation from their viewpoint. Secondary objective was to identify SN perceived barriers and elicit their recommendations to improve ASOHP operations.

## Materials and Methods

### Study design and Participants

A cross-sectional study was conducted to determine the SNs attitudes and perspectives to better understand the implementation ASOH program. List of 153 primary schools where ASOHP had been implemented during time frame: November 2018 to March 2020 was prepared and email addresses of their SNs was retrieved. The electronic survey was disseminated to all the 153 school nurses and no sampling was undertaken.

### Data Collection

The data collection instrument used was an online, anonymized questionnaire developed by the researchers for the purpose of the study. The questionnaire sought the demographic information about the school nurses and was structured to include three questions on their attitudes towards the ASOHP and seven questions on SN workload manageability. In addition, service evaluation section

comprised of ten questions addressing various aspects of program implementation. Another section sought their free- text response to two open ended questions on their perceived barriers and recommendations to improve ASOHP operations. After face and content validity assessment by experts in Dentistry and School Health Departments of PHCC, the test-retest reliability coefficient of the electronically administered questionnaire was pilot tested on 10 school nurses and found to be 0.82. Time taken to complete the survey was 10-12 minutes.

Survey invitation, electronic informed consent and link to survey were disseminated to eligible school nurses through their email in May 2020. Their personal identifiable information was not determined and IP addresses were not stored to protect their identity. Participation was voluntary and SNs were assured confidentiality of their responses. The study adhered to the World Medical Association Declaration of Helsinki (version 2008). A second reminder email was sent after 2 weeks and the survey was made available for response for one month duration.

Data obtained from the online survey was imported into Statistical Package for Social Sciences (SPSS) version 25, and analysis was done to address the formulated research objectives. Results are presented as frequency and percentages. The responses to the two qualitative questions were collected and reviewed for content focusing on perceived barriers and recommendations to improve the program.

## Results

The electronic survey was disseminated to 153 school nurses. 50 school nurses declined to participate. Response rate was 67.3%. Of the 103 SN survey forms returned 41 had to be eliminated due to incomplete responses. 62 survey forms that had responses to all sections of the questionnaire were included in the final analysis.

Majority of the SNs (86%) were females. Analysis of SN educational credentials indicates that 17 (27%) had Diploma, 41 (66%) had bachelor's degree and 4 (7%) had master's degree in nursing as shown in Table 1.

**Table 1: Gender and educational qualification of School Nurses**

Descriptive data		Number	Percentage
Sex	Male	9	14
	Female	53	86
Education level	Diploma degree	17	27
	Bachelor's degree	41	66
	Master's degree	4	7

Attitude of SNs towards ASOHP is presented in Table 2. When enquired if they consider ASOHP beneficial for the students, great majority of SN i.e., 49 (79%) had positive attitude, 13 (21%) had ambivalent attitude and impressively none had negative attitude (0%). Almost all SN (97%) were satisfied with ASOHP, only 2 (3%) reported being not satisfied. More than half of the respondents (57%) reported unfavorable attitude that the workload assigned in ASOHP was an additional burden. 27 (43%) of SN reported favorable attitude that it was not an additional burden.

**Table 2: School Nurse attitude towards ASOHP**

SN attitude		Number	Percentage
Do you consider ASOHP beneficial for the students	Yes (positive attitude)	49	79
	No (negative attitude)	-	-
	May be (ambivalent attitude )	13	21
Are you satisfied with ASOHP	Yes (positive attitude)	60	97
	No (negative attitude)	2	3
Do you feel ASOHP assigned duties as an additional burden on you	Yes (unfavorable attitude)	35	57
	No ((favorable attitude)	27	43

**Table 3 demonstrates the responses to SNs' manageability of assigned workload in ASOHP**

Greater portion of participants n= 29 (47%) worked in big schools with >600 student intake. 29% worked in schools with student intake 200-600 and 24% worked in small schools with student intake <200. Very few (10%) reported that they had assistance from other staff in their school to support their work. 13% also reported that they were assigned to work concomitantly in other school also.

**Table 3: School Nurse workload manageability**

		Number	Percentage
Number of students in school	≤200	15	24
	> 200 ≤ 600	18	29
	>600	29	47
Do you have other staff to support your workload	Yes	6	10
	No	56	90
Are you assigned to work in any other school concomitantly with your current school	Yes	8	13
	No	54	87
Do you face challenges in disseminating and collecting Parent consent forms	Yes	25	40
	No	13	21
	Sometimes	24	39
Do you face difficulties in assisting in setting up examination site for ASOHP in school	Yes	9	15
	No	36	57
	Sometimes	17	28
Do you face difficulties in arranging lecture halls/ classrooms for oral health education	Yes	12	19
	No	36	58
	Sometimes	14	23
Do teachers cooperate in releasing students for ASOHP	Yes	33	53
	No	8	13
	Sometimes	21	34

**Table 4 : School Nurse reported perceptions about implementation of ASOHP**

Service Evaluation		Number	Percentage
Do Asnani program coordinators have good communication with you before school visit	Yes	39	63
	No	23	37
Do Asnani team arrive on time for the program on scheduled date	Yes	56	90
	No	1	2
	Don't know	5	8
Do Asnani team carry all required equipment and materials for SOHP	Yes	62	100
	No	-	-
	Don't know	-	-
Do Asnani team deliver lecture on Oral Health before stating the screening	Yes	54	87
	No	2	3
	Sometimes	3	5
	Don't know	3	5
Do Asnani team teach proper toothbrushing technique to all students	Yes	58	94
	No	1	2
	Sometimes	3	4
Do Asnani team answer questions and clarify students' queries about oral health	Yes	54	87
	No	2	3
	Sometimes	6	10
Do you feel Asnani team is fulfilling their duties efficiently	Yes	54	87
	No	-	-
	Don't know	8	13

Do Asnani team leave the school premises before completing the days assigned student list	Yes	3	5
	No	52	84
	Don't Know	7	11
Do Asnani team hurry to examine more number students than assigned for their schedule	Yes	41	66
	No	-	
	Sometimes	15	24
	Don't know	6	10
Do Asnani team apply preventive fluoride varnish to all students	Yes	36	58
	No	6	10
	Don't know	20	32

25 SN (40%) reported facing challenges in disseminating and collecting parent consent forms. More than half i.e., 57% of the surveyed nurses did not encounter any challenges/ difficulties in setting up examination site for ASOHP in school. Similar response of 58% was reported for not encountering any challenges/ difficulties in arranging lecture halls/ classrooms for oral health education, although around 25% of the SNs faced difficulties in managing these duties sometimes. 33 SNs (53%) responded in affirmation when enquired about teacher's cooperation in releasing students from classes for ASOHP.

With regard to SN perspective on ASOHP implementation and service evaluation, 63% reported good communication with program management. Impressively 90% reported that Asnani team arrive on time and 100% unanimously reported that they carry all necessary equipment and materials. Very high number of SNs reported that Asnani team deliver lecture before screening (87%), teach proper brushing technique to students (94%), answer/ clarify students questions concerning oral health. Nearly 9 out of 10 SNs reported that Asnani team was fulfilling their duties efficiently (87%).

84% reported that Asnani team does not leave the school premises before completing the days assigned student list. In fact, 66% even reported that they hurry to examine more number students than assigned for their schedule. More than half of SNs were aware of fluoride varnish application done on student's teeth, while one third were not aware about the preventive treatment.

Qualitative analysis of responses to two open ended questions on their perceived barriers and recommendations to improve ASOHP operations was conducted. Most commonly identified barriers were that the administrative duties in ASOHP are time consuming and this delays care of students with other health issues like chronic diseases in school clinic. Another perceived barrier expressed was lack of prior orientation and support from school's administration towards oral health program. Very few also perceived disruption of lessons and other school activities as a barrier. Recommendation to improve the program include availing more support from school administration, delegating a specific school staff member to be in charge of preparing the student list and coordination movement of students for the oral program. Few SNs recommended Asnani workforce optimization, with more team members visiting the school to complete the program in shorter duration. Some SNs suggested conducting Oral Health Education session for parents of students to increase their oral awareness.

## Discussion

School nurses play a vital role in implementation of various health programs. This research was undertaken to better understand the attitudes and perceptions of SNs towards ASOHP and to obtain insights of the service evaluation from their viewpoint. Our results show that SNs have positive attitude towards the ASOHP, as they

consider it beneficial for the students and are satisfied with the program. Their reported perceptions regarding program evaluation reflect efficient service delivery which is ascertained by good communication with Asnani coordinators and excellent work ethics of Asnani team in fulfilling their responsibilities at school.

Despite more than half of SNs reporting application of preventive fluoride varnish to all students by Asnani team, some were unaware about this treatment and very few reported that fluoride varnish was not applied to all the students. This might have been due to their lack of knowledge about the preventive treatment, or their engagement in other duties, and on one very rare occasion due to shortage of fluoride varnish supplies.

Primary prevention of oral diseases was the basis of ASOHP. This school program had the potential to overcome many of the logistical barriers to accessing primary preventive oral health services which the students would otherwise receive only through visiting health centers or private dental clinics.

School nurses are essential members of the school team and are integral in managing and maintaining students' health [12]. Studies have reported the role of school nurses in oral health promotion of students [13-15]. SNs in some countries contribute significantly by delivering focused oral health education on topics like oral hygiene, proper nutrition and prevention of oral diseases. Some countries have dedicated allied health care providers called "school dental nurses" to provide preventive dental treatment.[16,17]

It is noteworthy that ASOHP adopted by PHCC Qatar is unlike the above-mentioned programs, as it leverages on collaboration with SNs to provide logistic and administrative support, while the trained Asnani team of Dentists and Dental Hygienists supported by Dental Assistants deliver oral health education and preventive treatment. As the Asnani team is professionally trained, they are more efficient in laying the foundation for good oral hygiene practices and sustain oral health attitudes and behaviors changes among young students, as compared to school nurses in Qatar who lack such training.

Al-Dahnaim et al. studied the perception of school nurses and principals toward the role of school nurses in providing school health services in Qatar [18]. Results from responses of more than 300 participants of this study reflect that the most commonly perceived roles of the school nurse by both nurses and principals were 'following up of chronically ill students', 'providing first aid', and 'referral of students with health problems'. This study was conducted before implementation of Asnani School Oral Health Program. Hence there were no questions regarding their role in the oral health program. Furthermore, since the school nurse plays a crucial role in the provision of comprehensive health services to students, they play a fundamental role in supporting the dental team in Oral Health Promotion at the present time through ASOHP.

Asnani School Oral Health program engages a broad array of stakeholders from central level at Ministry of Education to local levels at schools, collaborating with Primary Health Care Corporation from the health sector. Success of the program is dependent on effective horizontal and vertical coordination between the stakeholders during different phases of the program to ensure alignment with the program's mission of improving oral health of children in Qatar. In this study, PHCC, representing the health sector was more actively involved in the program, while at the local schools level, some inadequacy of support with regard to managing SNs workload were identified. These findings indicate that the school administration should orient the SNs about the program activities and focus on capacity building to train additional staff members to support the SNs. Schools should build their human resources to support all activities of Health promotion in their premises [19,20].

One of the limitations of this research was that not all SNs participated in the survey. However, the overall survey response rate was adequate. The results of this research can be used to plan how best to fill gaps in SNs orientation about the oral health program through school administration and to reinforce the importance of their collaboration for the success of the program.

### Conclusion

SNs attitude, perspectives and perceived barriers provide valuable insights that determine their satisfaction with ASOHP. This is an important area of research as it impacts in long term sustainability of the program.

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### Conflict of Interest

All the authors have declared COI.

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