

# Assessment of Parental Knowledge and Awareness about the Space Maintainer in KSA

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**Abstract:** This study was aimed to evaluate the awareness and attitude of parental toward space maintainer used by their children, we also attempted to compare the awareness difference between females and male's parents. A cross-sectional survey with a structured questionnaire was designed according to dental association. The study was conducted during the month of (July, 2017 to October 2017) after taking prior informed consent from the 518 parents. Inclusion criteria were parents getting their children treated for dental malocclusion and who were willing to participate. The space maintainer's treatment for the primary teeth can be a controversial choice of treatment for some dental practitioners that do not advise use space maintainers as well as consider them a waste of time as well as unhealthy to the continuing to be dentition sometimes. The majority of dental practitioners believe that the usage of space maintainers could protect against the development or worsening of malocclusion. Females had significantly better general knowledge ratings than Males. On top of that, participants with less education and learning level had dramatically better overall expertise scores than higher informed mothers and fathers.

**Keywords:** Space maintainers (S.M), cross-sectional survey.

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## 1. INTRODUCTION

Parents are the one who care for their kids hence they should have understanding regarding the primary teeth, their health as well as caring in order to build confidence in their youngsters through Tiny teeth. Early loss of baby teeth could compromise the eruption of succedaneous teeth if there is reduction in the arch length. Timely treatment might save space for the eruption of the long-term teeth. The secret to space upkeep in the primary teeth is to recognize which problems to deal with [1].

Space maintainers (S.M) are primarily used to maintain the mesiodistal relationship in a given arch when it is indicated [2]. A space maintainer is made use of when there is early loss of the primary molar as this could avoid or decrease the extent of a developing malocclusion. Different sort of devices can be made use of for space maintenance relying on the child's phase of dental advancement, dental arc, included missing out on teeth, occlusion, patient's age, ability to work together as well as to tolerate a detachable device [3].

Early detection and also appropriate referral of situations calling for preventative as well as interceptive orthodontic treatments are important. It will certainly lower the extent or get rid of a developing malocclusion, complexity of treatment, and general therapy time and also price. It will certainly likewise improve the self-confidence of the subject as well as parental complete satisfaction [3,4]. Amongst the preventive measures is "Space upkeep" making use of certain home appliances called "Space maintainers." Space maintainers are dealt with or detachable appliances made use of to maintain arch size complying with the premature loss or elective extraction of primary tooth [5]. Space upkeep is an important procedure in the establishing dentition. The loss of arch size could bring about numerous troubles such as crowding, ectopic eruption, dental impaction, cross bite formation, and dental centerline inconsistencies. Thus, making use of space maintainers typically impacts the future dental requirements of a complex orthodontic treatment as it might possibly obviate the need for later removals [4].

The pediatric dentist plays an equally important function in the follow-up as well as recognition of oral health and wellness for the young patients and their parents. Correct patient education, normal examinations, and subsequent as well as boosting public awareness about the maintenance as well as care of the combined as well as primary dentition, specifically with instances of repaired appliances in addition to space maintainers are significant obligations of the pediatric dentist [6,7].

This study was aimed to evaluate the awareness and attitude of parental toward space maintainer used by their children, we also attempted to compare the awareness difference between females and male’s parents.

## 2. METHODS

A cross-sectional survey with a structured questionnaire was designed according to dental association. The study was conducted during the month of (July, 2017 to October 2017) after taking prior informed consent from the 518 parents. Inclusion criteria were parents getting their children treated for dental malocclusion and who were willing to participate. The self-administered, close-ended questionnaire was written in English. It was then translated in Arabic language, an attempt to include different regions of Saudi Arabia.

The questionnaire was designed to have all fields with “required responses,” so that the respondent cannot move to the next question without answering the previous one.

The questionnaire consisted of 20 multiple-choice questions assessing four main categories; (a) (1-8 questions) were about Demographic data, (b) Oral hygiene and its measures, (c) Awareness about Para functional habits and its effects, (d) Early tooth loss of population children, and (e) Awareness toward the uses and maintenance of space maintainers & availability of Space Maintainer. The demographic data included age, gender, marital status, nationality, educational level.

SPSS was used to analysis the data collected throughout our survey.

## 3. RESULTS

The response rate was 100% as all 518 parents completed the questionnaire. Of 518 parents, (N = 215) were Females and (N = 303) were Males. Nearly 42.3% of the participants were from 31 to 40 age groups. About 60% participants had bachelor degree education while 7% maximum people had primary education. Only 23% people had high school level education. 91%% of the participants were Saudis, other 9% participants were non Saudis [Table 1].

**Table 1: Sociodemographic characteristics of the study population**

S.No	Variable	Responses	Frequency (%)
1.	Sample Size (n)		518
<b>Demographic &amp; Biographic Data</b>			
2.	Age (In Class Intervals)	20 - 30 Years	208 (40.2)
		31 –40 Years	219 (42.3)
		≥41 Years	91 (17.6)
3.	Gender	Male	303 (58.5)
		Female	215 (95)
4.	Social Status	Married	492 (50)
		Divorced	26 (5)
5.	Nationality	Saudi	472 (91.1)
		Non Saudi	46 (8.9)
6.	Educational Level	Primary School	37 (7.1)
		Elementary School	52 (10)
		High School	119 (23)
		Bachelor Degree	310 (59.8)
7.	Income Group	Less than 3000	74 (14.3)
		3000 - 9000	242 (46.7)
		9000 - 15000	124 (23.9)
		> 15000	78 (15.1)
8.	Number of Children	1	161 (31.1)
		2 -4	223 (43.1)
		>4	134 (25.9)

Participants showed less awareness about importance of frequent tooth brushing, 40.5% stated that not even one time they advise their children to brush their primary teeth. Females parents showed better awareness than males in matter of tooth brushing, since 47.4% of females they showed that at least once daily, in compare to males only 33.3% stated once daily, though males are count more in our study population [Table 2].

**Table 2: Awareness of parents of oral hygiene among their children**

Gender		Time Brushing			Total
		no one	one	twice	
Male	Count	159	101	43	303
	% within Gender	52.5%	33.3%	14.2%	100.0%
Female	Count	51	102	62	215
	% within Gender	23.7%	47.4%	28.8%	100.0%
Total	Count	210	203	105	518
	% within Gender	40.5%	39.2%	20.3%	100.0%

When parents were asked about what if their children lost his teeth because of caries or trauma or other? more males participants (53.1%) stated that their children have lost their teeth in trauma accident or with caries incidence. While more females (60%) stated no about their children teeth that it's not been lost with caries or traumatic events [Table 3].

**Table 3: Awareness of parents toward tooth loss among their children**

Gender		loss Tooth		Total
		yes	no	
Male	Count	161	142	303
	% within Gender	53.1%	46.9%	100.0%
Female	Count	86	129	215
	% within Gender	40.0%	60.0%	100.0%
Total	Count	247	271	518
	% within Gender	47.7%	52.3%	100.0%

In the matter of using dental floss females showed more awareness than males parents, but still results showed less awareness among parental toward the use of dental floss since (91.4% males) stated that their children don't use it. In other hand (82.3% females) with the same responds as males [Table 4].

**Table 4: Parental awareness of using dental floss**

Gender		D.floss		Total
		yes	no	
Male	Count	26	277	303
	% within Gender	8.6%	91.4%	100.0%
Female	Count	38	177	215
	% within Gender	17.7%	82.3%	100.0%
Total	Count	64	454	518
	% within Gender	12.4%	87.6%	100.0%

Parental responds toward whether they think the thumb sucking and use the pacifier for long time will affects the normal eruption of the teeth, Females parents showed more significant shih knowledge than males toward this manner, since (77.7%) of females' participants stated that they think that the thumb sucking among their children will affect the normal eruption of their primary teeth, and only (47.5%) of male's parents showed their agreement in this matter [Table 5].

**Table 5: Awareness toward effect of thumb sucking in primary teeth**

Gender		T.sucking		Total
		yes	no	
Male	Count	144	159	303
	% within Gender	47.5%	52.5%	100.0%
Female	Count	167	48	215
	% within Gender	77.7%	22.3%	100.0%
Total	Count	311	207	518
	% within Gender	60.0%	40.0%	100.0%

In part of examining the awareness of parents, toward harms lose children primary teeth earlier than the time, it will harm the permanent teeth their children’s teeth later. Both gender showed higher awareness here than other parts, since 52.8% of male’s parents stated they are aware of the harms, and as every part the females also were significantly higher than males in their awareness about the harms of losing primary teeth earlier than it should [Table 6].

**Table 6: Awareness of harms of losing the primary teeth**

Gender		Harms		Total
		yes	no	
Male	Count	160	143	303
	% within Gender	52.8%	47.2%	100.0%
Female	Count	136	79	215
	% within Gender	63.3%	36.7%	100.0%
Total	Count	296	222	518
	% within Gender	57.1%	42.9%	100.0%

When concerned about importance of SM female’s parents showed higher awareness than males since 64.2% stated they are aware of importance of SM, while only 45.5% of male parents showed that they are aware and 54.5% are unaware of SM importance [Table 7].

**Table 7: Awareness of parents toward the importance of SM**

Gender		S. maintainer important		Total
		yes	no	
Male	Count	138	165	303
	% within Gender	45.5%	54.5%	100.0%
Female	Count	138	77	215
	% within Gender	64.2%	35.8%	100.0%
Total	Count	276	242	518
	% within Gender	53.3%	46.7%	100.0%

**Table 8: Parents awareness toward actions taken in case SM get broken**

Gender		SM.broken		Total
		visit the dentist	leave it	
male	Count	189	114	303
	% within Gender	62.4%	37.6%	100.0%
female	Count	203	12	215
	% within Gender	94.4%	5.6%	100.0%
Total	Count	392	126	518
	% within Gender	75.7%	24.3%	100.0%

Females (94.4%) showed very significant higher attitude than males parents (62.4%) toward their knowledge of what should be done in case the SM of their children get broken [Table 8].

When comparing the age differences of parents toward awareness SM maintenance young parents aged between 20-30 years were more aware of SM maintenance than other age groups, which showed significant impact of age on parent’s knowledge toward the harms and benefits of SM for their children [Table 9].

**Table 9: Age impact on parental knowledge toward SM**

Age		p. knowlege. s.maintainer		Total
		yes	no	
20-30	Count	61	147	208
	% within Age	29.3%	70.7%	100.0%
31-45	Count	47	172	219
	% within Age	21.5%	78.5%	100.0%
46 and more	Count	11	80	91
	% within Age	12.1%	87.9%	100.0%
Total	Count	119	399	518
	% within Age	23.0%	77.0%	100.0%

In concerned with food types which are prohibited in case of using SM Age group above 46 years and age group between 20-30 years showed more significant awareness than other age groups [Table 11].

**Table 11: Age of parents and their knowledge toward prohibited food during SM usage**

Age		Prohibited. Food				Total
		gum	popcorn	candies	all	
20-30	Count	50	23	49	86	208
	% within Age	24.0%	11.1%	23.6%	41.3%	100.0%
31-45	Count	24	28	62	105	219
	% within Age	11.0%	12.8%	28.3%	47.9%	100.0%
46 and more	Count	22	8	14	47	91
	% within Age	24.2%	8.8%	15.4%	51.6%	100.0%
Total	Count	96	59	125	238	518
	% within Age	18.5%	11.4%	24.1%	45.9%	100.0%

When we examine the effect of Education level of parents toward the frequent dental visits and how often do they bring their children to dentists we found that those parents with primary education were significantly higher than other groups in their awareness of benefits of dental visits [Table 12].

**Table 12: Education level and Awareness’ of dental visits among study population.**

EDU		D.visit		Total
		yes	no	
p. school	Count	14	23	37
	% within EDU	37.8%	62.2%	100.0%
E. school	Count	10	42	52
	% within EDU	19.2%	80.8%	100.0%
H. school	Count	21	98	119
	% within EDU	17.6%	82.4%	100.0%
BA	Count	105	205	310
	% within EDU	33.9%	66.1%	100.0%
Total	Count	150	368	518
	% within EDU	29.0%	71.0%	100.0%

[Table 13] showed the education level of parents and their awareness of using dental floss for their children. Also primary level educated parents were more awareness than any other group, which showed 27%.

**Table 13: Parental education level and use of dental floss**

EDU		D.floss		Total
		yes	no	
p. school	Count	10	27	37
	% within EDU	27.0%	73.0%	100.0%
E. school	Count	5	47	52
	% within EDU	9.6%	90.4%	100.0%
H. school	Count	7	112	119
	% within EDU	5.9%	94.1%	100.0%
BA	Count	42	268	310
	% within EDU	13.5%	86.5%	100.0%
Total	Count	64	454	518
	% within EDU	12.4%	87.6%	100.0%

#### 4. DISCUSSION

The study revealed that the participants have an ample understanding especially male's parents. Surprisingly, nonetheless, just few of the existing research examples understood exactly how regularly kids need to be taken to the dentist and the relevance of routine dental visits. The existing searching's for sustain numerous research studies conducted in Saudi Arabia examining parents' awareness toward children dental care from two viewpoints

Restricted research studies have been reported in the literature assessing moms and dads' recognition towards the management of early loss of baby teeth and also making use of space maintainers and with limited depth [8,9]. Accordingly, there were no readily available data to compare with for this problem. The existing searching's for showed reduced degree of experience with space maintainers in addition to unsatisfactory levels of understanding to the management of lost baby teeth, making uses of space maintainers, along with the care and maintenance of space maintainers. Borrie et al. [8] by a random sample of 400 basic dental practitioners in Scotland significantly located that the greatest obstacle in supplying interceptive orthodontic care was the specialists' absence of positive self-image in their selected treatment strategy [8]. Interceptive therapy seems to be a challenging problem for both general dental practitioners in addition to moms and dads. Talekar et al. [9] discovered that only fifty percent of their analyzed population, who reported having youngsters lost their baby teeth as a result of caries, abscess or injury, was treated with space maintainers; without further data to discuss the management considered such cases. They stressed in their research that adult understanding and understanding had a significant impact on children oral wellness as well as therapy received [9].

In similar studies among Saudi populations the high level of awareness and parents look after their children in Saudi Arabia was verified by Alshehri as well as Nasim et al. in 2015 [10] they also revealed that moms and dads choose excellent quality dental solutions. However, inning accordance with the record by the Ministry of Health, Kingdom of Saudi Arabia; the portion of youngsters aging 6 and also twelve, dealing with dental caries in the Kingdom reached 96% as well as 93.7%, specifically [11]. Several research studies revealed that the prevalence and seriousness of cavities in youngsters in the kingdom is relatively high [12,13]. As that of young grown-up. This highlights the 2nd point of view where parents' care and perception still did not appear to be effectively mirrored in their attitude and management of their children dental care. The lack of recognition toward the unhealthy result of unmanaged early lost baby teeth on the dentition and, thus, the importance of normal dental visits could be an aspect [12,13].

#### 5. CONCLUSION

The space maintainer's treatment for the primary teeth can be a controversial choice of treatment for some dental practitioners that do not advise use space maintainers as well as consider them a waste of time as well as unhealthy to the continuing to be dentition sometimes. The majority of dental practitioners believe that the usage of space maintainers

could protect against the development or worsening of malocclusion. Females had significantly better general knowledge ratings than Males. On top of that, participants with less education and learning level had dramatically better overall expertise scores than higher informed mothers and fathers.

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