RESEARCH ARTICLE

AWARENESS AND ATTITUDE TOWARD PULP THERAPY OF THE PRIMARY TEETH AMONG PARENTS IN QASSIM PROVINCE, KINGDOM OF SAUDI ARABIA.

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Abstract

Background:- Early loss of primary teeth can cause number of problems, such as ectopic eruption, drifting of erupted teeth, space loss for the successor teeth, development of aberrant habits such as tongue thrusting, alterations in speech, and impairment of function. Thus it is important that primary teeth should be maintained in the dental arch, provided that it can be restored to function and remain free from disease. This could be achieved mainly by restoration and pulp treatment.

Aim:- To determine the level of awareness and attitude of parentstoward pulp treatment of the primary teeth in Qassim Area and compare it according to gender and level of education.

Materials and Methods:- A descriptive cross-sectional survey was conducted in Qassim province among 505 sample of parents who have 12 years old children or younger. Data collection started on December 2015 using self-administered questionnaire.

Results:- Out of the 505 of study sample, (47.7%) 241 were aware about the pulp treatment of primary teeth, the highest percentage were female (30.5 %) 154. Seventy seven of the study samples disagree to do pulp treatment for a badly carious primary tooth. Looking for the reason, [primary teeth don’t need pulp treatment], (71.4%) was the highest one, statistically significant difference was reported.

Conclusion:- The majority of parents showed that the pain is the reason for visiting a dentist; they didn’t go regularly for chick-up. Furthermore, the parents who didn’t accept pulp treatment to a badly carious tooth believed that primary teeth don’t need pulp treatment.

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Introduction:-
Primary and permanent teeth are equally important. Once the primary teeth start to erupt, dental plaque, the major cause of dental caries begins to adhere to the teeth and regular dental care for the child becomes essential.1 Parents are responsible for the oral care of children. Many of them feel or believe that since primary teeth will any way shed, it is not worth to spend time and money on providing a high oral health care to children.2 It is the parents’ responsibility to take care of their children’s teeth according to the dentist’s advice. This is because the child at that age lacks the awareness of the importance of the teeth, the knowledge in dental health care, and the ability to maintain the required oral health.3

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Early loss of primary teeth can cause number of problems, such as - ectopic eruption, disturbance of eruption sequence, drifting of erupted teeth, space loss for the successor permanent teeth, development of aberrant habits such as tongue thrusting, alterations in speech, and impairment of function. Thus it is important that primary teeth should be maintained in the dental arch, provided it can be restored to function and remain free from the disease. An intact tooth successfully disinfected and restored clinically is a superior space maintainer than an appliance. The teeth with infected root canals, particularly those in which infection has reached the periradicular tissues constitute a common problem in primary dentition. Pulp therapy plays an important role in removing bacteria, their by-products and substrates, by disrupting and destroying the microbial ecosystem through chemical and mechanical methods. To accomplish this, many treatment procedures have been proposed such as indirect pulp capping, partial pulpotomy, pulpotomy, and pulpectomy. Endodontic treatment may be indicated far earlier in the primary than in permanent teeth. Obviously, treatment is indicated when a patient presents with a pulpal necrosis, or symptoms of pulpitis. However, the distinction of reversible or irreversible pulpitis applied to the permanent teeth is not so relevant in the primary teeth; any sign or symptom of pulpitis indicates the need for pulp therapy in primary teeth. Thus, the current study aimed to determine the level of awareness and attitude of parentstoward pulp treatment of the primary teeth in Qassim Area and compare it according to gender and level of education.

Materials and methods:
A descriptive cross-sectional survey was conducted in Qassim province among parents who have 12 years old children or younger. Data collection started on December 2015. A sample size of (n=505) was obtained from respondents after distribution of questionnaires among the targeted parents in the Qassim university dental clinics and through the social media. The purpose of the study was explained, its voluntary nature was emphasized and confidentiality was assured. Both Saudi and non-Saudi parents living in Qassim were included and those who have 12 years old children or above were excluded. The questionnaire composed of 17 closed-ended questions assessing the knowledge about pulp therapy in primary teeth, its importance and the rationale for its importance. Questions also assessed the attitude regarding dental visits, restoration and pulp treatment of primary teeth.

The data obtained was cleaned, entered and analyzed using Excel software and the SPSS programs (SPSS 15.0 for windows). Descriptive statistical analysis was carried out and results on categorical measurements were presented in frequencies and percentages (%). Chi-square statistical test was used to find out any significant differences between the variables and p value <= 0.05 was considered as significant.

Results:
The results in this study showed that the total number of males is 170(33.7%) and females are 335(66.3%). Distribution of the study group showed that 6 (1.2%) were 20 years or younger, 352(69.7%) were 21 to 40 years, 144(28.5%) were 41 to 60 years, 3(0.6%) were 61 years and older. Regarding the level of education it was found that 87(17.2%) were pre-university and 418(82.8%) were university and post-graduate.

Table 1:-Assessment of Knowledge According to Gender.

| Variables                              | Do you know what pulp treatment of a tooth is? |
|----------------------------------------|-----------------------------------------------|
|                                        | Stat | Female | Male | Total | \(\chi^2\) (P) |
| Yes                                    | Count | 154    | 87   | 241    | 1.23* 0.268 |
|                                        | %within gender | 30.5 | 17.2 | 47.7 |
| No                                     | Count | 181    | 83   | 264    | 3.07* 0.380 |
|                                        | %within gender | 35.8 | 16.4 | 52.3 |

| Is the pulp treatment of primary teeth important? |
|--------------------------------------------------|
| Yes                                              |
| Count | 260 | 118 | 378 | 4.02* 0.045 |
| %within gender                                   | 51.5 | 23.4 | 74.9 |
| No                                               |
| Count | 75 | 52 | 127 |
| %within gender                                   | 14.9 | 10.3 | 25.1 |

| If yes, why pulp treatment for primary teeth is important? |
|----------------------------------------------------------|
| Relieve the pain                                         |
| Count | 105 | 50 | 155 | 3.07* 0.380 |
| %within gender                                           | 27.8 | 13.2 | 41.0 |
| Preserve space for                                       |
| Count | 94 | 33 | 127 |
Table 1 showed that out of the 505 of study sample, (47.7%) 241 were aware about the pulp treatment of primary teeth, the highest percentage were female (30.5 %) 154. A statistically significant difference was reported among males and females concerning the importance of pulp treatment (p=0.045). A (33.6 %) of the participants knew that the importance of the pulp therapy for primary teeth is to preserve space for the permanent tooth.

Table 2: Assessment of Attitude Regarding Dental Visit According to Gender.

| Variables                        | Do you used to visit a dental clinic? | Reason for visiting dental clinic: | | | |
|----------------------------------|---------------------------------------|-----------------------------------|---|---|
|                                  | Stat | Female | Male | Total | $\chi^2$ (P) | |
| Yes always.                      | Count | 20 | 11 | 31 | 0.33* | 0.954 |
|                                  | %within gender | 4.0 | 2.2 | 6.1 | | |
| Many times                       | Count | 44 | 25 | 69 | | | |
|                                  | %within gender | 8.7 | 5.0 | 13.7 | | |
| Sometimes                        | Count | 174 | 87 | 261 | | | |
|                                  | %within gender | 34.5 | 17.2 | 51.7 | | |
| Never                            | Count | 97 | 47 | 144 | | | |
|                                  | %within gender | 19.2 | 9.3 | 28.5 | | |
| Pain                             | Count | 227 | 128 | 355 | 20.67* | 0.001 |
|                                  | %within gender | 45.0 | 25.3 | 70.3 | | |
| Trauma                           | Count | 66 | 16 | 82 | | | |
|                                  | %within gender | 13.1 | 3.2 | 16.2 | | |
| Check-up                         | Count | 40 | 17 | 57 | | | |
|                                  | %within gender | 7.9 | 3.4 | 11.3 | | |
| Caries                           | Count | 2 | 6 | 8 | | | |
|                                  | %within gender | .4 | 1.2 | 1.6 | | |
| Delayed fall of primary teeth    | Count | 0 | 2 | 2 | | | |
| all of above                     | %within gender | 0 | .4 | .4 | | |
| Do you think that children's teeth should be checked regularly by a dentist? | | | | | |
| Yes                              | Count | 299 | 127 | 426 | 18.09* | 0.000 |
|                                  | %within gender | 59.2 | 25.1 | 84.4 | | |
| No                               | Count | 36 | 43 | 79 | | | |
|                                  | %within gender | 7.1 | 8.5 | 15.6 | | |

Table (2) shows the attitude regarding dental visit according to gender. Asking about visiting dental clinic, (51.7%) used to visit a dental clinic sometimes, (34.5%) of theme was from female group. A statistically significant difference was observed between males and females, the majority of female (45%) reported that the pain is the reason for visiting dental clinic, at the same time (59.2%) of female think that children's teeth should be checked regularly by a dentist.
Table 3: Assessment of attitude regarding primary teeth treatment according to gender.

| Variables                                                                 | Stat   | Female | Male | Total | $\chi^2$ (P)     |
|---------------------------------------------------------------------------|--------|--------|------|-------|-----------------|
| Do you think that primary teeth need dental treatment?                     |        |        |      |       |                 |
| Yes                                                                       | Count  | 309    | 142  | 451   | 8.96* 0.003     |
|                                                                           | %within gender | 61.2   | 28.1 | 89.3  |                 |
| No                                                                        | Count  | 26     | 28   | 54    |                 |
|                                                                           | %within gender | 5.1    | 5.5  | 10.7  |                 |
| If a carious tooth of your child needs filling, do you agree for the treatment? | Count  | 326    | 155  | 481   | 9.38* 0.002     |
|                                                                           | %within gender | 64.6   | 30.7 | 95.2  |                 |
| If a badly carious tooth of your child needs to be restored with pulp treatment do you agree for the treatment? | Count  | 288    | 140  | 428   | 1.14* 0.285     |
|                                                                           | %within gender | 57.0   | 27.7 | 84.8  |                 |
| If No, what is the reason?                                                | Count  | 47     | 30   | 77    |                 |
|                                                                           | %within gender | 9.3    | 5.9  | 15.2  |                 |
| No time for visits                                                        | Count  | 1      | 1    | 2     | 10.93* 0.027    |
|                                                                           | %within gender | 1.3    | 1.3  | 2.6   |                 |
| Primary teeth don’t need pulp treatment expensive                          | Count  | 38     | 17   | 55    |                 |
|                                                                           | %within gender | 49.4   | 22.1 | 71.4  |                 |
| Small child's age                                                         | Count  | 4      | 8    | 12    |                 |
|                                                                           | %within gender | 5.2    | 10.4 | 15.6  |                 |
| No qualified dentists                                                      | Count  | 1      | 4    | 5     |                 |
|                                                                           | %within gender | 1.3    | 5.2  | 6.5   |                 |
| If the options for treatment of the carious tooth of your child is either pulp treatment or extraction, what option do you chose? | Count  | 236    | 117  | 353   | .141* 0.707     |
|                                                                           | %within gender | 46.7   | 23.2 | 69.9  |                 |
| Have any of your children had pulp treatment of their primary teeth?       | Count  | 99     | 53   | 152   |                 |
|                                                                           | %within gender | 19.6   | 10.5 | 30.1  |                 |
| Yes                                                                       | Count  | 86     | 44   | 130   | 0.003* 0.959    |
|                                                                           | %within gender | 17.0   | 8.7  | 25.7  |                 |
| No                                                                        | Count  | 249    | 126  | 375   |                 |
|                                                                           | %within gender | 49.3   | 25.0 | 74.3  |                 |

Table (3) A statistically significant difference was reported between study groups, (89.3%) of them believe that primary teeth need dental treatment, the highest percentage was from female (61.2%), similarly (64.6%) of female agreed for the treatment If a carious tooth of their child needs filling. Seventy seven of the study sample disagree to do pulp treatment for a badly carious primary tooth. Looking for the reason, [primary teeth don’t need pulp treatment], (71.4%) was the highest one, statistically significant difference was reported (P=0.027).
### Table 4: Assessment of Knowledge according to level of education.

| Variables                                                   | Stat   | Pre-University | University & Post-Graduate | Total | $\chi^2$ (P) |
|--------------------------------------------------------------|--------|----------------|-----------------------------|-------|-------------|
| **Do you know what pulp treatment of a tooth is?**          |        |                |                             |       |             |
| Yes                                                          | Count  | 32             | 209                         | 241   | 5.04* 0.025 |
| %within education level                                      |        | 6.3            | 41.4                        | 47.7  |             |
| No                                                           | Count  | 55             | 209                         | 264   |             |
| %within education level                                      |        | 10.9           | 41.4                        | 52.3  |             |
| **Is the pulp treatment of primary teeth important?**       |        |                |                             |       | 3.50* 0.062 |
| Yes                                                          | Count  | 72             | 306                         | 378   |             |
| %within education level                                      |        | 14.3           | 60.6                        | 74.9  |             |
| No                                                           | Count  | 15             | 112                         | 127   |             |
| %within education level                                      |        | 3.0            | 22.2                        | 25.1  |             |
| **If yes, why pulp treatment for primary teeth is important?**|        |                |                             |       | 3.04* 0.386 |
| Relieve the pain                                            | Count  | 36             | 119                         | 155   |             |
| %within education level                                      |        | 9.5            | 31.5                        | 41.0  |             |
| Preserve space for the permanent tooth                      | Count  | 20             | 107                         | 127   |             |
| %within education level                                      |        | 5.3            | 28.3                        | 33.6  |             |
| Preserve esthetic                                           | Count  | 6              | 32                          | 38    |             |
| %within education level                                      |        | 1.6            | 8.5                         | 10.1  |             |
| I Don’t know                                                | Count  | 10             | 48                          | 58    |             |
| %within education level                                      |        | 2.6            | 12.7                        | 15.3  |             |

Table (4) shows a statistically significant difference reported among pre-university and university & post – graduate (P=0.025). Out of 505 of the study sample 264(52.3%) have no idea what pulp treatment of a tooth is.

### Table 5: Assessment of attitude regarding dental visit according to level of education.

| Variables                                                   | Stat   | Pre-University | University & Post-Graduate | Total | $\chi^2$ (P) |
|--------------------------------------------------------------|--------|----------------|-----------------------------|-------|-------------|
| **Do you used to visit a dental clinic?**                    |        |                |                             |       |             |
| Yes always.                                                 | Count  | 5              | 26                          | 31    | 0.537* 0.911|
| %within education level                                      |        | 1.0            | 5.1                         | 6.1   |             |
| Many times                                                  | Count  | 14             | 55                          | 69    |             |
| %within education level                                      |        | 2.8            | 10.9                        | 13.7  |             |
| Sometimes                                                   | Count  | 44             | 217                         | 261   |             |
| %within education level                                      |        | 8.7            | 30.0                        | 51.7  |             |
| Never                                                       | Count  | 24             | 120                         | 144   |             |
| %within education level                                      |        | 4.8            | 23.8                        | 28.5  |             |
| **Reason for visiting dental clinic:**                      |        |                |                             |       |             |
| Pain                                                        | Count  | 52             | 303                         | 355   | 8.97* 0.110 |
| %within education level                                      |        | 10.3           | 60.0                        | 70.3  |             |
| Trauma                                                      | Count  | 22             | 60                          | 82    |             |
| %within education level                                      |        | 4.4            | 11.9                        | 16.2  |             |
| Check-up                                                    | Count  | 11             | 46                          | 57    |             |
| %within education level                                      |        | 2.2            | 9.1                         | 11.3  |             |
| Caries                                                      | Count  | 1              | 7                           | 8     |             |
| % within education level | 0.2 | 1.4 | 1.6 |
|--------------------------|-----|-----|-----|
| **Delayed fall of primary teeth** | Count | 1 | 1 | 2 |
| % within education level | .2 | .2 | .4 |
| **all of above** | Count | 0 | 1 | 1 |
| % within education level | 0 | .2 | .2 |

Do you think that children’s teeth should be checked regularly by a dentist?

| | Count | Pre-University | University & Post - Graduate | Total | □^2 (P) |
|---|---|---|---|---|---|
| Yes | Count | 75 | 351 | 426 | 0.27* |
| % within education level | 14.9 | 69.5 | 84.4 | 0.602 |
| No | Count | 12 | 67 | 79 | |
| % within education level | 2.4 | 13.3 | 15.6 | |

Table (5) There is no statistically significant difference was observed regarding dental visit according to level of education among the study sample.

Table 6: Assessment of attitude regarding primary teeth treatment according to level of education.

| Variables | | Stat | Pre-University | University & Post - Graduate | Total | □^2 (P) |
|---|---|---|---|---|---|---|
| **Do you think that primary teeth need dental treatment?** | | | | | | |
| Yes | Count | 74 | 377 | 451 | 1.99* |
| % within education level | 14.7 | 74.7 | 89.3 | 0.159 |
| No | Count | 13 | 41 | 54 | |
| % within education level | 2.6 | 8.1 | 10.7 | |

If a carious tooth of your child needs filling, do you agree for the treatment?

| | Count | Pre-University | University & Post - Graduate | Total | □^2 (P) |
|---|---|---|---|---|---|
| Yes | Count | 84 | 397 | 481 | 0.40* |
| % within education level | 16.6 | 78.6 | 95.2 | 0.530 |
| No | Count | 3 | 21 | 24 | |
| % within education level | .6 | 4.2 | 4.8 | |

If a badly carious tooth of your child needs to be restored with pulp treatment do you agree for the treatment?

| | Count | Pre-University | University & Post - Graduate | Total | □^2 (P) |
|---|---|---|---|---|---|
| Yes | Count | 72 | 356 | 428 | 0.32* |
| % within education level | 14.3 | 70.5 | 84.8 | 0.570 |
| No | Count | 15 | 62 | 77 | |
| % within education level | 3.0 | 12.3 | 15.2 | |

If No, what is the reason?

| | Count | Pre-University | University & Post - Graduate | Total | □^2 (P) |
|---|---|---|---|---|---|
| No time for visits | Count | 1 | 1 | 2 | 3.06* |
| % within education level | 1.3 | 1.3 | 2.6 | 0.548 |
| Primary teeth don’t need pulp treatment expensive | Count | 10 | 45 | 55 | |
| % within education level | 13.0 | 58.4 | 71.4 | |
| Small child’s age | Count | 3 | 9 | 12 | |
| % within education level | 3.9 | 11.7 | 15.6 | |
| No qualified dentists | Count | 1 | 2 | 3 | |
| % within education level | 1.3 | 2.6 | 3.9 | |

If the options for treatment of the carious tooth of your child is either pulp treatment or extraction, what option do you chose?

| | Count | Pre-University | University & Post - Graduate | Total | □^2 (P) |
|---|---|---|---|---|---|
| Pulp treatment | Count | 63 | 290 | 353 | 0.32* |
| % within education level | 12.5 | 57.4 | 69.9 | 0.574 |
Count Extraction

|        | Count | 24 | 128 | 152 |
|--------|-------|----|-----|-----|
|        | %within education level | 4.8 | 25.3 | 30.1 |

| Have any of your children had pulp treatment of their primary teeth? | Count | 20 | 110 | 130 |
|---------------------------------------------------------------|-------|----|-----|-----|
| Yes                                                           | %within education level | 4.0 | 21.8 | 25.7 |
| No                                                            | Count | 67 | 308 | 375 |
|                                                             | %within education level | 13.3 | 61.0 | 74.3 |

Table (6) Eighty nine percent of the study sample thought that primary teeth need dental treatment, high percentage (74.7%) was from University& Post – Graduate Asking the parents [if a badly carious tooth of your child needs to be restored with pulp treatment do you agree for the treatment?], (15.2%) of them refuse that. Regarding the options of pulp treatment and extraction, only 30% of the study group prefer extraction.

Discussion:
Oral health education and prevention play an important role in minimizing oral disease. Parents are responsible for the oral care of their children. Many of them believe that primary teeth are temporary, so they are not worth preserving and wasting time and money in their treatment. Even in developed countries, most of the parents still bring their children to the dentist for radical treatment rather than preventive treatments. To emphasize the critical importance of primary teeth and their need for pulp therapy, the present study was planned and conducted. The objective of this study was to evaluate the level of awareness and attitude of parents toward the concept of pulp treatment of primary dentition and to compare the results according to gender and level of education.

Fourty eight percent of the study sample was found to be aware about the pulp treatment of primary teeth. The highest percentage was among the females 154(30.5 %).This result is in accordance with that of Tangade et al, (2011), where they stated that the female subjects had better knowledge as compared to their male counterpart. The importance of pulp treatment of primary teeth were known by 74.9 % of the parents as they identified that the main reason for opting pulp therapy for primary teeth is relief of pain.

Around 70.3% of the study subjects (the majority of them were females) believed that pain is the basic reason for visiting a dental clinic. These findings are similar to an earlier study that was conducted in India stated that pain and associated features were the commonest reasons for visiting the dental clinic. The result of this study showed higher percentage when compared with the results of previous study carried out in Riyadh Saudi Arabia which reported that, 28.1 % of parents considered the pain as a main reason. The results also showed that a good percentage of the parents (84.4%) bring their child to the dentist regularly for check -up . However, the previous study in Saudi Arabia also reported a lesser percentage (40.3%).

Primary teeth need dental treatment. This was reported by (89.3%) of the present study sample, (61.2%) of them were females. Similarly, (64.6%) of females agreed for the treatment, if a carious tooth of their child needs filling. No contradiction of this result when compared to that one stated in the study carried out in 2011, where they reported that a major percentage of both urban (96%) and rural (73.3%) populations thought that there is a need for primary teeth treatment.

When parents were asked about their perception regarding the need for any dental treatment to save the pulpally involved primary tooth, a high percentage (85%) of both female (57%) and male (27.7%), populations believe that there is a need for pulp treatment for primary teeth, and a very less number (15. %) among them thought that these teeth do not need pulp treatment since they are temporary and will be replaced by permanent successors. This is not the only justification of this group, since (16%) of them think that the cost of treatment refute them from doing pulp treatment for primary teeth .In contrast, another study demonstrated that the commonest reason for unwillingness of parents was the wasting of time with monetary considerations being the next common cause and very few not stating exact reasons.

The university and post - graduate subjects had better knowledge as compared to their pre-university counterparts. This reflects that the highly educated parents in this study have acquired a higher sense of responsibility towards the importance and treatment of primary teeth. This finding is in agreement with the study conducted by Pai V et.al in 2006 in Mangalore city reported that a higher level of knowledge was revealed among Kannada and English medium primary school teachers.
The trend of preferences for seeking treatment of primary teeth in various education levels in this study reported that check-up is the third reason for visiting dental clinic, after pain and trauma. This is in agreement to a study in India done by Dr. Jyothsna V in (2011) in which he stated that routine dental check-up is the last reason. This result indicates the lack of awareness and bad attitude regarding dental visit and routine check-up.

The study results also showed that university and post-graduate parents think that primary teeth need dental treatment and most of them are willing to do pulp treatment for their child’s teeth. This result was confirmed when parents were asked if the options for treatment of the carious tooth of their child is either pulp treatment or extraction, most of them (69.9%) preferred pulp treatment.

**Conclusion:-**
The current study revealed that the knowledge of parents was inadequate in most aspects of pulp therapy of the primary teeth except for the importance of pulp treatment, but they didn’t know the reason of its importance as to preserve space for the permanent tooth. The majority of parents showed that the pain is the reason for visiting a dentist, they didn’t go regularly for chick-up. Furthermore, the parents who didn’t accept pulp treatment to a badly carious tooth believed that primary teeth don’t need pulp treatment. Female, university and post-graduate parents reported a greatest level of Awareness and attitude toward pulp therapy of the primary teeth comparison to their counterparts.

**Recommendations:-**
Raising parents’ awareness in the direction of maintaining a healthy primary teeth and inform them about the consequences of early loss of primary dentitions is of great importance. The concept of the tooth as a best space maintainer for a normal development of the dental arch needs to be emphasized.

There is a real need to improve the parents’ attitude toward visiting the dental clinic for regular check-up

**Limitations:-**
The sample size of 505 is not considered to be representative for parents in Qassim. However, we believe that the sample was drawn from an economically diverse area to make the study group reasonably representative for other regions of Qassim. Also because the study was limited to Qassim province, other areas in Saudi Arabia need to be assessed. However, the results of the current study can be used as a baseline for enhancing the knowledge toward pulp therapy of the primary dentitions.

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