ORIGINAL ARTICLE

Expectant mothers’ readiness to initiate preventive oral health care for their children

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KEYWORDS
Expectant mothers; Libya; Knowledge; Attitude; Willingness

Abstract  Objectives: To assess the readiness and barriers faced by expectant mothers in Libya to initiate preventive oral health care for their children. Methods: A cross-sectional quantitative survey was conducted based on a structured questionnaire in a face-to-face interview. Four hundred and thirty seven expectant women who attended three main public maternal centers in three different districts in Libya were invited to participate. Descriptive statistics, bivariate and logistic regression analyses were performed. Statistical significance (p-value) was set at 0.05. Results: The response rate was 89.0% (389/437). In terms of knowledge readiness, less than half of the participants had adequate knowledge regarding healthy dietary habits, oral hygiene care, and preventive dental attendance (44.7%, 35.7% and 56.8% respectively) with fewer than one-third (27.5%) of mothers ready in terms of overall knowledge readiness. The majority demonstrated readiness in terms of their attitude toward the importance of their children’s oral health (89.9%) and their willingness to initiate preventive oral health care for their children (98.7%). Only 17.7% of participants demonstrated an overall readiness to initiate preventive oral health for their children. Overall readiness significantly differed based on maternal age and number of children (p = 0.001 and p = 0.04, respectively). Most mothers (84.6%) faced barriers that prevented them from initiating preventive oral health for their children. Barriers included busy schedules at work/home (34.7%), insufficient information (29.3%), and insufficient skills (13.7%). Conclusion: These findings highlight the
1. Introduction

Good oral health during early childhood is crucial, considering oral health is an integral component of general health and well-being. Unfortunately, many children are afflicted with dental caries at an early age, even those as young as 12 months. Dental caries in young children is still a major public health problem. The prevalence of dental caries in the developed countries has declined over the past decades. However, studies in the Middle East and Arabic countries report a high prevalence and severity of caries in children. Recently, a study involving school children aged 6–12 years in the Libyan cities of Al Zahra and Al Zawia showed that the prevalence of dental caries was 60.8% (6). The mean DMFT and dmft scores were 1.01 (SD ± 1.48) and 1.45 (SD ± 2.39) respectively.

Young children generally spend much of their time with their primary caregivers where most of their early childhood routines and habits, including dietary habits and health behaviors are acquired. These habits and behaviors that are learned early in life become ingrained in the children’s mind and this may lead to adoption of good oral hygiene methods in later life. Mothers are central in providing their children with the information, knowledge and encouragement needed for starting a healthy life. Since tooth brushing and healthcare behaviors are learned from models (e.g. parents), mothers play an important role in establishing their children’s oral health behaviors from an early age. Young children’s health behaviors are influenced by their parent’s knowledge and beliefs, which affect oral hygiene and healthy eating habits. Basic oral health knowledge is essential to any effective disease prevention strategy. Many studies have reported poor parental knowledge, practices and/or poor attitudes toward children’s oral health. Low parental knowledge and poor attitudes are found to be associated with higher caries experience in young children.

In many developed or developing countries, the majority of children (76–99%) start tooth-brushing before two years of age. However, a study conducted in Libya among 6–12 year olds demonstrated that 61.9% of 6–12 year olds had dental caries and about 42.1% of the 6 year old children had not started brushing their teeth. In addition, only 14.3% brushed at night. In fact, there are no previous studies conducted in Libya exploring mothers’ oral health knowledge and attitudes. In order to develop an effective oral health promotion strategy targeting this community, it must be based on an in-depth understanding of the unique needs of this population. Assessing the levels of knowledge, attitudes and practices is the first and an essential step in identifying areas of weakness. Thus, the need to assess Libyan expectant mothers’ knowledge, attitudes and willingness to initiate preventive oral health care for their children would appear to be timely at this point.

The aims of this study were to assess the knowledge and attitudes of Libyan expectant mothers toward preventive oral health care for their children, and to investigate their willingness, barriers faced, and overall readiness to initiate preventive oral health care for their children.

2. Methods

In Libya, about 88% of the population is located in urban areas, mostly concentrated in the five largest cities, Tripoli, Benghazi, Aljafarah, Misratah, and Azawiyah. In this study, all Libyan expectant mothers attending three main public maternal centers in Libya namely, Al Zahra hospital, Al Zawia hospital and Al Jala maternal hospital in 3 different cities in the North West Libya for maternal check-ups within a three month period in 2011 constituted the study population. Approval for this study was obtained from the Human Ethics Committee at the University of Malaya, Malaysia and Ministry of Health, Libya (DF CO1003/0053(P)). An estimation sample size of 380 participants was calculated using Epi info software based on the total antenatal attendances in three selected hospitals, a confidence interval of 95%, an alpha level of 0.05, and power of study of 80%.

Data were collected using a structured questionnaire survey (modified from previous studies) in a face-to-face interview method to assess the knowledge, attitude, willingness, and readiness of expectant Libyan women to initiate preventive oral health care for their children in their family setting. The original questionnaire was designed in Canada in English language and has been tested and validated. For use with this population of Libyan mothers, the tool was sent to two dental public health specialists in order to validate the intended objectives of the questionnaire items against the study objectives. The finalized questionnaire was translated into Arabic using the forward-back translation method. The Arabic translated questionnaire was then finalized by separate panels to ensure the semantic equivalence of the Arabic translated version to the original questionnaire. The finalized Arabic version questionnaire was pre-tested among ten Libyan mothers prior to the actual data collection. This was done in order to check for the clarity and understanding of the questionnaire, time taken to answer and the anticipated difficulties during the data collection. The mothers showed good cooperation and fully understood the questionnaire. No changes to the questionnaire were needed after the pre-test. All the interviews were carried out by one interviewer. Mothers were required to respond to all the items of the questionnaire as all interviews were conducted by a staff member. The interviews were conducted either before or after maternal checkups in a separate room from the waiting area (at the hospitals) to ensure the privacy of the respondents.

The questionnaire comprises five sections. The first section collected socio-demographic characteristics of expectant mothers including mother’s age, employment status, education levels and number of children. The second section assessed each mother’s knowledge regarding preventive oral health care...
for their children. The third section addressed each mother’s attitude toward the importance of their children’s oral health. The fourth section evaluated her willingness and barriers to initiate preventive oral health care for their children. The final section investigated the expectant mother’s overall self-readiness (data from this final section of the questionnaire are not reported in this paper). Data were coded and entered into the computer using Statistical Package for Social Science (SPSS) version 17.0. Descriptive and analytical statistics were performed. Descriptive analysis was presented as frequencies, mean ± SD and percentages. Chi-square test was used to determine the association between categorical variables. Binary logistic regression analysis was performed for mothers’ overall readiness and included those independent variables significantly associated the mother’s overall readiness at the bivariate analysis level. The level of statistical significance (p-value) was set at 0.05.

A composite score was calculated for each category of factors affecting mothers’ knowledge, attitudes, and willingness. This was done by giving a value of 1 to each correct answer and a value of 0 to any incorrect and/or ‘do not know’ responses. In terms of items assessing mothers’ attitude toward the importance of child’s oral health, the response of ‘agree’ was given a score of 1 and ‘disagree’ and/or ‘do not know’ were given a score of 0. The cut-off point was made based on the median value for each domain. Mothers’ overall readiness was assessed from a composite score of mothers who were ready in terms of total knowledge readiness (≥11) + attitude readiness (≥2) + willingness readiness (≥2) as shown in Table 4. When testing for association, mothers’ education level groups were collapsed into 3 categories (primary, secondary and post-secondary). Mothers’ age groups and number of children groups were collapsed into two groups (30 years and below and 31 years and above), (no children and one child or more) respectively.

### 3. Results

Among the 437 eligible expectant women who attended the three main public maternal centers in three different districts in Libya, 389 agreed to participate in this study and provided informed consent (response rate was 89.0%). The distribution of the socio-demographic characteristics of responding expectant mothers is shown in Table 1. The mean age of the participants was 30.1 ± 5.6 years.

Table 2 assesses knowledge of expectant mothers regarding child’s oral hygiene, dietary habits and preventive dental visit. Few mothers (17.7%) knew that they should start cleaning their child’s teeth once primary teeth erupted. Similarly, only 38.0% of mothers indicated that they were aware of the need to clean their child’s teeth before bed, especially when their child fell asleep while bottle-feeding. Furthermore, the majority of the mothers had insufficient knowledge about most aspects regarding healthy dietary habits. Less than half of the mothers (42.9%) knew that the use of a cup instead of the bottle would help to prevent dental caries and sugary snacks between meals are unhealthy (42.9% and 46.7%, respectively). Moreover, few mothers (32.6%) were aware that their child should be weaned off the bottle by the age of one year. Regarding preventive dental attendance, most mothers indicated that it is a good practice to take their child to a dentist (95.1%) and to seek dental treatment immediately if their child complains of a toothache (96.9%). Unfortunately, only 14.6% of mothers were aware that a child should have his/ her first dental visit by the age of one (Table 2).

Only slightly more than half (58.1%) of respondents had a favorable attitude regarding their child’s oral health care and agreed that primary teeth are as important as permanent teeth, and almost half (49.9%) said it is unacceptable for children to have tooth decay (Table 3). However, the majority were generally willing to initiate preventive oral health care in terms of cleaning their children’s mouth and teeth (99.2%), controlling the intake of sugar and sweetened drinks (92.8%), and taking their children to see a dentist regularly (91.5%).

Most mothers (84.6%) faced barriers to initiate preventive oral health care for their children. The three most frequent barriers were (1) their busy schedules at work/home (34.7%), (2) insufficient information (29.3%), and (3) insufficient skills (13.7%) to start preventive oral health care for their children. Other lesser barriers included a lack of motivation (7.3%), lack of support from their husbands (6.9%), and the responsibility of caring for too many children (4.8%), and when they themselves fall sick (2.7%).

The readiness of expectant mothers in terms of their knowledge, attitude and willingness is shown in Table 4. In this study, less than one-fifth (17.7%) showed an overall readiness to initiate preventive oral health for their children and to be prime-movers of oral health in their family. Slightly higher overall readiness was noted among mothers who already had children (29.8%) and mothers ≥31 years of age (24.9%) compared to mothers with no children (20.2%) and younger.

### Table 1 Socio-demographic characteristics of expectant mothers.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>389</td>
<td>(100.0)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;20</td>
<td>7</td>
<td>(1.8)</td>
</tr>
<tr>
<td>20-30</td>
<td>205</td>
<td>(52.7)</td>
</tr>
<tr>
<td>31-40</td>
<td>168</td>
<td>(43.2)</td>
</tr>
<tr>
<td>&gt;41</td>
<td>9</td>
<td>(2.3)</td>
</tr>
<tr>
<td><strong>Study site</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Al Jala hospital</td>
<td>240</td>
<td>(61.7)</td>
</tr>
<tr>
<td>Al Zawia hospital</td>
<td>63</td>
<td>(16.2)</td>
</tr>
<tr>
<td>Al Zahra hospital</td>
<td>86</td>
<td>(22.1)</td>
</tr>
<tr>
<td><strong>Educational level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>4</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Primary school</td>
<td>21</td>
<td>(5.4)</td>
</tr>
<tr>
<td>Secondary school</td>
<td>166</td>
<td>(42.7)</td>
</tr>
<tr>
<td>Post-secondary education</td>
<td>198</td>
<td>(50.9)</td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>164</td>
<td>(42.2)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>202</td>
<td>(51.9)</td>
</tr>
<tr>
<td>Student</td>
<td>23</td>
<td>(5.9)</td>
</tr>
<tr>
<td><strong>Number of children</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>134</td>
<td>(34.6)</td>
</tr>
<tr>
<td>1</td>
<td>104</td>
<td>(26.7)</td>
</tr>
<tr>
<td>2</td>
<td>70</td>
<td>(18.0)</td>
</tr>
<tr>
<td>3</td>
<td>39</td>
<td>(10.0)</td>
</tr>
<tr>
<td>≥4</td>
<td>42</td>
<td>(10.7)</td>
</tr>
</tbody>
</table>
Table 2  Expectant mothers’ knowledge regarding child’s oral hygiene care, dietary habits and preventive dental attendance.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Child’s oral hygiene care</strong></td>
<td></td>
</tr>
</tbody>
</table>
| A clean towel, gauze, toothbrush are used to clean baby’s mouth after primary teeth appear | Yes* 238 (61.2)  
Don’t clean 60 (15.5)  
Don’t know 91 (23.3) |
| Using fluoride toothpaste will reduce dental caries | Yes* 245 (63.0)  
No 68 (17.5)  
Don’t know 76 (19.5) |
| Primary teeth should clean at night before bed  | Yes* 148 (38.0)  
No 180 (46.3)  
Don’t know 61 (15.7) |
| Once primary teeth erupted should you start cleaning your baby’s teeth | Yes* 69 (17.7)  
No 320 (82.3)  
Don’t know – |
| How often should you clean your child’s teeth and mouth? | Once a day 166 (42.7)  
Twice a day* 223 (57.3)  
Don’t know – |
| Parents who have cavities can pass tooth decay germs to their child | Yes* 208 (53.5)  
No 122 (31.3)  
Don’t know 59 (15.2) |
| **Child’s dietary habits**                     |           |
| Bottle-feeding after my child is one year of age is bad for his/her teeth | Yes* 127 (32.6)  
No 233 (59.9)  
Don’t know 29 (7.5) |
| Addition of sugar or sweeteners to a child’s bottle may result in dental caries | Yes* 95 (24.4)  
No 271 (69.7)  
Don’t know 23 (5.9) |
| Frequently feeding a child with sweetened liquids is bad for teeth | Yes* 205 (52.7)  
No 134 (34.4)  
Don’t know 50 (12.9) |
| Putting a child to bed with a bottle of milk/sweetened drinks increases risk of dental caries | Yes* 314 (80.7)  
No 57 (14.7)  
Don’t know 18 (4.6) |
| Using a cup instead of a bottle for a child helps to prevent dental caries | Yes* 167(42.9)  
No 86 (22.1)  
Don’t know 136 (35.0) |
| Sugary snacks between meals is unhealthy       | Yes* 182 (46.7)  
No 129 (33.2)  
Don’t know 78 (20.1) |
| **Preventive dental attendance**              |           |
| Regular checkup is the main reason to visit a dentist | Yes* 188 (48.3)  
No 201 (51.4)  
Don’t know – |
| How often should you take your child to see a dentist? | Once a year 288 (74.0)  
Twice a year* 101 (26.0)  
Not sure – |
| Taking my child to see a dentist is a good practice to prevent dental caries | Yes* 370 (95.1)  
No 6 (1.5)  
Don’t know 13 (3.4) |
| Seeking dental treatment immediately if a child complains of a toothache or dental caries | Yes* 377 (96.9)  
No 12 (3.1)  
Not sure – |
| By first birthday should a child start to visit a dentist? | Yes* 57 (14.6)  
No 332 (85.4)  
Don’t know – |

Correct responses *.
**Table 3** Expectant mothers’ attitude toward the importance of various aspects of children’s oral health.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Responses N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary teeth are as important as the permanent teeth</td>
<td>Agree 226 (58.1) Disagree 96 (24.7) Don’t know 67 (17.2)</td>
</tr>
<tr>
<td>It is unacceptable for children to have tooth decay</td>
<td>Agree 194 (49.9) Disagree 147 (37.8) Don’t know 48 (12.3)</td>
</tr>
<tr>
<td>Identification of any dental problem in the child’s mouth is important</td>
<td>Agree 345 (88.7) Disagree 14 (3.6) Don’t know 30 (7.7)</td>
</tr>
</tbody>
</table>
| Correct responses *.

mothers aged 30 years and below with significant differences between them (11.8%) ($X^2 = 4.2$, $p = 0.04$, $X^2 = 11.3$, $p = 0.001$) (Table 5).

Table 6 shows the crude and adjusted Odds Ratio (OR) of number of children and mother’s age as predictors of the mothers’ overall readiness. Independent variables that were significantly associated with mother’s overall readiness at the bivariate analysis were included in the logistic regression model. In the crude analysis; number of children and mother’s age were significant predictors of the mothers’ overall readiness. Independent variables that were significantly associated with mothers’ overall readiness at the logistic regression model revealed that both number of children and mother’s age as predictors of the mothers’ overall readiness ($p < 0.05$).

The logistic regression model revealed that both number of children and mother’s age were significant and independently associated with mothers’ overall readiness. Overall, this revealed that mothers who had children OR 2.1 (95% CI, 1.1–4.1, $p = 0.029$) and older mothers OR 2.1 (95% CI, 1.2–3.6, $p = 0.011$) were twice more aware and ready in terms of knowledge, attitudes and willingness to prevent dental caries in their children (Table 6).

4. Discussion

This study aimed to assess the oral health knowledge, attitudes and willingness of Libyan expectant mothers, and their overall readiness to initiate preventive oral health care for their children. The results of this study showed that less than one-third (27.5%) of mothers demonstrated overall knowledge readiness. The majority of the mothers demonstrated readiness in terms of their attitude toward the importance of their children’s oral health (89.9%) and were willing to initiate preventive oral health care for their children (98.7%). In terms of overall readiness only 17.7% were ready to initiate preventive oral health for their children. Older mothers and those who have children were twice more aware and ready to initiate preventive oral health care for their children.

Understanding aspects of oral health care knowledge that are lacking among expectant and young mothers can assist dental care providers to be more focused in their health education messages for this target group especially with regard to prevention of oral diseases in their children. This is because parents’ health behaviors and practices usually have a direct influence on their children’s dental health.

In the present study, expectant mothers in Libya seem to have lack of sufficient knowledge about oral hygiene care. This is reflected by the fact that few mothers understood that cleaning their child’s teeth before bed, brushing their child’s teeth twice a day and using toothpaste with fluoride would help prevent dental caries (38%, 57.3% and 63%, respectively). These facts are generally considered to be common/basic dental knowledge given the public exposure to media advertisements in this century based on the recommendations of many professional organizations where media considered a powerful channel to dismiss oral health messages. Unfortunately, it appears that these basic oral health recommendations are not reaching a considerable proportion of parents in Libya.

Moreover, 82.3% of expectant mothers had insufficient knowledge of the need to clean the baby’s teeth once primary teeth erupted. The findings of this study are similar to those
reported by Suresh and colleagues, where most Indian parents felt that they should brush their child’s teeth only when all the primary teeth have erupted. In contrast, good knowledge among Canadian caregivers in terms of cleaning their children’s mouth even before eruption of the primary teeth was reported. The greater awareness of early childhood oral health among Canadian mothers may be the result of public health messaging and early childhood oral health promotion campaigns in high-risk communities to prevent ECC. However, the insufficient knowledge among Libyan mothers could be due to the lack of oral health education programs shown in Libya or that the programs that are currently shown on T.V are not effective enough to educate Libyan mothers. Therefore, there is a great need to evaluate the effectiveness of Libyan health education messages using mass media and its reachability and comprehensiveness for the general Libyan public. Needless to say, the importance of children having and maintaining healthy teeth from a young age should be emphasized.

In terms of knowledge about oral hygiene care, slightly less than one-half of mothers knew that parents who had cavities could actually pass tooth decay germs to their children which is in agreement with Suresh and colleagues who reported that the majority of Indian mothers have an inadequate knowledge about the transmission of tooth decay germs from themselves to their children by the sharing of utensils. These findings highlight potential areas in which Libyan mothers could be further educated through future health education and promotion interventions organized by the Ministry of Health of this country.

In addition, the majority of participants had inadequate knowledge about feeding practices and sugary snacks. Only one-third stated that they did not bottle feed their child after the age of one year which contrasts with Schroth and colleagues who reported that almost two-thirds of Canadian caregivers were aware that bottle feeding a child after the age of 1-year old can cause dental caries. This obvious lack of knowledge in the present study could be due to Libyan mothers being unaware of the harmful effects of bottle feeding beyond the age of one year. Similarly, only less than half of expectant mothers knew that using a cup instead of the bottle could help to prevent dental caries and were aware that sugary snacks between meals were an unhealthy practice that caused dental caries. Such information could be shared with future mothers in Libya through targeted oral health education programs at maternity centers throughout the country. Besides this, the inclusion of essential preventive oral health care messages regarding infant and preschoolers could also be incorporated into prenatal classes and routine prenatal health care practices. Incorporating oral health messages within the Libyan preschool curriculum could further help in reinforcing knowledge of preventive oral health care for Libyan mothers and children. Currently, health education programs shown on Libyan television very rarely includes oral health messages. This may be one mode of increasing mothers’ oral health knowledge.

The majority of mothers knew that it is a good practice to take their children to a dentist. However, only a few mothers seemed to place a high value on preventive dental visits over emergency dental visits to address dental symptoms. Surprisingly, only 14.6% knew that the first dental visit should occur no later than 12 months of age. This concurs with Hussein and colleagues report about Malaysian parents having low parental awareness (12.5%) of the recommended time for their child’s first dental visit. Similar findings indicated that only (24.6%) of Kuwaiti caregivers were aware of the ideal time for the first dental visit. Cultural beliefs and the lack of awareness regarding the importance of early preventive dental visits could be a possible reason. This finding is critical because Libyan mothers’ awareness and their practices may have a long-term effect on the oral health of Libyan children. Hence, it is essential to make mothers aware about their vital role in dental caries prevention. Developing an appropriate education program for expectant mothers in Libya about the importance of early utilization of preventive dental care services for their children could be a crucial step in addressing the prevalent dental caries problem among school children in Libya.

Theoretically, mothers who have favorable attitudes toward early childhood oral health may be motivated to carry out oral hygiene practices, improve their children’s dietary habits, and encourage earlier visits to the dentist, as well as gain more benefits from any oral health education and diet counseling programs. Akpabio and colleagues indicated that mothers’ dental awareness has an important impact on their children’s oral health and oral health-related behavior. In additions, parents’ attitudes have a significant positive influence on their children’s oral health. However, the findings of the present study showed that a sizable proportion of Libyan expectant and young mothers had unfavorable attitudes toward ‘primary teeth’. This was reflected in their responses that ‘primary teeth’ are not as important as ‘permanent teeth’ and that it was acceptable for children to have teeth decay. Similar findings were reported whereby about two-thirds of Polish mothers believed that care of primary teeth was not necessary. Indian parents had similar attitudes about primary teeth as it was temporary and eventually replaced by a set of permanent teeth. However, about 80% of caregivers in Kuwait showed better appreciation of the importance of baby teeth.

Majority of Libyan mothers were generally willing to initiate preventive oral health care in terms of cleaning their children’s mouth and teeth, limiting the intake of sugar and

### Table 6

<table>
<thead>
<tr>
<th>Variables</th>
<th>Overall readiness</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Crude OR (95% CI)</td>
<td>SE</td>
<td>p-Value</td>
<td>Adjusted OR (95% CI)</td>
<td>SE</td>
</tr>
<tr>
<td>Number of children*</td>
<td>2.6 (1.4-5.0)</td>
<td>0.329</td>
<td>0.03</td>
<td>2.1 (1.1-4.1)</td>
<td>0.341</td>
</tr>
<tr>
<td>Age of mothers*</td>
<td>2.5 (1.4-4.2)</td>
<td>0.275</td>
<td>0.001</td>
<td>2.1 (1.2-3.6)</td>
<td>0.285</td>
</tr>
</tbody>
</table>

95% CI = 95% confidence intervals.

* Reference category = no children, 30 years and below.
sweetened drinks, and taking their children to see a dentist regularly. Past literature has shown that a pregnant woman becomes receptive to any information which will benefit her unborn child. Health information is of much interest to her and her family, and health professionals can more easily motivate her to follow guidelines toward a sound physical health.

The implications of these findings is that since health information is of much interest to expectant women and their families, any education program targeting this group would have a greater chance of being successful. These findings may also indicate that expectant women in Libya would be willing to promote oral health care for their children and their families once they are provided with relevant dental information and key oral health messages. This motivator should be used as a platform for the Ministry of Health in Libya to initiate oral health education among expectant and young mothers in order for them to be prime-movers of oral health in their families.

Most mothers faced different barriers that prevented them from initiating preventive oral health for their children. The three most frequent barriers faced by Libyan antenatal mothers included their busy schedules at work/home, insufficient information and skills to start preventive oral health care. This could be because almost half of the mothers in this study were employed; thus it is not surprising that their busy schedules prevented them from initiating preventive oral healthcare for their children at home. Despite the fact that almost two-thirds of mothers had prior experience in looking after their children, they still felt they lacked information and skills to initiate preventive oral healthcare for their children. Hence, future oral health education programs for Libyan expectant mothers should focus on essential oral health information and also improve their skills in oral hygiene care for their children from birth. In addition, dental professionals could also provide essential oral health messages for young women of child-bearing age in view of their future role as mothers.

In terms of overall readiness, only less than one-fifth of mothers were ready in terms of their knowledge, attitude and willingness to initiate preventive oral healthcare for their children. These findings showed the lack of confidence among expectant mothers due to insufficient knowledge on how to provide oral hygiene care for their children as well as a lack of awareness regarding the importance of preventive dental visits for their children. The present study findings provide valuable information for oral health planners in Libya to consider when planning future oral health education and promotion programs for this important target group who can be agents of change within each Libyan family unit to ensure their children’s oral health and general well-being as the future generation of the country.

It is evident that many maternal factors have an influence on child’s oral health. Educational level, employment status, mother’s age and number of children are important socioeconomic indicators. Higher maternal educational level and better occupational background are related to better oral health status and good oral health habits of their children. In the present study, an almost negligible proportion of mothers (1.0%) did not receive formal education. Therefore this group was combined with the mothers’ group who had received primary education. This decision was also made based on the underlying rationale that both groups of mothers similarly faced limited employment opportunities. However, the small sample size of mothers with primary education (6.4%) may have resulted in a very high proportion of them having overall readiness. This finding was not statistically significant. Furthermore, no association between overall readiness and mother’s employment status was observed.

However, mothers aged 31 year and above and those with one or more children showed significantly more overall readiness and were twice as aware and ready to initiate preventive oral health care for their children than mothers aged 30 years and below and those with no children. This could be logically explained based on the fact that older mothers and those with one or more children probably had more oral hygiene-related care experience and could have been already practicing preventive care for their children. In addition, older mothers would naturally be more mature than first time mothers (who mostly would be younger). This finding concurs with a previous study in which younger mothers and mothers of one or two children knew less about the prevention of oral disease than older mothers and those with three or more children. Despite there are no comparison data in the literature review for the neighboring countries, we anticipate similar limited oral health knowledge and readiness on the basis of that oral health education programs are deficient in most of the developing countries. Moreover, the results of other studies conducted in Arabic countries such as Kuwait and Saudi Arabia indicated poor knowledge, attitude and practice in relation to the oral health of children.

Our findings indicate that young pregnant and first time mothers should be especially targeted to receive oral health education regarding oral healthcare, healthy dietary habits and utilization of dental service for their children.

Our study is not without limitations. As with many other surveys, recall bias and respondent bias were unavoidable and may have been potentially present. The respondent mothers may have been responding in a certain way to give the impression that they care about their children’s oral health. However, the face-to-face interviews were conducted in privacy by the researcher in order to minimize such bias. Currently, local information about maternal perceptions of childhood oral health care is scarce. Therefore, this work offers preliminary evidence of maternal knowledge, attitudes and willingness to initiate preventive oral health care of their children.

5. Conclusions

Expectant mothers’ knowledge and attitudes toward their child’s oral health care in Libya are inadequate. Additionally, only less than one-fifth (17.7%) of them were ready in terms of their knowledge, attitudes and willingness to initiate preventive oral health care for their children. There was a significant relation between the overall readiness of the mothers and their age. The three most frequent barriers which reported by the majority were their busy schedules at work/home, insufficient information and skills to start preventive oral health care. A high priority should be placed on the development and implementation of wide-scale, long-term programs of health education and promotion for Libyan young expectant mothers that would help to increase aspects of oral health knowledge and skills that they lacked. Furthermore, motivation for this population
to adopt and promote oral health for their children and families should be emphasized.

Conflict of interest

The authors declare that they have no conflict of interest.

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