



Content analysis of Libyan primary and preparatory school curricula in regard to oral health education

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ABSTRACT

Aim: To determine if primary and preparatory school textbooks in Libya adequately provided knowledge relevant to oral health education. **Method:** Content analysis of all primary and preparatory school textbooks in Libya based on relevance to oral health education. Any text, picture or illustration, exercise related to oral health was collected and categorized in frequency tables and then percentages were calculated from each table. **Results:** In general, 21 text books (33%) of 64 textbooks contained items about oral health education. 78 items were found related to oral health information in textbooks of several school subjects. Majority of items were presented as pictures and illustrations (44%) and concentrated in Arabic languages subject (69%). largest percentage of items was about personal care of the teeth and gums (50%) and little information were related to oral diseases, sugar & dental health, relation of diet to oral health, role of fluoride in caries prevention and impact of smoking on oral health. **Conclusion:** The primary and preparatory school curricula in Libya do not adequately address oral health education, and this study brought attention to the need for further curriculum revision by experts in the ministry of education and the center of educational curricula & research in order to either develop school curricula that adequately incorporate oral health education or add oral health education as a separate subject to existing school curricula.

تحليل محتوى المناهج المدرسية الليبية لمرحلي التعليم الاساسي والاعدادي فيما يتعلق بالثقيف الصحي الفموي

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الملخص

الهدف: هذه الدراسة تهدف لتحديد ما إذا كانت الكتب المدرسية لمرحلي التعليم الاساسي والاعدادي في ليبيا تغطي معلومات كافية حول صحة الفم. الطريقة: تحليل محتوى المناهج المدرسية الليبية لمرحلي التعليم الاساسي والاعدادي فيما يتعلق بالثقيف الصحي الفموي. أي نص، صورة او رسم، تدريب له علاقة بالثقيف الصحي الفموي تم جمعها وتصنيفها في جداول تكرارية وتم حساب النسب المئوية من كل جدول. النتائج: بشكل عام 21 كتاب (33%) من 64 كتابا احتوى على فقرات تخص الثقيف الصحي الفموي. تم إيجاد 78 فقرة ذات علاقة بصحة الفم في الكتب المرسية لعدة مواد دراسية. أغلبية المعلومات كانت مقدمة في شكل صور ورسوم ومتركة في كتب اللغة العربية (69%). نسبة كبيرة من المعلومات كانت حول النظافة الشخصية للاسنان واللثة بنسبة مئوية 50% ونسبة قليلة من المعلومات كانت حول امراض الفم، السكر وصحة الاسنان، علاقة الغذاء بصحة الفم، دور الفلورايد في منع التسوس و أثر التدخين على صحة الفم. الخلاصة: المناهج المدرسية الليبية لمرحلي التعليم الاساسي والاعدادي لا تعالج بشكل كافي الثقيف الصحي الفموي وهناك حاجة لمراجعة هذه المناهج من قبل اصحاب الخبرة في وزارة التعليم و مركز المناهج التعليمية والبحوث لكي يتم تطويرها بحيث تشمل الثقيف الصحي الفموي بشكل كافي او تتم اضافة الثقيف الصحي الفموي كمادة منفصلة الى المناهج المدرسية الحالية.

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Introduction

Oral health is defined as “A standard of health of the oral and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general well-being”^[1]. It is considered an integral part of general health of children and their quality of life can be greatly impacted by poor dental health. However, many oral diseases are preventable and can be reversed in their early stages. The recent Libyan oral health survey showed that prevalence of dental caries among Libyan school children was high and the authors stressed the importance of oral health programs in lowering this elevated prevalence of dental caries^[2].

School has been considered efficient setting for tackling oral diseases and implementing oral health promotion programs^[3]. School health education is one of the key components of school health promotion program^[4]. Integrating of oral health education into school curriculum is one of oral health-related school health policies that can be applied to equip children with necessary knowledge and personal skills about oral health and consequently to help them adopting positive attitudes and favourable oral health behaviours^[3]. For example, in some Chinese schools, oral health issues were successfully incorporated into the curriculum^[5]. It is feasible to teach oral health education material as separate subject or in association with other classes such as science, mathematics, social studies and English classes. To sufficiently integrate oral health into school curriculum, curriculum should cover several components of oral health and be age-specific, which is each grade level has specific oral health topics^[6].

The basic education stage in Libya includes primary (1-6 grade level) and middle classes (7-9 grade levels). The school subjects taught in Libyan basic education curricula are: Islamic education, Arabic language, English language, Mathematics, Science, Citizenship education, Computer studies, Humanities.

Content analysis is one of several approaches used to collect data in health education studies^[7]. Many previous studies had used this tool to assess the amount of health education in several school curriculums around the world^[8]. It is unclear how much information regarding oral health education is included in Libyan textbooks; therefore this present study was aimed to determine if primary and preparatory school textbooks in Libya adequately provided knowledge relevant to oral health.

Methods

Electronic version of 64 Libyan primary and preparatory school

TABLE 1: Frequency distribution of the oral health education in textbooks of eight school subjects for school grades (1-9)

School grade level	Number of textbook analyzed	Islamic education	Arabic language	English	Mathematics	Science	Citizenship education	Computer studies	Humanities
1 st Grade	5	✓	✓	✓					
2 nd Grade	5		✓		✓				
3 rd Grade	6			✓	✓	✓			
4 th Grade	8		✓				✓		
5 th Grade	8					✓			
6 th Grade	8			✓			✓		
7 th grade	8		✓	✓	✓	✓			
8 th Grade	8		✓		✓				
9 th Grade	8			✓	✓				
	64	Percentage of textbooks included oral health education is 21(33%)							

In comparison between school textbooks included oral health information (Table 2), the most dental health education was more concentrated in textbooks of Arabic languages subject (69%), while

textbooks (Publication year 2019-2020) for grade levels 1 to 9 were downloaded as pdf files from Arabic educational website Alangaad (www.al-amgaad.com)^[9]. This website contains a library of textbooks for several Arabic school curricula. The school textbooks of the following subjects were included in this analysis: Islamic education, Arabic language, English language, Mathematics, Science, Citizenship education, Computer studies, Humanities.

About 8371 pages of 64 textbooks were scanned for the presence or absence of any oral health-related information and only textbook pages of actual content (lessons and exercises) were included in this screening. Any oral health-related information was collected. The study author (WA) assessed all textbooks for material pertaining to oral health. The aforementioned reviewer checked the validity of the findings by twice examination of the textbooks on separate occasions. If the discrepancy was found between the findings of the two examinations, the textbooks were re-checked for clarification.

Content analysis of the examined textbooks was conducted. The units of measurement used in the present analysis were text, pictures and/or illustrations and exercise. The analysis units were categorized according to their relevance to the following categories: Anatomy and physiology of the mouth, oral diseases, sugar and dental health, personal care of the teeth and gums, role of fluoride in caries prevention, relation of diet and nutrition to oral health, dental visits and information on dental procedures and effects of smoking on oral health. These categories were created in accordance with educational goals laid out by World Health Organization (WHO) for oral health education curriculum of primary school^[6,10]. The frequency distributions were calculated by using of Microsoft Excel software for Mac 2011(version 14.2.0).

Results

Of the 64 textbooks, only 21 textbook contained information regarding oral health education (33%). The textbooks of computers studies and humanities do not include any information related to oral health. While the majority of Islamic studies textbooks have not contained oral health education materials, only in 1st Grade, the Islamic studies textbook referred to importance of oral health hygiene. Of 9 mathematics textbooks, only three books included pictures and/or Illustrations and exercises related to oral health. (Table1).

the textbooks of mathematics, science, Citizenship education and Islamic education subjects contained few oral health information.

TABLE 2: Frequency distribution of the oral health-related information according to the type of textbook

Type of textbook	Number of texts, pictures and/or Illustrations & exercises related to oral health	Percentage of oral health information
Arabic language	44	69%
English language	17	27%
Mathematics	6	9.4%
Science	5	8%
Citizenship education	4	6.3%
Islamic education	2	3.1%

In 8371 pages of the 64 school textbooks, 78 items of text, pictures and/or Illustrations and exercises were found related to oral health education. The most information was expressed in pictures (44%); the larger part of these pictures and/or Illustrations was related to oral hygiene practices (21%) (Figure1). The component found in the majority of textbooks was personal care of the teeth and gums (50%). Information on dental plaque, sugar & dental health, relation of food to dental health fluoride, oral consequences of smoking had paid little attention (Table3).



FIGURE 1: Sample of pictures and illustrations related to oral health in school textbooks

TABLE 3: Frequency distribution of oral health components in textbooks

Oral health component	Texts	Pictures and/or Illustrations	Exercises	Total	(%)
Anatomy and physiology of the mouth	5	4	3	12	15.4
Oral diseases	2	2	1	5	6.41
Sugar and dental health	2	1	2	5	6.41
Personal care of the teeth and gums	9	21	9	39	50%
Role of fluoride in caries prevention	1		1	2	2.6
Relation of diet to oral health	2	1	1	4	5.12
Dental visits and information on dental procedures	4	4	1	9	11.54
Effects of smoking on oral health	2			2	2.6
	28 (36%)	34 (44%)	18 (23%)	78	

Discussion

According to literature, only few studies on the content analysis of textbooks have focused on oral health and majority of them were related to other subjects such as general health and nutrition messages [11]. To our knowledge this is the first content analysis aimed to analyze oral health information in primary and preparatory school textbooks in Libya.

The findings of this study showed that several subjects in Libyan primary and middle school curriculum contained oral health-related information and the most information was concentrated in Arabic language school textbooks. However, Our research showed that few of the WHO-specified important aspects of oral health were reflected well in Libyan basic education curricula [4]. The neglected aspects were oral diseases, sugar and dental health, role of fluoride in caries prevention, relation of diet to oral health and effects of smoking on oral health.

Several studies conducted in US, Korea & India found similar outcomes [12,13,14] According to a study conducted in the US in 2004, the information in current health literature is insufficient to teach upcoming individuals about mouth cancer prevention and early detection. Similar study from Korea revealed that the textbooks did not adequately reflect oral health teaching for primary school students. Furthermore, Indian study in 2019 has identified 51 health messages were included in 179 textbooks used in primary and secondary schools and only 6% of them were related to oral health. Another Indian study in 2020 reported that there is an urgent need to adapt the textbook content because oral health information is lacking in science textbooks [11].

Personal care of the teeth and gums was the most oral health

component that received attention in Libyan basic education curricula. Although, The usefulness of tooth brushing instructions on caries levels is very poorly supported by research [15], It has been suggested that health education provided frequently and in conjunction with other activities is likely to have a favorable impact on oral health status and behavior [16].

According to previous research, information presented in both text and visuals improves recall and comprehension [17,18]. However, The majority of information related to personal care of the teeth and gums in the Libyan school textbooks was only presented through pictures and illustrations.

Even though several textbooks were included information on smoking, the information regarding how smoking affects dental health was inadequate (2.6%). Content analysis of textbooks used in primary and middle school grades in the developing nations showed that many key components of tobacco use were not sufficiently covered [19].

Sometimes, the material in textbooks does not accurately reflect what is taught in classrooms. For instance, in certain schools, theatre performances were also employed as a method for health education. But in developing countries where such resources are typically sparse, school textbooks are important and critical resources for teachers. [19]. Accordingly, this study raises concerns regarding the difficulties Libyan teachers face in effectively imparting the information on oral health that is included in school curricula.

One of the limitations of this analysis, it was only quantitative; therefore qualitative analysis is needed to identify the quality of information provided in school textbooks.

Conclusion

Oral health education has not been adequately covered in the primary and preparatory school curricula in Libya. This study highlights the need for further curriculum revision by experts in the ministry of education and the center of educational curricula & research in order to either develop school curricula that sufficiently incorporated oral health education or add oral health education as a specific subject to school curricula.

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