



Sociodemographic Factors and Oral Health Knowledge and Practices of Parents of Primary School Students

Salah Farag Abdulsalam Hwas¹, Mohammed Faez Baobaid¹

¹Managemnet and Science University Malaysia.

ORIGINAL ARTICLE

ABSTRACT

Received on: December 14, 2024.

Accepted on: December 28, 2024.

Published on: December 30, 2024.

Keywords: Dental health awareness;
Health education;
Interventions;
Oral hygiene practices;
Parental influence;
Sociodemographic factors.

Corresponding author: Salah Farag Abdulsalam Hwas
salahfrag1@gmail.com

Background: Enhancing parental education on oral health can lead to better hygiene practices and a decreased incidence of dental issues in children.

Objective: To evaluate the association of sociodemographic factors of parents with their oral health knowledge and practices.

Methods: The cross-sectional observational study was conducted in Tarhuna, Libya's central area from September 2023 to March 2024. Data (sociodemographic traits, dental health awareness, and attitudes toward oral health) were collected from 380 parents of primary school students using a structured questionnaire. SPSS v.26 was used for data analysis.

Results: Most respondents were aged 29–40 years (43.4%), followed by 18–28 years (35.5%). A smaller proportion were aged 41–55 years (17.6%), and only 3.4% were above 55 years old. Male respondents made up 71.6% of the sample, while female respondents constituted 28.4%. Majority of respondents (32.9%) reported monthly incomes between 500 and 1000 Libyan dinars, with 1500–3000 dinars being the second most common range (31.6%). Awareness generally increased with age, with higher proportions in the "high awareness" category among the 29–40 and 41–55 groups. The parents had different views and substantial knowledge gaps on dental health, which were influenced by variables including income and educational attainment.

Conclusion: This study emphasizes the importance of culturally appropriate health communication strategies and educational programs that cater to the particular needs of the Libyan population.

Citation: Hwas SFA, Baobaid MF. Sociodemographic factors and oral health knowledge and practices of parents of primary school students. Chron Biomed Sci. 2024;1(4):39. Available from: <https://cbsciences.us/index.php/cbs/article/view/39>.

Introduction

Children's dental health is one of the most important foundational components in maintaining general health. Toothache, discoloration, eating disorders, tooth loss, delayed language development, and embarrassment are some of the problems that can result from neglecting and failing to maintain oral health. A cross-sectional survey on dental public health education in Egypt revealed a lack of information about dental education in African nations and emphasized the urgent need for solutions to address widespread oral health issues [1]. The African

Region of WHO, comprising 47 countries, faces challenges with the oral health workforce and limited resources in the field [2]. Children's oral and dental health greatly depends on parents' awareness. However, parental awareness is essential for kids' dental and oral health [3]. It has been shown that parents' cultural and educational models significantly influence their children's oral health behaviors [4]. The importance of teaching kids good dental hygiene cannot be overstated. These habits have a major effect on a person's long-term dental health and usually continue into adulthood [5]. Reports indicate that children whose parents lack

awareness about the significance of oral health are at a greater risk of developing dental caries [6]. A systematic review highlighted the importance of parental involvement in protecting children's dental health and stressed the need for programs to educate parents about oral health and the care of deciduous teeth [7]. Determining the existing level of parental knowledge is crucial to creating successful intervention strategies in the Central Region of Libya, where cultural and economic issues are linked. By carefully examining parental knowledge, the study seeks to pinpoint social injustices, obstacles, and resources. These understandings are essential for comprehending the difficulties parents encounter, but they are also required for developing effective solutions that are culturally appropriate [8]. Additionally, the study looked into the sources of information parents receive about oral and dental health, offering insights into possible directions for specialized educational initiatives. The study carefully looks at parental awareness, to identify inequalities, challenges, and community resources [9]. These insights are not only essential for understanding the challenges parents encounter but they are also required for developing effective and culturally appropriate solutions [8]. Additionally, the study investigated the sources of information parents use to teach their children about oral and dental health, which may result in the creation of more specific educational programs.

Methods

The sociodemographic characteristics, oral health knowledge, mindsets, and practices of parents of primary school pupils in Central Libya were investigated in this study using a cross-sectional quantitative research approach. To guarantee a thorough comprehension and exact portrayal of the study objectives, the research process is broken down into some essential elements.

Study Design: The research investigation uses a cross-sectional observational design, which makes it possible to evaluate information gathered from a particular population at a given moment in time. The prevalence of dental health awareness and practices can be assessed with this approach, and associations between various sociodemographic characteristics and oral health habits can be found.

Study Settings: The study was conducted in Tarhuna, Libya's central area. The six-month data-gathering

period ran from September 2023 to March 2024. To guarantee a representative sample of the target population and to take into consideration possible seasonal variations in oral health behaviors and practices, the chosen timeframe was chosen.

Participants Criteria: The study focused on over-18-year-old Libyan parents who could read and write in Arabic and lived in the central region. To preserve the integrity of the data gathered and to guarantee the capacity and well-being of study participants, participants who were under the age of eighteen or who had mental or physical instability were excluded.

Inclusion Criteria: The eligibility requirements include central-region Libyan parents who are at least eighteen years old and who can read and write in Arabic.

Exclusion Criteria: Due to concerns about the capacity and well-being of study participants, parents under the age of 18 and Libyan parents who are mentally and physically unstable are excluded from participating.

Sampling: A representative subset of a broader population was chosen for this study using a statistical technique known as non-probability convenience sampling, despite the lack of a sample frame. This allowed for observations and inferences about the population as a whole. In addition to reducing expenses, time, and effort, the main goal of sampling is to obtain precise data that may be extrapolated to the full population. The sample needs to be diverse enough to accurately reflect the population for the findings to be applicable. Using sampling techniques while selecting a subset helps to minimize bias. Moreover, selecting a subset of individuals from a statistical population to ascertain the features of the entire population is referred to as sampling.

Sample Size: Based on the finite population correction, the calculated sample size is 385. An additional 20% was added to account for non-respondents, resulting in a total sample size of 462 (385 + 77). The sample size (with finite population correction) is equal to 383 (Kish equation).

Data Collection Tools: A standardized questionnaire intended to evaluate sociodemographic traits, dental health awareness, and attitudes toward oral health was used to gather data. In addition to questions about dental health practices and awareness, the questionnaire had

sections on age, gender, occupation, income, number of children, education level, and occupation. To guarantee clarity and precision in assessing the desired variables, the questionnaire underwent validity and reliability pre-testing.

Statistical Analysis: Software called SPSS (version 26) was used to evaluate the data that was gathered. Demographic traits and important factors in oral health awareness and practices were compiled using descriptive statistics. The associations between oral health practices and sociodemographic characteristics were investigated using chi-square testing, with a significance level of 0.05.

Application Study: Data collected from a population at a particular moment in time. An observational quantitative methodology is used in the aforementioned study design to evaluate health studies, depict health characteristics, and ascertain prevalence [10]. Due to their effectiveness and affordability, cross-sectional studies are beneficial in a variety of social and behavioral science fields [11]. These studies evaluate exposure and outcome at the same time, yielding frequently used statistical measures like correlation values, prevalence estimates, prevalence ratios, and prevalence odds ratios [12]. Using an observational quantitative cross-sectional technique, the current study tried to paint a picture of the variables being studied at a certain time. Study Settings (Place, Time, Duration). Among its study settings are the time, place, and length of the study.

- I *Place:* The Tarhuna region in central Libya
- II *Time:* The dates are set for September 2023 through March 2024.
- III *Duration:* Six months.

Result

In Tarhuna, central Libya, 380 parents of primary school pupils participated in the study. A summary of the respondents' demographics is provided below, with particular attention to factors including gender, age, monthly income, occupation, education level, and the number of children in the household. The chapter also explores the respondents' oral hygiene routines, food habits, and attitudes and awareness regarding dental health.

Distribution of Respondents by Gender

Figure 1 provides a pie chart summarizing the respondents' gender breakdown. Male respondents made up 71.6% of the sample, while female respondents constituted 28.4%. This distribution indicates significant male predominance, possibly due to cultural or societal norms influencing participation in health-related studies in this region.

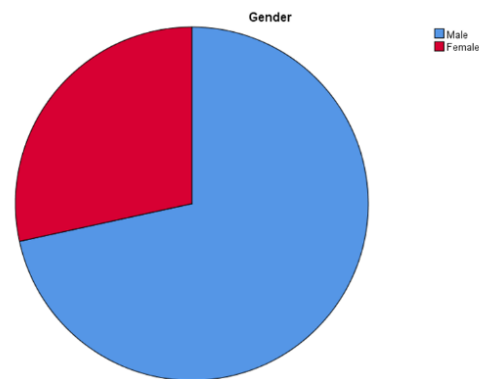


Figure 1. Distribution of Respondents by Gender

Distribution of Respondents by Age

Figure 2 displays respondents' age distribution. Most respondents were aged 29–40 years (43.4%), followed by 18–28 years (35.5%). A smaller proportion were aged 41–55 years (17.6%), and only 3.4% were above 55 years old. This age distribution suggests most respondents were in their prime working and parenting years, influencing attitudes and practices regarding dental health care.

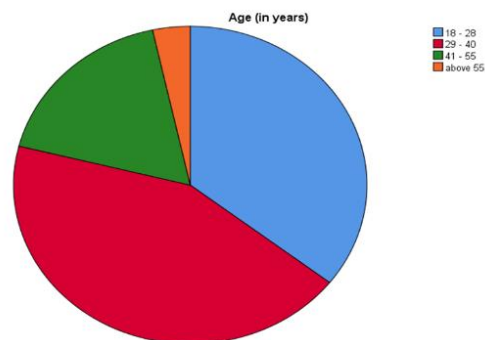


Figure 2. Distribution of Respondents by Age

Distribution of Respondents by Monthly Income

Figure 3 shows that the majority of respondents (32.9%) reported monthly incomes between 500 and 1000 Libyan dinars, with 1500–3000 dinars being the second most common range (31.6%). Smaller proportions reported incomes above 3000 dinars or between 1000 and 1500 dinars (25.3% and 10.3%, respectively). Income levels strongly influence access to healthcare, including dental care. The prevalence of lower income brackets may impact respondents' ability to afford routine dental care, shaping their hygiene habits.

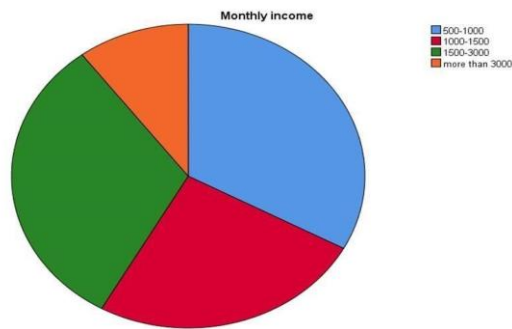


Figure 3. Distribution of respondents by monthly income

Distribution of Respondents by Number of Children

Figure 4 highlights family size as a factor influencing dental health practices. The findings reveal that 48.9% of respondents had three or more children, while 22.1% had one child, and 14.5% each had two or three children. Larger family sizes may pose financial and logistical challenges to regular dental care.

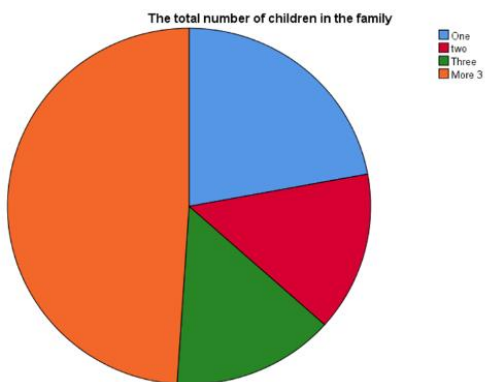


Figure 4. Distribution of respondents by number of children

Age and Awareness Cross-tabulation

Figure 5 explains awareness levels across age groups: 18–28, 29–40, 41–55, and above 55. Awareness generally increased with age, with higher proportions in the "high awareness" category among the 29–40 and 41–55 groups. The 18–28 group displayed mixed awareness levels, while the above 55 group showed fewer individuals in both categories, likely due to a smaller sample size or differing trends.

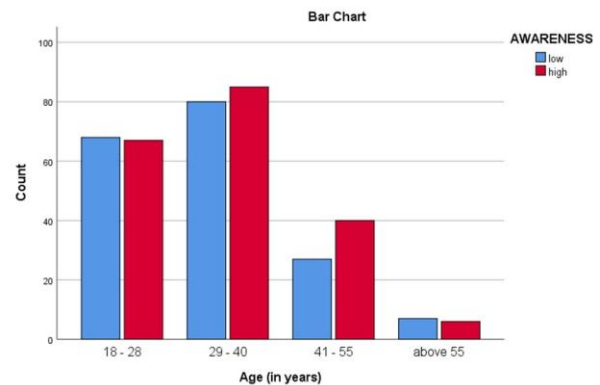


Figure 5: Age and Awareness cross-tabulation

Discussion

The sample predominantly consisted of individuals in their prime working and parenting years. Most were male (71.6%), with the largest age group being 29–40 years (43.4%), followed by 18–28 years (35.5%). Smaller age groups included 41–55 years (17.6%) and above 55 years (3.4%).

Notably, 64.7% of respondents had a diploma or higher education, indicating a high level of health literacy likely to positively influence dental health behaviors and awareness. However, financial constraints were evident, with 32.9% of respondents earning monthly salaries between 500 and 1000 Libyan dinars. Such economic limitations may restrict access to essential dental care services [13]. Additionally, 48.9% of respondents had more than three children, which likely made regular dental visits more challenging both financially and logistically. Family size further complicated access to care. Findings are coherent with other studies in similar studies [14]. Age-related differences in awareness were observed, with older respondents (above 55) displaying

lower awareness, potentially due to a smaller sample size or other trends. Younger respondents (18–28) exhibited mixed awareness levels, while those aged 29–40 and 41–55 demonstrated higher awareness. A study concluded that regular dental visits can improve oral health and help reduce chronic diseases among middle-aged and older adults. Our findings highlight the importance of implementing targeted, age- and sex-specific interventions to enhance both oral and overall health [15]. These results highlight the interplay between demographic and socioeconomic factors in shaping dental health behaviors and emphasize the need for targeted interventions, including accessible dental care programs.

Conclusion

The study, which involved 380 parents of primary school students in Tarhuna, central Libya, highlights several critical demographic and socioeconomic factors that significantly influence dental health practices in the region. Most respondents were in the 29–40 age range (43.4%), with a significant male predominance (71.6%), reflecting potential cultural or societal norms that shape participation in health-related studies. Financial challenges were evident, as 32.9% of respondents reported monthly incomes between 500 and 1000 Libyan dinars, placing them in lower income brackets that may restrict access to basic dental care. Additionally, family size played a crucial role, with 48.9% of respondents having three or more children, which likely compounds financial and logistical barriers to maintaining consistent dental health practices and regular dental visits.

Further highlighting the complexity of the problem are age-related differences in awareness, with respondents in the 29–40 and 41–55 age groups exhibiting higher levels of awareness than younger respondents (18–28), who displayed mixed levels, and older respondents (above 55), who displayed relatively lower levels. These results raise the possibility that focused health education initiatives may be required to close the knowledge disparities among various age groups. When taken as a whole, these traits highlight how family size, cultural norms, and financial limitations interact to influence dental health access and practices. To enhance outcomes

and provide equitable access to dental care for this population, interventions should prioritize accessible dental treatment, encourage public health education, and address the unique challenges faced by larger families and low-income households.

Authors' contributions

ICMJE criteria	Details	Author(s)
1. Substantial contributions	Conception, OR Design of the work, OR Data acquisition, analysis, or interpretation	1 1,2 1,2
2. Drafting or reviewing	Draft the work, OR Review critically for important intellectual content	1 2
3. Final approval	Approve the version to be published	1,2
4. Accountable	Agree to be accountable for all aspects of the work	1,2

Acknowledgement

None

Funding

This research study received no specific grant from any funding agency.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The University of Management and Sciences' Ethics Committee gave its approval for the study, which was carried out by ethical standards. Before distributing the questionnaire, all participants gave their verbal and written informed consent, and participant confidentiality was rigorously upheld for the whole study.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

References

- [1]. Gouda H, Virtanen JI, El Tantawi M. Dental public health education in Egypt: a cross-sectional survey. BMC Med

Edu. 2023;23(1):899. doi: 10.1186/S12909-023-04888-9/FIGURES/3

[2]. Gallagher JE, Mattos Savage GC, Crummey SC, Sabbah W, Varenne B, Makino Y. Oral health workforce in Africa: a scarce resource. *Int J Envir Res Pub Heal*. 2023;20(3):2328. doi: 10.3390/IJERPH20032328

[3]. Elshebani SB, Huew R, Buzaribah KS, Mansur EK. Parental awareness and attitude about oral health habits of their children and its relation to caries experience in 8–10-year-old children. *J Adv Edu Sci*. 2022;2(3):45-52.

[4]. Elshebani AB, Elfaitouri AM, Busaadia MA, Alhassi BA, Alsaiti MH, Alatti MS, et al. Study of meningitis inflammatory disease among children admitted to Benghazi Pediatrics Hospital during 2017-2020. *Sci J Univ Benghazi*. 2022;35(1):1-5.

[5]. Ciardullo C, Szoltysek K, Zhou P, Pietrowska M, Marczak L, Willmore E, et al. Low BACH2 expression predicts adverse outcome in chronic lymphocytic leukaemia. *Cancers*. 2021;14(1):23.

[6]. Abed R, Bernabe E, Sabbah W. Family impacts of severe dental caries among children in the United Kingdom. *Int J Envir Res Pub Heal*. 2020;17(1):109.

[7]. Kaushik M. A systematic review of parents' knowledge of children's oral health. *Cureus*. 2023;15(7):e41485. doi: 10.7759/cureus.41485

[8]. World Health Organization. Laboratory testing for 2019 novel coronavirus (2019-nCoV) in suspected human cases: Interim guidance, 17 January 2020. World Health Organization; 2020 Mar 30.

[9]. Thomas J, Utley J, Hong SY, Korkmaz H, Nugent G. A Review of the Research. *Handbook of Research on STEM Education*. 2020 Apr 27.

[10]. Huo X, Ma G, Tong X, Zhang X, Pan Y, Nguyen TN, et al. Trial of endovascular therapy for acute ischemic stroke with large infarct. *New Eng J Med*. 2023;388(14):1272-83.

[11]. Shinde A, Illath K, Kasiviswanathan U, Nagabooshanam S, Gupta P, Dey K, et al. Recent advances of biosensor-integrated organ-on-a-chip technologies for diagnostics and therapeutics. *Analytic Chem*. 2023;95(6):3121-46.

[12]. Bose S, Jalal A. *Modern South Asia: history, culture, political economy*. Routledge; 2022 Oct 14.

[13]. Aloshaiby A, Gaber A, Arheiam A. The oral health care system in Libya: a case study. *BMC Oral Health*. 2024;24(1):888.

[14]. Luo H, Wu Q, Bell RA, Wright W, Quandt SA, Basu R, Moss ME. Rural-Urban differences in dental service utilization and dental service procedures received among US adults: Results from the 2016 medical expenditure panel survey. *The Journal of Rural Health*. 2021;37(3):655-66.

[15]. Limo L, Nicholson K, Stranges S, Goma NA. Age and

sex differences in the association of dental visits with inadequate oral health and multimorbidity: Findings from the Canadian Longitudinal Study on Aging (CLSA). *BMC Public Health*. 2024;24(1):2968.