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**Analysis of Awareness, Knowledge, Attitude, and Implementation of Evidence- Based Dentistry among Jordanian Dental Specialists: A Cross-Sectional Study**

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**ABSTRACT**

**INTRODUCTION:** As healthcare professionals, dental specialists should provide the best dental care to their patients; this requires in-depth knowledge and clinical training. In doing so, they face many uncertainties(1), which is why they need to integrate the best evidence that supports their diagnostic judgment and treatment planning (2).Evidence-based dentistry (EBD) is an approach to oral healthcare that requires the judicious integration of systematic assessments of clinically relevant scientific evidence relating to the patient's oral and medical condition and history, with the dentist's clinical expertise and the patient's treatment needs and preferences (3) EBD is becoming increasingly important in providing optimal dental care to patients that is focused on effectiveness to maximize patients benefits while minimizing costs and risks (4); thus, dental specialists are required to keep pace with the latest research through continuing education and professional development (5) Also, they should be aware of the current systems and standards that assess the quality of evidence (6) However, to date, no means exist to quantify the extent to which barriers, such as lack of time in the working day, lack of appropriate skills, unawareness of EBD basics or principles, and negative attitudes may prevent greater uptake of EBD (7) (8) (9) (10). Jordan is a country in the Middle East with two governmental dental colleges offering post-grad training.Royal Medical Services and the Ministry of Health provide similar programs.

**METHODS:** This study was conducted after being approved by the Royal Medical Services Ethical Committee. An electronic self-administered cross-sectional questionnaire was distributed among dental specialists practicing in Jordan, namely (periodontists, endodontists, pedodontists, orthodontists, prosthodontists, oral medicine specialists, restorative dentistry specialists, and oral surgeons). These specialists provided dental health care nationwide (e.g., military hospitals, Ministry of Health, universities, and the private sector). The questionnaire was adopted from McColl et al. (12) and Barghouti et al. (13)

**STATISTICAL ANALYSIS:** The data was entered into an Excel sheet (Microsoft Corp., Redmond, WA, USA) and analyzed using Statistical Package for the Social Sciences (SPSS) (IBM Corp., version 29.0, USA). The data analysis yielded four themes: personal data and practice characteristics, attitudes toward EBD, barriers to practicing EBD, and awareness and knowledge of technical terms.

**RESULTS:** The completed forms that we received were 548. There were 272 (49.6%) females and 276 (50.4%) males. Age varied among the participants, with the majority (47.6%) falling in the age group of 31 to 39 years old. 40.5% of the specialists saw between 10 and 19 patients per day.

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**Table 1: Characteristics of correspondents**

| Gender   |             | Number of patients seen daily |             |
|----------|-------------|-------------------------------|-------------|
| • Female | 272 (49.6%) | • < 10                        | 216 (39.4%) |
| • Male   | 276 (50.4%) | • 10-19                       | 222 (40.5%) |
|          |             | • > 20                        | 110 (20.1%) |
| Age      |             |                               |             |
| • < 30   | 107 (19.5%) |                               |             |
| • 31-39  | 261 (47.6%) |                               |             |
| • 40-49  | 127 (23.2%) |                               |             |
| • > 50   | 53 (9.7%)   |                               |             |

Regarding the attitude of the respondents toward EBD (Table 2), 14.1% strongly welcomed and 65.5% welcomed the promotion of EBD. On the other hand, 65.5% of the respondents believed that their colleagues welcomed the promotion of EBD. Furthermore, 50.7% of the participants agreed that EBD was useful in the management of their patients, while 46.7% think it was extremely useful. 44.3% claimed that almost the majority of their practice was evidence-based. Despite the 64.2% of the respondents who strongly agreed to the impression that practicing EBD improved patient care, 18.6% and 4.2% agreed and strongly agreed that EBD was of limited value in dentistry. The respondents were asked to identify the barriers to practicing

**Table 2: Attitude toward EBD****1. How would you describe your attitude toward the current promotion of EBD?**

- Strongly welcoming 309 (56.4%)
- Welcoming 218 (39.8%)
- Not welcoming 11 (2%)
- Don't know 10 (1.8%)

**2. How would you describe the attitude of most of your colleagues toward EBD?**

- Strongly welcoming 77 (14.1%)
- Welcoming 359 (65.5%)
- Not welcoming 54 (9.9%)
- Don't know 58 (10.6%)

**3. How useful are research findings in your day-to-day management of patients?**

- Extremely useful 256 (46.7%)
- Useful 278 (50.7%)
- Not useful 8 (1.5%)
- I don't know 6 (1.1%)

**4. What percentage of your clinical practice do you believe is currently evidence-based?**

- 0–24 27 (4.9%)
- 25–49 69 (12.6%)
- 50–74 209 (38.1%)
- 75–100 243 (44.3%)

**5. Practising EBD improves patient care**

- Strongly agree 352 (64.2%)
- Agree 192 (35.1%)
- Disagree 4 (0.7%)
- Don't know 0 (0.0%)

**6. Evidence-based dentistry is of limited value in dentistry because much of dental care lacks a scientific base:**

- Strongly agree 23 (4.2%)
- Agree 102 (18.6%)
- Disagree 387 (70.6%)
- Don't know 36 (6.6%)

EBD (Table 3). Lack of personal time was the foremost barrier identified by 20.9%. Too much evidence and the availability of and access to information were identified as a barrier by 20.1% and 15.6%, respectively

**Table 3: Factors that respondents perceive to be barriers to practicing (EBD) Respondents were allowed more than one answer**

|                                           |             |
|-------------------------------------------|-------------|
| Lack of investment by health authorities  | 211 (14.4%) |
| No financial gain in using EBD            | 36 (2.5%)   |
| Availability of and access to information | 229 (15.6%) |
| Lack of critical appraisal skills         | 98 (6.7%)   |
| Patients' expectations                    | 31 (2.1%)   |
| Lack of personal time                     | 307 (20.9%) |
| Too much evidence                         | 294 (20.1%) |
| Others                                    | 260 (17.7%) |

The understanding of technical terms used in the research was assessed by asking the respondents to answer several questions about some of these terms (relative risk, absolute risk, odds ratio, confidence interval, and publication bias) (Table 4). 39.1% of the participants claimed they understand and could explain relative risk to others, while 29.5% had some understanding, and 28.6% didn't understand but would like to. 39.1% had an excellent understanding of absolute risk. The odds ratio and confidence interval were claimed to be understood and explained to others by 43.6% and 24.6%, respectively. Nevertheless, 20.6% could understand publication bias and explain it to others

**Table 4. Respondents' understanding of technical terms:**

|                                              |             |  |
|----------------------------------------------|-------------|--|
| <b>1. Relative risk</b>                      |             |  |
| • I understand and can explain it to others  | 214 (39.1%) |  |
| • Some understanding                         | 163 (29.7%) |  |
| • I don't understand but I would like to     | 157 (28.6%) |  |
| • It wouldn't be helpful to me to understand | 14 (2.6%)   |  |
| <b>2. Absolute risk</b>                      |             |  |
| • I understand and can explain it to others  | 214 (39.1%) |  |
| • Some understanding                         | 163 (29.7%) |  |
| • I don't understand but I would like to     | 157 (28.6%) |  |
| • It wouldn't be helpful to me to understand | 14 (2.6%)   |  |
| <b>3. Odd ratio</b>                          |             |  |
| • I understand and can explain it to others  | 239 (43.6%) |  |
| • Some understanding                         | 135 (24.6%) |  |
| • I don't understand but I would like to     | 155 (28.3%) |  |
| • It wouldn't be helpful to me to understand | 19 (3.5%)   |  |
| <b>4. Confidence interval</b>                |             |  |
| • I understand and can explain it to others  | 35 (24.6%)  |  |
| • Some understanding                         | 157 (28.6%) |  |
| • I don't understand but I would like to     | 230 (42.0%) |  |
| • It wouldn't be helpful to me to understand | 26 (4.7%)   |  |
| <b>5. Publication bias</b>                   |             |  |
| • I understand and can explain it to others  | 113 (20.6%) |  |
| • Some understanding                         | 167 (30.5%) |  |
| • I don't understand but I would like to     | 234 (42.7%) |  |
| • It wouldn't be helpful to me to understand | 34 (6.2%)   |  |

## DISCUSSION

According to the available data provided by the Jordanian Dental Association, there are 1309 dentists registered as dental specialists. The sample size of this study represents 41.86% of the total number of dental specialists. In this study, the respondents show a positive attitude towards the concept of EBD, with 56.4% strongly welcoming its current promotion and 56.5% claiming their colleagues have a welcoming attitude. With the high quality of training and evaluation at the post-graduation level in Jordan, it is not surprising how 44.3% of specialists reported that 75 to 100% of their practice is currently evidence-based, and 64.2% strongly agree with the notion that EBD improves patient care. Moreover, only 4.2% strongly agree with the impression that EBD is of

limited value in dentistry. The respondents reported several factors that are perceived as a barrier to practicing evidence-based dentistry. Lack of personal time (20.9%) emerges as the most common barrier, followed by the presence of too much evidence (20.1%). These findings are in accordance with similar results reported in literature (14–16). To practice EBD, the specialists need to understand terms used in scientific research, as well as those significant in critical appraisal. The dental specialists who participated in answering the questionnaire showed a good understanding of the terms used in research, and those who were unaware of these terms reported a willingness to learn.

## LIMITATIONS

The authors of this study acknowledge the shortcoming in methodology; the self-rated assessment might be a cause of bias and might shed doubt on the objectivity of the responses.

## CONCLUSION

Evidence-based practice is a relatively new concept in dentistry (17). The dental specialists who participated in answering the questionnaire used in this study showed willingness to enhance their knowledge regarding EBD, and the overall awareness among them was good. However, a percentage of the respondents believe that EBD is of limited value in dentistry.

In this study we identify lack of personal time and the presence of too much evidence as a major barriers to practice EBD by the respondents. In spite of the limitations in this study it provides a significant data regarding Evidence based practice in Jordan, a further studies are recommended to overcome the limitations and to address the practical implementation of EBD.

## REFERENCES

1. Kay E. Why evidence based dentistry? Vol. 24, Evidence-Based Dentistry. Springer Nature; 2023. p. 1.
2. Haron IM, Sabti MY, Omar R. Awareness, knowledge and practice of evidence-based dentistry amongst dentists in Kuwait. *European Journal of Dental Education*. 2012 Feb;16(1).
3. James Bader 1 AIAC on SAD of SJ of the ADA. Current Policies [Internet]. 1954 [cited 2023 May 10]. Available from: Bader J, Ismail A; ADA Council on Scientific Affairs; Division of Science; Journal of the American Dental Association. Survey of systematic reviews in dentistry. *J Am Dent Assoc*. 2004 Apr;135(4):464-73. doi: 10.14219/jada.archive.2004.0212. PMID: 15127870.
4. Chiappelli F. Evidence-Based Dentistry: Two Decades and Beyond. Vol. 19, *Journal of Evidence-Based Dental Practice*. Mosby Inc.; 2019. p. 7–16.
5. Ubu N, Badner V. Evidence-based dentistry. Vol. 150, *Journal of the American Dental Association*. American Dental Association; 2019. p. 3–4.
6. Guyatt GH OAKRVGFYYSHGWGroup. guyatt2008. *BMJ* [Internet]. 2008 May 3 [cited 2023 May 10]; Available from: <https://www.bmj.com/content/336/7651/995.long>
7. Upton D, Fbpss P, Upton P, Mphil MA. METHODOLOGICAL ISSUES IN NURSING RESEARCH Development of an evidence-based practice questionnaire for nurses. Vol. 54, *Journal of Advanced Nursing*.
8. Neuppmann Feres MF, Roscoe MG, Job SA, Mamani JB, Canto GDL, Flores-Mir C. Barriers involved in the application of evidence-based dentistry principles: A systematic review. Vol. 151, *Journal of the American Dental Association*. American Dental Association; 2020. p. 16-25.e16.
9. Selvi F, Ozerkan AG. Information-Seeking Patterns of Dentists in Istanbul, Turkey. *J Dent Educ*. 2002 Aug;66(8):977–80.
10. Hannes K, Norré D, Goedhuys J, Naert I, Aertgeerts B. Obstacles to Implementing Evidence-Based Dentistry: A Focus Group-Based Study. Vol. 72, *Journal of Dental Education* ■.
11. Kida Minja I, Lwoga ET. META REVIEW Evidence Based Dentistry among Dentists in Low and Middle Income Countries: A Systematic Review [Internet]. Available from: <http://tinyurl.com/EBDappendixII>
12. Mccoll A, Smith H, White P, Field J. Information in practice General practitioners' perceptions of the route to evidence based medicine: a questionnaire survey [Internet]. Available from: [www.bmj.com](http://www.bmj.com)
13. Barghouti F, Mrcgp MD, Halaseh L, Said T, Mousa AH, Dabdoub A. Evidence-based medicine among Jordanian family physicians Awareness, attitude, and knowledge. Vol. 55, *Canadian Family Physician • Le Médecin de famille canadien*. 2009.
14. Wårdh I, Axelsson S, Tegelberg Å. Which Evidence has an Impact on Dentists' Willingness to Change Their Behavior? *Journal of Evidence-Based Dental Practice*. 2009 Dec;9(4):197–205.
15. Hannes K, Norré D, Goedhuys J, Naert I, Aertgeerts B. Obstacles to Implementing Evidence-Based Dentistry: A Focus Group-Based Study. Vol. 72, *Journal of Dental Education* ■.
16. Gupta, M., Bhambal, A., Saxena, S., Sharva, V., Bansal, V., & Thakur, B. (2015). Awareness, Attitude and Barriers Towards Evidence Based Dental Practice Amongst Practicing Dentists of Bhopal City. *Journal of clinical and diagnostic research : JCDR*, 9(8), ZC49–ZC54. <https://doi.org/10.7860/JCDR/2015/12814.6342>
17. Yamalik, N., Nemli, S. K., Carrilho, E., Dianiskova, S., Melo, P., Lella, A., Trouillet, J., & Margvelashvili, V. (2015). Implementation of evidence-based dentistry into practice: analysis of awareness, perceptions and attitudes of dentists in the World Dental Federation-European Regional Organization zone. *International dental journal*, 65(3), 127–145. <https://doi.org/10.1111/idj.12160>

