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Patient's perspective and awareness of materials used in dentistry

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Abstract

Objective: To assess patients' knowledge and attitude towards different dental materials used in private and public dental facilities in an urban setting.

Method: The cross-sectional study was conducted at the Islamabad Dental and Medical College, Islamabad, Pakistan, from February to July 2019, and comprised individuals at private dental clinics and teaching hospitals. Data was collected using a pre-validated structured questionnaire that recorded socio-demographic information as well as patients' perception on evidence-based dentistry using visual analogue, trust on the dentist, quality of materials and the source of information. Data was analysed using SPSS 21.

Results: Of the 269 participants, 151(56.1%) were females with a mean age of 33.87±12.63 years, and 118(43.9%) were males with a mean age of 33.28±13.71 years. Overall, 208(77.3%) respondents were in favour of using materials with long-term scientific data; 201(74.7%) recognised a difference in

quality of materials used at private clinics and teaching hospitals; 128(63.7%) believed that poor quality materials were used in teaching hospitals; 229(85%) trusted their dentists for using high-quality materials; and 108(40%) identified dentists as the source of information. There was a significant relationship between patient's education level and realising the importance of using dental materials supported by scientific evidence ($p \leq 0.01$).

Conclusion: Majority of subjects believed that poor quality materials were used in teaching hospitals compared to private dental facilities.

Key Words: Patient-centred care, Evidence-based dentistry, Dental material.

Introduction

Modern-day dental patients are increasingly well-informed regarding their dental treatment needs and various treatment options available. As a result, they demand equal involvement in the decision-making process related to their health. This is now recognised as a fundamental principal of patient-centred dental services^{1, 2}. It not only ensures good dentist-patient relationship, but also improves patient satisfaction with the treatment outcome^{1, 2}.

Patients' perception of available dental materials would affect their preference for the selection of restorative material³. In addition, their oral healthcare behaviour is dependent on their knowledge and perception of oral health and available materials⁴. For instance, studies have shown that some patients still prefer dental amalgam because of its low cost, high strength and durability. Other patients prefer aesthetic restorations due to the silver colour of amalgam and controversy regarding its potential health and environmental hazards⁵. A study reported that patients' opinion also had a great influence on the dentist's decision⁶.

The source of information about dental materials also plays a major role in patients' perception of dental treatment outcome. A study on the use of dental implants as treatment option compared to conventional treatment modalities

showed that from 200 participants, 45.5% had heard about dental implants from friends, while 38% had no idea about oral hygiene related to the care of dental implants, and 28.5% expected them to last 10-20 years⁷.

Despite the presence of a wide variety of materials in dentistry, the clinical use of any type of material is largely influenced by clinician's preference and patient's acceptance. The knowledge and attitude of patients towards different dental materials can affect acceptance of proposed treatment plans. Different populations across the globe can exhibit different attitudes towards similar dental materials. The current study was planned to assess the attitude of patients towards the use of evidence-based dental materials in dental hospitals and private clinics, and to assess the level of patients' participation in the selection of dental materials.

subjects and Methods

The cross-sectional study was conducted at the Islamabad Dental and Medical College, Islamabad, Pakistan, from February to July 2019, and comprised individuals at private dental clinics and teaching hospitals.. After approval from the institutional ethics review board, the sample size was calculated using Raosoft calculator⁸ with confidence level 95%, margin of error 5% and an anticipated population proportion of 1.05 million⁹. Those included were literate patients aged 15 years or above. Those who refused to participate were excluded.

After taking informed verbal consent from the subjects, data was collected using completing a double-sided pre-validated structured questionnaire which was drafted in English and Urdu. It was designed to record socio-demographic data, like age, gender and education level, and the type of dental clinic. In addition, the questionnaire consisted of 3 statements with a 10-point visual analogue scale (VAS) to evaluate patients' perception of evidence-based dentistry which was in line with previous studies^{2, 10}. During data analysis, the 10-point scale was transformed to a 3-point response scale ranging from 1 = not important to 3

87 = important), with 2 = neutral. The questionnaire also assessed view of patient's
 88 trust on the dentist for the selection of dental materials, quality of materials used
 89 in private practice and teaching hospitals, and the source of information.
 90 The data was analysed using SPSS 21. Chi square test was used to analyse
 91 association between patients' education and their view of patient-centred care.
 92 $P \leq 0.05$ was considered significant.

94 **Results**

95 Of the 386 subjects approached, 269(70%) volunteered to participate. Among
 96 them, 151(56.1%) were females with a mean age of 33.87 ± 12.63 years, and
 97 118(43.9%) were males with a mean age of 33.28 ± 13.71 years. Regarding
 98 education, there were 26(9.7%) subjects who did not complete secondary
 99 school, 105(39.1%) studied up to the high school level or below, 87(32.4%) had
 100 bachelor's or technical degree, and 51(19%) had a postgraduate degree.

101 Overall, 208(77.3%) respondents were in favour of using materials with long-
 102 term scientific data (Table 1); 201(74.7%) recognised a difference in quality of
 103 materials used at private clinics and teaching hospitals; 128(63.7%) believed
 104 that poor quality materials were used in teaching hospitals; 229(85%) trusted
 105 their dentists for using high-quality materials (Figure 1); and 108(40%)
 106 identified dentists as the source of information (Figure 2).

107 There was a significant relationship between patient's education level and
 108 realising the importance of using dental materials supported by scientific
 109 evidence ($p \leq 0.01$). No differences in perception were noted between patients in
 110 the two different clinical settings ($p > 0.05$).

111 When asked if their dentist gave them the choice of material when performing
 112 the treatment, only 135(50.2%) respondent stated they were asked before
 113 treatment. Among patients who said they were given the choice to select a
 114 material, 82(60.7%) reported in private dental clinics, and 53(39.6%) in
 115 teaching hospitals.

116 A positive correlation was observed between trust on dentist and choice of
117 material ($p \leq 0.01$).

118 Finally, 238(88.5%) participants said they would like to upgrade their
119 knowledge about different materials used in dentistry and to get involved in the
120 decision-making process.

121

122 **Discussion**

123 Quality of care is a major concern for healthcare providers ¹¹. The present study
124 showed that majority of patients reporting at private dental clinics and teaching
125 hospitals of Islamabad had firm belief regarding use of high-quality and
126 evidence-based dental materials, which is in line with an earlier study in which
127 most patients preferred to choose a material having long-term success rate in
128 clinical research, and had a strong opinion on the 'own label' version of dental
129 materials while staying away from materials not made by recognised
130 manufacturers².

131 The present study also suggests that patients with a postgraduate degree placed
132 more emphasis on the use of materials having scientific evidence compared to
133 the less-educated respondents. This could be attributed to a sense of realisation
134 and awareness of one's well-being health-wise that comes with education¹².
135 This finding corresponds to a previous study¹³. Another study found that
136 education level influences oral health, with a trend of poor oral health and
137 higher treatment needs of less-educated patients¹⁴.

138 Regarding the quality of material, majority (74.7%) respondents believed that
139 substandard quality of dental products was used in teaching hospitals. A study
140 showed that 44% respondents felt a difference in the quality of the materials
141 used in public and private patients².

142 Patient's trust on the dentist for the selection of best-quality dental materials is
143 important in achieving improved patient satisfaction¹⁵. More importantly,
144 dentist-patient interaction during dental treatment has shown to affect patient

compliance¹⁶. A 2003 poll showed that 61% respondents felt dentists were honest and trustworthy, while less than a third considered dentist to be dishonest and opportunistic¹⁷. A recent survey in the United States on trustworthiness and ethics across various professions showed that just over 60% respondents believed the 'honesty and ethical standards' of dentists to be 'very high' or 'high'¹⁸. These studies are consistent with the results of the present study, because more than two-thirds of the respondents trusted their dentists for material selection. Another interesting finding was that patients attending private dental clinics had higher trust level compared to those reporting to teaching hospitals, indicating that patient participation in the decision-making process can improve patient satisfaction of dental care as is commonly done at private practices¹¹.

Dentist and the dental team were the most common source of information on different materials used in dentistry in the current study which is in agreement with an earlier study¹⁹. It has been reported that dental surgeons and dental health workers play an important role in enabling the patients to make adequate use of the available dental facilities²⁰.

The current study has limitations, as it was done in a single city, and did not assess patients' knowledge about dental material and treatment options. It is recommended that similar studies should be conducted nationwide while assessing patients' knowledge and preference of specific material and treatment choice. In addition, other factors which can influence the trust of patients on their dentists should be explored.

Conclusion

Most patients recognised the importance of using evidence-based dental materials, especially the ones with a higher level of education. Moreover, the majority of patients identified a difference in the quality of materials being used in private clinics and teaching hospitals, with the latter being perceived as a

source of low-quality materials. Overall, majority trusted their dentists to provide the relevant information as well as use high-quality materials during treatment.

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Table: Importance of use of high-quality and evidence-based dental materials as perceived by patients.

Statement	Important	Neutral	Not important
How important is the quality of materials used in your mouth?	231 (85.9%)	34 (12.6%)	4 (1.5%)
How important it is that the materials used in your mouth are supported with relevant clinical research evidence?	215 (79.9%)	48 (17.8%)	6 (2.2%)
How important it is that the materials used in your mouth have long term data of success?	208 (77.3%)	45 (20.1%)	7 (2.6%)

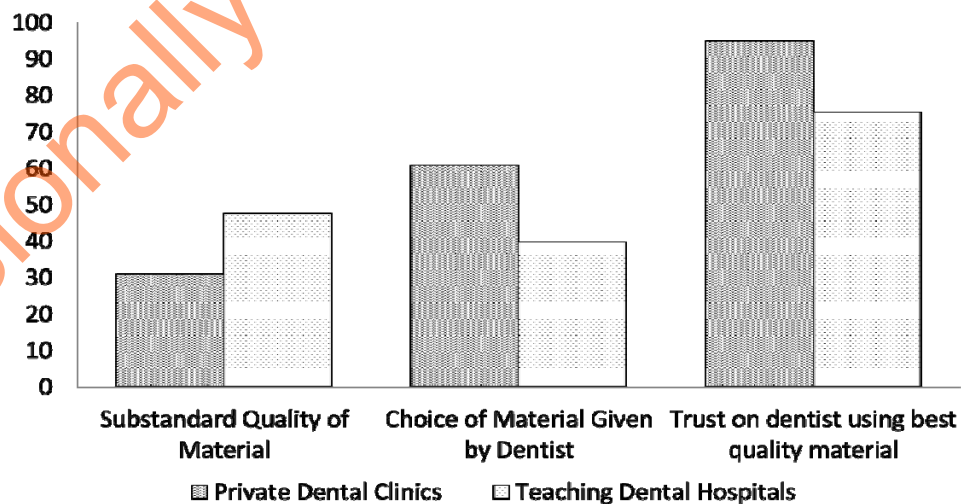
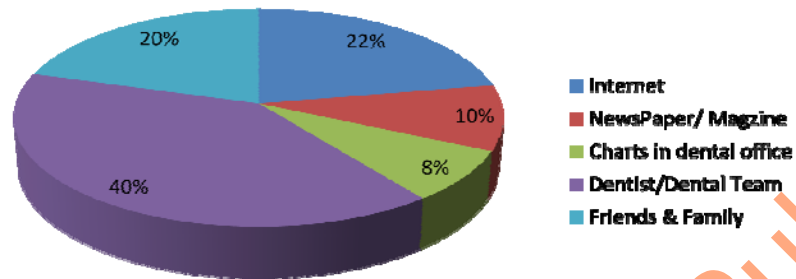


Figure 1: Comparison between private and public dental health facilities.

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Figure 2: Source of knowledge about dental materials.