ABSTRACT

Objective: Green dentistry is an emerging concept necessary to address the worsening climatic changes. It is essential to compile the existing literature on knowledge, attitude, and practice on green dentistry that can be accomplished by conducting a literature review. The objective of this literature review was to summarize and present the existing knowledge that dentists have regarding green dental practices, their attitude about this shift towards sustainability, and steps that they have taken in their personal practice to adhere to an eco-friendlier dental approach.

Methods: Three months of effective research and review development from March 2022 to June 2022. Design using keywords, a literature search was performed in PubMed, Google scholar and Web of Science databases. A total of 13 articles of 45, fulfilling the inclusion criteria were selected, of which two were excluded as these were not in English.

Results: Dental practitioners have good knowledge about green dentistry and positive attitudes towards environment conservation, but implementation in their practice is not adequate. Most common themes of knowledge, attitude and practice assessment in green dentistry are amalgam management, radiographic management, infection control, waste management, water, and electricity management.

Conclusion: The absence of adequate literature on eco-friendly practices in dentistry makes it difficult to validate the findings of most of these studies. Dental professionals are familiar with environmentally friendly dental practices and have a positive outlook on their role in environmental protection, but its application in practice is far from adequate.

KEYWORDS: Eco-friendly dentistry, Green dentistry, Sustainable dentistry, Knowledge, Attitudes, Practice.

doi: https://doi.org/10.12669/pjms.40.1.7606


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INTRODUCTION

Sustainable Development Goals (SDGs) were presented in the United Nations (UN) in 2015, by encouraging all countries to adopt a set of 17 goals targeted to end poverty, protect the planet, and ensure prosperity for all. Sustainable development is becoming increasingly important due to environmental concerns. Climate change is caused by human actions that produce greenhouse gases, leading to rising temperatures, heat waves, fires, droughts, and warming waters. The healthcare sector is committed to providing safe and effective care. Health and dental care providers prioritize efficiency over sustainability, leading to the production of a lot of waste and carbon dioxide emissions.

Dental practices discard millions of sterilization pouches, chair barriers, and light handle covers annually. Gloves, masks, suction tips, saliva ejectors, needles, and paper as other disposables are difficult to breakdown. 360 gallons of water waste each day, production of 4.8 million lead foils, 28 million liters of poisonous X-ray fixer, and 3.7 tons of mercury waste annually.
and Suchak pioneered eco-friendly dentistry in 2007. His recommendations have been heavily used in subsequent studies. The World Federation of Dentistry (FDI) called for sustainable techniques in oral health care to safeguard service delivery and foster green economy.

Since the idea of “green dentistry” is novel, only a few studies have explored dentists’ knowledge, attitudes, and practices (KAP) in order to learn more about what they know, believe, and engage in. However, these studies are not unidirectional and cover various aspects of KAP of dentists with regards to sustainable dental practices. Compiling and analyzing existing KAP literature is essential to identify gaps and guide future research efforts. KAP questionnaires can be used to inform further research. Literature review was identified as the most effective method. This literature review aims to summarize the knowledge and attitudes of dentists regarding sustainable dental practices, their attitude towards this shift, and their steps to adhere to an eco-friendly dental approach.

METHODS

Literature search Design: Literature search and review development was conducted from March 2022 to June 2022 using PubMed, Google Scholar and Web of Science databases using keywords such as knowledge, attitude, practice, green dentistry, ecofriendly dentistry, and sustainable dentistry. Every individual search term was supplemented with relevant free text terms. When appropriate, the free text terms have been truncated in order to include alternative word endings. The database searches were complemented with manual review of the reference lists of relevant articles, which resulted in a few additional articles included in the study.

Studies exploring knowledge, attitude, and practices of dentists regarding green dentistry in English with free full text were included. Thirteen articles were selected, of which two non-English were excluded. A manual screening of references from final articles was performed to ensure inclusion of all articles. The eleven studies were all original research manuscripts, with one being a thesis dissertation. Fig.1 shows the flowchart of the search strategy.

Ethical approval: Not Applicable.

RESULTS

Articles on KAP of dental health care providers regarding green dentistry are summarized in Table-I. All studies used a self-administered questionnaire as their data collection tool, with responses ranging from 150 to 800. The respondents were mostly dentists, dental graduate and post graduate students, and dental professionals.
Knowledge of green dentistry: Six of eleven articles reported dental health care providers’ knowledge or awareness of green dentistry, with Table-II providing a summary of studies. In 2013, two studies were conducted in Jordan and Thailand to assess the KAP of dentists regarding green dentistry using self-developed questionnaires. Shatrat et al. in Jordan tested questionnaire on 30 volunteer participants for content validity, clarity, and format. Agrasuta V’s study did pilot for clarity and ease of completion. Both studies reported no quantitative measures of internal validity or consistency and showing dentists are well-versed in sustainable dental practices. However, the design of the questionnaire, which forbade the use of parametric statistical tests, is one of the limitations of both studies that might have had an impact on the findings. Both studies expressed concern related to the lack of literature on eco-friendly dental practices, which also makes it difficult to validate the findings.

KAP of dentists in India and Saudi Arabia was assessed in 2015 and 2016. Zaharunnissa et al used a self-developed questionnaire to survey 150 dental practitioners. Pilot tested on thirty volunteers. The study found that dentists had adequate knowledge about sustainable dentistry, with “fully in place” being a proxy for high knowledge. Al Qarni et al in Saudi Arabia conducted an educational awareness intervention to increase awareness of eco-friendly dentistry. Using a self-administered questionnaire with internal consistency of 0.80-1.00. Unlike other studies by Shatrat et al,

<table>
<thead>
<tr>
<th>No.</th>
<th>Author</th>
<th>Study Type</th>
<th>Country</th>
<th>Participants</th>
<th>Sample size</th>
<th>Instrument</th>
<th>Publication year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agrasuta V⁹</td>
<td>Cross sectional KAP</td>
<td>Thailand</td>
<td>Dentists</td>
<td>472</td>
<td>50-item Questionnaire</td>
<td>2013</td>
</tr>
<tr>
<td>2</td>
<td>Shatrat A⁸</td>
<td>Cross sectional KAP</td>
<td>Jordan</td>
<td>Dentists</td>
<td>150</td>
<td>39-item questionnaires</td>
<td>2013</td>
</tr>
<tr>
<td>3</td>
<td>Zahrunnissa¹⁰</td>
<td>Cross sectional KAP</td>
<td>India</td>
<td>Dentists</td>
<td>150</td>
<td>22-item questionnaire</td>
<td>2015</td>
</tr>
<tr>
<td>4</td>
<td>Daniela ²⁶</td>
<td>Cross sectional attitudes and behaviors</td>
<td>Romania</td>
<td>Dentistry students, dental practitioners, dental technician</td>
<td>159</td>
<td>Questionnaire</td>
<td>2015</td>
</tr>
<tr>
<td>5</td>
<td>Mohammad A. Al-Qarni¹¹</td>
<td>Cross sectional pre-post survey knowledge</td>
<td>Saudi Arabia</td>
<td>Dentists, dental students, dental auxiliaries</td>
<td>160</td>
<td>18-item questionnaire</td>
<td>2016</td>
</tr>
<tr>
<td>6</td>
<td>Prathima¹³</td>
<td>Cross sectional KAP</td>
<td>India</td>
<td>Dentists</td>
<td>800</td>
<td>Questionnaire</td>
<td>2017</td>
</tr>
<tr>
<td>7</td>
<td>Amandeep¹⁶</td>
<td>Cross sectional practices and perceived barriers</td>
<td>India</td>
<td>Dentists</td>
<td>120</td>
<td>6-item questionnaire</td>
<td>2017</td>
</tr>
<tr>
<td>8</td>
<td>Abhinav²⁷</td>
<td>Cross sectional attitude and factors influencing adoption of green dentistry</td>
<td>India</td>
<td>Dentists</td>
<td>110</td>
<td>9-item questionnaire</td>
<td>2017</td>
</tr>
<tr>
<td>9</td>
<td>Praneetha¹⁵</td>
<td>Cross sectional attitude and implementation of eco-friendly dental office strategies</td>
<td>India</td>
<td>Dentists</td>
<td>120</td>
<td>Questionnaire</td>
<td>2019</td>
</tr>
<tr>
<td>10</td>
<td>Pallavi¹²</td>
<td>Cross-sectional KAP</td>
<td>India</td>
<td>Dentists</td>
<td>250</td>
<td>15-item Questionnaire</td>
<td>2019</td>
</tr>
<tr>
<td>11</td>
<td>Shivangi¹⁴</td>
<td>Cross sectional knowledge and practices</td>
<td>India</td>
<td>Dentists</td>
<td>200</td>
<td>20-item questionnaire</td>
<td>2020</td>
</tr>
</tbody>
</table>
Table-II: Summary of studies assessing knowledge of dentists regarding green dentistry.

<table>
<thead>
<tr>
<th>No.</th>
<th>Author</th>
<th>Country</th>
<th>Instrument</th>
<th>Knowledge assessment</th>
<th>Knowledge result</th>
<th>Key findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Shatrat A8</td>
<td>Jordan</td>
<td>45 item self-administered questionnaire, 4-point Likert scale</td>
<td>4-point Likert scale</td>
<td>70% reported high knowledge</td>
<td>70% of dentists: high knowledge of eco-friendly dental practices. Highest knowledge observed: alternative filling materials to amalgam, amalgam disposal, utilizing and purchasing radiographic chemicals, and compact fluorescent light bulbs. Least knowledge: radiographic waste disposal and using motion detectors for rooms.</td>
</tr>
<tr>
<td>2.</td>
<td>Agrasuta V9</td>
<td>Thailand</td>
<td>Web based 7 multiple choice knowledge questions.</td>
<td>Assessed as scores. Highest score: 6</td>
<td>Score 5: 35.6%</td>
<td>83.5% of respondents never heard about the term “green dentistry” and 16.5% having some idea. Responses differed significantly for age, years of working experience, and workplace. Higher knowledge scores: age above 31 with more work experience Least knowledgeable: private dental practitioners</td>
</tr>
<tr>
<td>3.</td>
<td>Zaharrunnisa10</td>
<td>North Bangalore, India</td>
<td>Self-administered 18 item questionnaire, in person.</td>
<td>Assessed as scores, reported as category. Adequate (&gt;75% score)</td>
<td>62% dentists: moderate knowledge, 38%: adequate knowledge,</td>
<td>62% moderate knowledge 38% adequate knowledge. Dentists of age &gt;40 years significantly higher knowledge as compared to those &lt; 40 years old. Males had &gt; knowledge than females, Postgraduate dentists &gt; knowledge than graduate dentists.</td>
</tr>
<tr>
<td>4.</td>
<td>M. Al Qarni11</td>
<td>Saudi Arabia</td>
<td>Self-administered 18 item questionnaire</td>
<td>Mean knowledge score</td>
<td>Dental student 29.33 (11.8)</td>
<td>Overall participants lacked knowledge about eco-friendly dental practices.</td>
</tr>
<tr>
<td>5.</td>
<td>Prathima13</td>
<td>Telangana, India</td>
<td>Self-administered questionnaire</td>
<td>Not specified</td>
<td>13.1% respondents aware: Eco-Friendly Dental practices association. 76% participants aware of dental practice effects on environment</td>
<td>Postgraduate’s awareness of green dentistry &gt; than graduates. Graduates knowledge about digital radiography (100%). Awareness of mercury toxicity high in both groups.</td>
</tr>
<tr>
<td>6.</td>
<td>Pallavi12</td>
<td>Chennai, India</td>
<td>8-items questionnaire</td>
<td>Proportion of correct answers for each stem</td>
<td>Dentists’ knowledge regarding green dentistry insufficient</td>
<td>52.5% PGs, 48.4 % graduates and 81.5% PG students aware of the term “green dentistry”.</td>
</tr>
</tbody>
</table>
Table-III: Summary studies assessing attitudes regarding green dental practices of dentists.

<table>
<thead>
<tr>
<th>No.</th>
<th>Author</th>
<th>Country</th>
<th>Instrument</th>
<th>Attitudes assessment</th>
<th>Attitudes result</th>
<th>Key findings</th>
</tr>
</thead>
</table>
| 1.  | Agrasuta V⁹     | Thailand    | 11 questions             | Assessed as scores on a 5-point Likert 1 = very negative 3 = neutral 5 = very positive | Mean attitude score 3.95 (SD 0.43) | Overall attitude: very positive Lower attitude scores: financial burden, ease of finding green products, and amalgam management.  
Strong sense of dental community role in environment protection.  
Highest positive attitude scores: Energy management and water management 4.44 and 4.47  
Negative responses: added financial burden.  
Concerns: about using sterilizable instruments over disposables.  
Overall, dentists had adequate attitudes towards adopting green dentistry  
Dentists of age < 39 years had highest adequate attitude scores (55.8%),  
Lowest scores > 40 years old.  
Males had highest attitudes than females.  
Graduate dentists had higher proportion of attitudes than PGs.  
Dentists with 10-15 years of experience had most positive attitudes (57.1%) |
| 2.  | Zaharunnisa¹⁰   | North Bangalor, India | 5 questions             | Assessed as scores, reported as category.  
Inadequate (<=50% score)  
Moderate (51-75% score)  
Adequate (>75% score) | 56.7% moderate attitudes score, 43.3% adequate attitude score | Overall, dentists had adequate attitudes towards adopting green dentistry  
Dentists of age < 39 years had highest adequate attitude scores (55.8%),  
Lowest scores > 40 years old.  
Males had highest attitudes than females.  
Graduate dentists had higher proportion of attitudes than PGs.  
Dentists with 10-15 years of experience had most positive attitudes (57.1%) |
| 3.  | Daniela²⁶       | Romania     | Self-administered questionaire | Proportions | Not specified, study was ongoing, presented partial results | Positive response towards biomedical waste management.  
Unaware of opportunities to recycle clinical waste |
| 4.  | Prathima¹³      | Telangana, India | Self-administered questionaire | Not specified | Not specified | 91.9% positive attitudes towards implementing various green dental strategies.  
90% agreed that green practices play a role in environment transformation from current to Green practice is difficult 63.3% unsure if green practices will increase financial burden 41.7% unsure of finding compatible green dentistry products 51.7% believed that eco-friendly practices lower operations and maintenance cost. |
| 5.  | Praneetha¹⁵     | Rajahmundry, India | 8-items on a questionaire | Measured as categories: Agree Not sure Disagree | Not specified |  

Agrasuta V et al,9 and Zahrunnisa et al,10 this study did not report final knowledge levels by means of continuous or categorical score. Instead, proportions of dentists responding correctly to each answer were reported with results showing improved knowledge of eco-friendly dental practices in post-intervention test.11

Three Indian studies were reported between 2017 and 2020 to assess dental practitioners’ knowledge on sustainable dental practices. Prathima et al reported results from 800 dentist participants, Pallavi et al and Shivangi et al had 150 and 200 participants respectively.12-14 They used self-administered questionnaires.14 Dental practitioners’ knowledge of green dentistry was found to be high, while Shivangi et al reported otherwise.12 According to Pallavi et al the results cannot be regarded as having actual validity because the degrees of awareness in urban and rural areas of the country may differ.

**Attitudes about green dentistry:** Seven of eleven studies reported positive dentists’ attitudes towards green dentistry, with each study reporting on diverse themes as summarized in Table-III. Overall, dentists have a positive attitude towards adopting green dental practices to reduce environmental impact. Two studies reported negative attitudes towards green dental practices due to their perceived financial burden.9,15

**Green dental practices:** Eight studies assessed practices of dental health care providers on green dentistry using self-administered questionnaires with varying numbers of questions. The questionnaires focused on amalgam, radiographic, waste, water, and energy management. Shatrat et al and Agrasuta et al. reported green practices of dentists as being “fully implemented”, “in the process”, “not implemented” or “unsure”.8,9

Other studies reported proportion of dentists following each practice. Regardless of measurement, there was low implementation of sustainable dental practices by dental practitioners.2-5,12-16 Majority reported Dentists of different ages, genders, post-graduates, and under-graduates have different practices.8,9,10,12,14 Nevertheless, many studies in terms of evaluating green practices were not free from biases. According to Zahrunnisa et al. the questionnaire could not address all eco-friendly dentistry practices because it only included a few in order to encourage compliance which makes it harder to support the findings.12 Similar to this, Al Qarni et al in Saudi Arabia focused on the role of dentists, but it might not have correctly represented the relevance of dental hygienists and assistants in the adoption of eco-friendly dentistry practices.10 The issue of limited sample size was common with the most studies in India; hence, investigations with a broader population were required to have a deeper understanding and more trustworthy data to generalize the findings.8,12

Majority using GIC and composites conserve water and electricity.8,9,10,13,15,16 Amalgam separators were least used with poorly established amalgam disposal practices.8,9,10,13,15,16 Majority of dentists have digitalized their radiographs and record keeping systems. Chemicals are often purchased in concentrated, bulk form from vendors. Reducing waste, using renewable energy, and using eco-friendly paint are important strategies for infection prevention in different regions. A summary of findings for practices is shown in Table-IV.

**DISCUSSION**

Green dentistry seeks to promote sustainability in dentistry. Farahani and Suchak pioneered eco-friendly dentistry in 2007.3 Their green model of eco-friendly alternatives to conventional dental practices replaced harmful current dental practices with green practices.3 Since then, numerous studies have explored the environmental footprint of dental practices.

The review found that the lack of literature on eco-friendly practices in dentistry made it difficult to validate the findings of most of these studies. This led to the absence of a uniform instrument, which is pervasive throughout literature and is identified as a common barrier. The six green dentistry model themes — amalgam management, radiography management, infection control management, procurement management, energy and water conservation — were shared by all of them. Despite common themes, each study had developed their own tool. Overall, most studies reported high dentists’ knowledge of green dental practices, but their practices were not adequate.

**Amalgam management:** Regarding the first theme, amalgam management, its usage is contentious because of mercury, a bio-accumulating substance.17 Mercury is known to have negative effects on human health.16,19 Improper disposal of amalgam in regular trash is hazardous. Unused amalgam particles should be collected and recycled, and pre-capitated amalgam should be used. Amalgam separators should be installed in suction and vacuum lines.14,20 All studies examined the environmental effects of amalgam and mercury, and asked questions about dentists’ knowledge and practice. Respondents in Jordan, Thailand, Saudi Arabia, and India were aware of amalgam hazards.9,11,12,14,15 Dentists in Jordan, Thailand, and India used alternative filling materials to replace amalgam. However, the use of amalgam separators was low due to dentists disposing the amalgam in garbage and the lack of proper disposal practices with few using amalgam separators. Amalgam is a popular restorative material due to its affordability, longevity, and ease of use among Indian dentists.21,22

**Radiography management:** Conventional radiographs use x-ray fixer, developer and dental film, which contain hazardous chemicals and should not be disposed of in regular trash.8,23 Dental practitioners must be aware of hazardous components and proper disposal of conventional x-rays. Green dentistry recommends digital radiographic techniques to minimize harmful chemical, paper, and plastic waste.24 Majority of dental practitioners in Jordan and North Bangalore use digital radiographs, while low levels of usage are reported in Chennai and Thailand.8,10,12 Poor disposal of x-ray fixer and developer solutions is observed.8,10,12

**Infection control management:** Only 20% medical waste...
Table-IV: Summary studies assessing green dental practices of dentists.

<table>
<thead>
<tr>
<th>No.</th>
<th>Author</th>
<th>Country</th>
<th>Instrument</th>
<th>Practice assessment</th>
<th>Practice result</th>
<th>Key findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Agrasuta V³</td>
<td>Thailand</td>
<td>15-item self-administered online questionnaire</td>
<td>‘Fully implemented’</td>
<td>47.3% adopting green practices (Low)</td>
<td>&lt; 50% eco-friendly dental practices. Pre-capsulated amalgam usage (92.8%) in the public sector. Radiographic waste, and water management was less than 50%. General waste management, infection control management energy management was &gt;50% but &lt; 80%. Low: amalgam management, radiographic and paper waste management, electronic records, infection control management and water/energy conservation.</td>
</tr>
<tr>
<td>2.</td>
<td>Shatrat A³</td>
<td>Jordan</td>
<td>45-item self-administered questionnaire</td>
<td>‘Fully implemented’</td>
<td>Low</td>
<td>High implementation: chemical mixing and storing, purchasing concentrated chemicals, digital radiography and fluorescent light bulbs. 71.3% implementation: electronic records &amp; awareness videos, 99% use of towel, 56.6% recycling paper, and 73.4% using digital radiography.</td>
</tr>
<tr>
<td>3.</td>
<td>Zaharun-nisa¹⁰</td>
<td>North Bangalore, India</td>
<td>13-items in a self-administered questionnaire</td>
<td>Practice measured as: Inadequate &lt; or =50% Moderate 51-75% Adequate &gt; or = 75%</td>
<td>62% dentists moderate practice levels 38% adequate practice levels</td>
<td>Low scores: unused amalgam particles in closed containers (43.3%) and amalgam separators (36.6%). 60% practiced paper waste disposal and alternative filling materials to amalgam. Low implementation: other green dental practices -renewable energy, waste segregation, digital data &amp; radiography, recycling x-ray fixer, developer, &amp; lead foil, and using amalgam separators.  &gt; 90% using alternate filling materials, LED bulbs, steam sterilizable cloth wraps. 78% digital radiography</td>
</tr>
<tr>
<td>4.</td>
<td>Prathima¹³</td>
<td>Telangana, India</td>
<td>Self-administered questionnaire</td>
<td>Positive proportions for each practice</td>
<td>Low</td>
<td>Low implementation: other green dental practices -renewable energy, waste segregation, digital data &amp; radiography, recycling x-ray fixer, developer, &amp; lead foil, and using amalgam separators. 81.7% use alternatives to amalgam fillings, 91.7% use digital radiographs, 48.3% use sterilizable instruments, 45% use LED light bulbs, 66.7% used hand sanitizers.</td>
</tr>
<tr>
<td>5.</td>
<td>Amandeep¹⁶</td>
<td>Chandigarh, India</td>
<td>6-item questionnaire</td>
<td>Positive proportions for each practice</td>
<td>Implementation in its stage of infancy</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Pranee-tha¹⁵</td>
<td>South Indian state, India</td>
<td>60-item questionnaire</td>
<td>Positive proportions for each practice</td>
<td>Adequate</td>
<td></td>
</tr>
</tbody>
</table>
is considered infectious and requires special disposal, while 3% from a dental practice requires management with protocol. Studies included in this article reported high knowledge of eco-friendly infection control strategies. Sterilizing instruments, film holding devices and trays, are the most common green infection control practices. Amandeep et al reported 91% dentists use steam sterilization for disinfection, while other studies reported low implementation. Enzyme-based cleaners are biodegradable and free of harsh chemicals, making them ideal for green practices. Practices of using enzyme-based cleaners and reusable items are low, with more inclination towards disposable items. Eco-friendly dental recommendations include paper recycling, electronic records, water and electricity conservation. Technology and awareness of recycling programs are essential for successful use of electronic records. Dentists in Jordan and Thailand recycle and use e-records. In contrast paper waste management was not well practiced in India, as reported by Praneetha et al and Pallavi et al.

The convergence of views regarding many facets of green dentistry is one of the review’s main conclusions. The majority have a positive attitude towards environmental protection. This can be used to increase dental practitioner’s engagement in sustainable practices by creating awareness. However, affordability, adaptation, and availability of green dental products are linked to negative attitudes. Green dental products are expensive and limited, making it difficult to adopt sustainable practices. Additionally, altering conventional dental practices necessitates a gradual transformation in thinking and behaviour. This study reviews the literature on dentists’ KAP with regard to clinical green dental practices. It highlights the need for more stringent research on the subject and create a standardized tool to assess KAP before developing interventions to improve it.

**Limitations:** The study scope is limited to only original KAP studies.

**CONCLUSION**

The practice of dentistry has a significant environmental impact due to its use of raw materials, water, and electricity. The studies identified in this paper provide a heightened level of knowledge, attitude and practices and serves as a rigorous review of literature pertaining to studies done globally for exploring dentists’ KAP regarding green dental practices. Although dental professionals are aware of eco-friendly practices and have a positive attitude, their practice is far from acceptable. The greatest barrier to the implementation of sustainability in all studies is discernment that exists within the profession that do not consider or prioritize sustainable practices. These are particularly pervasive in developing countries, where the greatest barriers are a lack of economic feasibility and a poor knowledge-base on the subject. The lack of literature on eco-friendly practices in dentistry makes it difficult to validate the findings of the majority of these studies. This has led to the absence of a uniform instrument, which is ubiquitous throughout literature and is identified as a common barrier. There is a notable
dearth of quality research that encourages and makes it possible to provide environmentally sustainable oral health care. Emerging research should attempt to develop a standardized tool comprising common aspects of green dentistry, to measure KAP of dentists, prior to planning interventions for improvement.

**Competing financial Interests statement:** None.

**Funding:** None.

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**Author’s Contributions:**

**JGD, JJ and NZ:** Conceived the project, format, the main conceptual ideas, and proof outline.

**JGD:** Is responsible for accuracy and integrity of the work.

**JGD and JJ:** Conceived the study and oversaw overall direction and planning.

**NZ:** Wrote the manuscript with support from JGD, JJ and JP who analyzed the data.