

# Perceptions regarding the shortened dental arch among dental practitioners in the Western Cape Province, South Africa

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**S B Khan:** Faculty of Dentistry, University of the Western Cape, South Africa.

**R Omar:** Faculty of Dentistry, Kuwait University, Kuwait.

**UME Chikte:** Faculty of Health Sciences, University of Stellenbosch, South Africa.

## Correspondence author

**S B Khan:** Department of Restorative Dentistry, University of the Western Cape, Private Bag X01, Tygerberg 7505; Tel: 021 937 3006, Fax: 021 931 2287, E-mail: skhan@uwc.ac.za.

**Aim and objectives:** This survey was conducted to determine the knowledge of and opinions related to the shortened dental arch (SDA), among dentists in the Western Cape Province, South Africa.

**Methods:** The study sample included two consecutive groups, drawn by a process of randomisation from the registered dentist population that included general dentists, specialists, those who had emigrated and retired dentists. A self-administered questionnaire was mailed, e-mailed and/or faxed to those selected. Reminders were either e-mailed or made by telephone over a period of six months.

**Results:** A final sample of 84 respondents with a mean age of 43 years (SD=11.9) was obtained. This represented a response rate of 23% (n= 84) from the final working sample (n=368), derived from the target group (n=618) originally contacted. All participants completed an informed consent form in which confidentiality was assured. Several respondents (40%) said they had heard about the SDA while at university, which would be in line with the age range of respondents in relation to introduction of the concept into dental curricula. As many as 62% had never read any research articles related to the concept which could partly account for the low response rate. The majority (86%) felt that patients can function with a SDA and that they would recommend acceptance to their patients.

**Conclusion:** Respondents know of the potential benefit that the SDA may have for their patients and see it as a viable alternative treatment option for the partially dentate patient, even though their level of current knowledge of the subject must be considered questionable.

**Keywords:** Tooth loss; shortened dental arch; attitudes; perceptions; knowledge; quality of life

## INTRODUCTION

The treatment objective of the complete restoration of dental arches lacks compelling scientific and clinical research

support, yet steadfastly remains the therapeutic standard of care amongst practitioners.<sup>1,2</sup> Whereas tooth loss in general is perceived negatively by most people,<sup>3</sup> the loss of anterior teeth is more profoundly felt.<sup>4</sup> There is also an increasing recognition that a patient's occlusal functional need cannot be defined solely by professionals.<sup>5</sup> Specifically, the need for full restoration of missing posterior segments is increasingly being questioned and the functional satisfaction that may be derived from less than a complete dentition in some patients, particularly in older adults, is both recognised and documented.<sup>4, 6-14</sup>

As originally defined, the classic shortened dental arch (SDA) consisting of twenty occluding anterior and premolar teeth, was initially proposed as a treatment strategy for the older, partially dentate patient.<sup>6,15</sup> Several variations to the classic SDA occlusal pattern, including discontinuous or interrupted arches, were proposed and the reduced posterior arches have been described in terms of the number of occluding units that can ensure adequate chewing function.<sup>6,7,11,12</sup> The SDA concept is a cost-effective treatment option that has been extensively studied and has been advocated as being viable for many industrialised as well as developing countries.<sup>9,12-22</sup> The SDA and its variations improve the accessibility of treatment for large sectors of the population, especially the socially- and economically-deprived middle-aged and elderly communities. It follows that disparities related to oral health that exists within and between populations, as in South Africa, can be addressed utilising the SDA concept as an appropriate treatment strategy.<sup>2,16</sup>

Effecting improvement and/or change in an oral healthcare system depends upon appropriately distributing and using available resources for better health outcomes. An inability to meet the needs and demands of partially dentate patients causes oral healthcare providers, healthcare policy-makers, and third party funders to call for more evidence-based practices in dentistry.<sup>2-5, 14, 15</sup> The literature reports several clinical trials and other research studies where the success of treatment using the SDA concept has been

demonstrated.<sup>3,6-8,10-5</sup> The assertion that this will provide effective treatment, reduce costs and allow equitable distribution of resources seems reasonable. For a country such as South Africa, contemporary treatment planning strategies, such as those based on the SDA concept, need to be considered and should be researched locally for relevance amongst the local population. The results may be able to support a proposal for implementation. Healthcare providers, however, will be at the front line in delivering such a management strategy to patients, and it is thus important that their understanding of, and attitudes towards, such a 'novel' treatment concept be gauged.

Studies have been conducted globally to determine the opinions and practices of dental clinicians regarding the SDA, but

differences in sampling have been noted and considered before undertaking the current research.<sup>8,10,16,26</sup> The convenience of samples drawn from consultants and departmental staff ensured a high response rate in some studies.<sup>8,10,16,26</sup>

For this questionnaire-based study, a survey was conducted amongst registered dentists practicing in the Western Cape Province, South Africa, with the objective of assessing their knowledge and current practices related to the SDA as an appropriate management approach in the partially dentate adult patient.

## MATERIALS AND METHODS

Ethical clearance for the research project (No. 10/2/13) was obtained from the Research and Ethics Committee of the

Survey: Dental practitioners of the Western Cape						
Please answer all questions. More than one option is required for certain questions, mark your response with an X						
1. Percentages of procedures treated in your practice per week? (To the nearest 10% and adding up to 100%)	Extraction .....%	Crowns & Bridges .....%	Fillings .....%	Ortho .....%	Dentures .....%	Other, specify .....%
2. Age categories of patients seen in your practice? (Mark all applicable ages)	Under 10	10– 18 yrs	18 - 35 yrs	35 -65 yrs	65 yrs or more	
3. Reasons for extracting teeth in your practice are? (Give a % for all options, to the nearest 10%, adding up to 100%).	Caries .....%	Perio Dis .....%	Trauma .....%	Impaction .....%	Ortho .....%	Patient request .....%
4. Percentages of the different teeth extracted are? (Give a % all options, to the nearest 10%, adding to a 100%)	Upper incisors .....%	Premolars .....%	Lower molars .....%	Upper molars .....%	Canines .....%	Lower Incisor .....%
5. Do your patients demand the extraction of anterior teeth?	Always	Sometimes	Rarely	Never		
6. Do you comply to requests for extraction of patients' anterior teeth?	Definitely yes	Yes	No	Definitely no		
7. Patients with decayed teeth are advised to save at least their anterior and premolar teeth?	Always	Sometimes	Rarely	Never		
8. What appliance do you commonly use for replacement of missing teeth?	Plastic dentures	Metal dentures	Fixed bridges	Implants	Other, specify	
9. Do you always replace missing molar teeth with distal extension dentures?	Definitely yes	Yes	No	Definitely no		
10. Do you advise patients not to replace missing molars with bridges or dentures?	Always	Sometimes	Rarely	Never		
11. Where did you first hear about the Shortened Dental Arch (SDA)?	University	Journal	This survey	Colleague	Other, specify	
12. Have you read any research related to the SDA conducted locally or internationally?	Definitely yes	Yes	No	Definitely no	Don't know	
13. Do you agree that patients can function adequately with a SDA?	Definitely yes	Yes	No	Definitely no	Don't know	
14. The SDA should be presented to patients as an alternative treatment option?	Definitely yes	Yes	No	Definitely no	Don't know	
15. Treatment options that you usually propose to patients with a SDA are? (More than 1 entry is allowed, to the nearest 10% and adding to 100%)	Plastic dentures .....%	Metal dentures .....%	Cantilever bridges .....%	Implants .....%	No treatment .....%	Other .....%
16. Would patients benefit from an SDA treatment option?	Definitely yes	Yes	No	Definitely no	Don't know	
17. An SDA treatment option must be limited to special cases only, e.g. the handicapped patient?	Definitely yes	Yes	No	Definitely no	Don't know	
18. What will prevent you from presenting the SDA as a treatment option?	Loss of income	Lack of knowledge	Limited research	Not viable option	Nothing	Other, specify
19. Patients most often request the replacement of missing molars with?	Plastic dentures	Metal dentures	Fixed bridges	Implants	No treatment	
20. Not replacing missing molars will affect the patients' Oral-health- related Quality of life.	Definitely yes	Yes	No	Definitely no		
21. Extracting anterior teeth will negatively impact on patients' Oral- health- related Quality of Life.	Definitely yes	Yes	No	Definitely no	Don't know	

**Table 1:** Demographic details of respondents

	24 – 35yrs	36 – 45yrs	46 – 59yrs	60+ yrs
Age range	28	24	24	8
Gender	Female	Male	Not Recorded	
	31	52	1	
Institutions attended (could be more than one)	University of the Western Cape	Stellenbosch University	Other South African Universities	International Universities
	24	40	13	4
Qualifications	BChD	PDD	MChD	BSc/MSc/ PhD
	84	35	10	25
Employment details (dual appointments included)	Private/ Public Health		Academic Institution	
	73		31	

University of the Western Cape (WC), South Africa. The first cycle of data collection was conducted as a pilot study amongst the staff (n=15) in the Department of Restorative Dentistry in the latter part of August 2009. The initial questionnaire was distributed amongst them to solicit their input and expertise so that ambiguities in the questions could be eliminated. The final self-administered questionnaire (Figure 1), cover letter and consent form were then distributed by post, fax and/or e-mail to randomly selected dentists practicing in the public and private sectors of the WC Province. The design of the questionnaire assessed respondents' opinions, knowledge, understanding and current clinical practices regarding the SDA concept. It also included questions designed to obtain the demographic profile of practitioners, the types of practices dentists worked in and the diversity of patients treated.



The population of dentists in the Western Cape included in this study was all registered practitioners and included general dentists in the public and private domains, as well as retired dentists and specialists in the fields of prosthodontics, periodontics and orthodontics. Excluded from the study were dentists whose interests do not especially include treatment of the partially dentate state, such as maxillofacial and oral surgeons, oral pathologists and community-dentistry specialists.

Through a compilation of records obtained from the Health Professions Council of South Africa (HPCSA), South African Dental Association, Public Health Clinics and Messrs Wright-Milner's Dental (the largest dental supplier in the region), it was recognised that the list of dentists and specialists registered with the HPCSA from the WC Province included many who had retired, specialised, emigrated or are no longer in practice. We used randomisation (accomplished through computer-generated numbers) for the second and third cycles to obtain a final sample of 652 active practitioners. For the third cycle, the information sheet was modified to indicate that an incentive would be received on completion of the questionnaire. This was decided upon after discussions with the statistician, to improve the response rate. After taking statistical advice, the pilot study sample (n=15) was included in the final study sample as these practitioners were all on the registered lists of dentists. In addition, several of these (academic) dental practitioners either have their own dental practices or work for other private practitioners.

Practical difficulties experienced included a large number of non-responders, outdated registered contact details, a

**Table 2:** Anterior extractions: patient demand and dentist reaction

Perceived demand for anterior extractions	Compliance by dentists with patient demand for anterior extractions			
	Definitely No	No	Yes	Total
Never	21	6		27
Rarely	14	14	5	33
Sometimes	7	7	8	22
Total	42	27	13	82

(Chi-squared test = 17.81, df. = 4, p-value < 0.005)

**Table 3:** Summary of results related to questions focusing on the shortened dental arch

	Definitely yes and Yes	Definitely no and No	Don't know
Read research	38%	62%	
Agree can function	86%		11%
As treatment option	83%		10%
Benefit to patients	82%		8%
Limit to special cases only	25%	67%	
Absent molars – affect OHRQoL	46%	43%	

number of disinterested practitioners including some retired practitioners; thus the period for obtaining completed questionnaires from the three cycles was extended to six months (from late August 2009 to January 2010). A research assistant followed up the non-responders who did not return the questionnaires, with participants receiving monthly reminders for at least two months via telephone, fax and e-mail in an effort to obtain as representative a sample as possible. The final collection and recording of data was completed by the researcher (SK).

Sample size, randomisation of sample, questionnaire format, type of study and the statistical analysis of data (type of tests) were initially discussed with the statistician. Data extracted from completed questionnaires were analysed using the Excel Statistical package. The categorical data were analysed by means of residuals based on observed and expected values. The data consisted of categorical and ordinal observations, as well

as paired comparisons. A lexicographical analysis was also included for question 18 (which states 'What would prevent respondents from implementing the SDA as a treatment option?') and it involves determining the specific responses for each given response option in a systematic sequence.<sup>27</sup>

## RESULTS

From the three cycles, the final working sample (n= 368) included registered and willing participants and excluded all the practitioners who were registered but had emigrated, were not practicing, some who had retired, those who had obtained a specialisation which was excluded, those who declined to participate and those whose current contact details were unavailable.

Of the 15 questionnaires distributed amongst the staff for the pilot study, 13 were completed. Together with those obtained in the second and third cycles, the final sample resulted in 84 completed questionnaires (23%). The demographic details are included in Table 1. The ages of respondents ranged from 24 to 75 years, with a mean age of 43 years (SD=11.9) and with most respondents being males at 62%. Many retired dentists, who were intentionally included so that the changes in teaching and practice over the years might be determined, did not participate. Respondents were from diverse academic backgrounds with dental qualifications having been obtained locally and/or internationally (Table 1).

Almost three-quarters (74%) of respondents (n= 62/84) reported that their practices were mainly restorative in nature. One-fifth of respondents (20%) further indicated that fixed prostheses and removable partial dentures were their treatments of choice in the management of partially dentate patients. Patients treated ranged from under 10-to-65 year-olds, with only three respondents indicating that they do not treat adult patients.

The unusual practice of anterior-tooth extractions, a cultural habit observed in the WC Province, necessitated that the questionnaire contain questions specific to the practice. Only 25% (n= 21/84) of respondents stated that requests for such extractions were not made. The majority of the responding dentists had been asked to extract anterior teeth and even though 82% of respondents said they did not accede to these requests, almost 20% said that they do extract these teeth to satisfy patients' requests. To see whether any relationship existed between requests by patients for anterior extractions and the subsequent reaction of dentists, a Chi-squared test ( $\chi^2 = 17.81$ , df. = 4, p-value <0.005) was performed (Table 2). These results suggest that the frequency of demands by patients for anterior extractions is influenced by the compliance of dentists to accede to these requests (i.e. a strong relationship between demand for anterior extractions by patients and compliance by dentists exists, and vice versa). Of all other tooth types extracted in the WC Province, lower molars were the most commonly reported at 67%, which is in line with global studies.

Prostheses provided for replacement of missing posterior teeth, in order of frequency, were acrylic partial dentures, metal-based partial dentures, fixed bridges and implants. Responses to questions relating to the replacement of missing molar teeth would appear to be influenced by knowledge of the SDA concept ( $\chi^2 = 6.79$ ; df. = 1; p-value=0.0092). Even though 48% of respondents (n=40/84) indicated that they had heard about the SDA at university, and 32% in a journal, 21% indicated that they heard about it for the first time from this survey. Those respondents (48%) who had heard about the concept at university were of a mean age of 43 years, which is in line with the likelihood that they would have been taught the concept during the 1990s.

Table 3 refers to the responses to questions related to the SDA and here data imputation was managed by dichotomisation: thus for the answers definitely no and no, these

**Table 4:** Comparison of the design and results of this study with similar studies conducted globally

Country	UK	Sweden	Tanzania	Netherlands	South Africa
Authors	Allen, 1993	Korduner, 2003	Sarita, 1998	Witter, 1997	Khan, current
Sample (n)	91	189	77	64	84
Reminders	Mail	Mail	Mail	Mail	Fax, telephone and e-mail
Information sheet	Yes	Yes	Yes	Yes	Yes
Sample	Restorative consultants	GPs	GPs, public sector dentists	Department staff	GPs, Department staff, specialists
<b>Comparison of data requested in Questionnaire</b>					
Demographic details	Yes	Yes	Yes	Yes	Yes
Opinions	Yes	Yes	Yes		Yes
Experiences		Yes	Yes	Yes	Yes
Implemented	Yes	Yes	Yes	Yes	Yes
Conclusions	Accepted, but not practiced	Affirmative	Accepted, but uncertain of practice	For contemporary practices	Would benefit South Africans
Comments	Reservation; No premolar occlusion	Few risks	89% use acrylic RPD for SDA	SDA useful if patients accept it	Produces no income; lack of knowledge
Problems	Drifting; age; knowledge	Decreased benefits for GPs	Acceptable for practice	Special needs only; TMJ/ periodontal problems	Non-response

were settled as a no response. As regards their 'having read any research' relating to the SDA concept, as many as 62% of respondents (n=52/84) indicated not having done so. On the other hand, 86% said that 'patients will be able to function adequately' with a SDA, even though most had not read any literature on the subject. A large majority of respondents (83%) said that they would 'present it as a treatment option,' while 82% indicated that it would 'benefit their patients'. Many respondents (67%) believed its application should not be 'limited to patients with physical disabilities' only.

Examining the results of questions referring to the treatment options proposed by practitioners compared with patients' requests for SDA treatment approach revealed distinct differences in responses. From the final sample (n= 84), 83% of dentists suggested the provision of acrylic and metal dentures, but patients requested implant therapy and either acrylic or fixed prostheses (and in that order). A clear difference existed in what patients perceived their needs and desires to be (irrespective of the finances involved) and what practitioners proposed and what was the final administered treatment.

For Question 18, 'what would prevent respondents from suggesting a SDA treatment option', respondents were presented with a range of options and their answers revealed some interesting responses: only 0.5% of respondents (n=4/84) admitted that 'loss of income' whereas 37% said 'nothing' would prevent them from proposing and implementing the SDA concept as a treatment option. It was then decided to conduct a lexicographical analysis of the responses for this question. This type of systematic analysis is used for data with several variables as responses, where the analysis includes several options or combinations of options.<sup>27</sup> For this question with four options, 16 different combinations could be provided. Interestingly, 93% of observations were found in four combinations with 49% of observations sitting in one combination only. This distribution fits the information (or Pareto) principle,<sup>28</sup> which states that for most cases in life, 80% of effects come from 20% of the causes.

A description of this combination includes, for example: no income; no knowledge; limited research and not viable versus 'nothing' will prevent the practitioner from suggesting a SDA. And within this combination, 73% (30/41 respondents) said 'nothing' will prevent them from suggesting a SDA. This type of analysis gave very specific responses to these options,<sup>27</sup> revealing that the respondents expressed a very positive attitude towards this SDA concept as a treatment option for their partially dentate patients. The benefits of using this concept were obvious to the dentists, even though many of them had indicated not having read any research related to the concept.

## DISCUSSION

Questionnaire-based studies are a useful tool in dental research, but can be a mixed blessing. Response rates among general practitioners have been shown to be dropping.<sup>29</sup> They also are at risk, if not sufficiently robustly framed, of conveying what respondents state they believe, or would do, and even what they believe the interviewer wishes to hear.<sup>30</sup>

The present research brought into focus some of these difficulties, in particular the lower than expected overall response rate (n= 84). On the other hand, the response rate in the pilot study (n= 13/15) was very good, but that was conducted in a controlled environment. Data thus derived are at risk of bias. In addition, the very high response rate would likely have been due to the pilot group being colleagues who felt obligated to cooperate. This pleasing effect could also have contributed as a source of bias. Such effects (opinion research and doing research in the same department) have been reported in the literature (Table 4).<sup>8,10,16,26</sup>

Efforts were made to reduce the risks of bias during the second and third cycles of the study. Reminders were limited to a maximum number of telephone calls, faxes and e-mails and over a short period of time. With the third cycle, it was hoped to improve the response rate and thus increase the sample size by offering an incentive. This was done to improve the internal validity and generalisability of the study and to eliminate any errors that could occur. For this study conducted amongst the registered population of dentists, the final sample size was still relatively small (n= 84) and may not give an accurate estimate for the total practitioner pool. In comparison, other global studies were conducted using convenience samples and within a controlled environment, thus reflecting larger response rates (Table 4).<sup>8,10,16,26</sup>

The non-response of participants for this study could be attributed to the time-consuming nature of completing a questionnaire; disinterest; lack of knowledge regarding the topic, dentists being retired and/or their refusal to respond, and the South African oral healthcare system operating under a fee-for-service structure which conflicts with the underlying 'non-interventional' concept under study. The final decisions for treatment are guided by the financial constraints of the most requested treatment option (implants) for a SDA. It is a situation that can be easily manipulated either way, in favour of the dentist or the patient. More importantly, it is a setting that should be used to guide and educate patients of the workable cost-effective solutions in the form of the SDA, if only practitioners had adequate knowledge of the SDA concept. It has been shown elsewhere that salaried public sector practitioners (e.g. academics) are more positively inclined towards the SDA concept in their clinical decision-making.<sup>31</sup> Some of the earlier studies that looked at the attitude of dentists toward the SDA were conducted in a controlled environment, had fewer participants, and in some cases had even longer questionnaires.<sup>8,10,16,26</sup> Notwithstanding the differences amongst the listed studies, it is evident that the present findings compare well with those found globally (Table 4).<sup>8,10,16,26</sup>

The condition of not having read any research related to the SDA had obvious bearings on this study. It is possible that a lack of knowledge related to the topic might cause reluctance to complete the questionnaire and so affect the response rate. In addition to this, the uncertainty expressed regarding the relationship between the SDA and oral-health related quality of life by the non-committed responses can also be explained by the respondents' limited knowledge. Oral health-related quality of life (OHRQoL), defined as the impact of the oral cavity and related diseases on the quality of life of an individual, is influenced by the age, number of

teeth, psychological, functional and cultural factors.<sup>32,33</sup> In the context of tooth loss, the degree to which OHRQoL is impacted is most likely context dependent,<sup>22</sup> with location and distribution of missing teeth being important.<sup>3</sup> Patients who have lost teeth usually seek treatment, primarily to address their esthetic concerns, and the desire to replace posterior teeth is less and reduces with the passage of time after extraction.<sup>4,32</sup> Whereas RPDs address and satisfy the esthetic concerns of many patients, research has questioned the efficacy of especially the distal extension denture.<sup>24,25</sup> Furthermore, these dentures are not regularly worn by up to 50% of patients, and providing them amounts to a considerable waste of resources and time.<sup>11,15,24,25</sup>

More importantly, the need for a questionnaire survey among South African dentists to gauge their attitudes towards the SDA concept, as was attempted in this study, appears to have been warranted. Notwithstanding the low response rate reported here, and the limitation this places on making the generalisation to all practitioners in SA, some cautious extrapolations from the present findings might reasonably be made. Firstly, the awareness by most respondents of the SDA concept, the belief by most that reduced posterior arch lengths can provide adequate function and indeed benefit certain patients and the readiness by most to offer the SDA option for consideration in the management of suitable partially dentate patients are all positive indicators of a possible shift in prosthodontic treatment planning. A clinical trial to assess the success of treatment using the SDA concept can thus be instituted with such positive feedback from practitioners.

Gauging the epidemiological data of the South African population, from the total of 48 million, approximately 30 million form the adult population of 20-80 year-olds and about five million (10.9%) of the country's population reside in the Western Cape (WC) Province.<sup>34</sup> Historically, the population was segregated into four broad groups by legislation, with socio-economic status also closely aligned with these divisions. The prevalence of periodontal disease, dental caries and tooth loss vary across the country, but are recorded to be the highest in adults (and children) in the groups living in the WC Province, concurring with other studies.<sup>34,35</sup> The WC Province also has the highest prevalence of adult edentulousness (37%) in the country (with farm-workers at 76%), but only 27% of edentulous patients had acquired complete removable dentures. The reasons cited for this are inaccessibility to clinics, high cost of dentures and no transport facilities to clinics.<sup>34</sup> It is evident from the foregoing that the oral health status, and pertinently the prosthetic aspects, of the population living in the WC Province fall far short of being acceptable.

According to Owen (2004), the inequities experienced in the South African healthcare system need to be addressed with appropriate primary healthcare measures.<sup>36</sup> The SDA can be seen as unique and as a significant evidence-based solution for South Africa. It can, in principle, be seen as an appropriate therapeutic approach for many patients in SA through which major inequities in the healthcare system can be addressed.<sup>2</sup> In an environment of limited resources, the concept has the potential to overcome barriers of financial access that are associated with conventional interventional options such as complete

and partial removable dentures, fixed prosthodontics or implant-retained procedures.<sup>2,15,34</sup>

Concerted efforts need to be made to improve the knowledge, and with it, interest in the topic. While Continuing Professional Development is an accepted method of updating knowledge, such direct educational interventions are considered to be not very effective in influencing clinical behaviors. Furthermore, while guidelines may improve the knowledge of dentists, they do not improve clinical decision-making skills.<sup>37,38</sup> It would seem that an important aspect that needs research attention is the process of the translation of knowledge of available evidence into best practice.<sup>39</sup> Such a task may be easier to inculcate at the undergraduate level, hence a survey of this nature completed with senior dental students as respondents would be an excellent indicator of what is being taught and how students translate such teachings into actions.

Equally pertinent, the patient should play a meaningful role in effecting healthcare, in terms of informed inputs into choices and consent. However, the patient is exposed to a surfeit of non-scientific information, imposing upon the dentist the need to enhance communication skills which must be learnt and practiced.<sup>40</sup> Thus determining the needs of patients and placing less reliance on normative approaches in decision-making, would be prudent in terms of introducing new concepts. It would seem that in the latter regard in particular, clinical decision making that encompasses SDA options would be beneficial.

## CONCLUSIONS

The participants in this study felt that patients can benefit from the implementation of the SDA concept. In addition, they alluded to the fact that patients with a SDA will be able to function adequately and that it should thus be presented to them as a treatment option.

The benefit of implementing this questionnaire survey amongst practitioners, whose reading of research on the subject was seen to be limited, has been revealing and points to the urgent need for further such surveys on a larger, more broadly-based and thus a more representative sample. More precise information and continued research are prerequisite for any further consideration of the SDA concept as an appropriate treatment strategy for the country.

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