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REVIEW ARTICLE

Perceived Barriers to Treating Patients with Disabilities and Complex Health Needs Reported by Oral Health Professionals: A Scoping Review

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Abstract

Background: People with disabilities and complex health needs have poorer oral health when compared to the rest of the population, with being able to find oral health professionals willing to provide treatment often identified as the main barrier. Despite this, our understanding of the barriers that oral health professionals face when treating these patients remains limited. This is crucial to overcoming the challenge of reducing oral health disparities faced by these vulnerable populations.

Aim: To provide an overview of barriers reported by oral health professionals in regards to treating patients with disabilities and complex health needs in the published literature.

Methods: Primary studies were searched for through PudMed, Ovid and Scopus databases using a search strategy developed by the research team. Articles were screened according to PRISMA guidelines and against inclusion and exclusion criteria.

Results: Eighteen studies fulfilled the criteria for evaluation, including studies using both qualitative and quantitative approaches. General dentists were most frequently included in the studies, but patient populations were highly variable, with the majority relating to people with disability. The reported barriers could be classified into three main areas: clinician, patient, and environment-related.

Conclusion: There are only a small number of studies reporting on barriers perceived by oral health professionals to impact on their ability to treat people with disabilities and complex health needs. While lack of training or experience was a factor underlying many of the reported concerns, studies raised concerns about clinicians being inadequately resourced or supported to provide this care. These are areas the dental profession will need to consider in order to address current oral health disparities experienced by people with disability and special health care needs.

Abbreviations: SND: Special Needs Dentistry/Special Care Dentistry

Introduction

Disability is no longer considered to be just a permanent attribute of a person resulting from their health conditions. Instead, it is recognition that different ranges of function, both temporary or permanent, are part of the human experience, and can be heavily affected by context, such as environmental and attitudinal factors in the world around us ¹. It is estimated that approximately 1.3 billion people, or 16% of world's population live with some form of disability ¹. While those figures are likely to underestimate the true situation, those figures are also naturally expected to be higher in ageing populations, like Australia and many other developed countries, with the proportion of people living with disability also expected to increase over time ².

Unfortunately, people with disability and special health care needs continue to experience higher levels of disease, including oral disease, in comparison to the rest of the population ². Available data indicates that people with disability experience higher rates of periodontal disease, dental caries or decay, and missing teeth, impacting on quality of life, self-image, and function ³⁻⁵. Likewise, dental care for these vulnerable populations is often irregular, despite their known increased risk for dental diseases ^{6,7}.

This increased risk is, in part, due to the interaction of disability and general health conditions, and their management, on the mouth. For example, physical or cognitive impairments may impact on the adequacy of, or independence in completing oral hygiene. Accumulation of pathogenic oral biofilm thereby predisposes to chronic inflammatory reactions of the gingival tissues that result in periodontal disease, as well as acid-producing bacteria within this same biofilm contributing to the initiation to dental caries. This may be further compounded by multiple medications that reduce the natural cleansing and immune functions of the saliva ⁸, with many of these medications also having a high sugar content thereby contributing to the risk of tooth decay, particularly amongst those unable to take tablet formulations ⁹.

Whilst these mechanisms speak to the complexity of direct biological reactions in the mouth, they simplify the true extent and impact of chronic dental conditions on people with disability. There are now well-established inflammatory pathways that explain the interactions between chronic periodontal disease and health conditions such as diabetes mellitus, cardiovascular disease and stroke, and rheumatoid arthritis ¹⁰. In addition, we understand the crucial role that oral hygiene can

play in the prevention of aspiration pneumonia, particularly amongst elders and those who have limited mobility or have swallowing impairments ¹¹.

In addition, it is no longer possible to ignore biopsychosocial aspects of disease and disability within the context of chronic dental disease, particularly for vulnerable populations, like people with increased frailty, disability, and other complex health needs, across the life course ^{12,13}. This only reinforces the crucial role that established care pathways play in preventing and managing chronic diseases, such as dental disease.

Unfortunately, despite increasing awareness about disability across our community, and international and local advocacy aimed at reducing barriers and ensuring inclusion and participation ¹⁴, people with disability and complex health care needs continue to experience difficulties in accessing the same levels of healthcare as all other members of the community ¹⁵. This is unfortunately no different for dental care, even despite some countries, like Australia, recognising a registrable dental specialty dedicated to managing the more complex health needs of this population and remains a significant challenge facing the dental profession, particularly as the proportion of these populations continues to grow ^{6,16}. To date, the lack of experience and unwillingness of oral health professionals to treat people with disability continues to be reported as the most common barrier to accessing ongoing and preventive dental care for this population ¹⁷, and somewhat surprisingly, more so than potential financial barriers ^{6,17}.

An understanding of the difficulties or concerns of oral health professionals in treating people with disability or complex health needs is crucial to any attempt to address some of the existing oral health disparities experienced by this population. Consequently, the aim of this scoping review was to identify and explore the reasons provided by oral health professionals as to why they felt unable to treat patients with special health care needs to help identify possible interventions to overcome these barriers.

Methods

RESEARCH DESIGN

Appreciating the breadth and diversity of people with disability and complex health needs, and the anticipated limited research in this field, a scoping review was proposed to identify and map the existing literature in this area. The approach of this review included:

1. Identifying the research question,

2. Searching for relevant studies using online databases,
3. Refining of studies based on pre-defined inclusion and exclusion criteria,
4. Extraction of relevant studies, and
5. Collation, summarising, and reporting of the results.

SEARCH STRATEGY

Key terms were identified and a search strategy was developed by the research team with the following terms: TITLE (special care OR special needs OR special healthcare OR disability OR disabilities) AND TITLE (perspective OR perspectives OR barriers OR perception OR perceptions OR attitude OR attitudes OR willingness) AND ALL (dental OR oral health OR dentistry OR dentists).

The search strategy was adapted to PubMed, Ovid, and Scopus electronic online databases to allow for coverage of publications in the field of life-sciences. The search was completed in May 2023, and conducted according to the methodology outlined by the 2020 version of the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines¹⁸.

ELIGIBILITY CRITERIA

Studies were only included in the review if they discussed the barriers around treating patients with special health care needs from the perspective of an oral health professional. This included dentists, dental specialists, oral health therapists, dental hygienists, dental therapists, dental prosthetists, and denture technicians. No timeframe for publication was defined but only studies published in English were included. Studies were excluded if they were not primary research studies. Case reports were also not included. Likewise, studies that only

discussed the views of only entry-to-practice level dental students, carers, or parents/guardians were excluded.

DATA SELECTION AND COLLECTION

The articles obtained from each database were screened by pairs of independent reviewers. Each reviewer screened article titles and abstracts against the eligibility criteria. Cohen's Kappa coefficient scores were calculated from each pair to evaluate inter-examiner reliability and level of agreement. The minimum level of agreement was set at 0.78 for a 95% confidence interval¹⁹. In the event that kappa score were below this target, the source of disagreement was addressed, and the data selection process was then repeated until consistent and suitable scores were obtained.

Once publications that met the inclusion and exclusion criteria were identified, the full text of the publication was reviewed for data extraction.

Results

The initial search identified 410 potential papers obtained from Pubmed (114), Ovid (114), and Scopus (182). After the removal of 192 duplicates, the remaining 218 articles were screened by title and abstracts against the eligibility criteria. Of the 43 papers meeting these criteria, 42 papers were successfully retrieved for full-text screening. Another 23 articles were eliminated on review resulting in the final 18 articles that were included this review. The search and review process are presented in **Figure 1**. **Table 1** provides a summary of the Cohen's Kappa coefficients for each screening pair. The average Kappa score during title and abstract screening were 0.924 and 0.827 respectively.

Table 1. Cohen's Kappa coefficients for inter-examiner reliability of screening pairs.

Round	Pair	Database search results			
		Scopus	PUBMED	Ovid	Average Kappa Score
Review by Title	1	0.875	0.875	0.890	0.880
	2	1.00	0.875	1.00	0.958
Review by Abstract	1	0.825	0.780	0.780	0.795
	2	0.875	0.825	0.875	0.858

Figure 1. Flow chart showing article section process as per PRISMA guidelines ¹⁸.

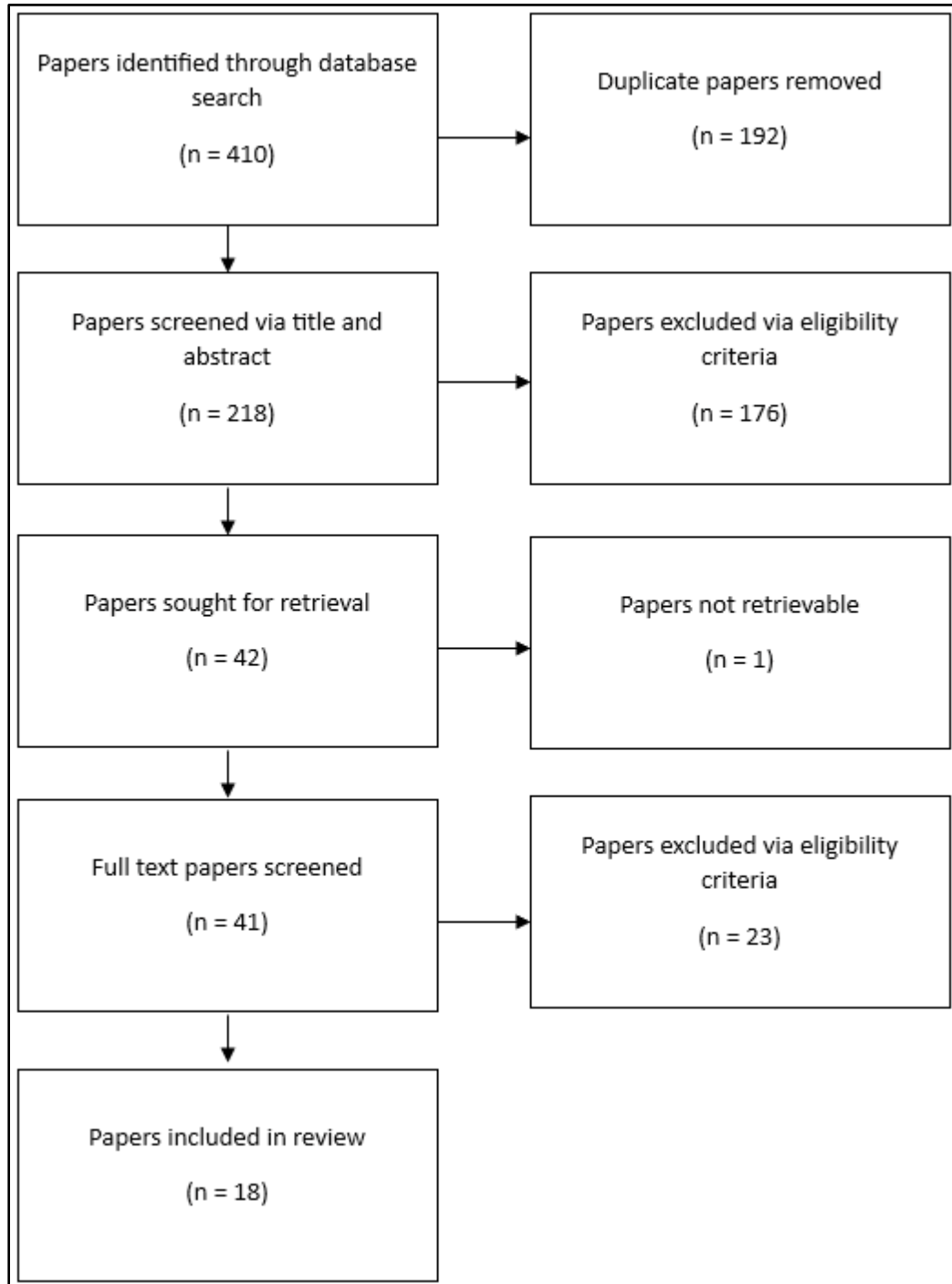


Table 2 provides an overview of the study designs, including the clinician group studied and the relevant patient population discussed. The geographical distribution of studies was relatively diverse, but lacked representation from Africa, with the highest representation from India. Just under two-thirds (n=11) of the articles used quantitative methods, with the remainder using qualitative approaches. Expectedly, sample sizes varied based on methodological approach with quantitative studies having sample sizes ranging

from 70-400 and qualitative studies ranging from 8-27. Out of the 18 articles included, the vast majority (n=15) explored the views of general dentists. Only 2 articles did not specify their clinician sample beyond identifying participants as oral health practitioners. Nine of the studies focused on specific population groups of patients, with the remainder not defining a specific patient group beyond them being a population with special healthcare needs.

Table 2. Summary of research approach of articles included in review.

Study	Country	Sample size and Clinician group	Patient group	Study design and methods
Tsai et al ²⁰	Taiwan	Dentist (n=105), Dental specialist (n=79)		Quantitative, questionnaire
Mendez et al ²¹	Chile	Training orthodontics specialists (n=8)	Neurodevelopmental disabilities	Qualitative, semi-structured interviews
Mandasari et al ²²	Indonesia	General dentist (n=173), Dental specialist (n=77)		Quantitative, questionnaire
Lim et al ²³	Australia	Oral health practitioners (n=27)		Qualitative, semi-structured interview
Adyanthaya et al ²⁴	India	General dentist (n=132)		Quantitative, questionnaire
Chuang et al ²⁵	Singapore	Dentists (n=193) excluding orthodontist and paediatric specialists		Quantitative, questionnaire
Coyle et al ²⁶	UK	Dentist (n=327)	Learning disabilities	Quantitative, questionnaire
Hugar et al ²⁷	India	Dentist (n=169), Training specialists (n=78)	Syndromes, Psychiatric conditions, Terminal medical illness, Cognitive impairment	Quantitative, questionnaire
Rajan et al ²⁸	India	General dentist (n=400)	Children with special needs	Quantitative, questionnaire
Chavis et al ²⁹	USA	Oral health practitioner (n=14), Dental students (n=6)	Adults with special needs (n=8)	Qualitative, semi-structured interviews
Klingberg & Hallberg ³⁰	Sweden	Dentist (n=10), Dental assistant (n=5), Hygienist (n=3)		Qualitative, interviews
Reichard et al ³¹	USA	Dentist (n=70)		Quantitative, questionnaire
Lim et al ³²	Australia	Dentist (n=21), Oral health therapist/ hygienist (n=6)		Qualitative, semi-structured interview
Bedi et al ³³	UK	General dentist (n=74), Dental auxiliaries (n=89)	Learning disabilities	Quantitative, questionnaire
Krishnan et al ³⁴	India	Dentist (n=200)	Children with disability/ special health care needs	Quantitative, questionnaire
Suhasini et al ³⁵	India	General dentist (n=110), Dental specialist (n=207)	Children with special needs	Quantitative, questionnaire
Lim et al ³⁶	Australia	Dentist (n=10)		Qualitative, semi-structured interview
Soltani et al ³⁷	Iran	Health care providers (N=14, Dentist n=1)	Spinal cord injuries, multiple sclerosis, intellectual disability, cerebral palsy	Qualitative, semi-structured interview

Table 3 provides an overview of the findings from studies included in this review. Barriers to treating people with special health care needs were generally related to three variables: clinician (n=17), patient (n=15), or environmental factors (n=13). Whilst most articles discussed all three variables, a third of the studies discussed only one or two.

Lack of clinician training (n=13) was by far the most

commonly reported barrier. Challenging behaviours, such as aggression or anxiety (n=7), complexity of medical or disability-related presentations (n=6), and communication barriers (n=6) were common reasons discussed in relation to patient-related barriers. In addition, almost half of the articles (n=8) included in this review discussed accessibility as a key environmental-related barrier in relation to dental treatment for people with special health care needs and disabilities.

Table 3. Overview of key findings of barriers discussed in reviewed studies.

Study	Clinician-related	Patient-related	Environment-related
Tsai et al ²⁰	Experience	Behaviours Communication Difficult treatment Lack of reimbursement	
Mendez et al ²¹	Lack of trained professionals specialising in this field Training and experience	Behaviours Poor oral hygiene	Lack of materials
Mandasari et al ²²	Experience (68.9%) Lack of interest Training (behaviours, psychological problems)	Behaviours (21.7%) More time consuming (13.3%) High incidences of non-attendance (4.4%)	Facilities (31.1%) Staff training (23.9%) Accessibility (9.4%)
Lim et al ²³	Confidence (70.4%) Physical and psychological burnout	Possible litigation Difficulty obtaining relevant information	Lack of organisational support Equipment Time and productivity pressures
Adyanthaya et al ²⁴	Training (32.6%)	Behaviours (13.3%) Communication (14.5%) Inadequately motivated caretakers (20.8%)	Accessibility (71%) Equipment (86%)
Chuang et al ²⁵	Confidence Lack of financial incentive	Behaviours Communication	
Coyle et al ²⁶	Training Inconsistent knowledge		
Hugar et al ²⁷	Training Experience	Behaviour (55.2%) Level of disease (24.8%) Level of disability (36.4%) Patient compliance (35.2%)	Accessibility Funding (13.6%) Staff training (20.4%)
Rajan et al ²⁸	Training (45%) Lack of financial incentive (20.5%)	Behaviours Communication (39.9%) Medical complexity	Time constraints (55.6%) Equipment (14.6%) Staff training Disturbance to other patients (11.7%)
Chavis et al ²⁹	Training Experience Lack of financial incentives	Difficulty with rapport building	Equipment Accessibility
Klingberg & Hallberg ³⁰	Training		Lack of organisation support Lack of multidisciplinary coordination
Reichard et al ³¹	Experience	Behaviours	Accessibility

Study	Clinician-related	Patient-related	Environment-related
	Training Lack of financial reimbursement	Complexity of treatment	Funding Credentialing
Lim et al ³²	Lack of interest Experience Training Lack of sense of achievement or gratification	Complexity of treatment Medical complexity Communication	Lack of multidisciplinary coordination Time constraints Funding Reliance of specialist services
Bedi et al ³³	Stress Concerns over effectiveness of the treatment Unsure if should be referred		
Krishnan et al ³⁴	Training	Behaviours	Accessibility (64.4%)
Suhasini et al ³⁵	Training (80%)	Complexity of disability (92%) Communication (90%) Behaviour (73%)	Accessibility Time constraints (83%)
Lim et al ³⁶	Knowledge, unanswered questions	Communication	Funding Retirement of experienced clinicians
Soltani et al ³⁷		Financial barriers	

Discussion

People with disability and special healthcare needs are more susceptible to decay and periodontal disease and experience higher levels of these than the rest of the population³⁸. In addition to the impact this can have on daily functions, such as eating and speaking, this can translate to impacts on quality of life. Further, there can also be significant consequences for their overall health due to increased risk of aspiration pneumonia, which we now know to be directly related to oral hygiene ³⁹. While the increased risk of these vulnerable populations is, in part, due to the complex interactions between their oral and systemic health and disability, the impact of inadequate access to healthcare, and particularly preventive dental care, a basic human right, cannot be ignored.

Barriers to access of dental care reported by people with disability and special health care needs have primarily been related to difficulties with finding oral health professionals willing to treat them with adequate understanding of their needs ¹⁷. Despite this presenting a significant challenge, considering the barriers likely to be faced by people with disability and complex health needs to accessing health services, this would seem to present the most significant opportunity for the oral health profession to address. Unfortunately, despite this problem being well-known, the results of this scoping review reflect the relative lack of discussion within the dental profession of this issue. Based on the search strategy, the current literature on this

topic remains relatively sparse with only 18 studied meeting the selection criteria.

Interestingly, about one-third of the available literature reviewed were qualitative studies. Whilst qualitative studies are often criticised for their small sample sizes, and thus the potential for them to lack proportional representation or relative weight of certain views and perspectives within the wider group of interest, for an area of research with limited previous breadth, qualitative approaches are key to identifying previously unknown barriers and providing a depth of understanding of the lived experience of participants. In this case, the experiences of clinicians in relation to providing dental care for people with disability and special health care needs. Without acknowledging these perceived or actual barriers at the individual clinician level there can be no effective way to understand and address these. Here quantitative methods, which describe the extent of these views across the workforce, are thus crucial to quantifying the impact of these barriers and to direct targeting of interventions to address them.

Despite the limited number of studies, the existing research has been conducted broadly on an international scale, including across Asia (n=9), Europe (n=3), Oceania (n=3), North America (n=2), and South America (n=1), with only Africa and the Middle East lacking representation. This should highlight clearly that the challenges experienced by clinicians in addressing the needs of this population

are universal and need to be addressed both locally and globally. Whilst the limited number of available studies prevented the potential to determine if barriers differed across regions and economic development, the results indicated that the challenges clinicians face are likely similar due to inherent limitations created by the dental profession, either through lack of training, infrastructure and accessibility challenges in the conventional dental setting, or the limited understanding towards reasonable adjustments possible for people with disability and special healthcare needs within the dental setting.

As such, the results of this scoping review suggested that barriers experienced by oral health professionals could be considered in three main areas: (i) clinician-related, (ii) patient-related, and (iii) environment-related barriers.

CLINICIAN-RELATED BARRIERS

Oral health professionals are central to facilitating equitable access to dental care for people with disabilities and complex health needs, but also present the most significant challenge. Despite clinicians potentially being motivated by personal reasons to treat people from particular vulnerable and minority backgrounds²⁰, clinician-related constraints were still the most significant barrier, discussed in almost all 18 articles included in this review.

The most prevalent barrier, found in 13 of the 18 articles, was a lack of training or education in relation to treating people with disability and special health care needs^{21-31,34}. Most articles noted that clinicians felt that they received minimal education or practical experience during their training^{24,26-28,30}. For example, Adyanthaya et al.²⁴ and Rajan et al.²⁸ found that only one-fifth to one-third of Indian dentists felt adequately trained in this area, with almost half (45%) unsure if they could provide treatment to people with disability²⁸. Worryingly, studies that formed part of this review found that up to 84% of dentists felt their training in treating people with special health care needs was inadequate³⁴, reflecting a general sense of inadequacy of current training of oral health professionals^{21,26,27}.

Other reported barriers that were potentially related to inadequate training were a clinician-perceived lack of competence^{28,32} and experience in managing people with special health care needs^{20-22,29,31,32}. A common finding was for clinicians to report feelings of insensitivity, because they lacked a comprehensive understanding of the patient's experience or needs^{26,30}. These findings were

consistent with the available literature. For example, an Australian study reported that 70.4% of dental participants said "no" to feeling "able to provide patients with special needs with the treatment they require"⁴⁰. Common themes that emerged from qualitative studies included in this review were a sense of fear or anxiety²¹, either related to uncertainties about whether treatment would be effective³³, or due to concerns about potential medicolegal implications, either related to consent or higher risk of potential complications and adverse events in a vulnerable population³².

However, some studies suggested that clinician unwillingness to manage people with disabilities and complex health care needs was more than just related to education and experience. A cross-sectional study conducted in Singapore found that although dental practitioners felt they received adequate training in geriatric dentistry, 13% were still unwilling to treat older patients with severe disabilities²⁵. In the same study, it was revealed that recent dental graduates, who were more likely to have received training in these areas, were more willing to treat mild-moderate cases compared to older clinicians. In contrast, another study found that the willingness of older dentists to treat people with special needs was significantly higher than that of younger dentists²⁰. Therefore, these results suggest that the level of clinician experience may be another factor to influence their willingness, whilst reinforcing the importance of SND training in fostering a sense of willingness amongst graduating clinicians.

Other interesting factors to emerge that may underlie this unwillingness to treat people with disability and complex health needs were a lack of interest and sense of achievement from treating these individuals^{22,23,32,33}. Qualitative studies described burnout and stress as factors^{23,32,33}. Of interest, one qualitative study discussed clinicians being reluctant to promote their interest in treating people with a disability, in case they became relied upon to do more work in this area than they desired³². Furthermore, a lack of satisfaction³² and a lack of financial incentives were discussed^{29,31}. In fact, a Taiwanese study reported that lack of financial incentive was the reason one fifth (20.5%) of clinicians decided not to treat patients with special health care needs, with 15% claiming that increased remuneration would enhance their motivation²⁰.

This provided a potentially interesting insight into dental clinician motivations in patient groups of interest, and the potential for remuneration based on case complexity to be part of the solution. Many

case complexity tools have been discussed to reflect public funding models^{41,42}, but not necessarily assessed for potential impact in private fee-for-service settings. In addition, current funding models often provide higher levels of reimbursement for treatments, disincentivising the time required to provide simple preventive services^{43,44}. This is certainly a challenge the dental profession faces to ensure the balance remains towards providing preventive care while ensuring small businesses remain viable.

Despite these findings, it was encouraging that a high proportion of dentists expressed an interest in pursuing further education and additional training in SND if it was available^{24,27,35}. Likewise, a qualitative study evaluating the efficacy of a support network in Australia has shown that ongoing support from experienced SND specialists helped improve the perceived ability of general dentists to treat these individuals³⁶. This receptiveness indicates the potential for introducing greater training in SND in undergraduate programs, continued professional development programs, and other support networks as potential strategies to address clinician-related barriers.

PATIENT-RELATED BARRIERS

Despite approaches such as patient-centred care and reasonable adjustments requiring for clinicians to tailor treatments to an individual patient's needs, patient-related factors were reported as a barrier to providing care to people with disability and special health care needs. In this review, patient-related barriers were the second most commonly discussed, being described in 15 of the articles. These barriers related to four main areas: behaviour, communication, medical complexity, and financial constraints.

Behaviour and communication were more prevalent in relation to people with intellectual disability. Behavioural challenges primarily related to difficulty in following instructions, anxiety, and disruptive behaviours that could impact on dental treatment^{24,27,31,32,34,35}.

Communication difficulties reported by clinicians were more in relation to obtaining information from patients^{24,28,29,32,35,36}. In particular, clinicians reported this to limit their understanding of the patient's needs and hinder their ability to obtain informed consent or acquire further information that may be pertinent to treatment. Furthermore, due to this same barrier, clinicians felt it was more difficult to establish trust and rapport^{20,29}. This inability to obtain adequate information also underlies the hesitancy in providing dental treatment to people

with special health care needs due to their medical complexity^{24,27,28,31,32,35}. Clinicians reported being worried about exacerbating underlying health conditions, managing emergencies or adverse reactions, and ensuring the overall safety and well-being of their patients during treatment.

These perceived patient-related barriers reflect concerns about the adequacy of current training in SND and available supports to practicing clinicians. A recent scoping review of clinical practice guidelines on support techniques for people with disabilities receiving dental treatment found a general lack of consistency in the terminology used⁴⁵. Interestingly, the majority of publications identified related to use of pharmacological agents and general anaesthesia, potentially reflecting the tendency of oral health professionals to consider sedation the primary option for support over other reasonable adjustments or approaches⁴⁵. The findings are suggestive of the lack of training of oral health professionals in relation to behavioural supports, or consistency of this training, particularly for people with disability. It also raises wider concerns about a lack of understanding about the benefit of working alongside other allied health professionals in the disability sector or how these approaches may be utilised to avoid more significant pharmacological approaches, some of which are now being considered as restrictive practices when other approaches have not been attempted.

Another reported patient-related barrier was the perceived lack of priority of oral health for people with disability and special health care needs, either due to lack of engagement with dental services, suboptimal oral care routines, or financial barriers to dental treatment. In particular, clinicians talked about the lack of perceived engagement and priority of oral health when referring to interactions with people with disability and their carers or family, feeling it limited their ability to achieve desired oral health outcomes, particularly given challenging treatment circumstances^{23,24}.

Unfortunately, the inadequacy of training of disability care workers in relation to oral health and dental care is well-known but rarely reported in the literature^{46,47}. However, the dental profession needs to consider how best it can be part of the solution rather than considering this as an excuse to avoid treating vulnerable populations because it is challenging.

Financial limitations and inadequate insurance coverage were also considered major barriers in some settings^{36,37}. While clinicians reported a lack

of interest in treating this group due to lack of financial incentive, as a patient-related factors this was concerned with the ability to afford dental care and thus proceed with recommended treatments. Soltani et al.³⁷ reported that patients with disability and low income were likely to discontinue their treatment due to the problem of affordability and lack of insurance coverage for dental services. These factors also contributed to difficulties in arranging appointments and ensuring comprehensive care for these patients^{23,27,33}. Affordability issues related to dental care for this population have been reported as a barrier to access of dental care^{6,7}, and it is understandable that clinicians may perceive lack of ability to proceed with recommended treatments as a frustration to addressing dental needs and prioritisation of dental care.

ENVIRONMENT-RELATED BARRIERS

Environmental barriers were considered as factors within the clinician's working environment that impacted on their ability to provide dental care for people with disabilities and special health care needs. Two major environmental barriers identified from this review were infrastructural barriers and supports for clinicians.

Accessibility to the dental clinic was reported as the most common environment-related barrier^{22,24,27,29,31,34-36}. In particular, clinicians reported their clinics to lack accessibility for people with disability due to their location, inadequate accessible parking, and inappropriate design preventing navigation by wheelchairs into buildings through elevators or due to inadequate space in surgeries^{31,32,35}. A further barrier that was discussed was the lack of equipment or facilities within their clinics. This ranged from a lack of access to bariatric chairs and hoists to access to general anaesthesia to facilitate treatment^{32,35 21-24,28,29,32}.

A further access barrier that was discussed was lack of support within the workplace. In particular, clinicians felt that organisational policies prevented them from being able to provide the required care to people with special health care needs and disabilities. In cases where specialist services were available, this prompted clinicians to refer patients with disabilities and special health care needs as they felt those specialised services may have greater flexibility to provide the type of care required^{23,32}. Specific examples that were provided in qualitative studies included understaffing, inadequate training of dental assistants, a lack of support from clerical and administrative staff, waiting lists, policies, insufficient funding, lack of flexibility about

appointment times and recall frequency, and productivity pressures^{22,23,27,28,30,32,35,36}. These findings were genuinely concerning given the basic principles about equity of access to healthcare to reduce such barriers and discrimination outlined in the United Nations Convention on the Rights of People with Disability almost two decades ago¹⁴.

Another perceived systemic or environment-related barrier was the ongoing siloing of the dental profession in healthcare. Clinicians felt that the dental care for people with disability and complex medical conditions often necessitated close interdisciplinary collaboration. The lack of multidisciplinary communication posed significant barriers to offering comprehensive care to PSNs with insufficient or ineffective exchange of information^{23,30,32}. This siloing can lead to disjointed treatment plans or conflicting advice that resulted in inconsistent, overlapping, or contradictory interventions. Oral health professionals reported a sense of unease in leading interdisciplinary coordination and navigating differing advice, providing further comment on training provided to dental professionals³².

LIMITATIONS

As with all reviews, there are limitations to drawing conclusions from published studies. Anticipating the likely available literature, a scoping review was chosen in this instance to provide an overview of the existing literature and results, rather than limiting the in-depth analysis of these results in a systematic review. The many factors that influenced this choice of review were also limiting factors for this review. These included the relatively limited available literature, the variability of definitions used to define people with special needs or disabilities, and the variation in study designs. As a result, the aims and findings of this review should not be considered in attempting to draw conclusions, but to demonstrate the current breadth of our understanding, previous approaches to achieving these, and informing our way forward to research and interventions in this area. Another potential limitation of the study design may have been the breadth of patient groups included. While this was purposeful, given it is believed that this is one of the few reviews conducted in this area, to provide a summary of the status quo, future reviews may wish to target particular subpopulations, thereby allowing for closer defining of the search terms.

Conclusion

Barriers to providing dental care for people with disability and complex health needs are reported by oral health practitioners in three main areas: clinician-, patient-, and environment-related factors.

A key recurring theme was that clinicians felt relatively unprepared to see patients from these backgrounds, speaking to the need for improved training for oral health professionals. However, this was exacerbated by a perceived lack of support within their professional environment to meet the needs of individual patients.

While meeting the oral health needs of these vulnerable populations presents a significant challenge to the dental profession on a local and global scale, it is crucial to remember that being able access basic healthcare, and aspiring to a reasonable level of oral health, like anyone else in the community, is a basic human right. The dental profession needs to reflect on the opportunities that lie in improved training. However, initiatives targeted to providing support in the work environment, through improved mechanisms to

enable clinicians to provide patient-centred care, opportunities for greater collaboration and communication, within the dental profession and interprofessionally with the wider disability sector, may be part of the solutions to addressing the health disparities experienced by people with disability and special health care needs.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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