Received: 6 April 2022 | Revised: 25 November 2022 | Accepted: 8 December 2022

DOI: 10.1111/cdoe.12832

COMMUNITY DENTISTRY AND ORAL EPIDEMIOLOGY WILEY

ORIGINAL ARTICLE

Attrition of dental therapists in South Africa—A 42-year review

Pumla Pamella Sodo[1] | **Sara Jewett**[2] | **Mbulaheni Simon Nemutandani**[3] | **Veerasamy Yengopal**[4]

[1]Department of Family Medicine, School of Clinical Medicine, University of the Witwatersrand, Johannesburg, South Africa

[2]School of Public Health, University of the Witwatersrand, Johannesburg, South Africa

[3]School of Oral Health Sciences, University of the Witwatersrand, Johannesburg, South Africa

[4]Faculty of Dentistry, University of Western Cape, Cape Town, South Africa

Correspondence
Pumla Pamella Sodo, Department of Family Medicine, School of Clinical Medicine, University of the Witwatersrand, Johannesburg, South Africa.
Email: pumla.sodo@wits.ac.za

Abstract

Introduction: Dental therapists are mid-level oral healthcare providers introduced in 1977 to the South African health system to improve access to oral health services. There has, however, been anecdotal evidence of their unusually high rate of attrition that is cause for concern.

Aim and Objectives: This study aimed to determine the demographic profile and attrition rate among members of the South African Dental Therapy profession.

Methods: A retrospective time series review of records of all dental therapists who were previously registered and who are still registered with the Health Professions Council of South Africa (HPCSA) between 1977 and 2019 was conducted.

Results: A total of 1232 dental therapists were registered from 1977 to 2019. The majority (64%) were Africans. Most practicing dental therapists were based in KwaZulu-Natal (44%) and Gauteng (27%), which are the provinces where dental therapists are trained. The overall attrition rate between 1977 and 2019 was 40%, with a figure of 9% for the last 10 years of the study (2010 to 2019).

Conclusion: This study has provided the first evidence of the high attrition rate of dental therapists in South Africa. The high attrition warrants further investigation to address the loss of valuable human resources from an already overburdened and under-resourced public oral health sector.

KEYWORDS
dental therapy profession, health staff attrition, human resource for health, staff turnover in South Africa

1 | INTRODUCTION AND BACKGROUND

Professionals leave their positions for varied reasons. Attrition is defined as a gradual reduction of the workforce, which may be due to either voluntary or involuntary factors.[1] Involuntary factors are factors that either the employer or employee has no control over, such as retirement, ill health or death, while voluntary factors are those that lead to resignation but can be prevented or addressed by the employer.[1] Voluntary factors that influence attrition may include people seeking improved remuneration, better benefits, an improved work/life balance, more opportunities to progress in their careers, time to address personal issues like health problems or relocations, increased flexibility or to escape a toxic environment.[1–3]

Attrition rates in healthcare professions vary from country to country although the highest attrition rates are reported among low- and middle-income countries (LMICs) as compared to high-income

countries (HICs).[2,3] A global study that reviewed the literature from 51 countries (high, middle and low-income countries) reported that overall attrition rates ranged between 3% and 44%, while annual voluntary attrition rates ranged between 0.3% and 28%.[2] The highest annual voluntary attrition rate was reported among medical doctors (range between 1% and 10%) followed by nurses (range between 1.4% and 9.3%).[2]

In sub-Saharan Africa, 36 countries reported staff shortages as a crisis, with attrition as the major contributing factor.[4] A South African study estimated a 25% annual voluntary attrition rate among health workers, which excluded an additional 6% involuntary attrition rate.[5] The most cited reasons for high attrition in the above-mentioned studies include low salaries, lack of access to professional development and further education, lack of effective supervision, weak regulatory environments, isolation for those in rural or remote areas, poor working conditions, huge workload, lack of motivation and low job satisfaction.[2,6,7]

Attrition may lead to staff shortages. Shortages of human resources in the healthcare sector are a major challenge in many African countries, including South Africa.[5] Studies have reported an inequitable distribution of healthcare workers and significant levels of attrition among skilled personnel.[5] This inequitable distribution of healthcare workers poses a challenge to the health, including oral health of citizens as the majority (84%–90%) of the population rely on public oral health services, which have small numbers of health personnel.[8] According to Bhayat and Chikte, 2018, the ratio of dental practitioners to the population was 1:8817,[9] which is much lower than the recommended World Health Organization (WHO) dental personnel–patient ratio of one dental personnel for 1000 patients.[10] This low ratio of oral health professionals to the population may lead to limited access to basic oral health services. Limited or lack of access to basic oral health services leads, in turn, to an increase in the number of untreated diseases.

Oral diseases rank among the most prevalent non-communicable diseases and affect almost 3.5 billion people worldwide.[11] Studies have reported prominent levels of oral diseases in South Africa and limited access to basic oral health services.[12–14] The last South African National Oral Health Survey conducted between 1999 and 2002 reported a high caries rate among children, with the highest rate in the Western Cape, where almost 80% of children required oral health care.[14] These survey findings have important implications for oral health planning in South Africa in terms of human resource allocation.[14,15] One of the most successful global strategies to improve access to oral health care and to address the inequities in oral health service provision was the introduction of dental therapists to the oral health team.[16–20] The inclusion of dental therapists in the oral health workforce started in 1921 in New Zealand and has been adopted by more than 54 countries globally.[16,21] Global literature revealed that dental therapists play a significant role in providing basic dental services, especially to children and underserved communities globally, at a low cost compared to dentists.[16,21] One strategy for reducing health disparities is to lower the unit cost of providing services by substituting higher-cost labour associated with hiring dentists, with low-cost labour, such as dental therapists.[16,21,22] The dental therapy profession is not a replacement for dentists; however, it is an economically sustainable professional mid-level workforce category where you can employ up to three dental therapists with the salary of one dentist.[16,22]

South Africa was among the countries that adopted the dental therapy strategy during the apartheid era in 1977 with the intention of complementing the oral health team and improving access to basic oral health services, especially in the disadvantaged communities.[15–19] During implementation, dental therapists were trained only in the so-called 'black universities', namely the University of Kwa-Zulu Natal (UKZN)-the then the University of Durban-Westville in Durban, Kwa-Zulu Natal (KZN), and Sefako Makgatho University (SMU), the then MEDUNSA, in Pretoria, Gauteng.[23] This situation created the perception that dental therapists were a product of apartheid system[18] and this has had negative connotations for the dental therapy profession since its inception as a mid-level profession in South Africa. During its inception, dental therapists were only permitted to work in government clinics and hospitals. In 2005, however, they were allowed to practice independently because of insufficient posts in the public sector.[16,21] The South African National Human Resource Development Strategy identified dental therapists as a critical component in the provision of Primary Oral Health Care Services leading to a subsequent call for the expansion of dental therapy training to other dental schools, and an increase in the number of dental therapists to be trained.[24] Although this profession was introduced more than four decades ago in South Africa, disparities in access to basic oral health care still exist.[14,15]

Despite dental therapists being trained at UKZN (University of Kwa Zulu Natal) and SMU (Sefako Makgatho University), the numbers of dental therapists registered with the Health Professions Council of South Africa (HPCSA) remain low.[25] All qualified dental therapists are required to register with HPCSA and pay an annual fee to remain in the register; failure to pay the annual fee will lead to suspension which eventually turns to erasure. Once erased, one is required to pay a fine and annual registration to be restored to the register. Some decide to abandon their annual registration when they change careers, and as a result, they end up being erased.[26] While anecdotal reports indicate that many dental therapy graduates have chosen to leave their profession, limited studies have been conducted among this cohort of oral health professionals. A South African regionally based study in Kwa-Zulu Natal (KZN) reported a high attrition rate among dental therapists.[27] This study reported the misdistribution of dental therapists between private and public sectors, with 47% of UKZN graduates working in private practice while only 9% work in the public sector.[27] This study also reported attrition in the profession, with 26% of dental therapists reported to have left the profession.[27] This regional study further reported that out of the 26% who left the profession, 19% returned to university to study dentistry while 7% no longer work in the dental profession.[27] Attrition of dental therapists was also reported in an Australian study, where 28% of dental therapists left their profession.[28] Based on the data, it is evident that a considerable number

of dental therapists have chosen to leave the profession constituting significant attrition in the profession.

Limited information exists on the attrition in the dental therapy profession; hence, the aim of this study was to describe the demographic profile and attrition rate in the South African Dental Therapy profession.

1.1 | Methodology

The study design was a retrospective time series review. The study population included the records of all dental therapists who were registered with the HPCSA from inception in 1977 to 2019, constituting records over 42 years.

The variables of interest were descriptive variables: gender, race, geographic location and current registration status; and outcome variables: annual, 10-year period, and overall attrition rate and reasons for attrition. These data were extracted from the HPCSA online database which is freely available to the public at https://hpcsaonline.custhelp.com/app/i_reg_form.

The extracted data were captured, cleaned and analysed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics were used to characterize the demography of dental therapists and attrition rates.

The attrition rate was determined by using the formula (Attrition Rate = Number of dental therapists who left the profession divided by the total number of dental therapists registered during the period of interest (year, decade, or 1977–2019) x100). The number of those who left was determined by the total number of graduates registered with HPCSA each year/decade minus those who were currently registered or still active each year, decade, or in the period from 1977 to 2019. The attrition rate per decade only considered those who were registered and left during that period, it excludes those who were registered in periods out of each decade even if they left during the period considered.

1.2 | Ethics considerations

Ethical approval for this study was obtained from the Wits Human Research Ethics Committee (HREC), certificate number M190686.

2 | RESULTS

2.1 | Socio-demographic characteristics

Table 1 shows the demographic characteristics of South African dental therapists by 2019. 1232 dental therapists were registered with HPCSA between the years 1977 and 2019. As can be seen from Table 1, the gender of dental therapists is equally distributed between males (50.1%) and females (49.9%). The large majority (64%) of dental therapists registered between 1977 and 2019 were Africans and only 3% were white, with African being an ethnic or racial reference in South Africa that may refer to indigenous South Africans. African race is also used to refer to Black people from other African countries who are in South Africa. The practicing dental therapists (in 2019) were unevenly distributed throughout the provinces with the majority located in KwaZulu-Natal (44%) and Gauteng (27%) while the remaining 29% are spread throughout the seven provinces.

TABLE 1 Socio-demographic characteristics of South African dental therapists in the 42-year period (1977–2019)

Variable	Category	*n* (%)
Gender (*N* = 1232)	Male	617 (50.1)
	Female	615 (49.9)
Race—(*N* = 1232)	African	784 (63.6)
	Indian	222 (18.0)
	White	37 (3.0)
	Coloured	7 (0.6)
	Unspecified	182 (14.8)
Geographic location of current dental therapists (*N* = 741)	KwaZulu-Natal	327 (44.0)
	Gauteng	202 (27.3)
	Limpopo	71 (9.6)
	Mpumalanga	46 (6.2)
	Northwest	39 (5.3)
	Free State	26 (3.5)
	Eastern Cape	13 (1.8)
	Northern Cope	12 (1.6)
	Western Cape	2 (0.3)
	Unspecified	3 (0.4)

2.2 | The racial profile of dental therapists for the 42-year period (before and after 1994)

Table 2 shows the racial profile of dental therapists for the 42-year period from 1977 to 2019. The data show an increase in the number of other races entering the dental therapy profession after 1994, post-apartheid. In 1994, the democracy in South Africa brought *ethnic profile transformation in higher education institutions where all races were allowed to enrol at any institution*, although there was a significant percentage (15%) of the race was not recorded in the HPCSA register, particularly during apartheid (before 1994).

2.3 | The attrition rate of dental therapists registered during the 42-year period from 1977 to 2019

Figure 1 shows the total number of dental therapists who registered in each of the 42 years (1977–2019), with lighter bars indicating those who were no longer registered in 2019. Out of 1232 dental therapists that were registered with the HPCSA during the

Race	Before 1994 *n* (%)	After 1994 *n* (%)	Total registered between 1977 and 2019 *N* (%)
African	106 (42)	678 (69)	784 (64)
Indians	27 (11)	195 (20)	222 (18)
Whites	3 (1)	34 (3)	37 (3)
Coloureds	0	7 (1)	7 (1)
Not stated	118 (46)	64 (7)	182 (15)

TABLE 2 Racial profile of dental therapists for the 42-year period (before and after 1994)

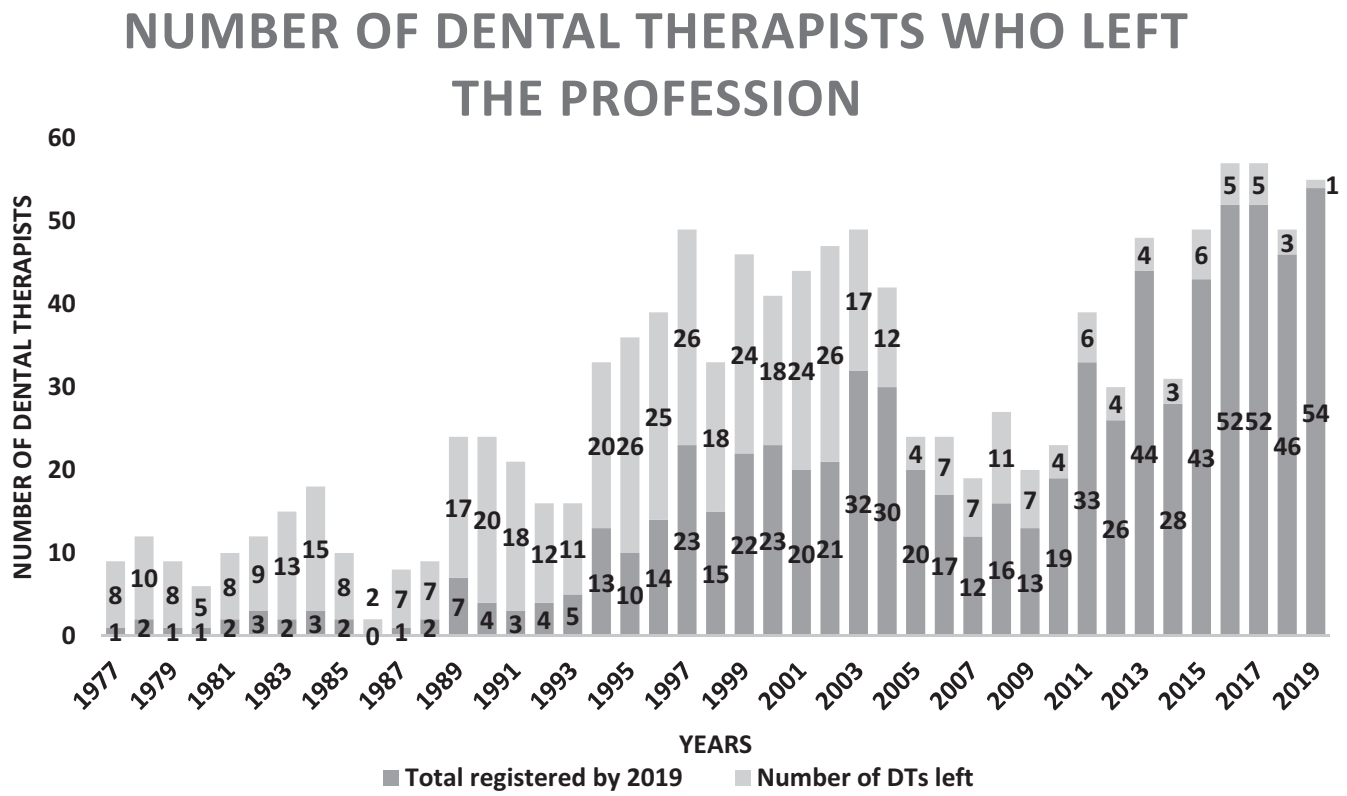

FIGURE 1 Number of dental therapists registered each year who remained or had left; based on 2019 registration

42 years (between 1977 and 2019), 491 were removed from the register during the same period. Only 741/1232 (60%) remained in the register by 2019. Overall, the attrition rate for the 42 years was 40%. Many of those dental therapists who were registered in earlier years, such as 1986, were no longer registered in 2019 in contrast to more recently registered dental therapists. The lowest attrition was observed in 2019, when only one dental therapist had left. High numbers of dental therapists registered between 1989 and 2003 have left the profession, with higher retention of those who registered thereafter.

2.4 | Attrition rate for the newly registered dental therapists within the last 10-year period of the study (2010–2019)

As attrition is often measured over shorter time periods, we also calculated the attrition rate of dental therapists that were newly registered and left in the 10 years period between 2010 and 2019 (included in Figure 1). Of the 397 newly registered dental therapists within the last 10 years of the study (2010–2019), 9% had left the profession in that same period. This is only the attrition rate for those newly registered during the 10-year period and excludes anyone registered before 2010, who may have also left during that decade.

3 | DISCUSSION

This study described the demographics and attrition rate of dental therapists who were registered between 1977 and 2019 in South Africa. The profession was dominated by the African race, and most practicing dental therapists were based in KwaZulu-Natal and Gauteng. The overall attrition rate between 1977 and 2019 was 40%, with a figure of 9% for the last 10 years of the study (2010 to 2019) among those newly registered in that decade.

By race, the profession is dominated by those of African descent followed by those of Indian descent. The literature reports that during the earlier years of inception, the dental therapy profession in South Africa was perceived as a Black profession and dental therapists were trained in the so-called 'Black universities'.[21,23] In 2006, the same profession was identified by the South African Department of Health as crucial in the provision of oral services, followed by a call for the expansion of dental therapy training to all the dental schools in the country such as the Universities of Pretoria, Witwatersrand and Western Cape in order to increase in the production of dental therapists.[24] The findings of the present study identified an increase in the number of other racial groups entering the profession since 1994 (post-apartheid era), which is noteworthy. Although this profession was regarded as a black profession at its inception (during the apartheid era), it started to attract other racial groups post-apartheid (post-1994). It is also worth noting that despite the Department of Health identifying dental therapists as crucial in the provision of basic oral health services they were not included in the list of critical skills.[24] This resulted in their exclusion from incentives such as scarce skills allowance and rural allowance provided to professions that were included on the list.[29] This might have contributed to the high attrition rate, as dental therapists may consider themselves as not being recognized within the health system.

The training of dental therapists in the two provinces might have contributed to most dental therapy graduates remaining and working in those provinces after graduation. Currently, registered dental therapists are unevenly distributed throughout the provinces, with the majority residing in the provinces where they trained. While acknowledging that it might be possible that some dental therapists remain in those provinces because it is their home provinces; the lack of job opportunities in other provinces, especially in the public sector, could be another reason for the dental therapists remaining in KZN and Gauteng post-graduation. Although the dental therapy profession was designed to serve in the public sector, in the late 90 s, dental therapists were allowed to practice independently because the government could not afford to employ them in the public sector.[16,21] This shift was evident in a study conducted among UKZN dental therapy graduates, which reported that only 9% of dental therapists work in the public sector.[28]

The main reasons for the shift to the private sector, as reported in the literature, include a lack of jobs and promotion opportunities in the public sector, poor salaries and lack of recognition.[28,30] Another South African study reported that most dental professionals resided in urban provinces and worked in private practice,[15] which has implications in terms of access to oral health services; only 20% of the South African population can afford private health care; a vast majority (84%–90%) can only access public health services.[15] Limited access to basic oral health services has led to an increased burden of untreated oral health diseases, which has been reported in South Africa, especially among school children.[12–14]

In contrast, studies from New Zealand, the United States, Canada, Hong Kong, Malaysia and Australia have reported the effectiveness of dental therapy services in improving access to oral health services and reducing the burden of untreated diseases at a low cost as compared to employing a dentist, especially among school children.[16] This calls for the government to create more vacancies for dental therapists in all the provinces to improve access to basic oral health services, and to integrate oral health services into the existing programs such as school health services as well as maternal and child health.

The findings of our study reported an overall attrition rate of 40% for the 42 years (1977–2019). Whilst acknowledging that this rate may be inflated due to involuntary factors such as retirement ad death, especially among those registered in the earlier years of inception, the rate remains concerning. Apart from involuntary factors, a plausible reason for this high attrition rate could be due to voluntary attrition where a conscious decision is taken by dental therapists to permanently leave the profession. Indeed, similar South African studies reported that dental therapists leave their profession to pursue other careers such as dentistry because they are not satisfied with their jobs or because of a lack of positions in the public sector, lack of career pathing, and poor salaries.[30,31] On a more positive note, the attrition rate for dental therapists registered in the most recent 10-year period between 2010 and 2019 was 9%. This rate is comparable with the conducted among other healthcare professionals, such as nurses who experienced an annual attrition rate ranging between 1.4% and 9.3% and doctors with an annual attrition rate ranging between 1% and 10%,[2] and is more likely due to reasons of voluntary attrition.

Based on previous studies, there is a need for more dental therapists in the public sector. The data from previous studies reported almost 40% of unmet oral health treatment needs (especially among schoolchildren) of which 80%[14] require treatment within the scope of a dental therapist; hence, the attrition of mid-level health professionals such as dental therapists from our study is concerning. Midlevel health professionals were introduced with the aim to speed up the production of the health workforce to enhance the transformation of the health system to be primary health care driven, this includes the reorientation of healthcare workforce and to ensure improved access to basic health services, especially among the disadvantaged population.[32] The imminent implementation of the National Health Insurance (NHI)[24] in the country also focuses on the mid-level category as the 'core' to deal with the huge unmet treatment needs which includes extractions, fillings, scaling and polishing and preventative interventions, which is dental therapist scope of practice. Global literature has confirmed the effectiveness of dental therapists in improving access to basic oral health services and the huge reduction of unmet treatment needs.[16] Hence, any voluntary attrition of dental therapists in South Africa may lead to the reduction of the oral health workforce, in turn impacting goals to achieve Universal Health Coverage. Further investigation into factors contributing to attrition among dental therapists will support the formulation of strategies to recruit and retain more dental therapists into the health system to achieve universal coverage.

A limitation of this study is that it relied on the data from HPCSA, which is captured when practitioners register. These data report on practitioner registration, demographics, suspensions, terminations

and erasures; it does not include information on those who was restored back to the register after being suspended, and it does not provide the year of removal from the register. Furthermore, the data might be inaccurate in reporting the residential location of dental therapists since a practitioner has to update their residential address when they relocate. If they do not update their details, the data will display the residency captured on registration.

4 | CONCLUSION

The majority of South African dental therapists who were registered in 2019 belonged to the African race and more than half resided in Gauteng and KZN provinces where dental therapists are trained. The attrition rate during the 42-year period (1977–2019) was 40%, and 9% for the latest 10-year period (2010–2019). Although the dental therapy profession is dominated by the African race, an improvement has been observed in terms of the inclusion of other racial groups post-apartheid. The uneven geographic distribution of dental therapists poses a threat to equitable oral health coverage in the country. The dental therapy profession in South Africa experiences a high overall rate although the 10-year attrition rate is comparable with other healthcare professionals. This attrition warrants a more detailed exploratory study to determine the factors that are driving this phenomenon as this can seriously negate attempts to increase the numbers of dental therapists by expanding the training of these professionals at other dental schools.

FUNDING INFORMATION

This study was not funded.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data is available from https://hpcsaonline.custhelp.com/app/i_reg_form

ORCID

Pumla Pamella Sodo https://orcid.org/0000-0002-2542-6038
Sara Jewett https://orcid.org/0000-0002-6658-2061
Mbulaheni Simon Nemutandani https://orcid.org/0000-0001-7335-4414
Veerasamy Yengopal https://orcid.org/0000-0003-4284-3367

REFERENCES

1. Chatterjee S, Wadhwa M, Ishani S. *A Study to Find the Reasons for Attrition of Housekeeping Staff: Cross-Sectional Questionnaire Survey (With Special Reference to Private Hospital)*. Vol5. IJRAR; 2018
2. Lopes SC, Guerra-Arias M, Buchan J, Pozo-Martin F, Nove A. A rapid review of the rate of attrition from the health workforce. *Hum Resour Health*. 2017;15(1):1-9.
3. Sabitova A, McGranahan R, Altamore F, Jovanovic N, Windle E, Priebe S. Indicators associated with job morale among physicians and dentists in low-income and middle-income countries: a systematic review and meta-analysis. *JAMA Netw Open*. 2020;3(1):e1913202-e.
4. Willis-Shattuck M, Bidwell P, Thomas S, Wyness L, Blaauw D, Ditlopo P. Motivation and retention of health workers in developing countries: a systematic review. *BMC Health Serv Res*. 2008;8(1):1-8.
5. Padarath A, Chamberlain C, McCoy D, Ntuli A, Rowson M, Loewenson R. *Health Personnel in Southern Africa: Confronting Maldistribution and Brain Drain*. Health Systems Trust; 2003.
6. Mullan F. The metrics of the physician brain drain. *N Engl J Med*. 2005;353(17):1810-1818.
7. Lok P, Crawford J. The effect of organisational culture and leadership style on job satisfaction and organisational commitment: a cross-national comparison. *J Manag Dev*. 2004;43(4):321-338.
8. Strachan B, Zabow T, Van der Spuy Z. More doctors and dentists are needed in South Africa. *S Afr Med J*. 2011;101(8):523-528.
9. Bhayat A, Chikte U. The changing demographic profile of dentists and dental specialists in SouthAfrica:2002–2015. *Int Dent J*. 2018;68(2):91-96.
10. World Health Organization. Human resources for health 2007. http://www.who.int.whosis/indicators/2007HumanResourcesForHealth/en/
11. Peres MA, Macpherson LM, Weyant RJ, et al. Oral diseases: a global public health challenge. *Lancet*. 2019;394(10194):249-260.
12. Thekiso M, Yengopal V, Rudolph M, Bhayat A. Caries status among children in the west Rand District of Gauteng Province, South Africa. *SADJ*. 2012;67(7):318-320.
13. Joosab Z, Yengopal V, Nqcobo C. Caries prevalence among HIV-infected children between four and ten years old at a paediatric virology out-patients ward in Johannesburg, Gauteng Province, South Africa. *SADJ*. 2012;67(7):314-317.
14. Van Wyk P. Caries status and treatment needs in South Africa: report of the 1999–2002 national children's oral health survey. *SADJ*. 2004;59:238-244.
15. Bhayat A, Nkambule NR, Madiba TK. A review of the 2030 human resources for health strategy: implications for dentistry in South Africa. *SADJ*. 2021;76(6):367-372.
16. Nash DA, Friedman JW, Mathu-Muju KR, et al. A review of the global literature on dental therapists. *Community Dent Oral Epidemiol*. 2014;42:1-10.
17. Pick WM, Nevhatulu K, Cornwall J, Masuku M, Fisher B. *Human Resources for Health in South Africa: a Draft National Strategy*. Department of Health. Government Printers; 2000.
18. Hugo J. Mid-level workers in South Africa—not an easy option. In: Ijumba P, Barron P, eds. *South African Health Review*. Health Systems Trust; 2005.
19. Lalloo A, R. National Human Resources Plan for Oral health: is it feasible? *SADJ*. 2007;62:360-364.
20. WHO. Mid-level health providers: a promising resource to achieve the health Millennium Development Goals. 2010.
21. Singh P. *The Dental Therapy Curriculum: Meeting Needs and Challenges for Oral Health Care in South Africa*. Doctoral Dissertation. UKZN-dspace; 2011. ukzn-dspace.ukzn.ac.za/handle/10413/623
22. Bailit HL, Beazoglou TJ, DeVitto J, McGowan T, Myne-Joslin V. Impact of dental therapists on productivity and finances: I. literature review. *J Dent Educ*. 2012;76(8):1061-1067.
23. Seekings J. The continuing salience of race: discrimination and diversity in South Africa. *J Contemp Afr Stud*. 2008;26(1):1-25.
24. Department of Health. *National Human Resources for Health Planning Framework*. Government Printer; 2006.
25. HPCSA annual report 2018/2019. https://www.hpcsa.co.za/Uploads/Publications%202019/Annual%20Report/HPCSA%20Annual%20Report%202018-19%2010102019.pdf

26. HPCSA Registrations. https://www.hpcsa.co.za/?contentId=385&actionName=Finance#:~:text=NB%3A%20Registered%20health%20practitioners%20who,due%20date%20of%2001%20April.&text=Notice%20is%20hereby%20given%20that,Act%2C%201974%20(Act%20No
27. Singh P, Combrinck M. Profile of the dental therapy graduate at the University of KwaZulu-Natal: scientific. *SADJ*. 2011;66(10):468-474.
28. Kruger E, Smith K, Tennant M. Non-working dental therapists: opportunities to ameliorate workforce shortages. *Aust Dent J*. 2007;52(1):22-25.
29. Erasmus J. The identification of scarce and critical skills in the south african labour market. *Skills Shortages in South Africa. Case Studies of Key Professions*. Government Gazette; 2009:22-33.
30. Gordon NA. Job satisfaction and working practices of South Africa dental therapists and oral hygienists.
31. Singh PK. Job satisfaction among dental therapists in South Africa. *J Public Health Dent*. 2014;74(1):28-33.
32. World Health Organization. *What is Health Financing for Universal Coverage?* . WHO; 2019 https://www.who.int/health_financing/universal_coverage_definition/en/

How to cite this article: Sodo PP, Jewett S, Nemutandani MS, Yengopal V. Attrition of dental therapists in South Africa—A 42-year review. *Community Dent Oral Epidemiol*. 2022;00:1-7. doi:10.1111/cdoe.12832