

Cultural and linguistic disparities in dental utilisation in New South Wales, Australia

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Objective: To examine the patterns and predictors of dental utilisation in culturally and linguistically diverse (CALD) and non-CALD groups in New South Wales. **Design:** Secondary analysis of the 2013 and 2015 NSW Adult Population Health Survey (n=24,707). **Main outcome:** Dental utilisation, defined as a dental visit within the last 12 months. CALD groups were defined using country of birth and language. Andersen's theoretical model was used. Chi-square test and multivariate logistic regression analysis adjusted for potential confounding. Sample weights adjusted for sampling design. **Results:** Most (69%) of the population were Australian born; 20% spoke a language other than English at home. Dental utilisation was 58.9% and 63.9% for CALD and non-CALD groups respectively. The foreign-born non-English speaking group had the highest level of education (60%) but lower levels of dental utilisation (OR:0.81, CI 0.69-0.94) than all groups. Australian born non-English speakers had similar levels of dental utilisation to the reference group (OR:1.27, CI 0.99-1.63). **Conclusion:** There are significant disparities in dental care utilisation among CALD populations. Foreign born, non-English speaking CALD migrants, and people experiencing socioeconomic disadvantage, are at greatest risk of inadequate dental utilisation. Furthermore, the combination of predisposing factors, language and cultural barriers compound disparities in oral health care utilisation. This data highlights the need for oral healthcare services that are sensitive to population needs, to reduce disparities among CALD communities residing in NSW.

Keywords: Oral Health, Healthcare disparities, Epidemiology, CALD, Dental utilisation

Introduction

Oral healthcare utilisation is essential to maintain good oral health care (Sheiham *et al.*, 2011). The WHO (2021) adopted a resolution to integrate oral healthcare within Universal Health Coverage (UHC) principles. This agenda aims to achieve Sustainable Development Goals 3 and 10, 'good health and well-being for all' and 'reducing inequalities' by 2030. Globally however, culturally and linguistically diverse (CALD) people experience inequalities in utilisation of oral health services. Several studies have shown disparities in the use of oral health services associated with race or ethnic groups, culture and language among others (Klein and von dem Knesebeck, 2018; Salim and Tiwari, 2021; Zhang *et al.*, 2019). Social determinants of oral health also highlight that where people live, eat and grow, either promotes or hinders health and well-being (Bedos *et al.*, 2018; Sheiham *et al.*, 2011). In Australia, the government provides a safety net for eligible individuals for dental costs, but this safety net is limited. CALD groups are not always eligible for publicly funded rebates or utilise public schemes due to multiple barriers.

Australia's skilled migration policy has resulted in a diverse population. In 2020, Australia had 7.6 million migrants, of which 30% were classified as first generation Australian (ABS, 2021). Over 20% of the migrant population were second generation Australians, with at least one overseas born parent (ABS, 2021). In the state of New South Wales (NSW), 30% of the population were

born overseas (ABS, 2021). The main source countries of migrants include; England, China, India, New Zealand, the Philippines, Vietnam, South Africa, Italy, Malaysia and Sri Lanka (ABS, 2021).

To date, limited insights to dental utilisation in CALD and locally born groups are available for Australia. One study reported that overseas born migrants who spoke a non-English language had the most emergency dental presentations (Brennan and Spencer, 1999). Subsequently, Lim *et al.* (2017) assessed dental treatment need for Australian-born and migrant populations. This cross-sectional study utilised a cluster sample from the National Survey of Adult Oral Health 2004-06 and oral examinations were performed by dentists. Migrants were grouped by country of birth. Asian migrants were more likely to over report treatment need, than the Australian born group. Discrepancies, however, were reported by age, insurance status and income (Lim *et al.*, 2017). More recent qualitative studies reveal accessibility, cost, language and communication challenges for CALD populations (Marino *et al.*, 2010). Consequently, these disparities are not isolated to one barrier, rather broader structural and socioeconomic barriers add to the complexity of oral healthcare disparities in CALD groups.

In 2017-18, 56.4% of Australian adults visited a dentist in the previous 12 months (Brennan *et al.*, 2020) but dental utilisation data in CALD migrant groups is lacking. Contemporary analysis considering the current diversity of the CALD population is needed, to facilitate

services that meet population needs. Therefore, this study explores the patterns and predictors to dental utilisation in CALD and non-CALD groups. This study applies Andersen's healthcare utilisation model (Andersen, 1995) as a theoretical framework to understand the factors associated with dental utilisation among CALD and non-CALD populations.

Methods

Data were sourced from the NSW 2013 and 2015 Adult Population Health Surveys (Williamson *et al.*, 2001). The surveys were conducted by the NSW Ministry of Health with topics selected in liaison with Area (now termed Local) Health Districts. The survey included questions on lifestyle, socio-demographics, health services utilisation, maternal and mental health and oral health. Trained interviewers undertook telephone interviews with randomly sampled residents in private households, within geo-mapped NSW area health boundaries (Williamson *et al.*, 2001).

The interview schedule was designed by 17 NSW Local Health Districts, to understand the population health and well-being, in the 1990s (Williamson *et al.*, 2001). The interviews were field tested with 200 people, and new questions amended for reliability and terminology (Barr *et al.*, 2011). Simple random data sampling and random digit dialling (Williamson *et al.*, 2001) were used to recruit adults. A computer assisted random selection of numbers were dialled, using computer assisted telephone interview (CATI) software (Williamson *et al.*, 2001). Both mobile and private household landline phone numbers were randomly dialled.

Telephone interviews were conducted in English and five additional languages, with bilingual interviewers; Arabic, Chinese, Greek, Italian and Vietnamese (Williamson *et al.*, 2001). A translation model (Williamson *et al.*, 2001) was incorporated for pre-translation preparation, translation and verbal back-translation. Up to seven calls were made to establish contact and then up to five calls were made to contact the selected participant. All adults aged 18 or older were included. No dental examinations were conducted.

Sampling weights for the survey design were calculated for households with more than one telephone number and for more than one person living in the household. In 2012, mobile phone weighting strategies were incorporated into the study design, as households could have both a landline and a mobile phone. A dual-frame design for random digit dialling for mobile sampling was incorporated (Barr *et al.*, 2011). Post stratification weights were used to reduce effects of differing response rates between males/females and age groups (Barr *et al.*, 2011). Weights were adjusted for probability of selection by each stratum and thus strata variable was used to account for this selection difference in Local Health Districts. Surveys were weighted according to the Local Health Districts, age and sex of the population using the Australian Bureau of Statistics (ABS) mid-year population estimates (Barr *et al.*, 2011).

Andersen's (1995) model for healthcare utilisation was used as the theoretical framework. The model focuses on conditions that predispose, enable or hinder dental utilisation.

Key variables were dental utilisation, country of birth and language spoken. Pham and colleagues (2021) undertook a literature review for CALD classification in epidemiological research. Findings recommend using a minimum of two variables, country of birth and language spoken (Pham *et al.*, 2021). Therefore, CALD was defined as individuals who were either born in a different country and communicate in a non-English language at home. This categorisation aligns to the ABS population data whereby, the overseas born population was 28.3% in 2015. This is comparable to our classification of the CALD overseas born group at 30.4% (ABS, 2021). Participants could then be classified into four groups including Australian born English speaking (AE, non-CALD) and three CALD groups: Foreign-born English speaking (FE), Australian born non-English speaking (ANE) and Foreign-born non-English speaking (FNE) (Table 2). There were missing data for language spoken or country of birth for some CALD participants. Hence, 5% of the sample was excluded from the analysis.

Dental utilisation was determined from two questions, "When did you last visit a dental professional about your teeth, dentures or gums?" and 'types of dental services last visited'. Data were also collected for gender, age, remoteness area, general self-rated health, number of people living in the household and education level. Socio-economic quintiles were derived from income, education, unemployment and occupation data. The Socio-Economic Indexes for Areas (SEIFA) was assigned based on participants' postcodes (Barr *et al.*, 2011).

Data were initially analysed for 2013 and 2015 separately. As the results for both years were similar, we combined the data. The final sample weights were adjusted to represent the NSW population. ABS (2016) data confirm that the population by December 2015 was over 7 million, thereby affirming this weighting procedure (ABS, 2016).

Data analysis first described the distribution of sample characteristics (including demographic, socioeconomic, dental care patterns and health outcomes). Dental utilisation was examined across these characteristics, and by CALD/non CALD groups. Bivariate analysis (Chi sq.) was conducted for the four groups across selected sample characteristics. To examine the relationship further, we performed both bivariate and adjusted logistic regression analysis with the dependent variable dental utilisation (classified as yes or no) and AE, FE, ANE, FNE. Covariates that were significant in unadjusted analysis were included in the final model (gender, socioeconomic disadvantage, education and remoteness area). Lastly, effect modification was assessed by the significance of interaction term (CALD groups), with predictors of dental utilisation. All analysis was conducted utilising IBM SPSS software. To account for design effects associated with the complex sampling design employed in the NSW surveys, Complex Samples Module in SPSS Version (27.0.0) was used.

In the 1990s, the state-wide survey administration was approved by the NSW Statewide Health Confidentiality and Ethics Committee (Williamson *et al.*). This secondary analysis of existing non-identifiable data was granted ethical exemption by the University of Sydney Human Research Ethics Committee.

Results

Data for 24,707 adults were analysed. One third were aged over 56 years, with similar proportions of men and women (Table 1). Nearly 70% were Australian born and 80.4% spoke only English at home with Australian born English speakers (the AE group) comprising 65.8% of participants. More than one third (38.1%) had attained a university degree or tertiary equivalent and participants were broadly ranged across the socioeconomic quintiles. Most participants (58.6%) reported their health as good or very good.

Dental utilisation in the last 12 months was slightly higher for the ANE speaking group than all other groups

(Table 2). The highest socioeconomic disadvantage was reported in ANE (30.6%) and FNE (21.4%) groups. Women and adults aged 56 to 75 years were more likely to have visited a dentist in the last year (Table 1). The CALD Foreign born, non-English speaking group were less likely have visited the dentist than the AE group (0.87, CI 0.76-1.00), but the FE and ANE groups had similar levels of attendance to the AE group. Dental utilisation decreased with greater socioeconomic disadvantage.

In multivariate logistic regression (Table 3), the CALD FNE group underutilised dental services compared to the AE group (0.81, CI 0.69-0.94). The FE CALD group had similar levels of dental utilisation to the AE group (0.87, CI 0.76-1.00). The ANE group also

Table 1. Dental utilisation in the last 12 months by predisposing, enabling and need factors among 24,707 adults

		Weighted proportion %	Dental utilisation % (weighted)	Dental utilisation OR (95% CI) (weighted)
<i>Predisposing factors</i>				
Age (n=24,707)	18-35	32.4	54.5	Ref
	36-55	34.5	59.4	1.23 (1.08-1.39)
	56-75	25.2	63.5	1.45 (1.29-1.63)
	76 and over	7.9	56.7	1.10 (0.95-1.27)
Gender (n=24,707)	Female	50.7	61.6	1.28 (1.17-1.41)
	Male	49.3	55.6	Ref
Country of birth (n=24,707)	Australia	69.1	59.2	Ref
	Other country	30.9	57.4	0.93 (0.84-1.03)
Language spoken at home (24,707)	English only	80.4	59.0	1.09 (0.97-1.23)
	Other language	19.6	56.9	Ref
CALD and non-CALD groups (n=24,707)	AE	65.8	58.9	Ref
	FE	14.6	59.6	1.03 (0.90-1.17)
	ANE	3.3	63.9	1.23 (0.98-1.56)
	FNE	16.3	55.5	0.87 (0.76-1.00)
Number of people living in the household (n=24,668)	1	14.8	55.8	Ref
	2	32.0	60.2	1.20 (1.05-1.37)
	3	17.9	58.9	1.14 (0.97-1.33)
	4 or more	35.3	58.5	1.12 (0.97-1.28)
<i>Enabling factors</i>				
Education completed (n=24,707)	University/tertiary degree	38.1	63.2	1.72 (1.52-1.95)
	TAFE/diploma	25.9	56.7	1.31 (1.15-1.49)
	HSC/year 12	15.9	61.6	1.60 (1.38-1.87)
	Primary school - Year 10	20.1	50.0	Ref
Remoteness area (24,685)	Major cities	73.6	60.0	Ref
	Inner regional	20.8	55.6	0.83 (0.75-0.93)
	Outer regional	5.2	51.1	0.69 (0.60-0.81)
	Remote & Very Remote	0.4	54.4	0.79 (0.49-1.29)
Socioeconomic disadvantage (24,684)	1st quintile	21.9	67.7	Ref
	2nd quintile	20.9	59.4	0.69 (0.59-0.83)
	3rd quintile	20.1	58.1	0.66 (0.57-0.77)
	4th quintile	19.9	52.8	0.53 (0.46-0.62)
	5th quintile (most disadvantaged)	17.2	53.5	0.55 (0.47-0.64)
<i>Need factors</i>				
Self-rated general health (n=24,654)	Excellent	23.5	62.1	Ref
	Very good	29.7	61.2	0.96 (0.84-1.10)
	Good	28.9	56.7	0.80 (0.70-0.92)
	Fair	11.2	53.5	0.70 (0.58-0.85)
	Poor	5.0	53.4	0.70 (0.58-0.85)
	Very poor	1.6	48.3	0.57 (0.42-0.77)
Total		100	58.6	

Table 2. Characteristics of CALD and non-CALD adults

		<i>Aust Born – English speaking</i>	<i>Foreign Born – English speaking</i>	<i>Aust Born – Non- English speaking</i>	<i>Foreign Born – Non-English speaking</i>
	<i>n=24,707</i>	<i>N=17,896 Weighted %</i>	<i>N=3,663 Weighted %</i>	<i>N=608 Weighted %</i>	<i>N=2,540 Weighted %</i>
	100%	65.8	14.6	3.3	16.3
<i>Predisposing factors</i>					
Age*	18-35	29.2	22.3	63.8	48.3
(N=24,707)	36-55	34.3	37.6	27.2	34.2
	56-75	27.4	30.7	7.4	14.8
	76 and over	9.1	9.4	1.6	2.8
Gender*	Male	48.4	50.9	53.7	50.7
(N=24,707)	Female	51.6	49.1	46.3	49.3
Number of people living in the household*	1	17.0	15.9	5.6	14.8
(N=24,668)	2	33.4	36.9	15.8	32.0
	3	16.7	17.2	17.7	17.9
	4 or more	32.9	30.0	61.0	35.3
<i>Enabling factors</i>					
Education Completed*	University/tertiary degree	30.3	48.7	36.9	60.1
(N=24,707)	TAFE	28.3	24.8	25.9	17.1
	HSC/year 12	16.3	12.6	29.3	14.6
	Primary school-Year 10	25.1	13.9	8.0	8.2
Remoteness area*	Major cities	65.6	81.9	91.6	95.0
(N=24,685)	Inner regional	26.9	15.4	6.9	3.7
	Outer regional, remote, very remote	7.5	2.7	1.5	1.3
Socioeconomic disadvantage*	1st quintile	19.9	31.3	19.9	21.6
(N=24,684)	2nd quintile	19.5	23.6	21.7	24.2
	3rd quintile	21.6	16.3	15.1	18.4
	4th quintile	22.1	17.9	12.7	14.4
	5th quintile most disadvantaged	16.8	10.8	30.6	21.4
<i>Need factors</i>					
Time since last dental visit* (N=24,539)	Less than 12 months	59.2	59.9	64.6	56.9
	1 year to 2 years ago	17.5	18.2	17.1	18.9
	2 or more	12.7	13.2	12.3	13.0
	Never	10.6	8.7	6.0	11.2
Type of dental service last visited* (N=22,678)	Private	89.3	92.0	86.8	88.5
	Public	10.7	8.0	13.2	11.5
Self-rated health* (N=24,654)	Excellent	23.5	24.9	23.4	21.8
	Very good	30.0	30.3	30.0	29.7
	Good	26.7	27.8	29.4	28.9
	Fair	12.4	10.8	9.5	11.2
	Poor & Very poor	7.3	6.1	7.6	6.6

* = p<0.05; Chi-square.

had similar levels of dental attendance to the reference group (1.27, CI 0.99-1.63). People who had completed a university degree or equivalent or HSC/year 12 were 1.84 times more likely to visit a dentist in the last 12 months, than with groups educated at the primary level up to year 10. Socioeconomic disadvantage was associated with less dental utilisation at each quintile, revealing a social gradient. The odds of people in the most deprived quintile attending the dentist in the last year were approximately two thirds (0.64) of those for the most advantaged quintile.

Discussion

Findings highlight that language and culture appear both as facilitation and hindering factors to dental utilisation. This data supports the Andersen's (1995) model in that predisposing, enabling and need factors predicted attendance, which is also impacted by the environment (including policy), health behaviours and outcomes (Andersen, 1995).

CALD adults with a foreign language and cultural differences (as measured by foreign country of birth)

Table 3. Logistic regression for predictors of dental utilisation in the last 12 months

		<i>Odds ratio (95% CI) Weighted</i>
<i>Predisposing factors</i>		
Non-CALD and CALD groups	AE	Ref
	FE	0.87 (0.76-1.00)
	ANE	1.27 (0.99-1.63)
	FNE	0.81 (0.69-0.94)
Age	18-35	Ref
	36-55	1.29 (1.13-1.46)
	56-75	1.72 (1.52-1.96)
	76 and over	1.40 (1.19-1.64)
Sex	Male	0.76 (0.69-0.84)
	Female	Ref
<i>Enabling factors</i>		
Education completed	University/tertiary degree	1.84 (1.61-2.11)
	TAFE	1.44 (1.27-1.65)
	HSC/year 12	1.81 (1.54-2.12)
	Primary school-Year 10	Ref
Remoteness area	Major cities	Ref
	Inner regional	0.94 (0.84-1.06)
	Outer regional	0.83 (0.70-0.98)
	Remote and very remote	1.07 (0.63-1.81)
Socioeconomic disadvantage	1st quintile	Ref
	2nd quintile	0.75 (0.63-0.88)
	3rd quintile	0.73 (0.62-0.86)
	4th quintile	0.59 (0.51-0.70)
	5th quintile (Most disadvantaged)	0.64 (0.54-0.76)

had the lowest odds of visiting a dentist in the last 12 months. Results remained significant in the final regression model when all covariates were adjusted. In contrast, CALD adults who were Australian born but conversed in a foreign language, had similar levels of dental visitations to the non-CALD group. Hence, Australian born CALD groups may experience predisposing factors that enable dental care. This suggests that the education, values and cultural factors experienced by second generation CALD groups contrast to first generation CALD groups (Klein and von dem Knesebeck, 2018). First generation migrant CALD groups encounter predisposing and other barriers in cultural, attitudes, beliefs and migration adjustment to a new country, among others (Amin and Perez, 2012). Hence, there appears to be a compounding predisposing disparity in oral healthcare for CALD adults who are from 1) non-English speaking countries and 2) converse in non-English languages. However, caution is required when interpreting results for a couple of reasons. Firstly, CALD groups are heterogenous within and amongst groups, thus specific ethnic insights could reveal differing population oral healthcare needs. Thus, better data collection would strengthen CALD population research. Secondly, the data may inadequately reflect the experiences of CALD non-English speakers as only 1% of the interviews were conducted in a non-English language.

As expected, educational attainment and socioeconomic advantage enabled dental utilisation (Brennan *et al.*, 2020; Sheiham *et al.*, 2011). Facilitators such as

high income or insurance, can be modified to influence the utilisation of oral health care services compared to predisposing variables such as age and ethnicity which are immutable (Andersen, 1995). Thus a social gradient of inequality highlights that the environment within which people live, eat, work and grow, impacts an individual's health and well-being (Bedos *et al.*, 2018). This is evidenced by CALD and non-CALD groups in the 4th and 5th socioeconomic disadvantage quintiles who were less likely to receive dental services. Additionally, non-English speaking groups reported the highest levels of socioeconomic disadvantage, which could be attributed to what Muirhead *et al.* (2020) argues, whereby power structures and lived experiences intersect and accumulate to compound inequalities experienced by particular groups.

In Australia, subsidised public dental schemes are available to individuals who meet eligibility criteria. Long waiting lists are further problematic (Duckett *et al.*, 2019). Unfortunately, cost remains one among many barriers to oral healthcare (Marino *et al.*, 2010).

Strengths of this study include the large sample and robust design with applied weights for probability of selection and non-response bias (Barr *et al.*, 2011; Williamson *et al.*, 2001). A possible duplication of results could have occurred by combining years 2013 and 2015 together, whereby participants could have potentially been interviewed twice. We understand discrepancies in grouping CALD and non-CALD groups may have inadvertently occurred, whereby individuals who identify as ethnic, but Australian born, English speaking could have been classified as non-CALD due to the inconsistent CALD definition and lack of CALD related questions on the survey (Marcus *et al.*, 2021; Pham *et al.*, 2021). Surveys generally exclude non-English speaking minority CALD groups, noting that five other languages were incorporated into the survey design. Differences with translators and interpreters could also result in misclassified CALD participant responses (Williamson *et al.*, 2001). The large sample should reduce sampling bias (Barr *et al.*, 2011), however few CALD groups, of non-English speaking diasporas are included in research. CALD groups remain an under-represented but important population group to include in future research. Grouping heterogenous populations into the four categories is a limitation, and further research could focus on specific ethnicities or cultures. The NSW population survey design asked few questions about oral health. While clinical examinations provide objective data, they are not conducted in the survey.

Conclusion

Predisposing disparities in oral healthcare are evident between CALD and non-CALD groups. The combination of language and culture compound inequalities in oral health care utilisation. Thus, first generation, foreign born non-English speaking CALD migrants comprise the key high risk population group in terms of inadequate oral health care utilisation. Equally, non-CALD and CALD groups in low socioeconomic status are at risk of getting inadequate oral healthcare. The finding has implications for commissioning services that are sensitive to population needs, to reduce disparities between and amongst communities in NSW.

References

- ABS (2016): Annual Population Change - Year ending 31 December 2015. From <https://www.abs.gov.au/ausstats/abs@.nsf/Previousproducts/3101.0Main%20Features2Dec%202015?opendocument&tabname=Summary&prodno=3101.0&issue=Dec%202015&num=&view=>.
- ABS (2021): Migration, Australia, 2018-19. From <https://www.abs.gov.au/statistics/people/population/migration-australia/latest-release>.
- Amin, M. and Perez, A. (2012): Is the wait-for-patient-to-come approach suitable for African newcomers to Alberta, Canada? *Community Dentistry and Oral Epidemiology* **40**, 523-531.
- Andersen, R. (1995): Revisiting the Behavioral Model and Access to Medical Care: Does it Matter? *Journal of Health and Social Behavior* **36**, 1-10.
- Barr, M., Baker, D., Gorringer, M. and Fritsche, L. (2011): NSW Population Health Survey: Description of Methods. NSW Department of Health. From <https://www.health.nsw.gov.au/surveys/adult/Documents/description-of-methods-2002-2011.pdf>.
- Bedos, C., Apelian, N. and Vergnes, J.N. (2018): Social dentistry: an old heritage for a new professional approach. *British Dental Journal* **225**, 357-362.
- Brennan, D. and Spencer, A. (1999): Variation in dental service provision among adult migrant public-funded patients. *Australian and New Zealand Journal Of Public Health* **23**, 639-642.
- Brennan, D.S., Luzzi, L. and Chrisopoulos, S. (2020): Use of dental services among Australian adults in the National Study of Adult Oral Health (NSAOH) 2017-18. *Australian Dental Journal* **65**, S71-S78.
- Duckett, S., Cowgill, M. and Swerissen, H. (2019). *Filling the gap: A universal dental scheme for Australia.*, Grattan Institute.
- Fennelly, K. (2007): The “healthy migrant” effect. *Minnesota Medicine* **90**, 51-53.
- Klein, J. and von dem Knesebeck, O. (2018): Inequalities in health care utilisation among migrants and non-migrants in Germany: a systematic review. *International Journal for Equity in Health* **17**, 160.
- Lim, M., Crocombe, L. and Do, L. (2017): Perceptions of dental treatment need in Australian-born and migrant populations. *European Journal of Oral Sciences* **125**, 479-486.
- Marcus, K., Balasubramanian, M., Short, S. and Sohn, W. (2021): Culturally and linguistically diverse (CALD): terminology and standards in reducing healthcare inequalities. *Australian and New Zealand Journal of Public Health* **46**, 7-9.
- Marino, R., Minichiello, V. and Macentee, M.I. (2010): Understanding oral health beliefs and practices among Cantonese-speaking older Australians. *Australasian Journal of Ageing* **29**, 21-26.
- Muirhead, V., Adrienne, M., Freeman, R., Doughty, J. and Macdonald, M. (2020): What is intersectionality and why is it important in oral health research? *Community Dentistry and Oral Epidemiology* **48**, 464-470.
- Pham, T., Berecki-Gisolf, J., Clapperton, A., O'Brien, K., Liu, S. and Gibson, K. (2021): Definitions of Culturally and Linguistically Diverse (CALD) : A Literature Review of Epidemiological Research in Australia. *International Journal of Environmental Research and Public Health* **18**, 737.
- Salim, N. and Tiwari, T. (2021): Migrant and refugee oral health. *Community Dental Health* **38**, 3-4.
- Sheiham, A., Alexander, D., Cohen, L., Marinho, V., Moysés, S., Petersen, P.E., Spencer, J., Watt, R.G. and Weyant, R. (2011): Global Oral Health Inequalities: Task Group—Implementation and Delivery of Oral Health Strategies. *Advances in Dental Research* **23**, 259-267.
- WHO (2021): Seventy-fourth World Health Assembly, Oral health. From https://apps.who.int/gb/ebwha/pdf_files/WHA74/A74_R5-en.pdf.
- Williamson, M., Baker, D. and Jorm, L. (2001). *The NSW Health Survey Program : Overview and methods, 1996-2000*. Sydney, NSW Department of Health.
- Zhang, W., Wu, Y. and Wu, B. (2019): Racial/Ethnic Disparities in Dental Service Utilisation for Foreign-Born and U.S.-Born Middle-Aged and Older Adults. *Research on Aging* **41**, 845-867.