

**Teeth Tales
Final Report
2014**

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Key findings at a glance

- There are sociocultural differences in practices and beliefs relating to oral health
- The early years of migration were the period of greatest risk of poor child oral health
- Sweet drinks and adding sugar to drinks were significant predictors of child oral health risk
- Parent education was a protective factor for child oral health outcomes
- Dental service use for children was low
- Parent perception of child oral health status did not always align with actual oral health status
- The community participatory approach in this study increased cultural and community engagement and relevance for the organisations and families involved
- The community based dental screening offered for pre-school children was a key incentive for families to participate in the study. It also introduced the family to a dental practitioner and raised awareness of oral health care needs for parents.
- There was an increase in the oral hygiene of children in families allocated to the intervention compared to those in the comparison group.



Partner organisations

The Teeth Tales study was led by the Jack Brockhoff Child Health and Wellbeing Program, University of Melbourne and Merri Community Health Services in partnership with:

- Arabic Welfare
- Centre for Culture, Ethnicity and Health
- City of Yarra
- Dental Health Services Victoria
- The Jack Brockhoff Child Health and Wellbeing Program, The University of Melbourne
- Merri Community Health Services
- Moreland City Council
- North Richmond Community Health
- Pakistani Australia Association of Melbourne
- Victorian Arabic Social Services



Teeth Tales Showcase panel discussion, October 2014. [Left to right] Associate Professor Lisa Gibbs, Dr Martin Hall, Adjunct Professor Hanny Calache, Maryanne Tadic, Associate Professor Lisa Gold, Michelle Hage.

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Project Background

Dental caries (tooth decay) remains one of the most common diseases of early childhood (1). In 2006 it was reported that 41% of Australian 4 year old children had dental caries (2). Tooth decay can result in pain, infection, sleep disturbances, disruption of eating habits, tooth loss and in some cases impaired speech development (3). Early childhood caries (ECC) is a particularly virulent form of tooth decay. Strong evidence shows children who experience ECC are more likely to develop further dental problems later in life, therefore prevention and intervention are important - particularly for high risk children (1, 4). There is a complex interaction between behavioural factors such as oral hygiene, fluoride exposure and diet; and social and demographics factors such as socio-economic status, ethnicity and immigrant status as risk factors for poor oral health (5-8).

The oral health status of migrant communities in high-income countries, such as Australia, is generally worse than that of the host population (9). Community concerns for the oral health of children from a refugee or migrant background residing in the Moreland and Hume local government areas (LGAs) of Melbourne was raised in 2006. Discussions between local Maternal and Child Health nurses, health promotion staff from Merri Community Health Services and researchers from the Jack Brockhoff Child Health and Wellbeing Program at the University of Melbourne resulted in the development of the first phase of the research study Teeth Tales, where formative qualitative research was undertaken with mothers and grandmothers of children aged 0 – 12 from an Iraqi, Lebanese or Pakistani background. Partnerships were established during this time with local community agencies; Arabic Welfare, Victorian Arabic Social Services and members of the Pakistani community (10).

Focus group discussions and semi-structured interviews were conducted with women from the target communities exploring knowledge, attitudes and practices in relation to child oral health and service access (10). The findings identified service access difficulties arising from barriers such as concerns about cost and waiting lists, lack of awareness of services, and concerns about discrimination (11). Cultural impacts on oral health beliefs, behaviours and knowledge were also identified such as; avoidance of tap water due to past experiences with unsafe drinking water, lack of knowledge of the benefits of water fluoridation in Australia, limited oral hygiene practices particularly toothbrushing with toothpaste, and use of traditional oral hygiene practices such as use of the miswak stick by the Muslim community (10). The abundant availability and accessibility of unhealthy 'luxury foods' in Australia influenced dietary changes in migrant families and was discussed as a factor contributing to dental caries post migration. Mainstream public oral health messages in Australia are not targeted to specific population groups, which may lead to a widening of the health inequality gap among migrant and refugee communities, particularly when traditional oral health practices are not acknowledged. The first formative stage of Teeth Tales identified that increasing the accessibility of services and building the capacity of dental and health professionals to understand and respect the complex health beliefs of refugees and migrants would assist in addressing health disparities for these population groups. This informed the development of a community-based intervention which was piloted in North Richmond, an inner suburb of Melbourne, in 2011. It involved 78 families from Oromo, Sudanese and Vietnamese backgrounds. The pilot learnings informed modifications for the subsequent trial including improved research and intervention processes and altered study design to accommodate the community and cultural context.

The final phase of Teeth Tales was an exploratory trial conducted from 2012-2014, implementing a community-based child oral health promotion intervention for Australian families from refugee and migrant backgrounds.

The aim of the trial was to establish a model for feasible, replicable and cost-effective child oral health promotion for culturally diverse local government areas (LGAs) in Australia (12).

Methodology

Theoretical frameworks and principles

A range of theoretical frameworks and approaches were adopted to guide the development, implementation, reporting and applications of the Teeth Tales study, as described below.

Conceptual model of children's oral health

Historically, oral health research focused on the biological and dietary influences on oral health. The Fisher-Owens et al conceptual model of influences on children's oral health presents a holistic, multilevel approach to promoting positive oral health (Figure 1) that reorientates oral health promotion away from the individualised 'biomedical' focus, to address the underlying social determinants of oral health (13).

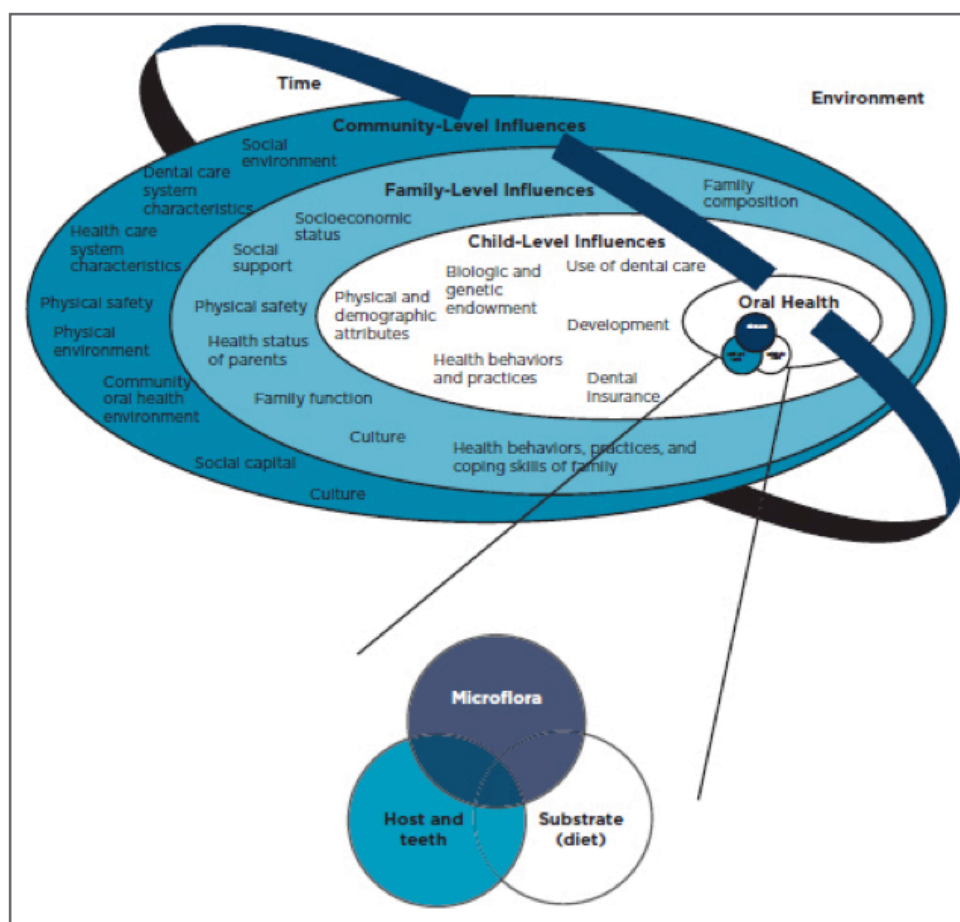


Figure 1. Fisher-Owens Conceptual model of children's oral health

Methodology

Community-based participatory research (CBPR)

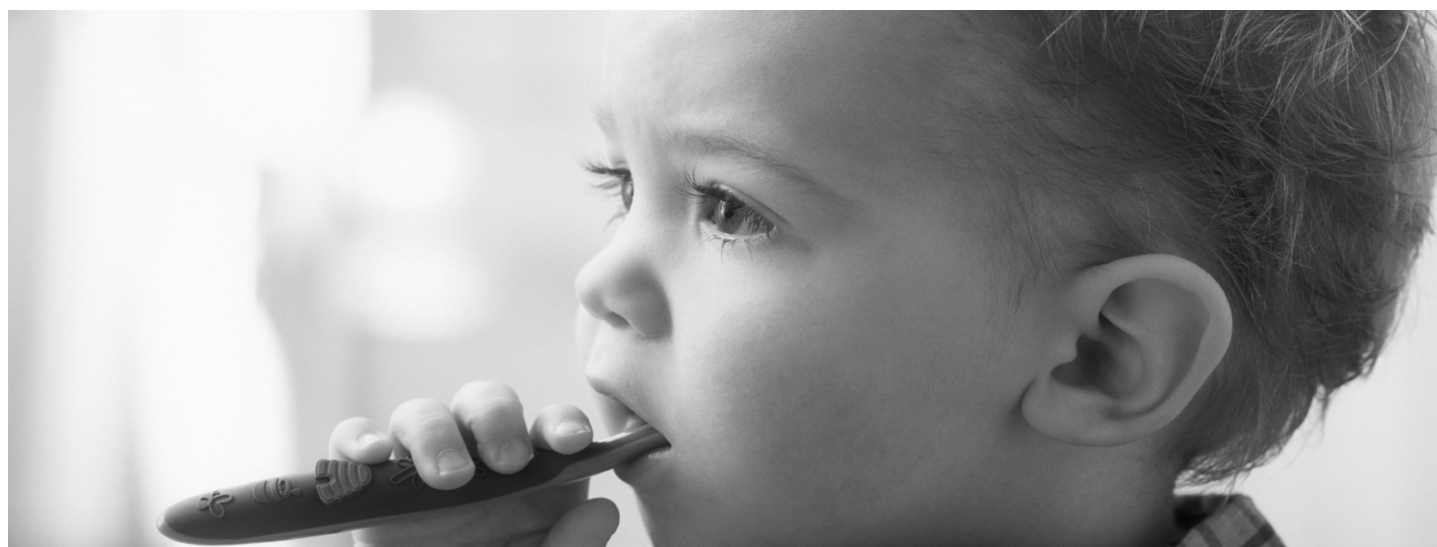
There were multiple partners involved in the cogeneration of evidence and outputs for the Teeth Tales study including community health, cultural, state and local government, and academic partners. A community-based participatory research (CBPR) approach was adopted to ensure the research and subsequent outcomes were relevant, acceptable and feasible for the stakeholders and community setting in which they were conducted (14). Figure 2 presents a CBPR conceptual model of the Teeth Tales study demonstrating the interlinking influence of the local context, partnerships and health issue on the processes and outcomes of the study.

Cultural competence

Provision of accessible and appropriate services to culturally diverse communities is referred to as 'cultural competence'. Cultural competence is defined by Cross et al (15) as 'a set of congruent behaviours, attitudes and policies that come together in a system, agency, or amongst professionals that enables that system, agency, or those professionals to work effectively in cross-cultural situations'. Improving service relevance and access for refugee and migrant communities is an important challenge for health and community service organisations.

Peer education

Peer education is being used more frequently as a method of health promotion and has been used in drug and sex education and HIV prevention programs (16). Based on social learning theory (17), in which people learn by observing and modelling the social behaviours of others with whom the person identifies, the peer education component was included as an integral component of the Teeth Tales study.



Teeth Tales Conceptual Model 2014 adapted from Wallerstein et al



*CBPR = Community based participatory research

Wallerstein, Oetzel, Duran, Tafoya, Belone, Rae, "What predicts Outcomes in CBPR," in *CBPR for Health From Process to Outcomes*, Minkler & Wallerstein (eds), San Francisco, Jossey-Bass, 2008); and Wallerstein & Duran, *CBPR contributions to intervention research: The intersection of science and practice to improve health equity*, *Am. J. Public Health*, 51, 2010: 100, S40-S46

Figure 2. Community based participatory research conceptual model for the Teeth Tales study

Methodology

Study Location

Teeth Tales was conducted in metropolitan Melbourne, Australia. Moreland, a culturally diverse inner-urban local government area (LGA) of Melbourne, was chosen as the intervention site for the Phase 3 exploratory trial.

Study Design

Teeth Tales was a mixed method exploratory trial implementing and evaluating a community-based child oral health promotion intervention for Australian families from refugee and migrant backgrounds (12).

Intervention

The Teeth Tales intervention aimed to prevent early childhood caries and promote positive oral health behaviours among migrant and refugee children aged 1-4 years and their parents/caregivers. It consisted of two components: a peer led oral health education program and a cultural competence organisational review.

A peer led oral health education program

Trained peer educators delivered two 3 hour sessions of oral health education to parents/caregivers followed by a site visit hosted by Merri Community Health Services¹. Participants began the course with an introduction to dental services in Victoria, the structure of teeth, dental caries and what causes decay and discussed their own oral health beliefs, values and practices, and strategies for managing change. The Dental Health Services Victoria (DHSV) messages² of 'Eat Well' and 'Drink Well' were presented which focus on promoting a healthy diet through healthy food and drink consumption and choice, suitable foods for developing children, the benefits of fluoridated water consumption, limiting high sugar foods and drinks in the diet and linking these behaviours to preventing tooth decay.

The 'Clean Well' message promotes the adoption of oral hygiene behaviours for the prevention of tooth decay; such as twice daily toothbrushing with fluoridated toothpaste and correct toothbrushing technique. Participants were provided with an oral health information pack which included toothbrushes and toothpaste for the family.

'Stay Well' promotes the benefit of regular dental check-ups for recognising and preventing progression of oral health problems and introducing children to the dentist early to increase familiarity. To reinforce this message, a group visit to Merri Community Health Services was arranged to introduce families to the site, explain the process for booking appointments and interpreters, the fee structure and the dental clinic experience. Information regarding Merri Community Health Services and Moreland City Council's Maternal and Child Health and Children's Services was provided as part of the site visit.

¹The Teeth Tales Community Oral Health Peer Education Manual is available from Merri Community Health Services website – <http://mchs.org.au/research-partnerships/latest-research>). For more information, email Maryanne Tadic at maryannet@mchs.org.au

²Sourced from the Statewide DHSV oral health promotion program Smiles 4 Miles - www.dhsv.org.au/oral-health-programs/smiles4miles

Methodology

Families were also sent follow up monthly messages for four months after the community education program to reinforce the key messages. The short messages were sent as text messages primarily or by email or phone if preferred by the participant.

A reorientation of dental and health services through a cultural competence organisational review (COrE)

The Cultural Competence Organisational Review (COrE)³ was developed to provide organisations with a profile of their current policies and practices in relation to service delivery to culturally and linguistically diverse groups, and to increase their capacity to monitor and improve cultural competence in their organisation. COrE was developed in partnership by Merri Community Health Services, The University of Melbourne and The Centre for Culture, Ethnicity and Health using a combination of existing tools and tools developed specifically for the Teeth Tales study.

COrE was implemented by Merri Community Health Services, the Social Policy and Early Years Branch of Moreland City Council and The McCaughey Centre at The University of Melbourne as an opportunity to conduct a guided, evidence-informed internal review of cultural competence in terms of staff perceptions of organisational practice and documented policies and systems.

Seven domains were identified as critical for organisational cultural competence: organisational vision and values; governance; planning, monitoring and evaluation; communication; staff development; organisational infrastructure and partnerships; and services and interventions. Organisations were assessed under these domains of cultural competence. Following the review, they were assigned levels of cultural competence for each domain by a staff member from the Centre for Culture, Ethnicity and Health using the categories defined by Cross et al (15) – cultural destructiveness, cultural incapacity, cultural blindness, cultural pre-competence, cultural competence and cultural proficiency. Recommendations for action were made and the organisations were supported in the development and implementation of an action plan to improve cultural competence. The staff survey and document review were conducted again 18 months after baseline.



³The COrE manual and information about associated supportive services is available from the Centre for Culture, Ethnicity and Health website (<http://www.ceh.org.au/culturalcompetence/cultural-competence-organisational-review-tool->)

Methodology

Recruitment, data collection and analysis

Recruitment and training of peer educators from the Lebanese, Iraqi and Pakistani communities was conducted in partnership with the cultural organisations Arabic Welfare, Victorian Arabic Social Services and Pakistani Australia Association of Melbourne. Community members and staff from the cultural organisational partners, selected to match the ethnicity, language spoken and cultural affinity of the target cultural groups, were trained over four weeks for a total of 20 hours. The Teeth Tales train-the-trainer peer education course, developed specifically for the study, was delivered by a trained educator and covered Dental Health Services Victoria's (DHSV) oral health messages of 'Eat Well, Drink Well, Clean Well and Stay Well'. The peer educators were trained in child oral health and nutrition as well as how and where to access dental and family health services.

The peer educators then recruited families with children aged 1 – 4 years old from their respective communities and through their cultural networks. A purposive and snowball sampling methodology was utilised to access migrant families with a Lebanese, Iraqi or Pakistani background across Melbourne.

Eligible families were invited to a recruitment day where they completed a baseline questionnaire, designed to assess oral health knowledge and behaviours, and each child received a free child dental screening, designed to assess the current oral health status of the child. These sessions were held in locations convenient to families such as the premises of the host cultural organisation, childcare centres, kindergartens, primary schools, local community health services, social services offices and local community rooms.

Recruited families were allocated to the intervention arm of the study if their residential address was within Moreland or adjacent local government areas, to ensure they had access to the peer led community oral health education sessions. The remaining families were allocated to comparison groups.

All families involved in the study were contacted by the peer educators 18 months after baseline data collection and invited to return for a follow up child dental screening and to repeat the parent questionnaire.

Recruitment and intervention participation was monitored to assess the reach of the project and intervention dose that the participants received. Three focus group discussions were conducted with the peer educators and staff from Arabic Welfare, Victorian Arabic Social Services and with the Pakistani peer educators employed through Merri Community Health Services. They were facilitated by two researchers from the University of Melbourne.

Statistical analyses of quantitative data include descriptive, bivariable and multivariable analyses, and significant testing. Inductive, thematic analysis was conducted to explore facilitators and barriers to the implementation of the project. Economic data was also collected and analysed to determine the cost of running the peer education program and CORE.

Findings

Participants

A total of 521 families were recruited into the main intervention study, which included 692 children (Figure 3). There was an even distribution of participants from the target cultural groups; with 169 Lebanese families, 167 Pakistani families and 185 Iraqi families participating at baseline, sometimes with multiple children participating from the same family.

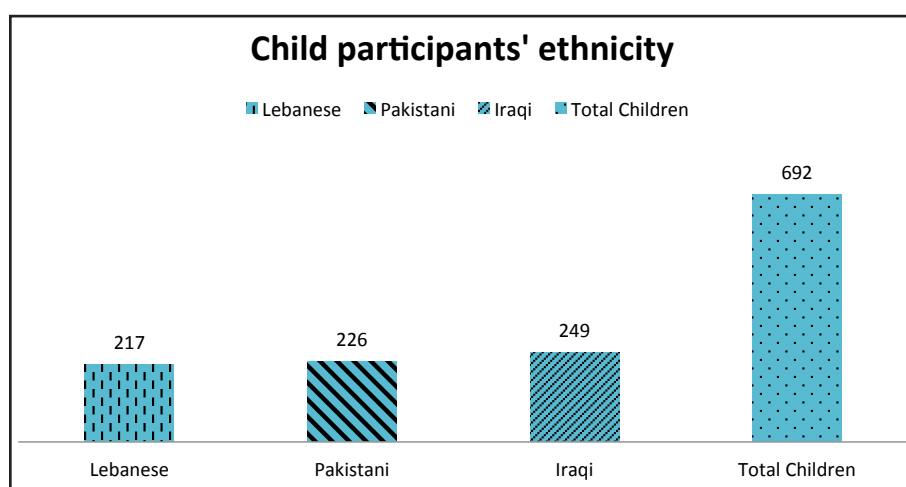


Figure 3: Representation of child participants' ethnicity at baseline

Recruitment of families was conducted by the trained peer educators whose role was to invite eligible families to participate in the study via their cultural networks. The peer educators reported that the recruitment and engagement of families was more difficult than expected as participation in the study was not considered a priority for families who had settlement and social services issues. This study experienced a high drop-out rate of participants at follow up, with a retention rate of 53%, which has been a common finding in similar oral health studies for families from a migrant background (18, 19).

"...so many people who live in this area of Hume they have whole lot of other priorities that have to go ahead"
- Iraqi peer educator

The peer educators' cultural networks were essential to the recruitment phase of the study. They knew where many families from their respective communities resided and the location of services commonly accessed. They were able to ensure families were comfortable with the research requirements and provided language assistance for those families who spoke a language other than English. It was emphasised by the peer educators that personal contact was required between the peer educator and the participant, as families were less likely to respond to a call for study participation that was via a flyer or email.

"So we have started from our own friends and then they send us to their furthermore other friends."
- Pakistani peer educator

Findings

"If you don't know who they are, and you don't have some personal contacts sending a flier to someone, address or email does not work without following up with phone calls and personal contact."

-Lebanese peer educator

The offer of a free dental screening for eligible children was an incentive for families to participate in the study.

"When they heard of the free dental check-up they were happy because it's not a common thing for them (and) they know that dental is very expensive, so families really appreciated it and some of the families they were so appreciative that they were telling other people as well".

- Pakistani peer educator

A total of 151 families (52% of those allocated to intervention) attended at least one of the peer education sessions. Peer educators reported that it was hard to engage families and encourage them to attend the peer education course. However, of those participants that attended, it was rare for them not to attend all sessions.

"They loved it. The ones that came to the first, they came to the second, and came to the visits, and their response was absolutely, they said please can we continue with this, can we get more."

- Lebanese peer educator

Oral health status and behaviours

Approximately 1 in 3 children showed signs of poor oral health, of which almost half had progressed to decay. Factors found to be predictors of poor oral health outcomes included recent arrival in Australia (less than 5 years), high consumption of sweet drinks and adding sugar to drinks. Higher parent education was associated with better child oral health.

Over half of the children at baseline consumed sweet drinks, which includes soft drinks, juices and cordials, with many drinking sugary drinks up to several times daily. Adding sugar to children's drinks was a cultural practice which was identified as a risk associated with the development of tooth decay.

In this study, 88% of the children had never visited the dentist, with reported barriers being cost, length of waiting lists and parents feeling there was no reason to visit the dentist (20). Many parents believed there was no reason for their child to visit the dentist, and yet 22% of those children experienced tooth decay (which included both non-cavitated and cavitated decay) and 8% had cavities (20). The community based oral health screenings were an important means of reaching children in need of dental treatment and linking newly arrived migrant families into local dental and health services. From the baseline sample of children, 12% were referred to further treatment and 7% then accessed the Merri Community Health Services dental service. Families may have also accessed a dental service local to their home.

Findings

“One of the families they came just recently to Melbourne with I think 4 or 5 kids and they don’t know anything about the system of Australia”

- Pakistani peer educator

Our findings suggest that although public dental services in Victoria offer priority access for children, and also for refugee and asylum seekers (21) many families are not aware of the availability of these services and they are not being fully utilised by migrant families.

Intervention impacts

Families in the intervention group showed significantly higher levels of child oral hygiene compared to the comparison group indicating increased toothbrushing frequency and/or improved technique.

Parents who attended the oral health education sessions were approximately 3 times more likely to report that they had been shown how to clean their child’s teeth. There was also a positive trend associated with knowledge of the role of fluoride, and when to start cleaning baby teeth (Figure 4). There was no apparent improvement in other forms of oral health knowledge.

Some participants did not attend the education course although they were allocated to the intervention group, and these families were mailed an oral health information pack. Our findings show oral health information provided in this way was not associated with knowledge or behaviour change.

Positive feedback was received in relation to the content of the peer education course. Participants reported that they found it helped them to initiate behaviour change in terms of oral health care and a healthy diet.

“People were very pleased, when they speak they did say it changed the way they think about this particular topic or problems with gums, teeth, the caring, the health, you know, how to care for your child’s health and also child’s nutrition. Information about the nutrition and healthy diet, and that diet is not something scary, it’s not ‘stop eating’, it is more about planning healthy.”

- Iraqi peer educator

“They have obtained a lot of knowledge and information about oral health through these [community education] sessions...and they have brought changes in their lives and their child’s lives as well as their eating habits and drinking habits.”

- Pakistani peer educator

Findings

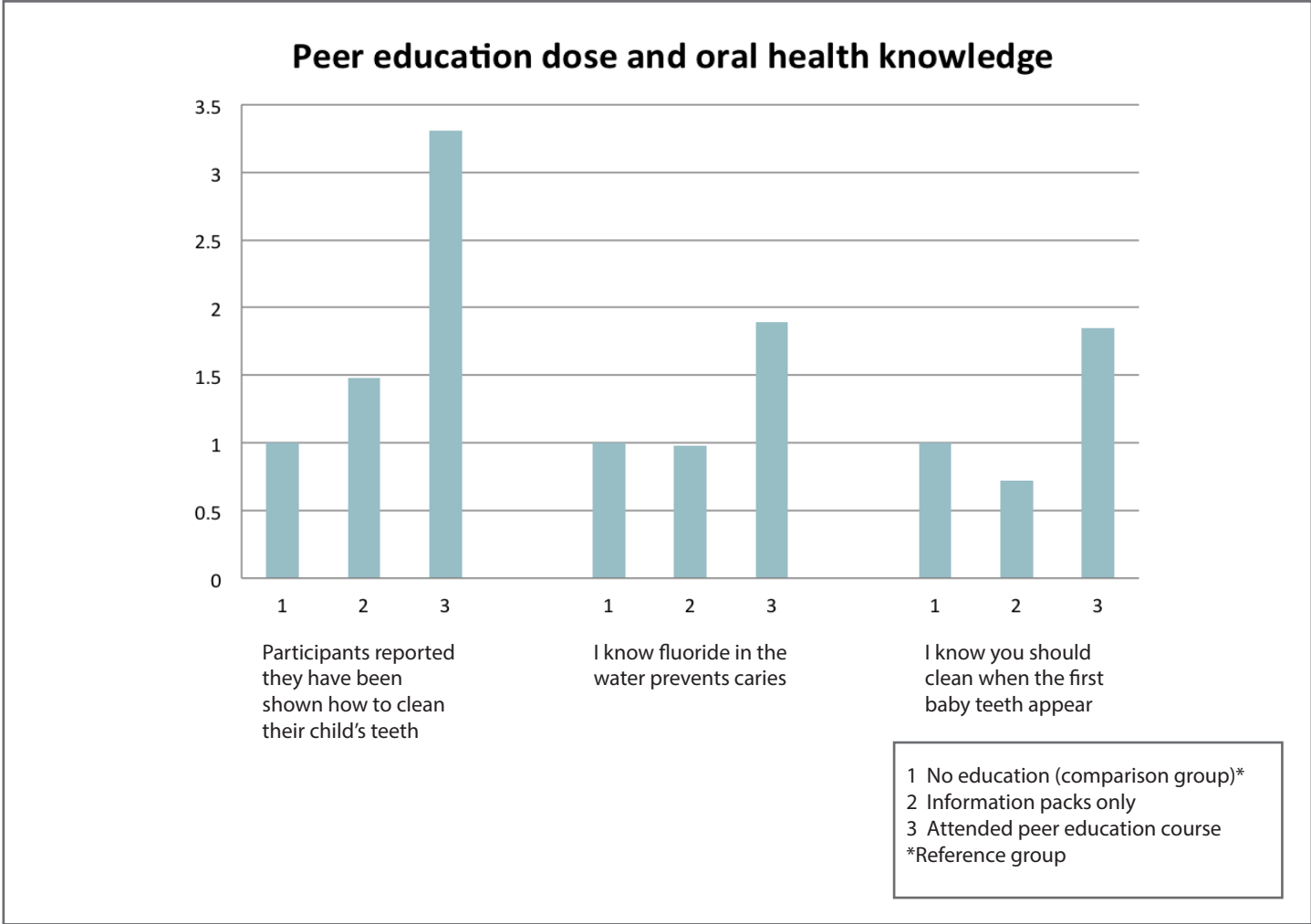


Figure 4: Peer education dose and oral health knowledge

CORe outcomes

The CORe follow up assessment indicated a positive shift towards improvement in organisational cultural competence at all participating organisations. Improvements and sustainability were supported by inclusion of the cultural competence action plan in a broader organisational diversity plan. Engagement in the CORe processes was also found to increase staff awareness of the value and importance of cultural competence and showed a commitment by the organisation’s management to improving service delivery to the culturally diverse community.

Costs

Costs of delivering the intervention equated to \$709 per family in the intervention group. Costs were largely associated with time spent by peer educators in delivering the community sessions and the contact attempts required by the peer educators to encourage community members to participate and remain in the intervention.



Conclusion

This study highlights the need for prevention strategies which engage families from a migrant and refugee background. Targeted community-based oral health promotion activities delivered in culturally appropriate settings can provide timely information about available dental and health services, which is particularly useful for families who are still navigating the Australian health system. Health services have the opportunity, through active community engagement to be more visible and accessible.

Consideration of cultural values and traditional oral health practices and a community based participatory approach will assist in ensuring the relevance of oral health initiatives. Working in partnership with established cultural organisations supports this process and also links families with the social support and networks offered by the cultural organisations.

Recruitment and retention was a challenge in this study. However, the inclusion of community-based dental screenings was an incentive for families to become involved initially. They also provided an opportunity to increase parent awareness of child oral health needs and link families with local community health services. As an exploratory study, Teeth Tales was not powered to detect difference but did still demonstrate significant improvements in relation to child oral hygiene, parent reports that they had been shown how to clean their child's teeth, and positive trends in relation to parent knowledge of the role of fluoride. Teeth Tales is thus a promising model for use in culturally diverse local government areas, although adaptations are required to increase uptake and likely impact.



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The Jack Brockhoff Child Health and Wellbeing Program

Research partnerships
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