

“Leave my teeth alone” - the use of participatory drawing to widen inclusion in a community-based study of dental service-related knowledge

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Abstract

Introduction:

This study aimed to understand why, how, and when lay people seek, acquire, and exchange dental healthcare knowledge across social networks, and to include people who may not have been able to express themselves using traditional research methods.

Methods

A participatory drawing method was used. Participants were recruited purposively (n = 15) in two drawing sessions and ethnographic sessions, including individuals with complex needs. Participants depicted their and their family's experiences of dental care through drawings, combined with narratives about the drawings' meanings. These were analysed using thematic narrative analysis.

Results

The drawings demonstrated that participants (24 to 92 years old) attached emotions of fear, apprehension, intimidation and dissatisfaction to their lived experiences of using dental services. Most participants concealed these emotions and limited communication about them, even with close family, putting on a 'brave face'. Participants with complex needs primarily expressed feelings of vulnerability and limited agency, as communication about feelings around dental care was overshadowed by psychological, social and economic challenges. While vulnerable dental emotions were concealed, negative feelings towards perceived injustices in the dental healthcare system were communicated without apparent reluctance.

Conclusion

The study demonstrated the potential strengths of using drawing methods to include individuals with complex needs in research.

Introduction

Lay people's knowledge acquisition and diffusion across community networks is known to influence the uptake of dental services for routine care and, through that, their oral health (1, 2). However, mechanisms linking people's dental literacy practices at the interpersonal and community [meso] levels to patterns of dental service utilization are poorly understood (2). Furthermore, there is a lack of definition of what constitutes lay people's knowledge of dental services and systems in the literature, so we define lay people's dental healthcare knowledge as the information that individuals and communities acquire and

disseminate about dentists and dental services, drawing on diverse sources, including social communication and information media in their everyday lives (1, 3, 4).

Oral health or dental literacy is the degree to which people have the capacity to obtain, process, and understand basic oral health information and services needed to make appropriate health decisions, and this has mainly been previously studied using quantitative methods. However, functional dental literacy constitutes only one aspect of people's knowledge, measuring only their educational competence in reading and understanding biomedical information about dental care (1). Standardized functional dental literacy measurement tools tend to overlook the need to investigate other forms of dental knowledge that people develop through social interactions (5, 6), despite it being acknowledged that people do not solely rely on educational materials, but bricolage knowledge by seeking and sharing across various informal and local information channels (7, 8). Whether people's social practices of acquiring and disseminating knowledge through informal networks shape dental service use is therefore unclear (7, 9). (10) concluded that knowledge diffusion across social networks may not influence people's dental service uptake behavior, although there are few studies in this space. This gap informed the positioning of the study, which attempted to capture dimensions of dental healthcare knowledge practices at the interpersonal and community [meso] level, by gathering data in a community setting.

This study is also unusual because it uses a qualitative participatory method (drawing) to explore this topic. Participatory arts-based methods such as drawing (11), photography (12); music and theatre (13), emphasize participants as leading data creation. These relatively creative and innovative techniques are often used in marginalized groups and communities (14, 15) to help address an imbalance of power between researchers and informants, and allow greater inclusivity of participants who are unconfident expressing their opinions in questionnaires and focus groups (16). Participatory arts-based methods have been used to explore human perceptions when interviews are not feasible (17).

Drawing methods have previously been used to explore health-related tacit knowledge and the lived experiences of lay people (17, 18). The visualisation of data in drawings helps participants express their tacit knowledge, formed through informal ways in everyday life (19, 20). This study hypothesizes that people comprehend and communicate their lived experiences of navigating the dental healthcare system, utilizing dental services not only through objective and logical analysis of words, but also visually through creative processing of information.

The empirical and methodological gap outlined above inspired the incorporation of drawing as a method in our study to map people's dental healthcare knowledge practices. This study, therefore, aimed to use a drawing method to gain a deeper understanding of why, how, and when lay people seek, acquire, and exchange dental healthcare knowledge across social networks, and to include people who may not have been able to express themselves using traditional research methods.

Materials and methods

The Community Setting

Drawing sessions were conducted in a community group located in a relatively disadvantaged area in Liverpool, North-West England. The centre supports local residents through outreach, education and social activities. It organises around 18-20 social and special interest group sessions throughout the week to provide social support and network opportunities. People with shared interests also form their own cliques within the larger community. About 200 people visit the centre per week, with the majority being White British women, over 40-years-old, and people experiencing various socioeconomic and health challenges. Participants in this study were comprised of individuals who attended this centre. They took part in two of the centres' groups: "Coffee and Chat" and "The Drawing Group". The existence of special interests and support groups, like that of a drawing group and other art-related activities, afforded the authors an opportunity to use participatory drawing as a way of gathering data.

Study design

The drawing study was situated within a wider ethnographic observation project where the researcher had conducted fieldwork for approximately 12 months, spending over 400 hours in the community center getting to know the staff and users, and understanding its function and relationships. The drawing sessions arose during the observation phase from a desire to elicit more detailed views of dental healthcare from participants. There were two primary drawing sessions and a further collaborative drawing event. The third, collaborative event involved the participants who contributed to a common medium, where their reactions and reflections were also noted by the researcher. The sessions were planned with consultation from the lead gatekeeper (SD). The researcher was an internationally qualified dentist, not currently working clinically, who had no experience of working in the NHS dental system.

Sampling participants

Participants from two support groups: "Coffee and Chat" and "The Drawing group" were included - based on their membership of either or both of these groups. Several participants also had complex healthcare and socioeconomic challenges. So, their caregivers/family members and centre support staff/volunteers were also included as participants and interlocutors between the researcher and drawing participant. Finally, a few participants who did not engage with any support group but had a creative inclination to draw and who had been identified during the wider ethnographic observation were also invited to participate. The final sample consisted of 15 participants – 13 female and 2 male, aged 24-92-years (Table 1).

Data collection

A diverse range of art materials, including sheets, canvas, paints, and artefacts (a face-mask-shaped canvas and a papier-mâché skull), were provided. Providing multiple media supported elicitation of participants' diverse creative potential and expression of their thoughts with minimal direction from the researcher. Since participants had been found in the ethnography to only infrequently talk about health-related topics in their informal discussions, the researcher initially encouraged participants to draw on a broad topic: 'You and your family's dental experiences' and to avoid leading what was produced.

Participants' descriptions of their creative representations were also documented in the researchers' field notes. Narratives were noted in field notes and not audio-recorded to capture how participants discussed the task and described their artwork for several reasons. Community groups were considered private spaces, and a few participants expressed their concern and discomfort with the researcher's practice of audio-recording. This was particularly so for those with limited communicative and cognitive abilities. Considering participants' needs and adhering to ethical practices in the study field, the researcher decided to document narratives in field notes, which they were familiar with, rather than audio-recording, given the ongoing ethnographic study over months. This decision facilitated the efficient conduct of the participatory sessions without compromising the engagement of under-represented participants. In field notes, the researcher paid attention to capturing tacit knowledge as well as non-verbal emotional aspects.

To address the limited verbal responses from some participants with complex needs, the researcher probed the group leader who assisted, for example, the participant with Parkinson's disease. Family members supporting participants were also asked for their interpretation during the drawing session, and whether the participants had previously shared the feelings they had depicted in the drawings with them. The awareness of family members regarding participants' thoughts concerning dental care as their primary caregivers was documented to understand the process of interpersonal sharing among family members in everyday life.

Data analysis:

Reissman's thematic narrative approach (21, 22) was used to analyze the mixed data comprising visual and textual components. The analysis aimed to understand each participant's narrative (23). The creativity inherent in the colors, strokes, and inscriptions of dental artworks, which may convey hidden meanings, was annotated using the participants' own words describing the drawing at the time of the session, alongside analyzing narratives captured in the field notes. Data from drawings and associated narratives were synthesized to form themes. To prevent misinterpretation and strengthen the transparency and rigor in the analysis of drawings, the researcher conducted member checking post-analysis to confirm the interpretation of drawings aligned with participants' opinions (24).

Ethical considerations:

Ethical approval was obtained (University of Liverpool, reference no.12748). A third-party agreement between the University of Liverpool and the community centre was signed concerning research integrity while conducting sessions in public settings. Ethical considerations were deemed crucial for conducting the drawing session, ensuring that participants understood the process of visual data collection, protection, and presentation. Visual data creation and publication followed the UK copyright law and the International Visual Sociology Association's (IVSA) code of research ethics and guidelines (25). Initially, blanket consent was obtained from gatekeepers to access the community center and interact with community members. Subsequently, a recruitment poster was displayed to inform participants about the

study, and participant flyers were distributed to various support and interest groups during visits to raise awareness about the ongoing study.

Prior to the drawing sessions, the participant information sheet was shared with every participant to explain the principles of voluntary participation, anonymity, and confidentiality. Written and informed consent was also obtained for participation. Additionally, to comply with copyright law, a separate consent form was prepared to obtain written consent from every participant to publish any images and creative pieces created by them, as they own the copyright to these images. The group leader of “Coffee and Chat” explained the information sheet specifically to a participant with Parkinson’s disease and assisted the researcher in obtaining written consent. Names of the local community center, support/interest groups and participants have been pseudonymized for confidentiality.

Results

Both community group drawing sessions lasted 2 hours. **Table 1** provides demographic details on the participants involved. Participants included three group leaders, a community volunteer and two family members who were primary caregivers of participants with complex needs. The two family members did not participate in the drawing exercise but were there as support and were also interviewed after the drawing session to incorporate their insights. In addition to the two drawing sessions, participants engaged in a collective artwork activity during the ethnographic observation sessions over a month.

Insert Table 1:Participant demographic characteristics.[Refer to the Table 1_Manuscript file].

The act of drawing facilitated brief moments of communication among participants about dental experiences, enabling them to share a topic that, according to the participants, was rarely discussed on usual days. As drawing allowed creative flexibility to the participants, the artworks covered wider perspectives than the researcher’s intended narrow research focus on understanding people’s literacy in using dental services for themselves and their families through their experiences, but were within the opening brief set to participants.

The analysis is presented in three themes: i) Putting on a brave face, (ii) Feelings of vulnerability and loss of agency by those experiencing health and social challenges and (iii) Perceptions of injustice, unaffordability of obtaining dental care.

(i).Putting on a ‘brave face’

The artworks and associated narratives highlighted the prominent role that emotions play in knowledge-sharing about dentists and dental service use. However, it was apparent that people tended to conceal or avoid sharing psychologically distressing emotional aspects like anxiety, fear, disappointment, and nervousness caused by dental care among their social networks. In particular, it was apparent that despite participants attaching strong emotions to their dental experiences, there was relatively limited communication and sharing of these emotions, even with close family members.

Insert_Figure 1: The drawing illustrates a multi-colored spectrum of dental emotions intertwined but discernible to the participant: [1] sadness, [2] scared, [3] anxiety, [4] bravery, [5] happiness. (Written consent obtained for publication).[Refer to Drawings_The artworks of participant file_Page 1].

A middle-aged mother, Florence (Figure 1), drew a picture of the mixture of emotions she felt as a mother about dental care, and how she shielded displaying these to her daughter (who had autism) receiving dental care. The painting portrays a complex range of both negative and positive emotions (sadness (blue), fear (red) and anxiety (dark green) mixed with thoughts and feelings about being brave and happy (bright and sunny colours). Florence said that although she personally felt anxious getting dental treatment,

she did not communicate her own nervousness to the family due to embarrassment and instead portrayed a courageous demeanor externally. She stated that as a mother, she does not want to transfer her feelings of dental anxiety to her children, particularly her daughter. She was consciously brave in setting aside her own anxious feelings about dental visits in order to support her daughter's dental visiting.

"I do not share my feelings about dentist as I feel silly. I am brave to encourage my children to go to dentist" – Florence, mother, Coffee and chat group.

Insert_Figure 2: Drawings depicting the vulnerable emotions attached to dental experiences unravelled during rare mother-daughter dyadic communication. (Written consent obtained for publication)[Refer to Drawings_The artworks of participant file_Page 2].

Figure 2 also involved a mother-child dyad relationship and was drawn by a mother (Whitney) on behalf of her daughter, who had ADHD. Prompted by the drawing task, Whitney asked her daughter if she could remember how the experience of orthodontic treatment was for her. Despite this being 19 years ago, Whitney's daughter had never discussed her experience of school bullying associated with her misaligned teeth and braces. Whitney's drawing depicts her daughter's transformational journey from the 'dark grey' phase of distressing feelings because of her dental appearance to eventually feeling beautiful after orthodontic treatment. Whitney, as a parent, reflected that, despite encouraging open communication, children may hold back sharing complex feelings about dental appearance and visits to avoid burdening others:

"I think she [daughter] just wanted to bury it, she just didn't want to acknowledge that it was happening, and em [pause]. She actually said [I] had a lot going on with Charlie [Whitney's specially abled son with cerebral palsy and autism], so she just felt it was something that really could not be addressed." - Whitney, (mother), The drawing group

Insert_Figure 3: The community knowledge of dentists is co-created on the papier mâché skull artefact, which symbolises the minds of participants. (Written consent obtained for publication) [Refer to Drawings_The artworks of participants file_Page 3].

A shared artwork on a papier mâché skull artefact (**Figure 3**) exhibited the same phenomenon with anxious emotions evoked by dental care, such as a phobia of needles, embarrassment of yellow teeth expressed in the artwork, which had not hitherto been discussed with others. Also depicted was relief after the dental visit and feeling proud at their bravery. Similar to individual artwork, the shared artwork depicted a concealing of distressing emotions and putting on a 'brave face'. This was drawn as just above the eye sockets by an individual (67-years, with a bipolar disorder diagnosis). The person expressing this, said she rarely talked to her husband or son about this. Unpleasant emotions were positioned towards the back of the skull, contrasting with a 'brave face' being put forward. It is notable that emotions are expressed and reported as 'internal', with memories of previous experiences backgrounded.

2. Feelings of vulnerability and loss of agency by those experiencing health and social challenges

Insert_Figure 4: The human mask-shaped artefact, inscribed with "Leave my tooth alone," poignantly captures the unspoken dental emotions a participant with Parkinson's disease experiences, created by the community leader. Written consent obtained for publication [Refer to Drawings_The artworks of participants file_Page 4].

Federica had slurred speech and reduced dexterity due to the long-term effects of Parkinson's disease on her. She could not easily draw or give an in-depth interview. Hence, Connor, as a supportive group leader and friend, listened to Federica's dental experiences patiently and illustrated an array of her fragmented, vulnerable emotions visually on the human mask-shaped canvas shown in Fig 4, which were evoked while undergoing dental procedures. Notably, the artwork displayed a prominent inscription, across its forehead in bold red capital letters, 'Leave my teeth alone': signifying this to be the uppermost thought in the mind of a participant (Federica) regarding her own dental care. The fact that this sat as a thought suggests the individual was unable to express their concerns and experienced a lack of agency in determining what was happening to them. The artefact (Fig 4) symbolically expresses Federica's feelings of vulnerability, during dental care. Connor explained the artwork based on what Federica shared with him:

"In terms of what she specifically told me, the tongue poking out was meant to be a bit mocking at the dentist. The dentists' equipment is to show how scary all the things used are and that it feels threatening. The tears and red ring around the eyes is to show exhaustion and fear. I asked Federica what she felt when she saw a dentist, and she said she wanted to say 'Leave my teeth alone' to the dentist"- Connor

Insert Figure 5: The 92-year-old participant with multiple healthcare challenges depicts her apprehension about dental visits through drawing, and the prominent inscription below it-"This is how I feel when I go to the dentist- Apprehensive", which she rarely communicates. (Written consent obtained for publication) [Refer to Drawings_The artworks of participants file_Page 5].

A grey shaded drawing (Fig 5) of an apprehensive face of a man was drawn by a 92-year-old lady (Meryl) who was confined to a wheelchair and facing multiple health complications, including heart failure, brain bleeding and postural hypertension with gradual ageing. Due to multiple morbidities, Meryl was primarily dependent on the support of her daughter and primary caregiver, Andrea (69-years), to access dental services. As the participant was not a trained artist, she chose to replicate a picture of an apprehensive male face, which she considered the closest symbolic depiction of her own apprehension during visiting her dentist.

When the researcher asked the participant's daughter and sole caregiver, Andrea, whether her mother had previously shared these emotions concerning dental visits with her, Andrea replied that Meryl rarely expressed feeling apprehensive about dental care despite the supportive presence of her daughter during dental visits. Andrea explained why her mother chose to draw her dental apprehension instead of actively discussing it:

"She will write, she will draw but she will very rarely communicate verbally to me or even to the dentist [how she feels]. They [Meryl's generation] didn't always want to express themselves. My mum has expressed herself, which gave me bit of a shock, that she actually felt apprehensive when she went to the dentist." - Andrea, Meryl daughter and primary caregiver

Insert_Figure 6: Bag of Nerves: Drawing by the participant living in social isolation, unemployment, with a learning disability. (Written consent obtained for publication).[Refer to Drawings_The artworks of participants file_Page 6].

Figure 6 was contributed by Orlando, who experienced multiple health and social challenges such as learning difficulties, living alone without any familial support, being unemployed and infrequently communicating with other community centre members. He tended to spend time by himself in a corner of the community lounge. Orlando drew a little human figure in the right corner depicting his childhood phase symbolically, labelling it as 'take my young self', to himself in different phases of adulthood depicted by bigger drawings of human figures with distinct 3-5 layers of dentition, along with the metaphoric phase 'Bag of nerves' which he kept repeating. He said the phrase represents his thoughts about how he always felt nervous visiting the dentist:

"It [dental visit] makes me feel nervous and uptight."- Orlando

When probed regarding dental visits, he responded, "No, no significant need", indicating that seeking dental care was not a priority for him. He went on to talk about his more general feelings about his life in general:

"I am just fed up of me life, no job, no money. I have no one to turn up to, I feel intimidated [from the world around me]. I feel trapped [in a routine life]."- Orlando.

The overshadowing of wider health and social care needs on dental issues was also found in relation to other participants. For example, Andrea, as carer for Meryl (Figure 5) attributed the lack of conversation

regarding her mother's dental apprehensiveness to the wider context of significant other healthcare needs:

"Every aspect of a person's care [referring to dental healthcare] is of significance, but with my mum, she was in heart failure, she had two heart attacks and then she had the brain bleed. So, mum's medical issues [pause]... my mum's general well-being was always of concern to me but obviously I would be looking more on day to day basis, to say at, in a morning like 'How's your breathing?', not 'How are your teeth?' 'Do you feel dizzy when you stand up? She has postural hypotension, so I say 'Are we good to walk?' sS in the list, it [dental visits] was not in the list of priorities. Not saying dental care wasn't important, but it wasn't in the list of priorities. It was not a general topic of conversation." – Andrea, Meryl's daughter and primary caregiver.

3. Perceptions of injustice, unaffordability of obtaining dental care

A third theme within drawings was an expression of common disappointment, frustration, anger, and sadness regarding the injustices of dental service costs. Before drawing, the participants collectively selected the dental issue which mattered to them, and they communicated with each other. Then they used a similar artistic style to depict their shared knowledge on the dental healthcare system (Fig 7). Money appears prominently (Figs 7b and 7c), and unfairness in terms of inequity is expressed in terms of a mountain (Fig 7c) despite being aware of the significance of dental care in life depicted in (Fig 7a).

Insert Figure 7[(a)-(d)]: Drawings created by participants portraying their discussions about unaffordable dental healthcare spending.(Written consent obtained for publication).[Refer to Drawings_The artworks of participants file_Page 7].

Dwyane, drew attention to the fact that he had left his drawing **[Fig.7d)]** black and white intentionally to convey his disappointment with the rising cost of dental services and dentists being uncompromising on treatment costs:

"I'm leaving it [the drawing, c] black and white because it is black and white. Dentists are black and white. There's no middle ground with them, is there? We'll charge you the earth. There's no compromise."- Dwyane.

Taby, agreed with Dwyane, explaining that the shared view of the group was they felt disappointed in a perceived failure of the public dental healthcare system:

"Right! [When] we were born, I was born in the 50s, it was [promised] 'CRADLE-to-GRAVE'; and why is? Why is your teeth not a part of your body? Don't get it. Don't get it Why is it now a separate part of your body and we were paying before anyway? NHS wasn't free, it is assumed that you can afford all this but you can't." – Taby, Drawing group.

Discussion

One of the most striking findings is the extent of emotions expressed through the artworks, particularly by participants with complex health and social needs. Participants depicted their thoughts and feelings about dentists and dental services principally through the nature and intensity of accumulated emotions over their life course, rather than in terms of factual information and educational messages. Many participants showed a tendency to conceal vulnerable emotions concerning dental visits, sometimes through putting forward an externally brave demeanour without seeking emotional support.

Cultures of 'silence' have been reported previously in participatory work on other conditions, such as Female Genital Mutilation and Menstrual Hygiene Management, with individuals tending to internalize emotions regarding their experiences (26, 27). Limited sharing of various healthcare experiences is not uncommon, nor is it limited to specific cultures or societies. Several qualitative studies conducted in the USA, UK, Africa, Asia and Australia have shown that people from a wide range of age groups and ethnicities limit their sharing about certain diseases and uptake of services. Women have been found to be reluctant to share thoughts about a wide range of healthcare issues, such as HIV (28, 29); dementia (30); breast screening (31, 32); and sexual health (33), with feared stigma, shame, judgment on identity and being left emotionally hurt due to cultural and religious beliefs, being thought to be reasons.

There is less literature on how oral health and related experiences are communicated across social networks, although a wide range of studies (34) describe people's experience of emotional distress during dental visits as well as feelings of shame and stigma at having poor oral health (7, 34, 35). Kettle et al (2019) found limited intergenerational sharing of anxiety regarding dental care and a tendency of parents to want to protect their children from their own concerns by masking their own negative emotions. There have been no previous studies, though, which have involved describing how people with a range of complex needs share and experience these anxieties.

Our results showed that a pattern of non-disclosure and hiding of emotions, even between family members and carers, existed. Although, more general negative thoughts and feelings about issues concerning the entire dental healthcare system, such as the perceived injustices relating to unaffordability and unequal availability of NHS dental treatment, tended to be shared among the group and discussed. Previous UK studies (36–38) similarly found perceptions of dental treatment as expensive and unfair, with dissatisfaction, confusion about private versus NHS costs, and mistrust of dentists' intentions posing barriers to uptake of dental care, and demonstrating belief in the egalitarian principle of equal access to affordable NHS care. Our study shows that such perceptions are not limited to individual concerns but are shared frequently within a community setting, which may amplify such perceptions.

We found that the drawing method was effective in including a group of participants who would not have participated in other methods, such as surveys, interviews and focus groups, especially as several participants had limited verbal ability. A previous review (39) reported that inclusive approaches to research participation empowered people with cognitive disabilities, allowing them to voice their previously unheard experiences and improve data quality. However, approaches to inclusion were varied

in effectiveness, and the authors advocated developing guidelines to promote inclusion at all stages of research and highlighted using innovative visual methods to engage participants in data collection and analysis, as used in this study, as an important opportunity for enhancing inclusivity.

Due to the creative and symbolic nature of the drawings, there was a risk of their misrepresentation by the researcher. Facilitating participants to interpret their own artworks enabled cross-validation, enhanced the depth of the data and strengthened reflexive rigor. Additionally, the collaborative session co-produced shared meanings of dental services embedded within the local community.

While this study was embedded in a community setting and involved a group of people who might not usually have been involved in research, this approach also had downsides in that inevitably, the sample involved were from a limited geographic area, the numbers involved were small and it is possible there was some cross-contamination of the ideas expressed, especially since the elicitation of data took place mainly in a group setting. While this limits generalizability, it suggests that this approach would merit replication in a range of other settings because the data itself revealed a depth of insight from a group which is often excluded from research efforts.

Conclusion

The study demonstrated the potential strengths of using drawing methods to include individuals with complex needs in research, who might not have been involved in research using other methods. In the community setting studied, participants attached intense and vulnerable emotions to their experiences of dental services: sadness, fear, anxiety, bravery, and happiness. These emotions were often concealed by participants, sometimes through putting on a 'brave face' and without seeking emotional and practical support. In contrast, negative experiences due to crises in dental service delivery were shared frequently across the community networks. The accounts also revealed how a wide range of social, psychological and economic factors compel people to deprioritise seeking information on dental services in daily life. The limited seeking and sharing of dental service knowledge in everyday life alongside other healthcare and social needs warrants further exploration, particularly with people with cognitive and communicative limitations from diverse ethnicities. Drawing as a participatory data collection method can be used to widen inclusivity, engaging people with communicative and cognitive limitations who are unwilling or unable to participate in conventional studies to understand their internal feelings and thoughts about using dental healthcare services.

Declarations

Ethics approval and consent to participate:

Ethical approval was obtained from the ethics committee of the University of Liverpool, UK, reference no.12748, and written consent forms were obtained from the participants after they had read the participant information sheet.

Consent for publication:

Written consent was obtained from every participant.

The consent form used to obtain permission for the publication of the images is available in the additional file.

Availability of data and materials:

All data created or analysed during this review are included in this article [and its additional information files] and are available from the corresponding author upon request.

Third-party material

This article includes third-party material. Written permission from every participant had been obtained via ethically approved consent forms to publish their artworks. The names of the participants had been pseudonymized, adhering to the ethical practice of confidentiality and anonymity to safeguard the identity of participants.

Competing interests:

The authors have reported no potential conflict of interest.

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Authors' contributions:

AB conceived the idea, conducted the participatory drawing session, data collection, data analysis and drafted the manuscript. SD enabled AB to conduct the participatory session and contributed to member checking of the data to prevent misinterpretation. RVH, TH and MVZ provided critical guidance for the data analysis and contributed to the final editing of the manuscript. All authors reviewed and approved the final version of the manuscript.

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References

1. Baskaradoss JK. Relationship between oral health literacy and oral health status. *BMC Oral Health*. 2018;18(1):172.
2. Rouxel PL, Heilmann A, Aida J, Tsakos G, Watt RG. Social capital: theory, evidence, and implications for oral health. *Commun Dent Oral Epidemiol*. 2015;43(2):97–105.
3. Organization WH. Health literacy development for the prevention and control of noncommunicable diseases: Volume 1. Overview: World Health Organization; 2022.
4. Ramos-Gomez F, Tiwari T. Oral health literacy framework: the pathway to improved Oral health. *J Calif Dent Assoc*. 2021;49(12):759–69.
5. Papen U. Literacy, learning and health: A social practices view of health literacy. *Lit numeracy Stud*. 2009;16(1):19–34. (2 and v. 17 no.
6. Samerski S. Health literacy as a social practice: Social and empirical dimensions of knowledge on health and healthcare. *Soc Sci Med*. 2019;226:1–8.
7. Emily Kettle J, Warren L, Glenn Robinson P, Walls A, Gibson BJ. I didn't want to pass that on to my child, being afraid to go to the dentist': making sense of oral health through narratives of connectedness over the life course. *Sociol Health Illn*. 2019;41(4):658–72.
8. Phillimore J, Bradby H, Knecht M, Padilla B, Pemberton S. Bricolage as conceptual tool for understanding access to healthcare in superdiverse populations. *Social Theory Health*. 2018;17(2):231–52.
9. Metcalf SS, Northridge ME, Widener MJ, Chakraborty B, Marshall SE, Lamster IB. Modeling social dimensions of oral health among older adults in urban environments. *Health Educ Behav*. 2013;40(1 Suppl):S63–73.
10. Murakami K, Aida J, Hashimoto H. Associations of social relationships with curative and preventive dental care use among young and middle-aged adults: Evidence from a population-based study in Japan. *Community Dent Oral Epidemiol*. 2019;47(5):389–97.
11. Literat I. A Pencil for your Thoughts: Participatory Drawing as a Visual Research Method with Children and Youth. *Int J Qualitative Methods*. 2013;12(1):84–98.
12. Ronzi S, Puzzolo E, Hyseni L, Higgerson J, Stanistreet D, Hugo MNB, et al. Using photovoice methods as a community-based participatory research tool to advance uptake of clean cooking and improve health: The LPG adoption in Cameroon evaluation studies. *Soc Sci Med*. 2019;228:30–40.
13. Phelan H, Hassan A, MacFarlane A. The role of music and singing as research methods to improve migrants' involvement in health research and policy-making. *Health Res Policy Syst*. 2025;23(1):67.
14. Fleming E, Raskin SE, Brody E. From describing disparities to understanding why disparities exist: Anti-racist methods to support dental public health research. *J Public Health Dent*. 2022;82(1):73–8.

15. Roy M, Bartlett G, Cushcagua J, Evans A, Macaulay A. Planned Parenthood as a Public Health Imperative: A Participatory Research Exploring the Use of Contraception by Indigenous Women of Chilcapamba, Ecuador. *Collaborations: A Journal of Community-Based Research and Practice*. 2020;3(1).
16. Harrison SL, Lawrence J, Suri S, Rapley T, Loughran K, Edwards J, et al. Online comic-based art workshops as an innovative patient and public involvement and engagement approach for people with chronic breathlessness. *Res Involv Engagem*. 2023;9(1):19–0.
17. Power JG. Evaluating Health Knowledge: An Alternative Approach. *J health communication*. 1996;1(3):285–300.
18. Torriani DD, Goettems ML, Cademartori MG, Fernandez RR, Bussoletti DM. Representation of dental care and oral health in children's drawings. *Br Dent J*. 2014;216(12):E26–E.
19. Fernyhough C, Borghi AM. Inner speech as language process and cognitive tool. *Trends Cogn Sci*. 2023;27(12):1180–93.
20. Garista P, Pocetta G, Lindström B. Picturing academic learning: salutogenic and health promoting perspectives on drawings. *Health Promot Int*. 2019;34(4):859–68.
21. Riessman CK. *Narrative methods for the human sciences*. Sage; 2008.
22. Ronkainen NJ, Watkins I, Ryba TV. What can gender tell us about the pre-retirement experiences of elite distance runners in Finland? A thematic narrative analysis. *Psychol Sport Exerc*. 2016;22:37–45.
23. McAllum K, Fox S, Simpson M, Unson C. A comparative tale of two methods: how thematic and narrative analyses author the data story differently. *Communication Res Pract*. 2019;5(4):358–75.
24. Thomas J, Maxwell D, Thomas S. These Are Not My Words: Sexual Trauma, Member Checking, and Qualitative Research. *Best practices mental health*. 2024;19(2):1–17.
25. Papademas D, the International Visual Sociology A. *IVSA Code of Research Ethics and Guidelines. Visual studies*. (Abingdon England). 2009;24(3):250–7.
26. Evans C, Tweheyo R, McGarry J, Eldridge J, Albert J, Nkoyo V, et al. Seeking culturally safe care: a qualitative systematic review of the healthcare experiences of women and girls who have undergone female genital mutilation/cutting. *BMJ Open*. 2019;9(5):e027452.
27. Hennegan J, Shannon AK, Rubli J, Schwab KJ, Melendez-Torres GJ. Women's and girls' experiences of menstruation in low- and middle-income countries: A systematic review and qualitative metasynthesis. *PLoS Med*. 2019;16(5):e1002803.
28. Felsher M, Koku E, Lankenau S, Brady K, Bellamy S, Roth AM. Motivations for PrEP-Related Interpersonal Communication Among Women Who Inject Drugs: A Qualitative Egocentric Network Study. *Qual Health Res*. 2021;31(1):86–99.
29. Whitford K, Mitchell E, Lazuardi E, Rowe E, Tasya IA, Wirawan DN, et al. Corrigendum to: A strengths-based analysis of social influences that enhance HIV testing among female sex workers in urban Indonesia. *Sex Health*. 2021;18(1):122.

30. Fair H, Doherty K, Eccleston C, Edmonds M, Klekociuk S, Farrow M. The Drivers of Conversations About Dementia Risk Reduction: A Qualitative Study. *J Health Commun.* 2023;28(1):64–72.

31. McEwan J, Underwood C, Corbex M. Injustice! That is the cause: a qualitative study of the social, economic, and structural determinants of late diagnosis and treatment of breast cancer in Egypt. *Cancer Nurs.* 2014;37(6):468–75.

32. Woof VG, Ruane H, Ulph F, French DP, Qureshi N, Khan N, et al. Engagement barriers and service inequities in the NHS Breast Screening Programme: Views from British-Pakistani women. *J Med Screen.* 2020;27(3):130–7.

33. Warren-Jeanpiere L, Miller KS, Warren AM. African American Women's Retrospective Perceptions of the Intergenerational Transfer of Gynecological Health Care Information Received From Mothers: Implications for Families and Providers. *J Family Communication.* 2010;10(2):81–98.

34. Strieder AP, Oliveira TM, Rios D, Cruvinel AFP, Cruvinel T. Is there a relationship of negative oral health beliefs with dental fear and anxiety regarding diverse dental patient groups? A systematic review and meta-analysis. *Clin Oral Investig.* 2019;23(9):3613–21.

35. Zain Ul Abideen M, Ali Bushara NA, Nadeem Baig M, Dilshad Siddiqui Y, Ejaz I, Tareen J, et al. Shining a Spotlight on Stigma: Exploring Its Impact on Oral Health-Seeking Behaviours Through the Lenses of Patients and Caregivers. *Cureus.* 2024;16(6):e63025.

36. Feizollah A, Byrne M. Patient perceptions of English dental services before, during and after the COVID-19 pandemic: a sentiment and topic analysis of online reviews. *Br Dent J.* 2025.

37. Hancock M, Calnan M, Manley G. Private or NHS General Dental Service care in the United Kingdom? A study of public perceptions and experiences. *J Public Health.* 1999;21(4):415–20.

38. Hill K, White D, Morris A, Goodwin N, Burke F. National evaluation of personal dental services: a qualitative investigation into patients' perceptions of dental services. *Br Dent J.* 2003;195(11):654–6.

39. Ghaderi G, Milley P, Lysaght R, Cobigo V. Including people with intellectual and other cognitive disabilities in research and evaluation teams: A scoping review of the empirical knowledge base. *J Intellect Disabil.* 2025;29(3):706–26.

Table

Table 1: Participant demographic characteristics

No.	Recruited from	Participants [Pseudonyms]	Age [in years]	Gender Male[M]/ Female [F]	Ethnicity	Associated healthcare or socioeconomic-related needs
1.	Coffee and chat	Connor	24	F	White-British	Community leader with self-reported autism
2.	Coffee and chat	Federica	80	F	White British	Parkinson's disease, wheelchair-dependent, social isolation
3.	Daughter of Federica	Emily	50+	F	White British	Primary caregiver and daughter of Federica
4.	Visitor	Orlando	61	M	White British	Self-reported learning difficulty, unemployment, benefits, and social isolation. Do not engage with any community group.
5	Coffee and chat	Sonia	84	F	White British	People Living with Dementia [PLWD]
6	Coffee and chat	Mindy	67	F	White British	Ageing and social isolation
7	Coffee and chat	Florence	50	F	White British	Community worker, mother of a daughter who is on the Autism spectrum
8	Coffee and chat, group volunteer	Michelle	48	F	White British	Multiple mental health conditions, including bipolar
9	Community worker	Kiara	30	F	White British	Community worker for mental well-being

10	The drawing group	Meryl	92*	F	White British	Ageing with increased health risks*, wheelchair-dependent
11	Family member of Meryl	Andrea	70	F	White British	Primary caregiver and daughter of Meryl
12	The drawing group	Dwayne	65	M	White British	Underlying cardiac condition
13	The drawing group	Taby	72	F	White British	-
14	The drawing group	Renee	54	F	White British	-
15	The drawing group	Whitby	66	F	White British	Mother of a daughter with ADHD

Figures



Figure 1

The drawing illustrates a multi-colored spectrum of dental emotions intertwined but discernible to the participant: [1] sadness, [2] scared, [3] anxiety, [4] bravery, [5] happiness. (Written consent obtained for publication).

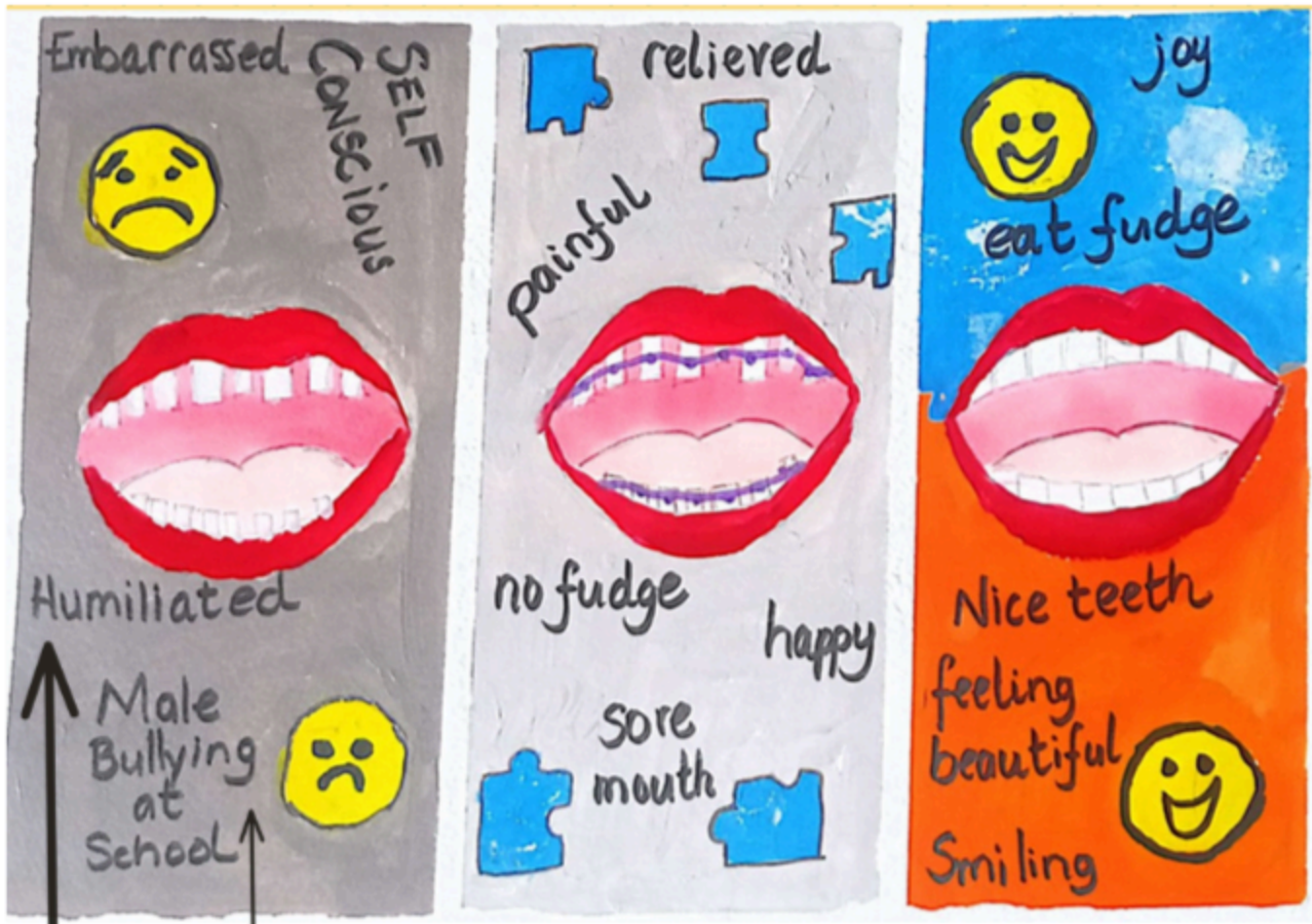


Figure 2

Drawings depicting the vulnerable emotions attached to dental experiences unravelled during rare mother-daughter dyadic communication. (Written consent obtained for publication)



A visual 3-dimensional representation of positive and negative emotions and thoughts emerges in the minds of participants during their dental visits

Figure 3

The community knowledge of dentists is co-created on the papier mâché skull artefact, which symbolises the minds of participants. (Written consent obtained for publication)

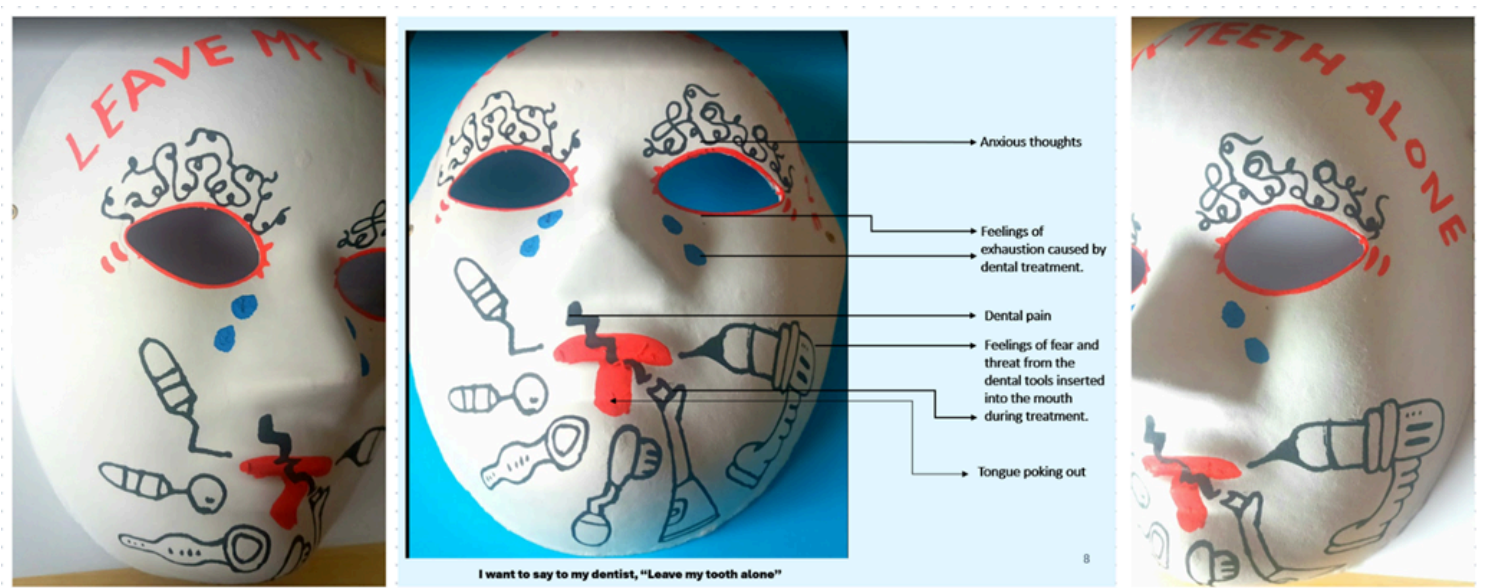


Figure 4

The human mask-shaped artefact, inscribed with “Leave my tooth alone,” poignantly captures the unspoken dental emotions a participant with Parkinson’s disease experiences, created by the community leader. Written consent obtained for publication



Figure 5

The 92-year-old participant with multiple healthcare challenges depicts her apprehension about dental visits through drawing, and the prominent inscription below it—"This is how I feel when I go to the dentist-Apprehensive", which she rarely communicates. (Written consent obtained for publication)



Figure 6

Bag of Nerves: Drawing by the participant living in social isolation, unemployment, with a learning disability. (Written consent obtained for publication).



Figure 7

[(a)-(d)]: Drawings created by participants portraying their discussions about unaffordable dental healthcare spending. (Written consent obtained for publication).

Supplementary Files

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- [Supplementaryfile1Drawingsofotherparticipants.docx](#)