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Disentangling a web of causation: An ethnographic study of interlinked patient barriers to planned dental visiting, and strategies to overcome them

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Abstract

Objective: To explore barriers to planned dental visiting, investigating how barriers interlink, how they accumulate and change, and how individuals envisage overcoming their combination of barriers through personal strategies.

Methods: An ethnographic study was conducted of adult urgent dental care attenders who did not have a dentist, including 155 hours of nonparticipant observations, 97 interviews and 19 follow-up interviews in six urgent dental care settings. Data were analysed using constant comparison, first identifying barriers and personal strategies to overcome them, and subsequently analysing interlinks between barriers and personal strategies.

Results: Accounts of barriers to planned dental visiting encompassed multiple barriers, which related to socioeconomic circumstances as well as experiences of oral health care. Barriers were multi-layered and more difficult to overcome when occurring together. Personal strategies to overcome diverse barriers often hinged on increasing importance of oral health to individuals, yet this was not always sufficient. The combination of barriers participants experience was dynamic, changing due to personal, family, or employment circumstances, and with increasing severity of barriers over time. Over time, this could lead to higher cost, and additional barriers, particularly embarrassment.

Conclusion: Barriers to planned dental visiting are complex, multi-layered and change over time, constituting a 'web of causation'. This adds a novel perspective to the literature on barriers to dental visiting, and requires that researchers, dental practitioners and policy makers remain open to barriers' interlinked effects, changes in primacy among individual patients' barriers, and their accumulation over time to better support uptake of planned dental visiting.

KEYWORDS

attitudes to oral health, health service utilization, inequalities, qualitative research, web of causation

1 | INTRODUCTION

Oral diseases are a widespread, but largely preventable problem.[1] Poor oral health is observed to be socially patterned—it worsens in line with socioeconomic background.[2-4] Oral health is also found to be poorer among people who do not visit a dentist for regular dental care, but wait until they have a dental problem, such as toothache or an abscess.[5-7] Dental visiting is also socially patterned in the population—even in health systems such as the United Kingdom where dental services are widely available, and where limited out of pocket payment is required for those on low incomes.[8] Since longitudinal studies conducted in various countries confirm that problem-based dental visiting contributes at least partly to inequalities in oral health, addressing inequalities in dental visiting behaviour is an important strategy in improving population oral health.[8-10]

Many studies have been conducted to examine what impedes dental visiting for planned care. These have been mainly cross-sectional and often look to describe patients' barriers to dental attendance. Most studies focus on specific groups, such as children,[11] older adults,[12] homeless people,[13] welfare recipients or people on low income,[14,15] and migrant or ethnic groups,[16,17] as well as the general adult population.[18,19] Barriers have been described as dental anxiety,[20,21] competing demands[22] including affordability of dental care,[18] relevance and meaning of oral health,[23-25] embarrassment,[26] trust in dentists and dental services,[27,28] and accessibility and availability of dental care.[12,29] Some studies have described factors which help overcome barriers: patients' persistence in care-seeking,[12] services' clear information provision,[12,30] providers' communication,[12,31,32] services' and societal support for specific needs,[12,30-33] and financial support.[30,31,33] The few intervention studies which exist in this area have focused on counselling patients,[34,35] patient education,[34,36] provider education on social determinants,[37] tailored provision including community dental services[38,39] and macro-level changes including public health coverage.[15,40] However, what individual patients do or intend to do to overcome their barriers has not been explored in-depth. Furthermore, interventions targeting the general adult population who do not visit a dentist unless they have a problem are needed, in addition to current interventions aimed at specific groups.

Dental visiting is increasingly investigated as a long-term or life-course phenomenon,[8-10] with a perspective which takes account of changes over time. Different barriers and their relative prominence for individuals may also vary over time,[13] but this has been under-appreciated in many studies to date. Moreover, barriers should be understood as not discrete entities but usually interrelated. Castañeda and others, for instance, investigated personal, social and service-level barriers related to both migration status and class among migrant farmworker families, and argued that barriers to dental visiting should not be studied as a combination of distinct factors, but as a 'web of effects',[29] linked to social class. The concept of a 'web of effects', coined by Heyman et al,[41] views barriers as linked, occurring simultaneously, and as more difficult to overcome when occurring together. The theoretical lens of a 'web of effects' focuses attention on the social structural causes of barriers to dental visiting. In particular, studying social class as an underlying structural cause, rather than focusing on socioeconomic status narrowly defined, has been advocated by Castañeda et al.[29]

This is akin to the widely used concept in epidemiology of a 'web of causation', which views dental visiting,[22] like health and disease, as influenced by multiple and interlinked strands,[42] shaped by both social influences and individual, biological factors. This perspective recognizes the web's historic development and raises the question what causes the strands of the web to exist.[22,42] This concept forms part of ecosocial theory, an approach developed by Krieger in response to an over-emphasis on risk factors in epidemiology, which are often added up rather than studied in a combined way.[42,43] Ecosocial theory takes into account multi-level effects and dynamic changes over time, inspired by the approach of ecology.[42-44] In oral epidemiology, this approach has been advocated too.[44] This is particularly suitable as oral health is shaped by interactions of social influences and biological factors.[44,45] Ecosocial theory takes into account complexity—for example, interaction between individuals and their socioeconomic circumstances, which cannot be reduced to the sum of its parts.[46] It also views health and disease as effects of social influences combined with biological factors, where inequalities may be produced by different effects of these interrelated factors on people from more deprived backgrounds.[43] This foregrounds the issue that overcoming barriers may need to involve actions at personal, (dental care) system and societal levels,[12] although the most appropriate points to intervene may vary.[42]

These perspectives study health behaviour as a layered phenomenon, subject to incremental changes. This leads us away from looking at *which* barriers inhibit planned dental visiting, instead focusing on *how* they combine and how such combinations might change. Using the perspective of a 'web of causation', this paper aims to explore individuals' multi-layered barriers to planned dental visiting. More specifically, we investigate how barriers interlink, how they may accumulate, and how this accumulation of barriers can be overcome by looking at individuals' personal strategies to do so.

2 | METHODS

This paper is based on an ethnographic study which examined the experiences of adults who did not have a dentist seeking care from urgent dental services. It was conducted in an urban area in the North of England between October 2018 and August 2019. Ethical approval was obtained from the Health Research Authority North-East, Tyne and Wear South (18/NE/0061, IRAS ID 240819). The study area experiences a considerable burden of ill-health, and substantial use of urgent dental services. In the United Kingdom, dental care is provided as National Health Service (NHS) care, with co-payment but at a reduced cost to patients,[47] or privately. General dental practices in the study area had spare capacity for new NHS patients. The study was conducted in six settings representing the diversity of the area's urgent dental services: a dental hospital which operates a walk-in clinic, two in-hours settings with a large share of in-hours

appointments situated in general dental practices, and all three out-of-hours urgent dental care settings situated in dental clinics during weekends and bank holidays. In the dental hospital, patients are triaged at the site, whereas in-hours and out-of-hours operate on an appointment basis after telephone triage.

The ethnographic data collected included: nonparticipant observations, formal and informal interviews, and visual materials such as drawings of the study areas. Posters were displayed around the waiting areas, with information about the on-going study and contact details for questions or opting out of on-going observations. The researcher was recognizable by a lanyard with ID badge. For interviews, purposive sampling was used aimed at diverse demographic characteristics, prioritizing patients with longer expected waiting times. Written consent for interviews, observations in surgeries and follow-ups was obtained prior to the interviews, following written and verbal information about the study and opportunity for seeking clarifications. After interviews, consent was reconfirmed verbally prior to observations in surgeries and follow-ups. Data were collected by the first author (MZ)—trained as a medical sociologist—in all sites, and also by two additional researchers (RH—with a background in dental public health—and a research assistant with a background in psychology) in the dental hospital. Nonparticipant observations were conducted in waiting areas, reception areas, and dental surgeries, and were recorded in fieldnotes. Observations focused on following the patient's journey through the dental setting. The observations were mainly conducted in the waiting area, noting particularly patients' interactions with dental clinic staff, information provided to them, the organization of urgent care appointments and what patients' journey through the urgent care appointment was like. In observations of dentist-patient interactions, the focus was particularly on information provided about dental visiting, and discussion of patients' dental visiting and what inhibits it. Observations also included informal interviews (recorded in fieldnotes rather than audio-taped), which were especially helpful as in the urgent care setting participants were not always at ease with a lengthy formal interview.

Alongside observations, semi-structured interviews were conducted with patients attending for urgent dental care appointments and their friends and family (if present and consenting to contribute). Interviews were conducted using a topic guide (Table 1). Additional questions based on observations in the dental setting were also included in the interviews and follow-up interviews, for example about particular experiences during participants' urgent care appointment, their opinions about information provided, or interactions with dental staff. Participants were approached by the researcher and invited to participate in the urgent care settings' waiting areas, and if consenting, interviews were conducted there subsequently. Most interviews were conducted whilst participants were waiting for their urgent care appointment, and sometimes after their urgent care appointment, in accordance with participants' choices. Interviews were conducted such that the urgent care appointment would not be affected, and therefore were stopped when the participant was called in for their appointment with the dentist. Furthermore, during the interviews, the researcher checked if participants continued to be comfortable with the interview whilst waiting for their appointment, and interviews were stopped if at any point the participant indicated a wish to pause. Follow-up interviews were conducted by telephone around five months after initial interviews. These were tailored to each participant and explored the topics detailed in Table 1. Interviews were audio-recorded and subsequently transcribed, or recorded in fieldnotes according to participants' preferences. Reflective fieldnotes were written after each interview.

TABLE 1 Topics discussed in interviews and follow-up interviews about barriers to planned dental visiting

Topics discussed in interviews
Reasons for using urgent dental care
Last dental visit and dental visiting history
Factors inhibiting dental visiting for planned care
Intentions regarding dental visiting after urgent dental care
Help needed and plans for overcoming barriers to dental visiting
Any remaining difficulties after trying to overcome the barriers discussed
Topics discussed in follow-up interviews
Experiences of and dental problems since the urgent dental care visit
Plans and actions towards finding a dentist since the urgent dental care visit
Experiences during any dental visits since the urgent dental visit
Changes in barriers to dental visiting
Intention to attend for planned dental care in future

Data were analysed using constant comparison,[48] using NVivo 10 (QSR International Pty. Ltd.). Analysis focused on the semi-structured interviews, with data from the observations drawn on to contextualize the interviews and reach a deeper understanding of participants' circumstances and experiences in the urgent dental care setting. SW and MZ independently coded 10 interviews, and subsequently agreed on a coding framework focusing on barriers and strategies. SW then coded all interviews, resolving uncertainties through discussion with MZ. MZ subsequently analysed links between barriers and strategies, and compared these across interviews and fieldnotes. Transcripts, coding and emerging interpretations were discussed regularly with CE and RH. Emerging analysis was also discussed with the wider project team involved in developing an intervention to reduce inequalities in dental visiting, a community advisory group, a patient reference group, and follow-up participants. This paper focuses on interlinks between barriers and strategies to overcome these. Participants' names have been changed to ensure confidentiality.

3 | RESULTS

As detailed in Table 2, 97 participants were interviewed, 19 of whom were interviewed again at follow-up, and 155 hours of observations were conducted. Five barriers to planned dental visiting were identified: (a) available resources; (b) importance of oral health; (c) trust in dentists; (d) dental anxiety; and (e) embarrassment. The conceptual

definitions for each barrier identified, along with examples of supporting data, as well as the personal strategies identified (with examples of supporting data), are detailed in Table 3. A large majority of participants discussed facing more than one barrier to planned dental visiting, which is described in the first section. The second section describes similarities in how barriers coalesced and implications this had for dental visiting. The third section explores how combinations of barriers may change over time.

3.1 | Accounts of multiple barriers

Most participants described several barriers impeding visiting a dentist. These were often a combination of socioeconomic circumstances and how dental care was experienced or valued. Barriers were often described closely together, for example around available resources and importance of oral health.

Linda: If I need to go, I will go. But if I don't feel the need to go, I just won't go. Erm, and also, I don't even know what the costs are now, I've no idea.
Interviewer: Would that, would that be, erm, an issue for you?
Linda: Yeah, because I'm only on a state pension.

Accounts of barriers were often recounted gradually over the course of an interview. This was often the case with emotions around dental visiting like dental anxiety.

Stephen: I'm a self-employed bricklayer. 'Cause I'm not on the dole or nothing like that, I can't go the dentist…I'm out of work so I can't pay […]Interviewer:What's the problem with your tooth today?Stephen:I've got, what it was, about twenty years ago I had, where you've got an overbite, so I got my jaw set back, they broke my jaw five times, loads of things, so it's made me hate the dentist over the years. I've had toothache for over a year.

Stephen's account of dental anxiety emerged after he detailed he could not afford it. This could suggest dental anxiety was not something readily discussed. A similar sequence was found with other participants. A reverse sequence was also found, where participants discussed dental anxiety initially, recounting other barriers later. Kevin detailed at the start of the interview:

> To be honest, that [being at urgent care dentist] tells you how much pain I'm in. If like I never had nothing wrong with me and they said you can have a check-up, oh, no, no, I don't like them…just a bit scared of it when I was young. […]
>
> To be honest, the thing that put me off if I'm going to be honest, I was thinking about how much it was going to cost, it might cost me. It's not free is it for people in work?
>
> (Keith)

Whilst participants' accounts often clearly distinguished between barriers, sometimes they were entangled. Sue, who attended with an abscess around one of her last remaining teeth, related that for

TABLE 2 Details of observations and interviews in urgent dental service sites and interview participants

		Total	In-hours	Out-of-hours	Dental hospital[a]
Number of sites		6	2	3	1
Approximate hours of observation		155	80	50	25
Total interviews		97	50	27	20
Sex	Male	28	16	12	
	Female	22	11	8	
Age group	<29	23	13	3	
	30-39	11	9	5	
	40-49	11	5	4	
	50-59	3	0	4	
	60+	2	0	4	
Interview length	≤5 min	8	4	3	
	6-9 min	15	11	4	
	10-19 min	15	10	7	
	≥20 min	9	1	4	
	Fieldnotes only	3	1	2	
Follow-up interviews		13	5	1	
Sex	Male	8	3	-	
	Female	5	2	1	
Age group	<29	5	5	-	
	30-39	2	-	-	
	40-49	4	-	-	
	50-59	0	-	-	
	60+	2	-	1	
Interview length	<5 min	2	2	1	
	6-9 min	4	1	-	
	10-19 min	5	2	-	
	≥20 min	1	-	-	
	Fieldnotes only	1	-	-	
Provider-patient consultations observed		26	9	3	

[a]Dental hospital: 1 participant age unknown.

24 years she had only visited dentists when having a problem. She described all five main barriers, and attempts to overcome these, during what she described as 'a long road of losing teeth'.

> I'm really frightened of the dentist so I just try not to go. Because I knew every time I went I'd have to have teeth removed [...] And also I mean my old dentist who took all me teeth out she was wonderful, erm, and then she left and then when I went to get the other tooth out and developed dry socket I lost all hope really... the other dentist just, there was no erm sympathy. [...] I'm embarrassed that I'm at such a young age with dentures and, when I was younger I had beautiful teeth and I had every, I had fissure sealants, I had lots of treatment, and I used to go every six months and just when I got pregnant I started losing [...] I did ask for a different dentist. So hopefully I'll get a different dentist. And it's also the cost because I work I'm finding I'm struggling really to find the money to get new dentures. [...] There's mainly, there's quite a lot of issues.
>
> (Sue)

Whilst dental anxiety was foremost among the barriers Sue described, overcoming anxiety alone would not suffice to enable dental visiting for planned care. Thus, barriers combined as 'quite a lot of issues' jointly inhibited planned dental care.

3.2 | Layered barriers and a web of causation

Although the barriers each individual participant faced varied, there were similarities in how barriers coalesced. As detailed in Figure 1, we found that barriers were often layered like an onion, with the figure's central layers encompassing personal, and sometimes less readily discussed barriers, encircled by more outward-facing ones. Barriers that often coalesced were available resources and importance of oral health - that is, having little time or finances often combined with dental visiting being a low priority compared with other aspects of participants' lives. Furthermore, dental anxiety was often mentioned alongside trust in dentists. Low perceived trust was displayed in stories of negative experiences of others, or media portrayals of dentists, and was linked with stories of feeling dentally anxious. When participants discussed strategies to overcome their barriers, this coalescing of multiple barriers was particularly pronounced. For example, building trust with a dentist was often mentioned in overcoming dental anxiety, as mentioned by Sue in the paragraph above.

Changing importance of oral health was central to many accounts of overcoming barriers to planned dental visiting. Lewis described available resources and embarrassment as main barriers, yet when discussing overcoming these barriers, he emphasized his growing sense of importance of maintaining oral health, rather than strategies to overcome barriers such as dental anxiety.

> It's really hard to get time off. But they should, they should give you a day for time off, so that's, yeah, I'd say that's the main thing [...] It's more nervous because you, you've reached a certain age where you think you should, I should be sorted by now, and I'm not so... I think it's more a confidence thing. [...] I've watched YouTube videos of people with mouths, like, being destroyed. That makes you want to go to the dentist straight away. So I think that might help [...] seeing people who haven't gone for that long - that makes you scared to not go.
>
> (Lewis)

Kate spoke about available resources as her main barrier, but discussed a change in importance of oral health as being pivotal in taking up planned dental care.

Interviewer: Is there anything that kind of stops you from going?

Kate: Erm, no. I probably just think work and a busy life. It's not something at the forefront of my mind I think (Kate)Kate:Like I know the importance of going the dentist and stuff, I just didn't, it just didn't cross me mind to be honest. I think being pregnant and stuff, and then obviously having the issue [dental infection], that definitely made me think, oh my gosh. Because, I'll never have toothache again like that. (follow-up interview)

Although she points out the embodied experience of a dental problem as setting off a change in her actions, she describes oral health care becoming meaningful through a wider shift, from getting 'just a bit wrapped up in work' to her family becoming important with having her first child. At follow-up, she had booked 'family check-ups', which she described as making her take care of herself and her oral health, along with her child and partner.

Not all participants who discussed growing importance of oral health overcame their barriers. Participants' socioeconomic conditions and political-economic factors affecting their lives sometimes precluded planned dental visiting even when importance of oral health care was very high.

> The dentist said to me then, back [10-20] years ago, he said "How old are you?" I said "I'm 30". He said "I'm telling you now if you don't start changing your attitude to your teeth and your oral hygiene you're going to have no teeth by the time you're 40". So that's the reason why I've tried as much. [...]
>
> It's just hard with my job. It's like there today, I've started work at 2am this morning, I've finished at 4pm today you know, and it is hard work. It is hard work to get into a dentist. I even find the same problem with doctors, to get to a doctor.
>
> (Daniel, follow-up)

TABLE 3

Barriers to dental attendance and personal strategies to lower barriers

Identified barrier	Conceptual definition	Participant quotes relating to barrier	Identified personal strategies for overcoming barrier	Participant quotes relating to strategies
Available resources	Having sufficient resources to be able to cope with the costs of dental care, relative to competing demands. This includes time relative to other obligations, cost relative to income	My job it's very difficult to get to a dental appointment. For me to get to a dental appointment, it costs me money, as in it costs me money for the treatment, but it also costs me money in my working week. […] Because my job is, I work away Monday to Friday so if I say to them I need to be at a dentist on Wednesday. They'll make me, they'll keep me local all week and I won't earn any money. […] It could cost me the best part of £200 just for not going. (Daniel, 40-49) I was setting it [planning for getting dental treatment] up to start, so I could make a payment plan. And all that but, and then I, I lost my job (Stephen, 30-39) I don't even know what the costs are now. I've no idea. (Linda, 70-79) [the place I work in] we're open 6 'til 8 so like a it, it, it's covers, you know, all the time they're open. Erm, and I've always been really wary of getting any kind of treatment before going into work because you feel like absolute, you know, if you're getting a tooth out, you're probably not gonna wanna be being nice to people and solving their problems for them (Tom, 20-29)	Planning attendance and appointment around other costs and time; Looking for a dental practice that fits with affordable time and cost; Trying to access dental services with reduced cost	Monday morning I've made a little space so I can phone around but then I don't know when I'm going to fit the appointments in. (Isabelle, 30-39) If I try and get a dentist I try and say to a dentist, Friday the latest appointment you have, because I can [unclear] right Friday I need to be back [from being away for work] for 2, 3 PM so I can get to that appointment. That's what I try and do. Some, some companies are flexible, some companies say sorry we can't do it. (Daniel, 40-49) If there was a payment plan in place. Even if I done a direct debit with them, like £30 a month. I'd jump at the chance if they said to me, look, I know you can't afford it but you do need the bottom dentures fitted in. I'd do it. I can't eat a meal so I need them fitting properly. So if they can say to me look, we'll do a direct debit, £30 a month I wouldn't have a problem. (Sue, 40-49) I'm on an apprenticeship you see. So I don't know whether it would be worth…I did go through that with me dentist. I said I'm on an apprenticeship and that, so do I get it free? (Tony, 20-29)

(Continues)

TABLE 3 (Continued)

Identified barrier	Conceptual definition	Participant quotes relating to barrier	Identified personal strategies for overcoming barrier	Participant quotes relating to strategies
Importance of oral health	Importance of oral health to everyday life. Among urgent dental care attenders importance was a barrier when oral health was taken as given (often maintained by self-care but not dental visiting), neglected through lifestyle or other behaviours, or outweighed by other priorities. Oral health was meaningful and not a barrier when it was prioritized, or coupled with self-identity	People don't think anything's going to happen, Like I thought oh, it's just gum disease, I'll put toothpaste on it and it'll clear up (Amy, 20-29) That [tooth decay] is my fault but I was like, forget today, you know what I mean. There's no tomorrow. Know what I mean? But you don't realise that when you're young, you're gonna get old. (Lee, 60-69) I've suffered with me teeth for years basically so I, I have neglected them, I haven't looked after them you know. Erm, I'm a smoker, I ate, you know, lemonade, bad food sort of growing up, so I have suffered. (Chris, 40-49) I'd like to [go to the dentist], at least for a scale and polish now and again. I always say that I need to go, I need to make sure I go. Just …You know, you just sort of like forget about it sometimes. It's hard, [unclear]. It's not like a proper priority. Only unless it's bothering you really (Pete, 20-29)	Prioritizing oral health; Telling others about relevance of oral health; Changing attitude to oral health	I think it was because I'd, yeah, because I went to the emergency it kind of pushed it more as a priority you know. Because before I just kind of brushed it off and didn't really think about it (Joanne, 20-29) It was just a, I suppose, stop taking them for granted as much. Or maybe I've been too lucky through my life and I've never actually had problems with my teeth despite taking less and less care of them. It just made me realise that I'd be buggered you know if I do have more problems and have to take teeth out. It will just make everything a lot more difficult and there's no going back when you get to that point (Tom, 20-29) My kids, my kids never missed dental, every, if you've got to be there every six months. All my kids, all my kids have got beautiful teeth, brace, they've had all the braces everything. They've done it all. [unclear] I, even though I've not took care of my own teeth. My kids, I make sure (Daniel, 40-49) It's just times have changed yeah. You get more looked after now and, you know, people are keen to keep their gums healthy, and their teeth, and you know their eyes and what have you. Whereas years ago it was just clean your teeth and that was it. I don't think you even looked at them to be honest with you. You just cleaned them and that was it. (Sandy, 60-69)

(Continues)

TABLE 3 (Continued)

Identified barrier	Conceptual definition	Participant quotes relating to barrier	Identified personal strategies for overcoming barrier	Participant quotes relating to strategies
Trust in dentists	An optimistic acceptance of a vulnerable situation in which the patient believes the dentist or dental care services will care for their interests.[50] This includes interpersonal trust (trust of patient in dentists and dental care staff) and institutional trust (trust of patient in (dental) care services)	They were just, they just rushed in there, he was not really listening to what you were saying. I just can't go back. (Andy, 30-39) But as the dentist says it's not him, it's the rules innit? The rules [unclear]. It's just another way to make money off us innit? Miss an appointment so they can charge you money. That's what they did you know […] they still send a letter now, £500 now or something. And it's £100 fine at first for missing your appointment and then they just keep building up (Mike, 20-29) I think just being able to explain to someone, look, I'm not, I'm not er, violent or nothing but I just really don't like the dentist. Just having a pair of ears, someone to go, alright, sound, that's it, don't worry about it, they'll be sound with you and that's that. But some people I've explained that to, I've ended up getting off arguing with them because they go, oh sit down, stop being, and all that. You know, stop being a little kid, you know what I mean, that attitude (Stephen, 30-39) A couple of years ago, about five, seven years ago, I seen a dentist and he said I needed two fillings. Then I seen another dentist and he said I don't need any fillings. So it put me off going to them, corrupt dentists… He said I needed two and the other dentist told me I didn't need any. [And] I watched a documentary, Panorama, on the BBC about dentists and it put me off. (Joseph, 40-49)	Finding a 'good dentist'; Asking questions and clarifications; Distancing from experiences that generated distrust	I didn't like the fella anyway and I just thought that was the end of it, so if I'm being honest I wouldn't have had any, erm, it wouldn't be me thinking, oh I need to get a new dentist […] But now coming here [at an urgent care dentist] and speaking to 'em, now I do want to. It's a strange one that, I have come back and it probably will work out better for me because I'll be getting regular check-ups whereas that was a bad experience where you thought, I'm never going back the dentist again (Andy, 30-39) If [I] found a new one I'd want to know like, like Universities have like the tables, if dentists had something like that. (Robin, 20-29) I was getting no clear feedback as to when. It was come back next week. Come back the following week […] If I could walk out with that information I'd be able to plan that and say, well I tell you what, it's x amount of money, you just stop doing this, there you go, I'm fixed. [….] if I could have that plan from start to finish. Have a cost, have a timescale, that'd be brilliant in my head and that (Chris, 40-49) Believe it or not it's a lot better from when I was a child. When I was a child you used to just see this big dirty great big needle coming towards you. Nowadays they give you a pair of sunglasses to put on, you can shut your eyes and, you know, so it's a little bit different now. (Daniel, 40-49)

(Continues)

TABLE 3 (Continued)

Identified barrier	Conceptual definition	Participant quotes relating to barrier	Identified personal strategies for overcoming barrier	Participant quotes relating to strategies
Dental anxiety and fear	Dental anxiety is defined here as a more general state of anticipatory concern related to dental treatment,[51] as compared with fear, which is considered to be a 'fight-or-flight' type emotional reaction to a perceived threat in the dental setting[51,52]	Jamie: I had a really bad extraction that put me off *Interviewer: Oh, hmmm. What happened?* Jamie: It broke and I had to go, like basically it broke in half and the root was stuck, and half the tooth was still left in and when [unclear] it was painful. And I've never gone back […] There's nothing anyone can do to get rid of that fear. 'Cause it's deep rooted since I was a child. (Jamie, 30-39) It was just that one [dentist]. She was just a nightmare. It was like, even like to other kids that would see her, so she must have hated children. She was like really brutal. And if you were upset by something, stop crying. Like really nasty kind of (Abbie, 30-39) Sopie: Fear, yeah. Fear of the unknown. I'm just paranoid that I'll have to get something done to them [unclear]. I just don't like, they just freak me out (laughs) *Interviewer: What about it is it that freaks you out?* Sophie: It's, like, at a doctors you can see what they're doing. At a dentist you can't. And that's what I don't like, not being able to see what's going on (Sophie, 20-29) Erm, it was just, I don't know. I'd always get, I would really, really come out in like sweats and go all clammy and sometimes, erm, you know like the dental person would be like [unclear]. I think they could see, erm, so yeah that's basically what put me off. Erm, but why I got like that I don't know (Esther, 40-49)	Dental visiting with a trusted other; Increasing understanding of dentistry; Speaking with dentist about anxiety; Distraction and relaxation techniques; Seeking treatment under sedation	*Interviewer: Why did you go quite regularly when you were in your 30s, what made you?* Esther: I think to be honest, I think at that time it was, well, me friend, she'd always come with me, encourage me to go you know, so she'd give me that little push to go. That was a good thing (Esther, 40-49) I feel a lot less nervous 'cause, I dunno, like, er, before when I went to the emergency one I couldn't really remember the last time I'd been to the dentist so I guess, er, yeah, you kind of are scared of things that you don't really, like the unknown, whereas now I know kind of what's going to happen so [unclear] feel a lot less uneasy (Joanne, follow-up) I think maybe like, you always hear like the horror stories from a dentist, but I think if you actually heard like real life stories of people that have been through it saying it's not actually that bad, instead of like the worst case scenario person telling you what's happened. Like routine, daily like procedures. (Sophie, 20-29) Having people explain what they're doing really is good. Like I've had one dentist who's done that. That was when I figured out I didn't like the sharp tool thing. It's like, what is this used for and he'd be like, oh, we use this to like try and get rid of plaque and stuff like that. That makes more sense. (Robin, 20-29) If I listen to music it can calm me down a lot more. So when I got there I felt a lot more relaxed than I was, like if I was walking my brain would be thinking, what's going to be happening? What's going to be happening? Whereas music's like, ok, just listen to the music, just carry on like listening to that. And then as I got here I felt a bit more calmer than I would have been. (Callum, 20-29) If I was asleep and didn't know what was going on I'd go in a heartbeat. But obviously I know there's a lot of risk getting put to sleep isn't there so? But strangely enough I'm more scared of the dentist than I am scared of the risk (Debbie, 20-29)

(Continues)

Identified barrier	Conceptual definition	Participant quotes relating to barrier	Identified personal strategies for overcoming barrier	Participant quotes relating to strategies
Embarrassment	Embarrassment, shame, or lack of self-confidence relating to the mouth and oral health. This includes embarrassment in social situations as well as when visiting a dentist	Ann: I'm terribly embarrassed about the state of my mouth. *Interviewer: Why's that?* Ann: Er, years ago somebody said how bad it was and I've just not gone back. I haven't got a dentist. It was a dentist [who told me] just that my teeth were in a terrible condition. And it didn't do me any good to be told that *Interviewer: What did you think after that?* Ann: I was totally put off. And embarrassed. I just didn't want to go near dentists (Ann, 60-69) And me confidence, 'cause I was always full of confidence, erm, but me confidence has gone terrible *I: When did that happen?* Gradually, yeah, erm. What, I'd say like it started to get me down really, more so, about, erm, a year or so ago you know? And I suppose it's just, it was just getting to that point where you, you needed that shove to get out (Esther, 40-49) I feel embarrassed to show you my teeth, they're really bad, you know what I mean? The top of my teeth all smashed in, both of me fangs, everything. I'm like the, me teeth are like the advert on the back of the ciggie box. (Stephen, 30-39) Engaging with dental treatments that improve appearance; Talking to dentist about appearance; Finding a dentist who does not pass judgement (interview continues after urgent dental appointment, participant has booked a check-up with the dentist she's just seen) I was quite pleased with what she [urgent care dentist] said. Because I know obviously like the [teeth with an infection around them] need to come out anyway. Erm, and like stress, as in what if they do have to take them all out and you have to live with dentures. Basically they'll work around that, getting me set up with dentures and like. It all comes together then, start to get some help there… I'm feeling more confident now, more happier. [It will] give me more confidence to be honest. (Esther, 40-49) *Interviewer: So how has it been to go to these appointments?* Ann: Er, difficult initially but, erm, ok subsequently. It was getting over the embarrassment and actually admitting to the state of my mouth and what the problem. Once they knew what the problem was, well it didn't matter any more [..] I told them the situation and they didn't pass judgement (Ann, 60-69)		

Abbreviations: I, interviewer; P, participant.

At follow-up, Daniel recounted that despite contacting seven dental practices repeatedly, he had not found a dentist he could attend outside of work hours. His account combined the circumstances of his work with his relocation after a divorce to an area where he found no practices allowing NHS appointments on weekends. Thus, both job constraints and the NHS services available inhibited some participants' planned dental visiting, despite scope for overcoming barriers through changing importance.

3.3 | From static to dynamic perspectives on barriers

Many participants described changing barriers over time. This was sometimes due to changes in personal or family circumstances, such as relocation, or separation, and changing, gaining or losing work. Matt, for example, who described not finding time to go to the dentist as his main barrier, talked about the combination of stress due to changes in his family circumstances, and moving away from the dental hospital where he was getting treatment as disrupting his dental visiting.

> To be honest like I lost me Nan, me Nan died who I lived with so, that just sort of, like, done me really. 'Cause I lived with her and I had to move, and loads of different things really. That was the main thing really. And, erm, it was a bit of an ordeal. [...] I just didn't bother then. Left it too long. Now you pay the price 'cause you leave it too long. [...] I feel ashamed and that, you know? I feel like confidence goes and that. Because you've just left things so long.
>
> (Matt)

Moreover, barriers often accumulated over time, especially when dental problems grew in severity. Matt referred to this as 'pay[ing] the price 'cause you leave it too long'. Even when personal circumstances were stable, additional barriers sometimes came up. Available resources often became inhibitive as time needed for treatments and costs increased after periods without dental visiting.

> I've suffered with me teeth for years basically so I, I have neglected them, I haven't looked after them you know. Erm, I'm a smoker, I ate, you know, lemonade, bad food sort of growing up, so I have suffered. Erm, got to the point where I thought oh I'll look after them now. Erm, it was then that they hit me with a big bill. I thought though, get an NHS dentist it would be great. Erm, then one time they hit me with a £250 bill. I thought alright, I'll have to pay. Didn't actually have it.
>
> (Chris)

Accumulation of barriers was particularly stark in participants' accounts of embarrassment about the state of their mouth. Embarrassment was often the last layer to emerge.

> I've got no problems with being in the chair and taking a needle. I'm ok with that. It's just that it's embarrassing. 'Cause I've let me teeth go. Know what I mean? As I said to you, they're like, my teeth are like an alehouse piano: one white, one black and one missing. You know, [like] the keys. Or a cemetery, d'you know what I mean. That's my fault but I was like, forget today, you know what I mean. There's no tomorrow.
>
> (Lee)

Accumulated dental disease and only visiting a dentist when problems occurred led to embarrassment and frequent worries about his mouth's appearance. In many participants, this limited daily life, and posed a new barrier to planned dental visiting taking primacy over other barriers.

4 | DISCUSSION

This ethnographic study of urgent dental care attenders explored barriers to planned dental visiting. Rather than thinking of barriers to dental visiting and strategies to overcome them in a cross-sectional and linear fashion—as many studies have done—we focused on how barriers combine together. Combinations of barriers were found to be patterned in similar combinations of layers across individuals, which changed over time, often as a result of personal, family, or employment circumstances. Barriers increased in severity over time, requiring more resources to overcome them. The increasing importance of oral health was central in strategies to overcome barriers, though this did not always enable participants to overcome their barriers to planned dental visiting. This study adds to current understandings of inequalities in dental visiting by suggesting that barriers do not occur in a linear, additive fashion, but combine as a 'web of causation' rooted in socioeconomic circumstances, which may grow more difficult to overcome over time.

This study has several limitations. Follow-up interviews were limited to 19 participants, which limited the ability to trace how successful participants were in overcoming their barriers. Interviews were conducted flexibly in this setting to limit selectiveness of participants who would be willing to participate in longer, preplanned interviews, which might have excluded people with chaotic lives or demanding job conditions. Participation in follow-up interviews was done on a voluntary basis, and was likely limited by this approach. Also, interview length was variable and sometimes limited, due to interviews being conducted in urgent dental care settings with variable waiting times before participants were called in for their urgent care appointment. However, this study is the first to explore in-depth the perspectives on routine dental visiting among people

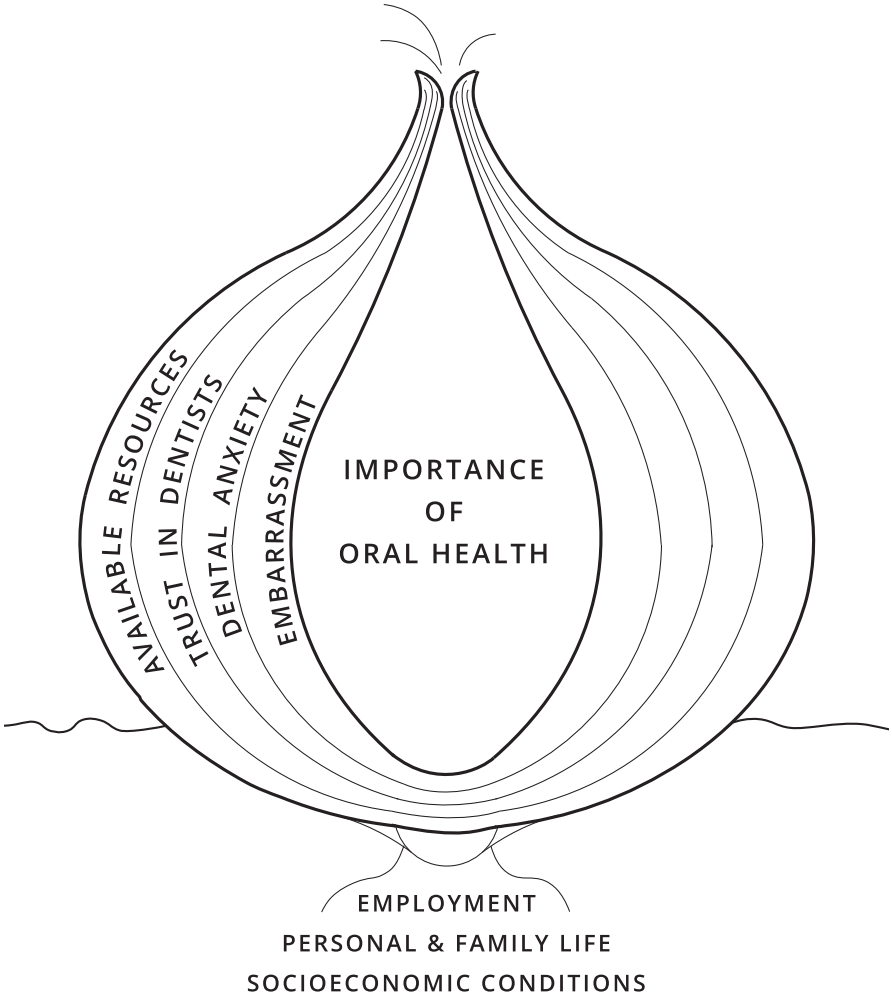

FIGURE 1 Barriers to planned dental visiting

attending for urgent dental treatment. It includes a large number of participants with varying backgrounds, and barriers and strategies identified by participants were consistent between initial interviews and follow-ups.

This paper investigated the 'web of causation'[42] that gives rise to dental visiting, a perspective that links the micro-level with meso- and macro-factors.[22] Ecosocial theory focuses attention on multi-level effects, dynamic changes over time, and the interplay of socioeconomic and biological factors in giving rise to health inequalities.[42-44] In our model, barriers were multi-layered, shaped by a person's life history, socioeconomic position, job conditions and social context. Krieger has argued for asking what brings a web of causation about; where is the spider[42]? Our study showed socioeconomic position and job conditions were central to the web's causation. Castañeda et al[29] have similarly studied migration status and social class as underlying interlinked barriers to dental care access, arguing that social class and poverty inhibit access to dental care in many low-income populations beyond the migrants they studied. Our study supports this, but also shows the importance of oral health in people's everyday lives had an additional influence, which could not be traced back to social class alone.

Our study suggests that the 'web of causation' linked to dental visiting changes over time.[22,42,43] In particular, individual factors combined with wider socioeconomic conditions contributed to barriers to dental visiting. These included: job constraints such as long or irregular working hours, and insecure job contracts with variable income, and limited available resources. Over time, feelings of shame could occur alongside biological progression of untreated disease, meaning that barriers expanded and became very difficult to address, as well as requiring more available resources. Similarly, Bedos et al[14,26] found severe impacts of oral health on people's social position, combined with great difficulty in overcoming barriers to dental visiting among people receiving social welfare in Canada. Our study adds to this with a more detailed focus on how different barriers interlink and change over time. Micro (individual), meso (social processes and community structures) as well as macro (population wide structures and policies) are all important, both in the formation of barriers and in ways to overcome them.[22] For example, whilst available time and income might manifest at an individual level linked to personal priorities, whether dental visiting is likely will be significantly influenced by, for example the density of dental services in the local area and transport links as well as wider employment policies and levels of income disparities in the population, which are the meso- and macro-levels represented by the 'root' in our onion diagram (Figure 1).

Our findings show that importance of oral health was pivotal to overcoming barriers to planned dental visiting. Harris et al[22]

described that planned dental visiting at the individual level is strongly influenced by importance of oral health, particularly beliefs about seriousness, susceptibility and care efficacy, though emphasizing the links between individual-level and social norms. Our study furthermore shows that importance of oral health is not only linked to social norms, but also appears to be linked to people's socioeconomic circumstances and competing demands in their everyday lives. Particularly jobs with long or irregular hours, frequent travel and frequent moving left little room for meaning of oral health. As Castañeda et al[29] caution, meanings of oral health and oral health knowledge should not be seen as 'cultural' practices detached from social class, but as partly based in people's socioeconomic position. When oral health and oral health care became more meaningful to patients, through oral health-related experiences such as having a dental problem, or changes in personal life such as family relations, this was a strong impetus to engage with dental care. Gregory et al[23,49] and Rousseau et al[24] have similarly discussed relevance and meaning of oral health as central to oral health-related quality of life, and to experiences of tooth loss and decision-making around dental treatment, respectively. Besides meaning of oral health, though, socioeconomic factors were also central to our analysis, and limited attempts to overcome barriers to planned dental attendance.

This study focused on patients' barriers and strategies to overcome these, in order to understand what types of interventions could support them. Service-level factors such as co-payment and sufficient, as well as easy-to-find, dental care in local areas remain important as well, and should be further investigated in future research. The barriers identified were comparable to those found in a variety of countries,[22] and interlinked effects of barriers can be expected in different settings. In helping patients return to dental visiting, a perspective that encompasses barriers as multi-layered and spanning socioeconomic, emotional, and cultural dimensions is needed. Dental practitioners and researchers developing interventions to address barriers to planned dental visiting and strategies to overcome these barriers need to remain open to changes in primacy among the barriers, their interlinked effects, and their accumulation over time.

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AUTHOR CONTRIBUTION

MZ contributed to the design of the study, data collection, analysis, and interpretation, writing and critically revising the manuscript. CE contributed to the design of the study, analysis, interpretation and critically revised the manuscript. SW contributed to analysis and critically revised the manuscript. RH contributed to conception and design of the study, data collection, analysis, interpretation and critically revised the manuscript. All authors approved the final version of the manuscript.

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