HoPSCOTCH

*Homeless People in SCOTland: a process evaluation of a Community–based oral Health intervention - the findings of a pilot study from 4 NHS Boards*

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### Abbreviations

<table>
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<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>CES-D</td>
<td>Center for Epidemiological Studies Depression Scale</td>
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<td>MDAS</td>
<td>Modified Dental Anxiety Scale</td>
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<tr>
<td>OHQoL</td>
<td>Oral health-related quality of life</td>
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<td>OHIP-14</td>
<td>Oral Health Impact Scale-14</td>
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EXECUTIVE SUMMARY
Introduction

Smile4life is the Scottish Oral Health Improvement Programme for homeless people in Scotland. Homeless people have been shown to have a greater experience of dental caries and high levels of ‘unmet restorative need’ compared to the UK general population (Collins and Freeman (2007); Hill and Rimington, 2011). A national survey of 853 homeless people in Scotland found that this population had poor oral health, alongside increased levels of depression and dental anxiety compared to the general population (Freeman et al., 2011). Findings from this survey highlighted the need for a holistic approach for oral health promotion, and led to the development of the Smile4life: Guide for Trainers, an evidence-based staff training guide (Freeman et al., 2012). This was launched in June 2012, and was designed to be used by NHS and homelessness sector staff, to assist in the implementation of Smile4life, a tailored oral health improvement intervention for homeless service users. HoPSCOTCH was devised to assess how the Smile4life intervention affected the oral health and wellbeing of homeless people and the benefits of staff training.

Aims and Objectives

The aim:

1. To investigate the benefits of providing additional training to dental health and health and social care practitioners;
2. To assess the impact Smile4life has on homeless service users.

The objectives:

- To examine whether Smile4life enhanced training increased the oral health, health promotion and health communication capacity of practitioners working in the homeless sector
- To assess the impact of the Smile4life intervention on homeless service users’ oral health knowledge and self-care practices, and whether it leads to improvements in their oral health and psychosocial wellbeing.
- To examine whether the Smile4life, as a tailored intervention, increases homeless service users' access to dental services and dental attendance.
To make recommendations relevant to the future implementation of the Smile4life intervention and associated training.

Method

Sample

A convenience sample of service users experiencing homelessness was recruited from the 4 participating NHS Boards. The participating service users were asked to complete baseline and follow-up questionnaires containing questions about their demographic information, living status, medical history, health behaviours, dental health attitudes and psychosocial health including their experience of depression, dental anxiety and oral health-related quality of life (OHRQoL). Questions relating to social support and self-esteem assessed social inclusion.

Within the same NHS Boards, a convenience sample of dental health and health and social care practitioners was also recruited. They were requested to complete baseline and follow-up questionnaires concerning demography, training, current dental referral processes, knowledge of and attitudes towards oral health and homelessness, and current behaviour regarding the provision of oral health education, helping service users access dental services and using motivational interviewing.

Interviews were conducted with dental health and health and social care practitioners over the course of the quantitative data collection period to explore their thoughts on the intervention. Interviews were conducted by telephone and face-to-face, and were of a semi-structured format.

Analysis of the data

Quantitative data collected from the questionnaires was analysed using the statistical package SPSS v.21. Qualitative data from the interviews was analysed using thematic analysis, whereby the data was searched for emerging themes.
Quantitative Results

Service users experiencing homelessness

Forty service users completed the baseline questionnaire, but only four went on to complete the follow-up questionnaire. For the four that completed both questionnaires, self-reported oral health status had improved between baseline and follow-up. The majority of follow-up participants had visited the dentist since completion of the baseline questionnaire, and one participant had improved their toothbrushing habits.

There was an increase in oral health-related quality of life, lower depression and increased self-esteem, which suggest that the intervention and improved oral health has a positive effect on the psychosocial health of homeless service users. There was no difference between baseline and follow-up results for any of the psychosocial measures. There was no change in dental anxiety, and a lower mean social support score.

Dental health practitioners and health and social care practitioners

Twenty-three practitioners (dental health practitioners: 10; health and social care practitioners: 13) completed the baseline questionnaire. Twenty completed the follow-up questionnaire (dental health practitioners: 8; health and social care practitioners: 12). There was an increase in practitioners’ number of correct responses for homelessness knowledge and oral health. Furthermore, there was an increase in the percentage of dental practitioners who stated they felt knowledgeable about homelessness (Baseline: 10%; Follow-up: 50%), and an increase in the percentage of health and social care practitioners who felt knowledgeable about oral health (Baseline: 38%; Follow-up: 75%). Taking part in the HoPSCOTCH evaluation did not alter the likelihood of the practitioners providing oral health education or assisting service users access dental care. For health and social care practitioners, there was an increase in the likelihood of providing oral health education and helping service users access dental care, suggesting that Third Sector staff may have started to include oral health in their interactions with service users. With regard to motivational interviewing, there was an increase in likelihood for health and social care participants, but a decrease for dental health practitioners from the NHS Boards. Practitioners’ confidence
when providing oral health education and using motivational interviewing also increased after taking part in HoPSCOTCH. There was no change in confidence with regard to helping homeless people access dental care.

As with practitioners’ knowledge, there was evidence that practitioners at follow-up had a better understanding of oral health and homelessness issues than at baseline. This demonstrates that a deeper awareness of the needs and rights of homeless people and their oral health.

**Qualitative Results**

By analysing the qualitative data, it became apparent that practitioners experienced a whole range of barriers when taking part in the HoPSCOTCH evaluation.

**Paperwork**

While opinions of the intervention itself were often positive, it emerged that some practitioners felt that the service user questionnaires acted as a barrier to the intervention. The questionnaires were criticised for being too ‘intense’ and ‘probing’, and some practitioners felt that it would be difficult to get service users to complete them, due to their length.

**Communication and Confidence**

A second barrier emerged, associated with the issues with the service user questionnaire: service users were often assisted by an oral health practitioner to complete the questionnaire. It had been assumed that this role would be undertaken by a support worker, who had a relationship with the service user. However, when this role was taken by the oral health practitioner, they were often unknown to the service user and felt uncomfortable asking personal questions.

**Trust and Engagement with the Third Sector**

NHS practitioners found it difficult to engage with the Third Sector to organise Smile4life training events or visits to speak to service users. It was felt that oral health was not considered a priority by the Third Sector staff, and NHS practitioners often experienced some ‘staff resistance’ to the Smile4life intervention, e.g. cancellations. This was
exacerbated by NHS staff changes, which affected three out of the four participating NHS Boards – when a new Smile4life lead came into post, it often meant rebuilding the Board’s relationship with the Third Sector organisations in their area.

Engagement with Service Users

When NHS staff made contact with service users who were potential participants in the evaluation, it was often felt that their ‘chaotic’ lifestyle made it difficult to reach them to complete the follow-up questionnaire. Additionally, practitioners felt that the intervention was needed at the right time in the service user’s journey through homelessness.

Support

It emerged that some NHS practitioners did not always feel supported by their Board. For some practitioners it was felt that Smile4life was not a priority, and that resources were diverted towards other oral health interventions. Other practitioners found it difficult to work alongside and share knowledge with relevant colleagues in other departments, e.g. Health Promotion, because of the structure of their Board.

Recommendations

Participants were asked about what they would change, in the light of the barriers they had experienced.

1. Service user involvement at development stage

Problems with evaluation paperwork, including questionnaires, could be reduced by involving and seeking feedback from homeless service users. Furthermore, this involvement could be used to inform future engagement with this population.

2. Increased input from Third Sector

Due to the problems experienced by dental health staff while attempting to interact with Third Sector organisations, it was felt that there is a need for greater input from Third Sector staff, to give everyone involved in the intervention the practical knowledge of how homelessness services work, and to advise on the most effective way of interacting with these services.
3. **Strengthened partnership working**

The results of this evaluation have shown that for Smile4life to be successful, all those involved must work together and communicate their needs and the needs of their homeless clients or patients. Indeed, as stated above, some health practitioners reported feeling disconnected from other NHS colleagues in different departments that could be useful to their Smile4life work. Increased partnership working will strengthen pre-existing relationships and encourage practitioners to draw on the knowledge and strengths of their colleagues. This would also ensure that all relevant practitioners are working towards the same goal, rather than each organisation tackling the same problem in multiple ways.

4. **Smile4life research**

Future Smile4life research should be a continuous process of training and evaluation for all NHS Boards and Third Sector organisations working on Smile4life.

**Next Steps for Smile4life**

Findings from the HoPSCOTCH evaluation suggested that there is a need for more engagement and partnership working between all practitioners working with homeless service users, i.e. NHS Boards, Third Sector and Local Authority staff. Therefore, the Smile4life research team intend to encourage and foster strong relationships between all parties, by continuing to liaise with partner organisations, including NHS Education for Scotland and Homeless Action Scotland, to offer further training and resources for practitioners. To this end, a mapping of homelessness services in Dundee has been conducted, with a view to roll-out to the rest of Scotland. Additionally, training resources, including presentations and lesson plans have been developed with NHS Education for Scotland, and a series of workshops for service users and staff in a Third Sector organisation, covering oral health, general health, mental health and stigma, will be piloted in early 2016.
1. INTRODUCTION
Many definitions of homelessness exist based upon a taxonomy of what constitutes a home, such as the European Typology on Homelessness and Housing Exclusion (FEANTSA, 2005), which defines four operational categories of homelessness (roofless, houseless, insecure housing, inadequate housing). Homelessness is, therefore, a multi-dimensional experience characterised not merely by the lack of a roof over one’s head but also by physiological and emotional deprivation (Somerville, 2013; Hwang, 2001).

In 2013-2014, 36,457 applications were made to local authorities in Scotland for assistance under the Homeless Persons legislation (Scottish Government, 2014). Of these applications, 80% (29,326) were assessed as being homeless. Indeed, as the latest Scottish Government statistics show, 34% of those who were assessed as homeless were found to have one or more additional support needs, including mental ill-health, drug or alcohol dependency as well as medical condition(s) (Scottish Government, 2014).

1.1 Scottish Government Policies and Standards

Policy-makers in post-devolution Scotland have addressed the exceptional healthcare needs of homeless populations as part of their wider inequalities agenda (Scottish Government, 2008; 2010). Scottish homelessness health policy has been regarded as progressive since the then Scottish Executive (now the Scottish Government) issued guidance in 2001 to NHS Boards to deliver appropriate services for homeless people (Scottish Executive, 2001). NHS Boards were to develop local Health and Homelessness Action Plans to provide ‘effective linkages’ and facilitate cross-organisational partnership working to enable the delivery of services to ‘people whose life circumstances undermine their access to stable, continuing care’ (Scottish Executive, 2001: p.1-4) This policy was strengthened in 2005 in the form of the Health and Homelessness Standards (Scottish Executive, 2005a) which outlined the framework, performance requirements and role of NHS Boards in the planning and provision of health services for homeless people. The Standards were aimed at ensuring that NHS Boards within Scotland gave special consideration to improving the health of people experiencing homelessness within their areas. The Standards (Appendix 1) directed NHS Boards to lead multi-sectoral partnerships and to provide integrated services, to maintain
health and ensure homeless people’s access to mainstream services. The practicalities and success of implementing the Standards at NHS Board level, via local health plans, would thus fall upon those practitioners providing frontline homelessness services.

Therefore, in 2005, as part of its *Action Plan for Improving Oral Health and Modernising NHS Dental Services in Scotland*, the Scottish Executive further stated that it would be desirable for NHS Boards to develop and implement oral health care promotion for priority groups of ‘adults most in need’ (Scottish Executive, 2005b). Homeless people were highlighted as one of these priority groups.

The commitment to improving the oral health of homeless people in Scotland was reinforced in June 2012 by the publication of the *National Oral Health Improvement Strategy for Priority Groups* (Scottish Government, 2012a). The Strategy made various recommendations for homeless people, including those relating to dental referrals and the provision of oral health education. It was also recommended that staff in the homelessness sector should play a key role in assisting homeless people to improve their oral health. In response to this policy strand, Smile4life, an on-going community-based oral health promotion programme for people affected by homelessness in Scotland, was established in 2007. A steering group was formed in November 2007, which was followed by the regular meetings of the National Homeless Oral Health Improvement Group.

### 1.2 Homelessness and oral health

#### 1.2.1. Homelessness and oral health: an overview

Homeless people have a greater experience of dental caries when compared to the general population of the United Kingdom, and have been found to have more missing and decayed teeth and a high level of ‘unmet restorative need’ (Collins and Freeman, 2007; Hill and Rimington, 2011). Levels of dental attendance and registration are often low, with reports of between 4% and 23% of homeless people being registered with a general dental practitioner (Daly et al., 2010; Hill and Rimington, 2011). To understand these findings, it is necessary to investigate the factors that influence oral health and oral health-related behaviours.
The oral health of homeless populations is strongly linked to psychosocial factors. For example, Collins and Freeman (2007) found that a homeless population had levels of dental anxiety considerably higher than those of the general population, together with poor oral health-related quality of life. Furthermore, Coles et al. (2011) reported that decayed and missing teeth could explain 19% of depression, via oral health impacts and high dental anxiety. These findings emphasised that the issues surrounding the oral health of homeless people go beyond purely dental impacts, since they affect the person as a whole.

1.2.2. Oral health interventions for homeless populations

Many oral health interventions for homeless populations have primarily been focused on improving the immediate dental health of homeless people. This often takes the form of dedicated dental clinics, some of which are mobile or ‘portable’ (Bolden and Kaste, 1995; Simons et al., 2012) or drop-in services located in hostels or shelters (Seirawan et al., 2010; Wallace et al., 2012). While many of these have been developed to overcome the known barriers to accessing dental care for this population, few were concerned with the whole person, their oral health behaviours or how to assist them to achieve sustained behaviour change. However, *Something to Smile About*, an oral health intervention that took place in NHS Lanarkshire, focused on these very issues. It aimed to build the capacity of staff working with homeless people in a holistic way and to provide oral health advice to their homeless patients or service users and thereby support behaviour change. An evaluation of *Something to Smile About* found it to be successful at building practitioner capacity for delivering oral health advice, but recommended a more bottom-up approach with greater involvement from homeless people themselves. Focusing on oral health within the context of the individual’s broader health and psychosocial needs, Coles et al. (2013) suggested, would achieve greater success in improving the oral health of homeless service users, rather than adopting a model which solely concentrated on teeth.
1.3. Scottish Oral Health Improvement Homelessness Programme: Smile4life


When Smile4life was initially proposed, its aim was to ‘facilitate the development, implementation and evaluation of evidence-based oral health preventive programmes for homeless (roofless and houseless) people throughout Scotland.’ (Freeman et al., 2011). One specific objective was to conduct a needs assessment of the oral health status and needs of homeless people, from the homeless service users’ perspective. To achieve this objective, a needs assessment survey of 853 people experiencing homelessness in Scotland was conducted in 2008-2009, and identified exceptional oral health needs among this population (Freeman et al., 2011). Oral health was poor: 98% of those surveyed had dental decay with 17 teeth being affected on average. Over 50% of the homeless sample had previously had at least one tooth extracted. Sixty-eight percent of the sample stated that they only accessed dental care when experiencing pain or in an emergency.

When compared with Scottish and UK general populations, the homeless participants in this needs assessment had poorer oral and psychosocial health. Depression and dental anxiety were found to be more prevalent than in the general population. Similarly, smoking and alcohol consumption were higher than national averages, as were the number of people prescribed psychotropic medication and methadone. These findings highlighted that the oral health and psychosocial needs of the homeless population of Scotland were markedly different from those of the general population. The need for a holistic approach for oral health promotion was apparent.

1.3.2. The Smile4life Intervention and Guide for Trainers

The Smile4life report (Freeman et al., 2011) recommended a tailored approach, to promote the oral health and improve the overall wellbeing of people affected by homelessness in Scotland. Dental services, it was suggested, should be focused on providing treatment and conducting oral health promotion for homeless people, based on the individual’s felt and expressed need.
Accordingly, a client-centred intervention, based on the results and recommendations of the Smile4life needs assessment survey (Freeman et al., 2011) was developed in conjunction with NHS Health Scotland. This evidence-based programme would become a practitioner-training guide for those working in the homelessness sector (Smile4life: Guide for Trainers: Freeman et al., 2012). The training guide was designed to be used by NHS and homelessness sector staff to assist with the implementation of the Smile4life intervention, a tailored oral health improvement intervention for homeless service users. The guide contains chapters on oral health and homelessness, oral health promotion and how to give oral health advice. The final part is concerned with the Smile4life intervention itself, specifically the background to the intervention, the intended delivery and guidance on how to tailor oral health messages and support behaviour change. To assess how Smile4life affected the oral health and wellbeing of homeless people, and the benefits of staff training, the HoPSCOTCH evaluation was devised.
2. AIMS AND OBJECTIVES
The overall aim of HoPSCOTCH was to conduct a process evaluation of the Smile4life intervention, and to examine:

1. The impact Smile4life has on homeless service users.
2. The benefits of providing additional training to dental health and health and social care practitioners.

The specific objectives were to:

1. Assess the impact of the Smile4life intervention on homeless service users’ oral health knowledge and self-care practices, and whether it leads to improvements in their oral health and psychosocial wellbeing.
2. Examine whether Smile4life, as a tailored intervention, increases homeless service users’ access to dental services and dental attendance.
3. Examine whether Smile4life enhanced training increased the oral health, health promotion and health communication capacity of practitioners working in the homeless sector.
4. Make recommendations relevant to the future implementation of the Smile4life intervention and associated training.
3. METHOD
3.1. Sample and Recruitment

3.1.1. Practitioners

A convenience sample of practitioners was recruited from each of the four participating Board areas: NHS Ayrshire and Arran, NHS Forth Valley, NHS Highland and NHS Tayside. Initial dental health practitioners in each Board area were identified via the National Homeless Oral Health Steering Group, members which included representatives from each participating Board. These dental health practitioners then identified and recruited staff from homelessness sector organisations in their Board area.

It was essential that practitioners worked specifically with homeless clients or homeless service users in the statutory and voluntary sectors. Eligible practitioners included:

- NHS staff (dental health practitioners): Oral health promoters, oral health educators, and dental health support workers
- Non-NHS staff (health and social care practitioners): housing officers, Local Authority staff, social workers and hostel/homeless organisation support workers.

3.1.2. Homeless participants (service users)

A convenience sample of homeless participants was identified and recruited via the participating dental health and health and social care practitioners. These participants were patients and clients that practitioners had access to in the course of their daily work activities. To be eligible to take part, participants had to fit the criteria provided by the European Typology of Homelessness and Housing Exclusion (FEANTSA, 2005, Table 1).

A total sample size of 164 homeless participants (41 from each Board) was required to detect a significant effect in terms of dental attendance. A two group \( c^2 \) test with a 0.050 two-sided significance level will have 80% power to detect the difference between a intervention proportion, \( p_1 \), of 0.200 and a control proportion, \( p_2 \), of 0.400 (odds ratio of 2.667) when the sample size in each group is 82.
Table 1: Roofless and Houseless Typologies (from the European Typology of Homelessness and Housing Exclusion, FEANTSA, 2005)

<table>
<thead>
<tr>
<th>Conceptual Category</th>
<th>Operational Category</th>
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<tr>
<td>Roofless</td>
<td>1  People living rough</td>
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<td>2  People in emergency accommodation</td>
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<tr>
<td>Houseless</td>
<td>3  People in accommodation for the homeless</td>
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<td></td>
<td>4  People in Women’s Shelter</td>
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<td></td>
<td>5  People in accommodation for immigrants</td>
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<td></td>
<td>6  People due to be released from institutions</td>
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<td></td>
<td>7  People receiving longer-term support (due to homelessness)</td>
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3.2. The Practitioner Training Intervention (Figure 1)

The practitioner training intervention was implemented in the four NHS Boards, all of which were present at the launch of Smile4life programme. The aim of the launch day was to equip participants with the knowledge, awareness and skills to deliver oral health and homelessness training to colleagues within the NHS or Third Sector. The launch event included information on the background to the Smile4life intervention, the Common Risk Factor Approach (Sheiham and Watt, 2000), and training in advanced communication skills, which involved role-play. The communication skills section of the training covered readiness to change, the need to tailor interventions, and the Precaution Adoption Process Model (Weinstein, 1988).

Control: NHS Ayrshire and Arran and NHS Tayside

These NHS Boards acted as controls and received no additional training after the initial Smile4life launch.

Intervention 1: NHS Highland: Communication and enhanced role-play

The communication training built on the topics covered in the launch and included information on behaviour change models, such as the stages of change model (Prochaska and DiClemente, 1984). Key basic communication skills, such as listening, questioning, empathy, and non-verbal communication were also addressed in role-play scenarios. The enhanced
communication role-play with an actor playing the part of a person experiencing homelessness permitted the practice of communication techniques.

**Intervention 2: NHS Forth Valley: Communication, enhanced role-play and Motivational Interviewing**

The communication training comprised the same enhanced role-play elements but included additional training on Motivational Interviewing (Miller and Rollnick, 2012). This was based on four general principles: expressing empathy, supporting self-efficacy, rolling with resistance, and developing discrepancies. Practitioners are taught to use open-ended questions, reflective listening, affirmations, and summarising, to help service users move from ambivalence to behaviour change. The enhanced role-play allowed motivational interviewing elements to be practiced with an actor who played the part of a homeless service user with dental pain.

The format of the intervention workshops included lectures on communication techniques and enhanced role-play with actors. The role-play communication session adopted the ‘fourth wall’ technique, developed by Jacobsen et al. (2006). This technique allows the trainee to process with the interaction as far as possible, but the participant of the moderator can suggest a ‘timeout’ if the trainee can go no further. The interaction is reflected upon by the group, and another group member progresses the interaction using their own, different, approach. The enhanced role-play communication session allowed all participants to practice and hone their communication skills.
Figure 1: Flow chart illustrating the HoPSCOTCH Intervention
3.3. Quantitative data collection

3.3.1. Service users’ questionnaire

1. **Demographic profile**

The questionnaire asked about the participants’ age, gender, living status, family status, previous occupation and reason(s) for homelessness.

2. **Medical history and health behaviours**

This section examined the participants’ medical history including prescribed medication and health behaviours such as alcohol, tobacco and drug use.

3. **Oral Health Behaviours**

Service users were asked how they would rate the state of their teeth, their toothbrushing frequency and about the care they take over their teeth. There were also asked about their dental knowledge, e.g. what prevents dental decay? Participants were also asked about whether they had been shown how to brush their teeth or if they had been told how to prevent dental decay.

4. **Psycho-social status**

Dental anxiety was assessed using the Modified Dental Anxiety Scale (MDAS) (Humphris et al., 1995). The MDAS consists of five questions. It assesses dental anxiety in relation to waiting for dental treatment, drilling, scale and polish and local anaesthesia. Respondents rate their dental anxiety on a five-point scale, which ranges from not anxious (1) to extremely anxious (5). Possible scores range from 5 to 25, with scores over 19 indicating dental phobia. In the UK 12% of the adult population score 19 or over (Hill et al., 2013). The normative value for a general practice patient population is 10.39 and the normative value for a UK general public population is 11.60 (Humphris et al., 2009).

Oral Health Related-Quality of Life was assessed using OHIP-14 (Locker, 1988). This 14-item inventory was based on a hierarchy of impacts arising from oral disease, ranging in severity, and includes functional limitation (e.g. pronouncing words), physical pain (e.g. painful aching
mouth), psychological discomfort (e.g. feeling self-conscious), physical disability (e.g. interrupted meals), psychological disability (e.g. feeling embarrassed), social disability (e.g. irritable with others) and handicap (e.g. life less satisfying). Respondents were asked how frequently they had experienced each of the 14 impacts, on a five-point Likert scale, with scores ranging from 0 (never) to 4 (very often).

Depression was measured using the valid and reliable Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977). The CES-D is a self-reported scale consisting of twenty items reflecting dimensions of depression, such as depressed mood, feelings of hopelessness and interactions with others. The questions are answered on a four-point Likert scale and the respondents are asked to rate their experience of each item in the previous week, the responses ranged from rarely or none of the time (scoring 0) to most or all of the time (scoring 3). Total scores range from 0 to 60, with scores of 16 or over indicating depressed mood.

The Medical Outcomes Study Social Support Survey (Sherbourne and Stewart, 1991) assessed social support. This reliable and valid measure, divides social support into four areas: [1] positive social interaction, [2] tangible support, [3] affectionate support, and [4] emotional support. There are 19 items, and respondents were asked to reflect on how often the various types of support had been available to them. Answers are presented on a five-point Likert scale, ranging from ‘none of the time’ to ‘all of the time’.

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) measured self-esteem. This reliable and valid measure is the ‘most commonly used measure of global self-esteem’ (Mullen et al., 2013). It is made up of ten items, and answers are on four-point Likert scale from ‘strongly agree’ to ‘strongly disagree’. Example items include: ‘I take a positive attitude towards myself’, and ‘I certainly feel useless at times’.

5. Previous dental experiences and dental health attitudes
The final part inquired about the time and reason for last dental attendance as well as previous dental treatment experiences (e.g. fillings and extractions). Attitudes about dental attendance were also assessed, using 9 attitudinal measures from the Adult Dental Health
Survey (Walker and Cooper, 2000), including statements such as: ‘I find NHS dental treatment difficult to find’. The responses are on a four-point scale, ranging from ‘definitely feel like that’ to ‘don’t feel like that’.

3.3.2. Practitioners’ questionnaires: baseline and follow-up

1. Demographic profile

Both the dental health and health and social care practitioners’ baseline questionnaires asked practitioners to report their age, gender and job title. The questionnaire for dental practitioners also asked about education received.

2. Training

Both questionnaires asked questions about the level of training practitioners had received in oral health education and motivational interviewing, e.g. ‘Have you attended postgraduate training in oral health care for patients who are homeless?’; ‘During pre-registration or your undergraduate training, were you ever taught about motivational interviewing?’

3. Homelessness-related and oral health-related knowledge

Dental health practitioners were presented with 10 statements about homelessness. These statements covered a range of beliefs about homelessness, e.g. ‘Most homeless people use hard drugs’. Health and social care participants were given 8 statements, all concerning oral health and dental treatment, e.g. ‘The concentration of fluoride in toothpaste is important’. All participants were asked to answer the questions using a ‘true’, ‘false’, or ‘don’t know’ format.

4. Homelessness-related and oral health-related attitudes and learning

All practitioners were presented with 21 statements about homelessness and oral health including dental treatment. They were asked to indicate the degree to which they agreed with each statement. Responses were given on a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5).

5. Work-related attitudes and behaviour
All practitioners were asked a series of questions about their attitudes relating to oral health education, access to dental care and using Motivational Interviewing with service-users. For health practitioners, there were 10 questions in each area; there were 6 questions for social care practitioners. Responses were presented on a seven-point Likert scale, ranging from 1 (e.g. ‘very unlikely’) to 7 (e.g. ‘very likely’).

Dental health practitioners were asked about the dental treatment they provided to homeless people. Health and social care practitioners were asked about their referral processes to dental services for their homeless patients/service users: that is where and how do they refer their clients for dental treatment? Answer options were presented in a checklist, with participants instructed to tick as many options as required.

3.4. Qualitative data collection

Qualitative data was collected using telephone and face-to-face interviews, conducted by EC and LB. Over the data collection period, 25 telephone interviews took place with HoPSCOTCH participants. Two further telephone interviews were conducted at the end of data collection. Two face-to-face interviews also took place at this time. Telephone interviews were chosen as the data collection method as they: provided an efficient means of communicating with participants based across Scotland; permitted ‘a strategy for obtaining data which allows interpersonal communication without a face-to-face meeting’ (Carr and Worth, 2001: 512); and allowed participants to feel more anonymous, so encouraging them to speak openly about potentially sensitive issues (Novick, 2008; Sturges and Hanrahan, 2004; Carr and Worth, 2001). Face-to-face interviews occurred at the end of the data collection period, in order to achieve a more in-depth, broader overview of participants’ experiences with HoPSCOTCH.

The interview guide included broad, open-ended questions (e.g. ‘What are your perceptions of the intervention and your role in it?’) to encourage participants to speak freely and share their experiences of implementing HoPSCOTCH. The interview structure was flexible so that participants’ responses could be explored and new issues raised by the interviewees followed up (Appendix 2). Each interview lasted approximately one hour. All of the interviews were audiotaped. The audio tapes were transcribed by LB.
3.5. Data processing and analysis

*Quantitative analysis of service-user and practitioner data*

All questionnaire data were entered into a computer using the statistical package SPSS v21. The data were then subjected to frequencies distributions.

*Qualitative analysis of practitioner data*

The transcribed qualitative data was analysed using thematic analysis. Thematic analysis is an iterative, interpretative approach whereby the data are examined for emerging patterns, which inform the development of a coding scheme to identify key themes (Braun and Clarke, 2006). There are six phases of thematic analysis: (1) familiarisation with the data, (2) the generation of initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing a report.

3.6. Ethical considerations

Ethical approval was obtained from the University of Dundee Research Ethics Committee (UREC 9005) and R&D approval was given from all four NHS Boards (Appendix 3). Information sheets detailing each aspect of the survey together with written consent forms were provided to each participant (Appendix 4); with different versions for practitioners and homeless service users. All questionnaire data were anonymised, with each NHS Board devising and maintaining a numbering system for participants.

All questionnaires, patient record forms and consent forms were identified in a manner designed to maintain participant confidentiality. All records are kept in a secure storage area with limited access to study staff only. Evaluation data will be kept for five years.
4. RESULTS
4.1. Quantitative Findings

4.1.1. Homeless sample baseline

Demographic profile

Forty homeless people completed the baseline questionnaire. The largest group of participants (23) was recruited in the NHS Highland area, representing 57.5% of the sample, and the smallest proportion, 10% of the sample, was from NHS Tayside (4 participants). NHS Forth Valley recruited 13 participants (32.5%). No participants were recruited in NHS Ayrshire & Arran.

Of the total sample, 52.5% were male. The mean age of the sample was 37.7 (95% CI: 31.5, 43.8) ranging from 16 to 78 years. Thirty-four percent (24) were aged between 16-24 years. Of the 38 participants that provided an ethnicity, all were white.

Seventy-five percent (30) of the sample stated that they were single, with a further 12.5% (5) stating that they were divorced. Ten percent (4) stated that they were married or had a partner and 40% (16) of the participants had children. Of the 33 participants who disclosed their accommodation status, the largest proportions were living in homeless hostels (25%) and temporary accommodation (22.5%). The most common reason given for homelessness was relationship breakdown (55.5%), mental or physical health problems (25%) and drug or alcohol problems (22.2%).

Twenty-six participants reported that they were currently receiving medical treatment from a general medical practitioner and/or from specialists either in primary (clinic-based) or secondary (hospital-based) care. Three quarters of the participants were taking prescription medication.

Dental attendance and previous treatment experiences

Thirty-five percent of service users stated that they were currently registered with a dentist at the time of completing the baseline questionnaire. Nineteen participants reported that they had visited a dentist in the previous 12 months. Of the 21 participants who had not visited the dentist in the previous 12 months, a third had visited 1-2 years ago while 4 had not
attended the dentist for at least 10 years. Twelve participants stated that they had attended for a routine dental examination. Of those reporting the reason for their last visit, 24 stated that they had attended the dentist because of pain, discomfort or trouble with their teeth. When were asked about the type of dental treatments, the most common treatments were: IV sedation (95%), extractions (90%) and fillings (87.5%) (Table 2).

Table 2: Reported dental treatment received

<table>
<thead>
<tr>
<th>Treatment Received</th>
<th>Treatment Not Received</th>
<th>Don’t know n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fillings</td>
<td>35 (87.5)</td>
<td>2 (5)</td>
</tr>
<tr>
<td>Injection in gum</td>
<td>16 (41)</td>
<td>23 (59)</td>
</tr>
<tr>
<td>Injection in arm (IV sedation)</td>
<td>38 (95)</td>
<td>2 (5)</td>
</tr>
<tr>
<td>X-rays</td>
<td>32 (80)</td>
<td>5 (12.5)</td>
</tr>
<tr>
<td>Extractions</td>
<td>36 (90)</td>
<td>3 (7.5)</td>
</tr>
<tr>
<td>Laughing gas (RA)</td>
<td>14 (35)</td>
<td>20 (50)</td>
</tr>
<tr>
<td>Fluoride treatments</td>
<td>7 (17.5)</td>
<td>21 (52.5)</td>
</tr>
<tr>
<td>Fissure sealants</td>
<td>4 (10)</td>
<td>22 (55)</td>
</tr>
<tr>
<td>General anaesthetic (gas)</td>
<td>16 (40)</td>
<td>18 (45)</td>
</tr>
<tr>
<td>Abscess</td>
<td>21 (52.5)</td>
<td>14 (35)</td>
</tr>
<tr>
<td>Crowns</td>
<td>3 (7.5)</td>
<td>33 (82.5)</td>
</tr>
<tr>
<td>Bridge work</td>
<td>4 (10.25)</td>
<td>31 (79.5)</td>
</tr>
<tr>
<td>Scale and polish</td>
<td>25 (62.5)</td>
<td>11 (27.5)</td>
</tr>
<tr>
<td>Dentures</td>
<td>8 (20.5)</td>
<td>29 (74.4)</td>
</tr>
</tbody>
</table>

Attitudes to accessing dental treatment

Over half of the sample (57%) stated that they would prefer to take painkillers than attend for dental treatment. Similarly 54% (21) felt that the worst part of dental treatment was waiting. Sixty-seven percent (26) of the sample stated that they would like to drop-in without an appointment for dental treatment. Seventy percent (28) stated that they wanted to know more about the dental treatment they were to receive. Smaller proportions of the sample felt that NHS dental services were difficult to find (45%), they did not want intricate dental treatment (33%), going to the dentist was like being on a conveyor belt (31%), and that dental receptionists were not helpful or welcoming (33%).
Oral health status, oral health-related knowledge and behaviours

Twenty-five percent (10) of the sample rated their teeth as ‘good’. Only one participant rated their teeth as ‘very good’. In contrast, 35% (14) rated the state of their teeth as ‘poor’, and 27.5% (11) as ‘not so good’. Ten percent (4) were not able to rate the state of their teeth. Levels of oral health neglect were also apparent: when asked about how much they had cared for their teeth over the previous 12 months, 22.5% (9) stated that they had not cared for their teeth at all, and 17.5% (7) only ‘a little’. Only 17.5% (7) had cared for their teeth ‘a lot’, whilst the majority (42.5%) had cared for their teeth ‘a fair amount’.

Over a third of the sample (36%) brushed twice a day, and a further 10% (4) brushed more than twice a day. Twenty-six percent (10) brushed once a day, and 15% (6) brushed less than once a day. Five participants (13%) reported that they never brushed their teeth.

In terms of oral health knowledge, 66% (25) of participants stated that they had been told how to prevent tooth decay, and 72% (28) stated that they had been shown how to brush their teeth using fluoride toothpaste. When asked what they did after brushing, 41% (14) stated that they spat out any remaining toothpaste, whereas, in contrary to current oral health advice, 50% (17) stated that they rinsed their mouths with water. Nine percent (3) of participants reported that they did not use toothpaste.

Psychosocial health

Dental anxiety status

The mean score for dental anxiety for the entire sample was 13.2 (95% CI: 11.0, 15.3). The cut-off for dental phobia on the MDAS is 19 or over. Nine participants scored 19 or over, suggesting that 23% of the sample were classified as dentally phobic.

Forty percent of participants (16) reported that they were very anxious or extremely anxious about having their teeth drilled and having a local anaesthetic injection in the gum (Figure 2). The prospect of having a scale and polish made over a quarter of the sample (28%) feel very anxious or extremely anxious, while 30% stated that they would feel very anxious or extremely anxious if they were going to the dentist tomorrow.
Figure 2: Percentage of participants responding ‘very anxious’ or ‘extremely anxious’ to each MDAS item

Oral health-related quality of life

The OHIP-14 questionnaire examined the frequency of oral health impacts experienced by this sample of homeless people in previous last 12 months. The mean score for oral health impacts was 31.9 (95% CI: 27.9, 35.9) – the percentage of participants experiencing each impact is shown in Figure 3.

Fifty percent reported feeling self-conscious fairly or very often, and 35% reported feeling embarrassed fairly or very often about the appearance of their mouth and teeth. Many participants frequently experienced discomfort when eating (45%), interruptions during meals (27.5%) and painful aching (25%). In addition, 22.5% stated that fairly or very often they found their lives less satisfying because of problems with their mouth and teeth.
Figure 3: Oral health impacts for the homeless sample at baseline

Depression
The mean score for the CES-D was 23.5 (95% CI: 19.8, 27.2). Thirty-seven participants completed the CES-D and 26 (70%) scored at least 16, which suggested that they were suffering from a depressive illness.

Self-esteem
The mean score on the Rosenberg Self-Esteem Scale was 14.4 (95% CI: 11.9, 16.8). As scores can range from 0-30, with a high score indicating high self-esteem, a mean of 14.4 indicates that the self-esteem of this population was neither high nor low. Indeed, this is supported by examining the individual scale items, in which there are similar numbers of participants who strongly disagree or disagree with a statement as there are participants who agree or strongly agree.

Social support
Table 3 shows the mean scores for the overall support index, and the four subscales that make up the Social Support Survey.
Table 3: The mean social support scores

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Support Index</td>
<td>3.7</td>
<td>3.2</td>
<td>4.2</td>
</tr>
<tr>
<td>Emotional Support</td>
<td>4.1</td>
<td>3.4</td>
<td>4.7</td>
</tr>
<tr>
<td>Tangible Support</td>
<td>4.4</td>
<td>2.9</td>
<td>5.9</td>
</tr>
<tr>
<td>Affectionate Support</td>
<td>2.9</td>
<td>2.5</td>
<td>3.4</td>
</tr>
<tr>
<td>Positive Social Interactions</td>
<td>3.1</td>
<td>2.7</td>
<td>3.5</td>
</tr>
</tbody>
</table>

This indicates that the type of support that was the least experienced in this population was *Affectionate Support*. Indeed, when individual items in the subscale are considered, 49% (19) of participants reported that none of the time, or a little of the time, they had no one to show them love and affection. With regard to *Emotional Support*, 67% (26) of participants reported that they had someone who understood their problems most or all of the time.

4.1.2. Homeless Sample Follow-Up

Of the 40 participating service users, only 3 participants from NHS Forth Valley and 1 participant from NHS Highland completed the follow-up questionnaire at the end of the intervention. The comparisons made between baseline and follow-up are for those 4 service users who completed both questionnaires.
Profile of service users who completed follow-up questionnaire

All the participants in the follow-up sample were white males, with a mean age of 29 (95% CI: 12.3, 45.7). None of the participants had children, one had a partner, and three reported that they were single. Three of the participants gave information about their most recent accommodation status – all three were residing in a homeless hostel. Relationship breakdown was the most cited reason for becoming homeless, with two participants selecting this option. Twenty-five percent of participants reported that they were receiving treatment, and three quarters were currently taking prescribed medication.

Dental attendance and previous treatment experiences

All four participants reported that they had been to the dentist in the last year because of trouble with teeth.

Oral health status, oral health-related knowledge and behaviours

Three of the participants rated their teeth as ‘good’ at follow-up compared with ‘not so good’ at baseline. There was a change in reported toothbrushing habits from baseline to follow-up, with one service user stating that (s)he had increased brushing their teeth from less than once a day to twice a day.

Psychosocial health

Dental anxiety

From this sample, the mean MDAS score was 13 (95% CI: 1.4, 24.6). Only one participant scored of over 19, and was classified as dentally phobic. Receiving an injection in the gum caused the most anxiety, with 50% of participants reporting that they would feel ‘extremely anxious’, while getting a tooth drilled caused 25% to feel ‘extremely anxious’. Sitting in a waiting room waiting for treatment, and getting teeth scaled and polished caused no anxiety in 50% of the sample (Figure 5).
Oral health-related quality of life

The mean OHIP-14 score at follow-up was 33.3 (95% CI: 2.6, 63.9). Unlike the baseline results, 2 participants at follow-up sample reported that they never felt self-conscious or embarrassed about their mouth or teeth (Figure 4). There was little difference in mean OHIP-14 scores between baseline and follow-up (Figure 5).

![Figure 4: Baseline and follow-up comparison of oral health impacts experienced by the homeless sample](image)

Depression

The mean CES-D score was 19 (95% CI: -5.2, 43.2). Fifty percent of the sample scored over 16, indicating that they had a depressive illness. There was a slight reduction in mean CES-D scores between baseline and follow-up (Figure 5).

Self-esteem

The mean score on Rosenberg’s Self-Esteem Scale was 20.5 (95% CI: 6.8, 34.2). Figure 5 shows that between baseline and follow-up there had been an increase in self-esteem in the 4 service users.
Figure 5: The baseline and follow-up mean scores for psychosocial health measures

Social support
The means scores for the Overall Support Index and the four subscales of Emotional, Tangible, and Affectionate Support and Positive Social Interactions are included in Table 4.

Table 4: Mean Social Support scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Overall Support Index</td>
<td>2.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Emotional Support</td>
<td>3.5</td>
<td>1.9</td>
</tr>
<tr>
<td>Tangible Support</td>
<td>2.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Affectionate Support</td>
<td>2.0</td>
<td>-1.2</td>
</tr>
<tr>
<td>Positive Social Interactions</td>
<td>2.7</td>
<td>0.1</td>
</tr>
</tbody>
</table>
4.1.3. **Practitioner Sample Baseline**

4.1.3.1. **Dental Health Practitioners**

*Demographic profile*

Ten dental health practitioners completed the baseline questionnaire. Two from NHS Forth Valley, 6 from NHS Highland, and 2 from NHS Tayside. There were no completed NHS questionnaires from NHS Ayrshire and Arran. The majority of practitioners (70%) were between the ages of 28 and 45, with 90% being female.

Five of the practitioners were oral health educators, and two were dental health support workers. Seventy percent of practitioners reported that they worked in the Community/Salaried Dental Service. While none of the practitioners had experienced hands-on clinical training with homeless patients, 40% had received training that included awareness of health and homelessness, with one practitioner reporting their training course included specific knowledge on this topic. All practitioners reported that their training included nothing on the subject of behavioural management of homeless patients. Ninety percent of practitioners reported that they would welcome training in oral health care for homeless patients.

Seven practitioners reported that during their undergraduate training they had been taught about motivational interviewing. Six practitioners reported that they had taken part in a motivational interviewing training course. Seventy percent of the practitioners had used motivational interviewing with a patient.

At the time of data collection, two practitioners had provided dental treatment to homeless patients in the last month, and three had provided oral health information to homeless patients. Four practitioners had assisted homeless patients to access dental care.

*Homelessness-related and oral health-related knowledge*

The response rates to each knowledge statement are presented in Figure 6. Seventy percent of practitioners correctly answered *false* to the statements that the most common reason for homelessness was drug misuse or alcohol addiction. Two practitioners reported that they did not know a homeless person could be refused dental treatment, however eight practitioners correctly answered *false*. Thirty percent of practitioners reported that it was *true* that most
homeless people use hard drugs. Twenty percent of practitioners incorrectly answered that it was false that most homeless people were single men, and a further 20% stated that they did not know. Eighty percent correctly answered that homeless people are not a fixed population, but 70% reported that they did not know if homeless people were homeless for long periods of time.

*Homelessness-related and oral health-related attitudes and learning*

The majority of practitioners agreed that people who are homeless can be expected to reach the same standard of oral hygiene as other people (60%), and are able to make decisions about their own health care (60%), (Figure 7). The majority (80%) of practitioners disagreed that people who were homeless were too disruptive in the dental chair to allow proper treatment, whereas 60% disagreed that oral hygiene instruction for homeless people had little or no effect. The majority of practitioners (80%) felt that treating homeless people was rewarding. All practitioners agreed that each dental case should be individually assessed, irrespective of the patient being homeless. All practitioners agreed that homeless people should receive the same quality of care as others.
Figure 7: Dental Health Practitioners’ homelessness-related and oral health-related attitudes
**Work-related attitudes and behaviour**

Six practitioners reported that they were likely to provide oral health education to homeless people. Seven practitioners felt confident and only one practitioner stated that (s)he was ‘not confident’ when providing oral health education (Figure 8). All practitioners believed that their NHS Boards’ were strongly committed to providing oral health information to their homeless service users. The majority of practitioners (90%) stated that they wished to comply with their NHS Board’s work streams and all reported that they wished to comply NHS Board policy.

![Figure 8: Dental Health Practitioners’ behaviour: providing oral health education](image)

Eight practitioners reported that they would assist homeless people access dental care. All practitioners reported feeling confident in their ability to do so. All practitioners reported that their Boards’ commitment to the provision of oral care for homeless people was strong and they would comply with the Boards’ homelessness policies.
Half of the practitioners reported that they would and felt confident about using motivational interviewing with service users. The majority (90%) of dental health practitioners wished to adhere with their Boards’ policies regarding motivational interviewing with homeless people. Five practitioners reported that it was stressful using motivational interviewing with their homeless service users.
4.1.3.2. Health and Social Care Practitioners

Demographic profile

Thirteen practitioners completed baseline questionnaires: 4 were from the NHS Ayrshire and Arran, 7 from NHS Forth Valley, 1 from NHS Highland, and 1 from NHS Tayside. Eleven practitioners were female. The median ages were 28 and 45 years of age.

The practitioners had a wide range of job titles: community psychiatric nurse (1), deputy service manager (1), drug and alcohol worker (1), health visitor (1), health and homeless nurse (1), homeless charge nurse (1), housing support officer (3), project development worker (1), and support worker (1). Two practitioners reported that they worked in the voluntary sector, two worked in hostels, two worked for the local authority housing department, and one worked in a resettlement sector.

Three practitioners reported that they had received oral health promotion training in the last two years. Of the ten that did not, nine stated that they would welcome it. Six practitioners stated that they had received motivational interviewing training; five of these practitioners reported that they had since used motivational interviewing with a service user.
Homelessness-related and oral health-related knowledge

Twelve practitioners correctly answered false to the statement ‘If people brush their teeth, it doesn’t really matter how much sugar they eat’. In agreement with current guidance (SDCEP, 2010), 11 practitioners stated that you should not rinse your mouth with water after cleaning your teeth. Ten practitioners were aware that the concentration of fluoride in toothpaste was important, however, one practitioner answer was incorrect, and two further participants did not know. All practitioners stated that adults should visit the dentist every 6 months for a check-up (Figure 11), which is incorrect. The frequency of dental check-ups can vary depending on the individual patient’s periodontal, caries and cancer risks (SDCEP, 2011).

Figure 11: Health and Social Care Practitioners’ oral health knowledge at baseline

Homelessness-related and oral health-related attitudes and learning

Thirty-eight percent of practitioners agreed that people who are homeless should be expected to reach the same standard of oral hygiene as other people (Figure 12). Nine practitioners agreed that people who are homeless should be able to make decisions about their own health care. The greater majority of practitioners disagreed with the statements that dentists should reserve the right not to treat homeless patients, that homeless patients needed to be accompanied by a responsible person and that dentists should be paid more for treating homeless people. Nearly all of the practitioners (92%) agreed that homeless people should receive the same quality of care as others. Eight practitioners (62%) agreed that treating homeless people was highly rewarding.
Figure 12: Health and Social Care Practitioners’ attitudes regarding oral health and homelessness
Work-related attitudes and behaviour

The majority of practitioners (54%) stated that they would provide and felt confident in providing oral health education to service users (Figure 13). Sixty-nine percent of practitioners stated that it was personally important to provide oral health education to service users, with only two practitioners stating that it was not important. Nine practitioners reported that their employer strongly believed that oral health information should be provided to service users and reported that they were willing to adhere to their employers’ work-streams. The majority of practitioners (46%) stated that they did not find it stressful delivering oral health education to their service users.

Eleven practitioners reported that they assisted service users to access dental care, that it was personally important to them and they felt confident in helping service users to access dental care (Figure 14). Ten of the practitioners felt that their employer strongly believed that service users should be given help to access dental care; they wished to adhere with what their employers’ wishes. Six practitioners stated that they did not find it stressful to help service users to access dental care, while four practitioners did find it stressful.

Figure 13: Health and Social Care Practitioners’ behaviour: providing oral health education

Eleven practitioners reported that they assisted service users to access dental care, that it was personally important to them and they felt confident in helping service users to access dental care (Figure 14). Ten of the practitioners felt that their employer strongly believed that service users should be given help to access dental care; they wished to adhere with what their employers’ wishes. Six practitioners stated that they did not find it stressful to help service users to access dental care, while four practitioners did find it stressful.
All but one of the practitioners reported that they did not currently refer service users seeking dental care to dedicated specialist dental services, or to hospital dental services. Twelve practitioners reported that they did refer homeless service users to the Salaried Dental Service (including the Community Dental Service). One practitioner referred clients to non-salaried with special interest General Dental Services. Two practitioners reported that they did not refer clients.

With regard to using motivational interviewing, eleven practitioners reported that they intended to use motivational interviewing, and nine felt confident using motivational interviewing (Figure 15). All practitioners stated that it was personally important to them to use motivational interviewing with two reporting that they thought their employer did not strongly believe they should use motivational interviewing with homeless clients. The majority of practitioners felt that they wanted to do what their employers believed they should do, with only one practitioner stating that they did not want to comply with their employer’s work streams. Four practitioners admitted that they found using motivational interviewing with their service users stressful, while five stated that this was not the case.
**Figure 15: Health and Social Care Practitioners’ behaviour: using motivational interviewing**
4.1.4. Practitioner Follow-Up

4.1.4.1 Dental Health Practitioners

Demographic profile
Eight practitioners completed the practitioner follow-up questionnaire: 2 were from NHS Forth Valley, 4 from NHS Highland, and 2 from NHS Tayside. There were no completed follow-up questionnaires from practitioners from NHS Ayrshire and Arran.

Homelessness-related and oral health-related knowledge
Figure 16 shows the comparisons between baseline and follow-up response frequencies for each knowledge statement. When asked how knowledgeable they thought they were about homeless people, 50% stated that they felt knowledgeable, compared to the 10% of practitioners who completed the baseline questionnaire. Compared to the baseline findings, there was a reduction in the number of practitioners answering that it was false that most homeless people were single men (Baseline: 2, Follow-up: 1). There was a reduction in don’t know answers concerning the cause of obvious decay experience in homeless people (Baseline: 4, Follow-up: 2).

Six practitioners disagreed with the statement that drug and alcohol misuse was the most common reason for homelessness. One practitioner stated that it was true that drug misuse was the most common reason for homeless, indicating no change from baseline to follow-up. One hundred percent of follow-up practitioners stated that it was false that dentists can refuse to accept homeless patients, indicating no change from the baseline findings. When presented with the statement ‘Homeless people are homeless for long periods of time’, 25% of follow-up practitioners answered don’t know, a reduction from the 70% of baseline practitioners, indicating an increased awareness of homelessness issues.
Figure 16: Dental Health Practitioners’ baseline and follow-up knowledge responses

Homelessness-related and oral health-related attitudes

There was an increase in the proportion of practitioners who agreed that homeless people could be expected to reach the same standard of oral hygiene as other people and being able to make decisions about their oral health care (60% at baseline, to 75% at follow-up) and that aesthetic dental treatment was as important for homeless patients as it was for other people (75% at baseline and 90% at follow-up).

All practitioners disagreed that dentists should be paid more for treating homeless patients; that every dental case should be individually assessed, irrespective of whether the patient is homeless; that homeless patients should receive the same quality of care as others; that dentists should refuse to treat people who are homeless unless they are accompanied by a responsible person; and that homeless people posed special health risk to other patients or that homeless people posed a health risk to dental personnel. Larger proportions of dental health practitioners at follow-up compared with baseline disagreed that: it was impossible to keep service users’ teeth dry during treatment, (Baseline: 60%, Follow-up: 87.5%); that homeless people were too disruptive to permit dental treatment to be conducted, (Baseline: 80%, Follow-up: 100%); that oral hygiene instruction had little or no effect on homeless
service users (Baseline: 60%, Follow-up: 75%); that it was better for all concerned if homeless people attended specialist clinics rather than general dental practices, (Baseline: 60%, Follow-up: 75%); and that service users would be able to successfully adjust to life when they move out of homeless (Baseline: 10%, Follow-up: 25% (Figure 17).
Figure 17: Dental Health Practitioners’ attitudes at baseline and follow-up
**Work-related attitudes and behaviour**

There was no change (Figure 18) in the likelihood of practitioners providing oral health education to homeless people (60% at baseline, 62.5% at follow-up). There was an increase in how confident participants felt about providing oral health education (70% at baseline, 87.5% at follow-up).

While 100% of baseline practitioners felt that their NHS Board strongly believed in the participants delivering oral health education to homeless people, this decreased at follow-up, with 87.5% agreeing.

All practitioners stated that they were able to comply with their NHS Board’s policies, indicating no change from baseline. At baseline, 30% of practitioners stated that they found it stressful to deliver oral health education to homeless people; at follow-up, this was reduced to 12.5%.

![Figure 18: Dental Health Practitioners’ behaviour: providing oral health education](image)

All dental health practitioners at follow-up stated that they were confident in assisting service users to access dental care; felt that their NHS Board was strongly committed to helping homeless people access dental care; felt that they were able to comply with their NHS Board’s policies and wished to comply with the NHS Board’s work streams.
Equivalent proportions of practitioners felt they would help homeless people access dental care (80% at baseline, 75% at follow-up), and, as with the baseline results, 100% of practitioners felt confident doing this. There was an increase in the percentage of practitioners who did not find it stressful to help homeless people access dental care, from 30% at baseline, to 75% at follow-up. (Figure 19).

![Figure 19: Dental Health Practitioners’ behaviour: accessing dental care](image)

There was a reduction in the percentage of practitioners who stated that they would use motivational interviewing with homeless people (baseline, 50%, follow-up 25%) and those who felt that it was important to use motivational interviewing (baseline 70%, follow-up 62.5%). (Figure 20). Despite this reduction, the proportion of practitioners who stated they felt confident about using motivational interviewing with homeless people increased from 50% at baseline to 62.5% at follow-up. The same percentage fall was also apparent with regard to the number of practitioners who felt their NHS Board’s commitment to the use of motivational interviewing was strong. There was a reduction in the number of practitioners who stated that they wanted to do what their NHS Board believed they should do, from 80% to 62.5%. There was no change in the percentage of practitioners who felt it was stressful to use motivational interviewing with homeless service users (50%).

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Figure 20: Dental Health Practitioners’ behaviour: using motivational interviewing
4.1.4.2. Health and Social Care Practitioners

Demographic profile
All follow-up questionnaires from non-NHS practitioners were received from NHS Forth Valley.

Homelessness-related and oral health-related knowledge
There was an increase in the proportions of health and social practitioners who stated they were knowledgeable about oral health, (38% at baseline, to 75% at follow-up) (Figure 21). There was an increase in the number of people who believed that the concentration of fluoride toothpaste was important, from 77% to 92%. There was no change in the percentage of practitioners who stated it was true that adults should have dental check-ups every 6 months, and that people with dentures should still have regular check-ups (100%). There was an increase in the percentage of practitioners who believed it was inevitable that people will lose most or all of their natural teeth, from 0 at baseline, to 25% at follow-up. There was a reduction in the number of people who believed that NHS dentists could refuse to accept homeless patients, from 15% to 8%.

![Figure 21: Health and Social Care Practitioners’ baseline and follow-up knowledge responses](image-url)
Work-related attitudes and behaviour

When asked if homeless people can be expected to reach the same standard of oral hygiene as other people, 50% of follow-up practitioners agreed, an increase of 12% compared to the baseline results (Figure 22). Whilst at baseline 23% of practitioners believed that homeless people were not able to make decisions about their own health care; however, at follow-up, this had reduced to 8%. An increase was noted in the percentage of practitioners who disagreed that homeless patients were too disruptive in the dentist’s chair to allow proper treatment, from 85% at baseline, to 92% at follow-up. A large increase occurred in the percentage of practitioners disagreeing that oral hygiene instruction for homeless people had little or no effect (baseline: 54%, follow-up 75%). Forty-two percent of follow-up practitioners felt that homeless people were able to successfully adjust to life outside of homelessness – this is an increase of 19% when compared to baseline practitioners. While 100% of baseline practitioners felt that dentists should not have the right to refuse to treat homeless patients, this was reduced to 92% at follow-up. The same reduction occurred in the percentage of practitioners who disagreed that dentists should be paid more for treating homeless patients. There was a reduction in the percentage of practitioners who agreed that homeless patients could be trusted to keep their dental appointments, from 38% to 25%. There was also a reduction in the number of people agreeing that treating homeless people was highly rewarding, from 62% to 42%. While 85% disagreed at baseline that there was no point in discussing treatment plans with homeless patients, this had increased to 100% at follow-up. Three quarters of follow-up practitioners disagreed that treating homeless patients caused too much stress for the dental team, an increase of 12%, compared to baseline results. There was an increase of 15% in the percentage of practitioners who felt it was not better for all concerned if homeless people attended specialist clinics rather than general dental practices, from 85% at baseline to 100% at follow-up.
Figure 22: Health and Social Care Practitioners’ baseline and follow-up attitude responses
While 54% of baseline practitioners stated they were likely to provide oral health education to homeless service users, this had increased to 67% at follow-up (Figure 23). Similarly, there was an increase in confidence at providing oral health education, from 54% to 75%. There was a large increase in the number of practitioners who felt it was important to them personally to do this – from 69% to 92%. The same increase was noted in the percentage of people who felt their employer strongly believed they should be providing oral health education to homeless clients, and in the percentage who stated they wanted to do what their employer believed they should do. While 46% of baseline practitioners felt it was not stressful to provide oral health education, by follow-up this had increased to 67%.

![Figure 23: Health and Social Care Practitioners’ behaviour: providing oral health education](image)

At baseline, no practitioners stated they were ‘not likely’ to help homeless service users access dental care. However, at follow-up, one practitioner indicated that they were ‘not likely’ to do this, an increase of 8% (Figure 24). There was little change in practitioners’ confidence, from 85% at baseline to 83% at follow-up. The same slight reduction was also noted in the percentage of practitioners who stated it was personally important to them to help homeless service users access dental care. Eighty-three percent of follow-up practitioners felt that their employer strongly believed they should be helping homeless service users access dental care, an increase from the 77% of baseline practitioners. Furthermore, 92% of follow-up practitioners stated that they wanted to do what their
employer believed they should do, compared to the 77% of baseline practitioners. Thirty-one percent of baseline practitioners reported that they found it stressful to help homeless service users access dental care; by follow-up, this had decreased to 25%.

![Figure 24: Health and Social Care Practitioners’ behaviour: accessing dental care](image)

There was an increase in the percentage of practitioners who reported that they were likely to use motivational interviewing with homeless service users (baseline: 85%, follow-up: 92%) (Figure 25). There was also an increase in the percentage of practitioners who stated they felt confident doing this, from 69% at baseline, to 92% at follow-up. Interestingly, there was a reduction in the percentage of practitioners who stated it was personally important to them to use motivational interviewing with homeless service users – from 100% at baseline, to 92% at follow-up. There was an increase, from 77% at baseline to 83% at follow-up, in the percentage of practitioners who stated that their employer strongly believed in using motivational interviewing with homeless service users, and that they wanted to do what their employer wanted them to do. There was an increase in the percentage of practitioners who felt that it was not stressful to use motivational interviewing with homeless people, from 38% at baseline, to 67% at follow-up.
Figure 25: Health and Social Care Practitioners’ behaviour: using motivational interviewing
4.2. Qualitative Findings

Semi-structured interviews were conducted throughout the data collection period with two dental health practitioners from NHS Forth Valley, one from NHS Tayside, two from NHS Ayrshire and Arran, and three from NHS Highland. Additionally, NHS Board meetings with HoPSCOTCH practitioners, from both the NHS and Third Sector, were attended by EC or LB – one in NHS Ayrshire and Arran, and two in NHS Forth Valley. Some of the practitioners who attended these meetings may have also completed the questionnaires.

4.2.1. Barriers to implementing HoPSCOTCH

Paperwork

Practitioners provided feedback about their struggles to implement HoPSCOTCH throughout the data collection period, and were also asked to reflect on significant barriers at the final interviews. The most commonly cited barrier to HoPSCOTCH was the paperwork that needed to be completed. Indeed, as one participant stated:

“It seemed like the evaluation was a barrier to the intervention.” (PM1, 30/10/14)

Issues surrounding the paperwork concerned both the amount of documents, and the length of the questionnaires. The practitioner paperwork was described as “confusing”, which was evident in the fact that some staff filled in the wrong questionnaires due to confusion between different versions for NHS and Third Sector staff.

The homeless questionnaire was seen as too long and too “probing”, and “intense”. Indeed, one practitioner cited the time needed to complete the questionnaire with a service users as “the biggest barrier”, and reflected that, in their experience, hostel staff did not want to go through the questionnaire with their service users, and did not believe that the service users would “sit for that length of time” (PM1, 30/10/14).

“There was a huge amount of paperwork, and some (service users) just weren’t interested.” (SWF1, 23/9/14)

“The questionnaires themselves were extremely time-consuming. I think it’s difficult to keep their attention for that length of time, to ask questions... that they didn’t really want to answer.” (PF1, 23/9/14)
“The clients are losing interest halfway through. It is long, and some of them don’t understand it fully, they’re having to get bits explained.” (PF2, 20/1/14)

Opinions of the intervention itself were largely positive, with practitioners recognising the value in providing oral health knowledge to homeless service users. Indeed, most stated that although the evaluation part of the study raised issues, the fact that service users were taking away basic oral health messages, and information on how to contact a dentist, should be seen as a positive outcome. Third Sector staff also appreciated the purpose and value of the intervention, and as such, one reported that they were willing to talk about oral health with their service users “because it is important.” (SWF1, 23/9/14)

“I think the intervention is great, and will work... it has the potential to work.” (PM1, 30/10/14)

**Communication and Confidence**

Although the questionnaire was intended to be completed with the assistance of a key worker or support worker, who knew the service user, in practice it was often completed an oral health member of staff. This led to additional problems, as the dental health practitioners were not confident and felt that the service users were not comfortable sharing personal information with them.

“Some of the oral health promoters within our department didn’t feel comfortable asking the homeless people some of the questions, they felt they were quite intrusive, and they didn’t know them well enough, they didn’t have a relationship, to ask those questions comfortably.” (PM1, 30/10/14)

“They don’t have the expertise, or the confidence to really do it.” (PF3, 17/1/14)

Furthermore, when it was the responsibility of the oral health staff to engage directly with service users, this had additional impacts upon their workload:

*I think the main problem is that they’re really busy with everything else. They’re swamped.*” (PF1, 23/9/14)
**Trust and engagement with the Third Sector**

An additional barrier was changes in members of staff involved in HoPSCOTCH, which occurred in three of the four NHS Boards. This interrupted implementation and training, as there was often a delay in appointing a new member of staff to cover the post. When a replacement was in post, the implementation often had to start at the beginning again, and rebuild the trust of Third Sector staff. As one new member of staff reflected:

“You need to have a level of trust with your partners, but at the point we were doing this I was a brand new face to them. They were trying to suss me out, which was an issue for us.” (PM1, 30/10/14)

Among oral health staff tasked with training Third Sector staff and speaking to homeless people within hostels, it was felt that oral health was not a priority for the Third Sector services.

“The councils, I don’t know if they see it as a priority, they’ve got more things to deal with, like housing and substance abuse.” (PF2, 14/8/14)

Furthermore, some oral health staff felt that there was “some staff resistance” (PF2, 23/9/14). This resistance appeared to manifest itself in repeat cancellations of training sessions, experienced by two Boards.

“I’m just finding that most of the hostels, they’re just not engaging with us.” (PF4, 9/4/14)

“They weren’t interested, and they weren’t willing to accommodate us.” (PF5, 15/7/14)

“Trying to get hold of them (after cancellations) is impossible. If we don’t get them when we arrange that appointment, we’re then waiting a month, two months, to be able to get back there. I would say we have capacity issues with staffing ourselves.” (PF1, 23/9/14)

“Actually delivering in-depth training to staff is a real problem. It’s not that they don’t want it, but they’re just so swamped with everything else... Taking on training is just too much.” (PF1, 23/9/14)
**Engagement with service users**

It emerged that access to homeless people was a challenge to the professionals, particularly with regard to HoPSCOTCH data collection. In the more rural areas, the homeless population moved around, which made it difficult to regularly monitor participants and ask them to complete the follow-up questionnaire. Additionally, the “chaotic” lifestyle of many homeless service users meant that they needed to be at an appropriate stage in their journey through homelessness before oral health was considered to a priority, or before they would be willing to engage with HoPSCOTCH.

“A lot of people that come in to our service are particularly chaotic – they’re not at a point in their life where they are interested.” (SWF1, 23/9/14)

When asked to reflect on their experiences of implementing HoPSCOTCH, practitioners often expressed regret or disappointment at not being able to recruit more homeless participants.

“I feel bad we didn’t do more.” (PM1, 30/10/14)

“We’re quite disappointed that we didn’t get the opportunity to follow the process right through from the beginning to end.” (PF6, 11/11/14)

**Support**

As the results of the practitioner questionnaires illustrate, the majority of practitioners felt that they were supported by their NHS Board. However, when asked to expand on this in the qualitative interviews, more details emerged. Staff from three NHS Boards stated that they felt they needed more support from their Board. One practitioner reflected that oral health interventions for other target populations were often given priority, while another practitioner stated that the structure of their Board meant that they could not easily liaise with other relevant departments, e.g. Health Promotion. Furthermore, one oral health practitioner stated that she felt there needed to be more flexibility with working hours, as the schedules of oral health staff and homeless hostels rarely matched up. One practitioner admitted that the oral health department was short-staffed, but that no help was offered from the Board.
“The Board isn’t aware we’ve had capacity issues – they probably wouldn’t get involved at that level, but I doubt we’ll get more funding for staff to have more time to do this sort of stuff.” (PF1, 23/9/14)

Some practitioners raised concerns about offering dental treatment to homeless people that may have outstanding fines at a dental practice where they have been registered.

“If there were fees outstanding, our dental staff might have a problem with that… (but) they might have outstanding fines, but they’re not ever going to pay them, and they really are out client group, to come into the Public Dental Service.” (PF5, 25/9/14)

4.2.2. Practitioner Recommendations

At the end of the data collection period, practitioners were asked to reflect on their HoPSCOTCH experiences, and make recommendations to overcome the issues raised.

Reflecting on the successes they had experienced, a group of Third Sector staff explained that visual displays had been useful and informative in delivering oral health information to service users; in particular a “Before and After” section with photos of celebrities who had had dental work, which piqued the interest of the younger homeless people in their accommodation, and facilitated provision of oral health information and signposting to relevant local services.

It was also suggested that some form of incentive should be offered to homeless service users, to encourage them to attend dental appointments. The notion of cancelling fines was suggested, as many practitioners felt, based on their experience of attempting to get service users to attend appointments, that outstanding fines were a significant barrier:

“They’re not going to pay it. They’ll just go somewhere else.” (SWF1, 23/9/14)

One Board noted that a significant barrier they had while recruiting HoPSCOTCH participants was that some people making use of homeless services, such as drop-ins, did not necessarily want to identify themselves as “homeless”. As such, their recommendation for going forward with the Smile4life intervention was to avoid targeting or labelling potential participants as “homeless”. Indeed, this was evident in the methods of one NHS Board, who offered dental services to “at-risk” populations – those that were formerly or currently homeless, and those who were transitioning out of homelessness. Similarly, one practitioner reported that in the
majority of hostels who had received training in HoPSCOTCH, the oral health of service users was being addressed alongside other health issues on their initial meeting with support workers, to ensure that service users did not feel they had been singled out due to their oral health status.

When asked to reflect on pass successes, a group of staff at one homeless accommodation site reflected that when the topic of oral health was raised, young mothers were often more interested in their child’s teeth than their own. Oral health staff used this as an opportunity to increase their oral health knowledge, which could be applied to the children and the young mothers themselves.

“It opened a lot of different doors that they hadn’t thought about before.” (SWF1, 23/9/14)
5. DISCUSSION
5.1. Homeless service users’ oral health and oral health behaviours

For the four clients that completed both questionnaires, self-reported oral health status had improved between baseline and follow-up. It is possible that this was due to the fact the majority of follow-up participants had visited the dentist since completion of the baseline questionnaire, and that one participant had improved their toothbrushing habits.

5.2. Homeless service users’ psychosocial health

While there were no significant differences between baseline and follow-up results for any of the psychosocial measures, there were slight changes. There was an increase in oral health-related quality of life, lower depression and increased self-esteem, which suggest that the intervention and improved oral health has a positive effect on the psychosocial health of homeless people. There was no change in dental anxiety, and a lower mean social support score.

5.3. Practitioners’ homelessness-related and oral health-related knowledge

While there was reasonable knowledge at baseline, there was an increase in dental health and health and social care practitioners’ self-rated knowledge about homelessness and oral health respectively, which was supported by an increase in correct responses to a series of true or false statements. This indicates that all practitioners improved their knowledge and understanding of oral health and homelessness due to their involvement in implementing Smile4life.

As with practitioners’ knowledge, there was evidence that practitioners at follow-up had a better understanding of oral health and homelessness issues than at baseline. This demonstrates that a deeper awareness of the needs and rights of homeless people and their oral health.

5.4. Practitioners’ work-related attitudes and behaviour

Taking part in the HoPSCOTCH evaluation did not alter the likelihood of dental health practitioners of providing oral health education and helping homeless people access dental care, most likely because these were already part of their job role. However, there was an increase in the likelihood of doing these for health and social care practitioners, indicating
that Third Sector staff had begun to include oral health in their interactions with service users. With regard to motivational interviewing, there was an increase in likelihood for health and social care participants, but a decrease for dental health staff. This is to be expected, as health and social care staff who closely interact with homeless service users more frequently are best placed to carry out motivational interviewing.

Practitioners’ confidence at providing oral health education and using motivational interviewing also increased after taking part in HoPSCOTCH. There was no change in confidence with regard to helping homeless people access dental care.

5.5. Limitations

The HoPSCOTCH evaluation was affected by a number of limitations. The most significant of these was the low number of homeless participants recruited to take part, which was far below the 164 required for statistical significance. Despite the low number of homeless participants, the findings from even small sample sizes, as reported here, are valuable to inform the development of future health interventions targeted at vulnerable populations. As the qualitative results indicate, practitioners experienced difficulties in recruitment due to staffing issues (both NHS and Third Sector), apparent disinterest from Third Sector services, and problems regarding the length and content of the questionnaires.

The service user questionnaires were the most criticised aspect of the evaluation. Indeed, many participants praised the intervention, but felt the evaluation was a barrier, and some participants cited the questionnaire as the main reason they could not recruit homeless participants.

This evaluation was also limited by the use of self-report measures for all the variables included in the questionnaire. This could have resulted in self-report biases, where respondents alter their answers to make them seem more desirable or acceptable. For example, studies have found that the Rosenberg Self Esteem Scale is associated with “self-deceptive enhancement”, a form of socially desirable responding, which may be compounded by the repetitive nature of the scale items (Robins et al., 2001). In addition, participants may have misunderstood some questions. For example, when asked about the dental treatment they had experienced, the percentage of participants who stated they had experienced an
injection in the arm was high. It is possible that some participants may have answered this with reference to their experiences of injecting drug use outwith the dental setting.

Furthermore, NHS Boards were asked to devise their own numbering system for participant’s completing questionnaires. In practice, this was not successful, and caused confusion in data entry, particularly regarding those participants who completed both baseline and follow-up questionnaires.

5.7. Conclusion

The implementation of Smile4life in the four participating NHS Boards has been faced with many challenges, as evidenced by the feedback from practitioners in the qualitative interviews, and the low number of participants recruited. However, there were numerous improvements observed, both in terms of improved oral health status of homeless participants, and with regard to improved knowledge and attitudes about oral health and homelessness among practitioners. There were also positive examples of implementation shared by practitioners, supported by the results of the questionnaire, illustrating that the majority of practitioners felt supported by their NHS Board, and felt confident providing oral health education to homeless service users. There is a need to learn from the results of this evaluation to improve the future implementation of Smile4life and the continued engagement with practitioners.
6. RECOMMENDATIONS
In line with the aims of all Smile4life research, the findings from this evaluation will be disseminated to participants, and used to provide recommendations to inform future implementation.

6.1. Service user involvement at development stage

It emerged from the qualitative interviews that many service users found the volume and content of the evaluation questionnaires off-putting. Indeed, one participant reportedly objected to the word “homeless” on the participant information sheet. Problems such as these could be reduced by involving and seeking feedback from homeless service users to help the researchers improve their awareness and sensitivity towards future homeless participants. Furthermore, this involvement and feedback could lead to the alteration or adaptation of data collection instruments used in future research with homeless samples.

6.2. Increased input from Third Sector

The findings from the qualitative interviews highlighted many barriers faced by NHS oral health staff when approaching Third Sector organisations about training, including lack of communication and time constraints faced by all practitioners. Therefore, there is a need for greater input from Third Sector staff, to give everyone involved in the intervention the practical knowledge of how homelessness services work, and to advise on the most effective way of interacting with these services. This is essential as a driver towards improved health and social care integration.

6.3. Strengthened partnership working

The results of this evaluation have shown that for Smile4life to be successful, all those involved must work together and communicate their needs and the needs of their homeless clients or patients. Indeed, some NHS practitioners reported feeling disconnected from other NHS colleagues in different departments that could be useful to their Smile4life work. Increased partnership working will strengthen pre-existing relationships and encourage practitioners to draw on the knowledge and strengths of their colleagues. This would also ensure that all relevant practitioners are working towards the same goal, rather than each organisation tackling the same problem in multiple ways. It is crucial that partnership working between all relevant practitioners and organisations should be a continuous process, not
simply for the purposes of Smile4life research. This should ensure that oral health connects with other aspects of the health and social care for homeless people. For partnership working to be successful, it may be necessary for the relevant NHS and Third Sector leaders or managers of their different organisations to encourage and support their staff to make links with others. For instance, by allowing staff to attend networking events or conferences where practitioners can learn about examples of good practice and to support a fruitful discourse.

6.4. Smile4life Research

The findings from this evaluation have highlighted a range of barriers to the successful implementation of the Smile4life intervention, as well as demonstrating that Smile4life training can affect the knowledge and behaviour of dental health and health and social care practitioners. Now that the evaluation is complete, it is necessary to focus on the long-term goals of the Smile4life research – this should be a continuous process of training and evaluation for all NHS Boards, and relevant Third Sector organisations.
7. NEXT STEPS
Findings from the HoPSCOTCH evaluation suggest that there is a need for a stronger level of engagement and increased partnership working between all practitioners working with homeless service users, i.e. NHS Boards, Third Sector and Local Authority staff. Therefore, the Smile4life research team intend to encourage and foster strong relationships between all parties, by continuing to liaise with partner organisations, including NHS Education for Scotland and Homeless Action Scotland, to offer further training and resources for practitioners. To this end, a mapping of homelessness services in Dundee has been conducted, with a view to roll-out to the rest of Scotland. Additionally, training resources, including presentations and lesson plans have been developed with NHS Education for Scotland, and a series of workshops for service users and staff in a Third Sector organisation, covering oral health, general health, mental health and stigma, will be piloted in early 2016.
8. REFERENCES


9. APPENDICES
Appendix 1: Health and Homelessness Standards (Scottish Executive, 2005)

| Standard 1: | The Board’s governance systems provide a framework in which improved health outcomes for homeless people are planned, delivered and sustained. |
| Standard 2: | The Board takes an active role, in partnership with relevant agencies, to prevent and alleviate homelessness. |
| Standard 3: | The Board demonstrates an understanding of the profile and health needs of homeless people across the area. |
| Standard 4: | The Board takes action to ensure homeless people have equitable access to the full range of health services. |
| Standard 5: | The Board’s services respond positively to the health needs of homeless people. |
| Standard 6: | The Board is effectively implementing the Health and Homelessness Action Plan. |
Appendix 2: NHS practitioner follow-up interview topics/questions

1. HoPSCOTCH overall
   As a practitioner, what barriers did you experience during HoPSCOTCH?
   Did you feel supported during HoPSCOTCH by NHS Board/NHS Team/your line manager/DHSRU?
   What else would have helped you?
   How can we engage services and their staff with Smile4life?

1.1 Client recruitment
   Describe your experiences and the issues around recruiting clients
   What are the issues with this particular client group?

1.2 Practitioner experience
   What have you personally gained from taking part in HoPSCOTCH?
   What are your perceptions of the intervention and your role in it? Have these perceptions changed over time?

1.3 Lessons learned
   What would you change e.g. the design of the intervention, the way it is implemented?
   How could things be done differently in the future?

2. Post HoPSCOTCH – implementing Smile4life
   How will Smile4life be taken forward? Where (geographically, organisationally)?
   How will it/you link in with other services?
Appendix 3: Ethical approval

3.1. Approval from NHS Ayrshire and Arran

Dear Dr Edwards,

*Developing, Implementing and Evaluating an Oral Health Preventive Programme for the Homeless (Roofless and Houseless) Populations in Scotland*

We have received confirmation from NHS Ayrshire and Arran Local Research Ethics Committee stating that ethical review is not required for the above project. I can confirm that R&D Management Approval will not be required either.

If however you do make changes to the protocol for this project, please resubmit the paperwork to Research and Development for review, as this might change the status of the project.

May I take this opportunity to advise you that this project should be registered with the Clinical Effectiveness Department in NHS Ayrshire and Arran. The Clinical Effectiveness Department can be contacted at 58 Lister Street, Crosshouse Hospital or on 01563 825863.

Good luck with your project and if you require any assistance in the future please don’t hesitate to contact us.

Yours sincerely,

[Signature]

Dr Karen L Bell
Research & Development Manager

c.c. Mrs Jacky Williams, Clinical Effectiveness Manager, Crosshouse Hospital
3.2. Approval from NHS Forth Valley

From: Richards Derek (NHS FORTH VALLEY) [mailto:derek.richards@nhs.net]
Sent: 22 March 2013 13:05
To: Emma Coles
Subject: RE: Smile4Life local R&D approval

Hi Emma

Attached is the email for R&D which I believe means that we can go ahead. I have completed the form

Regards

Derek

---

Derek Richards
Consultant in Dental Public Health
Dental Public Health South East Scotland (DePHeSE)
Director, Centre for Evidence-based Dentistry (www.celod.org)
Editor, Evidence-based Dentistry Journal (www.nature.com/ebd/)

PREFERRED Contact Email for Dental Public Health South East :: File:LHB.seadtanal@nhs.net

Contact address:
Carseview House
Castle Business Park
Stirling
FK9 4SW
Tel. 01786 457300
e-mail derek.richards@nhs.net

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From: Bailey Allyson (NHS FORTH VALLEY)
Sent: 14 February 2013 12:23
To: Richards Derek (NHS FORTH VALLEY)
Cc: Tacy Lucy (NHS FORTH VALLEY)
Subject: RE: Smile4Life local R&D approval

Hi Derek

If the Smile4Life interventions were introduced as part of the normal managerial process (i.e., the same way you would introduce any new clinical procedure), then this is indeed a service evaluation and all you have to do is register it with QH: http://www.qfiv.scot.nhs.uk/CE_Register/Project.asp

Allyson

Allyson Bailey
Research and Development Officer
NHS Forth Valley
Falkirk Community Hospital
Administration Offices
Westburn Avenue
Falkirk FK1 5SU
3.3. Approval from NHS Highland

07 March 2013

Professor Russell Freeman
Dental Health Services Research Unit
Dundee Dental School
Park Place
University of Dundee
Dundee
DD1 4HN

Dear Professor Freeman

Title: Homeless People in SCOTland: A Process Evaluation of a Community-based Oral Health Intervention (HoPSCOTCH) [Protocol V2 20/02/2012]

Thank you for the information you have provided regarding the above project. Since the project does not require formal Research and Development Management Approval as it is a service evaluation this letter is to confirm that we are happy for the project to go ahead at this site. I have notified Mr David Babb and Dr Cathy Lush that this project is going ahead at this site, and they have given their agreement for the project.

Please direct all enquiries regarding this letter to the NHS Highland Research and Development Manager (Frances Hinse 01463 255822).

Yours sincerely,

Professor Angus Watson
NHS Highland Research and Development Director

Headquarters: Assaynt House, Beachwood Park, INVERNESS IV2 3BW

Chair: Gerry Coutts
Chief Executive: Elaine Mead
3.4. Approval from NHS Tayside

Clinical Governance Checklist for approval of external Quality Improvement Work

Name of Chief Investigator/ Applicant:
Gillian Elliott (Scotland wide project – project lead is Ruth Freeman)

Title of project: Developing, Implementing and evaluating an oral health preventive programme for the homeless (roofless and houseless) populations in Scotland

Project Reference number

Ethics Reference number (where relevant) Ethics approval not required. IRAS have considered this piece of work to be service development and would not require ethical approval.

Date of receipt:

1. Purpose of the project

To facilitate the development, implementation and evaluation of evidence-based oral health preventive programmes for roofless and houseless people throughout Scotland

2. Sponsor of the project

Enter text here

3. Funder(s) of project:

Scottish Government, funding from Dental Action Plan fund.

4. External Contact details

Ruth Freeman, Director of Oral Health and Health Research programme, Professor of Dental Public Health, r.e.freeman@chs.dundee.ac.uk, 01382420070

5. Lead contact(s) for NHS Tayside
6. **Financial Implications**
None – funding will be through Dental Action Plan.

7. **Timetable of work**

   Within 6 mths – qualitative research, details of best practice, needs assessment.
   Within 12 -18 mths – Implementation
   Within 18 mths - Evaluation
   Within 24 mths – Report completed
   Interventions in place, Re-evaluation

8. **Ethical Issues** *(including; ensuring privacy, confidentiality and data protection; possible role conflict, ethical issues relating to topic and how these have been addressed, approval from Ethics Committee)*

   Ethics approval not required. IRAS have considered this piece of work to be service development and would not require ethical approval.

9. **Caldicott Guardian Issues**
None

10. **Consent Issues** *(including; consent form and information given to participants)*

    All individuals will complete consent form with help from health professionals taking into account any individual difficulty with literacy and understanding.

11. **Is there a project overview containing the following?** *(Please attach the information)*

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Dissemination of results

Yes ☑️  No ☐

12. Further comments (including reasons if ticked No above)

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Approval Authorisation:
Designation:
Date:

Signature:
Appendix 4: Participant information sheets and consent forms

Appendix 4.1. Homeless clients’ consent form

HoPSCOTCH
Homeless People in Scotland: A process evaluation of a community-based oral health intervention

WRITTEN CONSENT FORM

Participant number:

PLEASE SIGN YOUR NAME BELOW TO CERTIFY THAT:

1. The staff member has explained fully what is involved in the study.

2. You have read and understood the information sheet given to you.

3. You understand that you are free to withdraw from the study at any time and for any reason.

4. You have had the opportunity to ask questions about the study.

5. You have agreed to take part in the study.

Signature of participant ____________________________

Date____________

(Please note that participants must date their own signature)

Name of participant ________________________________

Signature of staff member __________________________

Date____________

Name of staff member _________________________________
We would like to invite you to take part in a research study. Before you decide if you want to take part, please read this very carefully. It tells you all about the study and what will happen if you do take part.

**WHAT IS THE PURPOSE OF THE STUDY?**
The survey is to improve dental health and increase access to dental services for homeless people in Scotland.

**WHO WILL BE TAKING PART?**
Homeless people in four areas of Scotland.

**WHY SHOULD I TAKE PART IN THE STUDY?**
To help us improve dental health and access to dental services for homeless people in Scotland.

**DO I HAVE TO TAKE PART?**
No: it’s completely up to you. Deciding not to take part will not affect current or future care.

**WHAT WILL HAPPEN TO ME DURING THE STUDY?**
The staff member will ask you some questions about your dental health and dental history, how your dental health affects you, and your feelings about visiting the dentist. This will take about 15 minutes and will be confidential.

The staff member will then discuss your dental health with you. He/she will give you a toothbrush/toothpaste pack and information leaflets. If you need dental treatment, the staff member will help to arrange an appointment or a course of treatment for you.
After you have visited the dentist or completed a course of treatment, you’ll be asked to come back to talk to the staff member who will ask you some questions about your dental health and your experience during the study.

**WILL EVERYONE BE ASKED TO DO THE SAME THING?**
Yes: everyone will be asked the same questions and will receive the same information. Everyone will have the opportunity to receive dental treatment if required.

**WHAT WILL HAPPEN IF I DON’T WANT TO CARRY ON IN THE STUDY?**
You can withdraw from the study at any time. You don’t need to give a reason. If you are receiving a course of dental treatment, this will continue until any necessary treatment is completed.

**WHAT ABOUT CONFIDENTIALITY?**
Everything will be completely confidential.

**YOUR RIGHTS**
If you have any questions about the study, please contact Laura Beaton on 01382 381691.

In the event that something goes wrong and you are harmed during the study there are no special compensation arrangements. If you are harmed and this is due to someone’s negligence then you may have grounds for a legal action for compensation against the University of Dundee or NHS Forth Valley but you may have to pay your legal costs. The normal National Health Service complaints mechanisms will still be available to you (if appropriate).

If you have a complaint about your participation in the study you should first talk to a researcher involved in your care. You can ask to speak to a senior member of the research team or the Complaints Officer for (insert NHS Board).

*Insert address of NHS Board’s Complaints Office*

If you’re unsure about anything or need more information, then please ask the staff member.

Thank you for reading this information sheet.
Appendix 4.3. Practitioners’ consent form (NHS Valley)

INFORMED CONSENT FORM

Title of Study: HoPSCOTCH: Homeless People in SCOTland: A process evaluation of a Community-based oral health intervention

Name of PI: Professor Ruth Freeman
Names of Researchers: Emma Coles and Laura Beaton

Please initial box

1. I confirm that I have read and understood the information sheet for the above evaluation. I have had the opportunity to consider the information, ask questions, and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.

3. I agree to receive Smile4Life enhanced training, plus motivational interview training, and complete baseline and follow-up questionnaires, before and after training.

4. I agree to administer the Smile4Life intervention to homeless clients.

5. I agree to take part in a telephone interview once per month during the trial, which will be digitally audio-recorded. Audio data will be destroyed after the end of the trial period (12 months).

6. I agree to complete pre- and post-intervention questionnaires.

______________________  ______________________  ________________
Name of participant   Date     Signature

______________________  ______________________ _________________
Name of person taking consent             Date     Signature

1 original for participant, 1 copy for evaluation file.
Appendix 4.4. Practitioners’ participant information sheet (NHS Forth Valley)

HoPSCOTCH

Homeless People in Scotland: A process evaluation of a community-based oral health intervention

PRACTITIONER PARTICIPANT INFORMATION SHEET

INVITATION TO TAKE PART IN A PROCESS EVALUATION
You are being asked to take part in a process evaluation to evaluate the implementation of the Smile4life Guide for Trainers and Smile4life intervention.

PURPOSE OF THE PROCESS EVALUATION
This process evaluation is being carried out to evaluate the Smile4life enhanced training, Guide for Trainers and associated Smile4life intervention. The evaluation will be conducted in order to evaluate the effect of the Smile4life enhanced training, motivational interview training and Guide for Trainers, and examine the implementation process and the impact of Smile4life on homeless people in four NHS Board areas. Findings will be used to refine the design and the implementation of the Smile4life training and intervention. Participation in this evaluation will benefit staff and clients in the homelessness sector.

COMMITMENT
Training:
Prior to the enhanced training, you will be asked to complete a baseline questionnaire to assess your homelessness-focused oral health literacy. You will then receive the Smile4life enhanced training. A follow-up questionnaire will be administered post-training.

Training will cover the following topics: use of the intervention to support client behaviour change; assessing client readiness to change using tools; assigning clients to the appropriate stage; information transfer; tailored health messaging; negotiating behaviour change; use of motivational interviewing communication strategies to explore client ambivalence and barriers and encourage dental attendance. The training will consist of a mix of presentations, workshops, and role play with actors.

In addition to this, you will receive additional training in motivational interviewing. Training will consist of an overview of motivational interviewing, and the skills required to conduct motivational interviewing, alongside example sessions conducted by trainers, and role-play workshops with actors. These role-play sessions will allow feedback to be given to you about your motivational interviewing techniques. After training you will be asked to complete a post-training questionnaire to gauge the effect the training may have had on your knowledge and perceptions.

Intervention:
The evaluation will require you to offer the Smile4life intervention to homeless clients. For each client who agrees to take part, you will be required to complete a client record form and administer a pre-intervention questionnaire to the client. You will then assess the client’s readiness to change using tools in the Smile4life Guide for Trainers, thus determining the intervention stage appropriate for the client. Depending on that stage, you may be required to: discuss the client’s oral health and oral health-related issues; use motivational interviewing communication techniques to engage with the client and provide tailored health advice; determine whether or not the client requires dental treatment; arrange a dental appointment and support the client during a course of treatment (if
required). After the client has completed the intervention, you will meet with him/her and administer a post-intervention questionnaire.

Client forms will be submitted to DHSRU on a monthly basis. You will also be required to take part in one telephone interview per month on an on-going basis during the implementation of the Smile4life intervention. You will receive a telephone call from researchers Emma Coles or Laura Beaton on a pre-agreed date/time. Interviews will last up to 30 minutes and will be digitally audio-recorded.

You will also be required to complete a pre- and post-intervention questionnaire at the beginning and end of the evaluation period, to allow the investigators to gauge your progress.

**DURATION**
The duration of the evaluation will be 12 months.

**TERMINATION OF PARTICIPATION**
You may decide to stop being a part of the evaluation at any time without explanation and without penalty.

**CONFIDENTIALITY/ANONYMITY**
The data we collect do not contain any personal information about you. No one will link the data you provided to your identity and name. The results will used in peer-reviewed papers and be published in a final report. Participants will not be identifiable. Non-identifiable data from the evaluation will be kept for five years.

**FOR FURTHER INFORMATION ABOUT THIS PROCESS EVALUATION**
Emma Coles and Laura Beaton will be glad to answer your questions about the evaluation at any time. If you want to find out about the final results of this evaluation, you should contact:

Emma Coles, DHSRU, Dundee Dental School, University of Dundee, DD1 4HN. e.coles@dundee.ac.uk Telephone 01382 381708

Laura Beaton, DHSRU, Dundee Dental School, University of Dundee, DD1 4HN. l.z.beaton@dundee.ac.uk Telephone 01382 381691
Address for correspondence:
Dental Health Services Research Unit
Dundee Dental School
University of Dundee
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