Community pharmacy staff oral health training, training needs and professional self-efficacy related to managing children’s dental problems

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Abstract

Objectives Few studies have explored the oral health training needs and professional self-efficacy (PSE) in both pharmacy support staff and pharmacists related to managing children’s dental problems. This study assessed community pharmacy staff perceptions of their (i) training experiences and interests; (ii) PSE; and (iii) whether this was influenced by the pharmacy being part of a minor ailment scheme (MAS), where staff could directly offer advice and issue prescription medications without patients seeing a doctor.

Methods All of the 1851 community pharmacies across London, UK, were invited to participate in an online questionnaire. Staff rated their prior training, perceived need for further training and confidence in giving parents advice related to three dental problems in children (dental pain, mouth ulcers and dental trauma). Information was collected about staff roles and whether the pharmacy was a MAS.

Key findings From 752 community pharmacies, 846 community pharmacy staff participated. Positive experiences of training were variable but interest in further training for all three dental problems was high. Pharmacy support staff had significantly lower PSE scores than pharmacy professionals ($P = 0.009$). A significant interaction showed that pharmacy staff who had poorly rated prior training on advising parents about managing their child’s dental pain and who did not work in a MAS had lower PSE scores than staff who had highly rated training and who worked in a MAS ($P = 0.02$).

Conclusions Minor ailment scheme pharmacies may be an optimal environment for frontline pharmacy support staff to develop higher PSE when combined with good quality oral health training.

Introduction

The 1982 catchphrase ‘Ask your pharmacist: you’ll get the help you need’ adopted by the National Pharmaceutical Association earmarked the wider role of community pharmacies in England.\textsuperscript{[1]} By 2016, the National Health Service (NHS) pharmacy contract included a vast number of essential services that all community pharmacies carried out in addition to dispensing medicines.\textsuperscript{[2]} Community pharmacies can also gain further accreditation enabling them to deliver advanced services such as administering flu vaccinations and reviewing patients’ medication use. Enhanced services have also been developed and contracted locally in England based on the needs of the population to assist patients who have minor ailments and injuries. The increasing demands on doctors in primary care and hospital emergency departments managing inappropriate attendances or relatively minor conditions have been a cogent driver for these enhanced services using community pharmacies as the first point of contact for patients.\textsuperscript{[3]} ‘Pharmacy First’ or pharmacy-based minor ailment schemes (MAS) allow patients who are exempt from paying NHS prescription charges (including children) to register with a pharmacy and receive advice and
treatment for specific minor ailments without having to first see a doctor. Minor ailments include pain, constipation, indigestion, hay fever, sore throat, earache, colds and flu, bites and stings. Of the 11 699 community pharmacies in England, 1830 pharmacies (16%) operated MAS in 2016/17. In MAS, community pharmacists assess patients, give advice and supply prescription-only medication if required.

Nearly a third of patients who visited pharmacy-based minor ailment schemes had acute pain and 61% of consultations were for children aged 16 years and under. Untreated tooth decay causing toothache is a common reason for acute pain in children. A study of parents found that 65% of parents were seeking pain relief for their children’s dental problems, primarily for toothache. Thirty percentage of community pharmacies in London operate MAS covering toothache.

The large number of parents who visit community pharmacies for children’s dental problems underscores the key role that pharmacy staff could play in providing appropriate advice for parents and children who have dental problems. National Institute of Health and Care Excellence (NICE) guidelines recommend that frontline healthcare staff should be able to provide oral health advice to the public. Moreover, members of the public perceive community pharmacies as acceptable providers of oral health information. While several studies have assessed the oral health knowledge and attitudes of Community Pharmacists towards giving oral health advice, only one study in Australia has explored the oral health training needs of other community pharmacy staff.

The pharmacy workforce in England includes two pharmacy professionals regulated and registered by the General Pharmaceutical Council (GPhC): Pharmacy Technicians and Community Pharmacists including pre-registration trainee pharmacists. Pharmacy support staff are often the first face-to-face contact for parents. Pharmacy support staff include Medicine Counter Assistants (MCAs) and Dispensers or Pharmacy Assistants. MCAs work under the supervision of pharmacists and are trained to advise clients about common ailments, in addition to selling over-the-counter medicines. Dispensers/Pharmacy Assistants also work under the supervision of a pharmacist. They must complete a GPhC-accredited course with minimum training requirements to gain competencies in offering clients advice about symptoms and pharmaceutical products. Additional duties include overseeing prescription receipts and collections, assembling prescribed items, ordering and storing pharmaceutical stock and preparing pharmaceutical products.

Emerging implementation science research has highlighted the limitation of solely providing health professionals with educational training, which does not necessarily lead to changes in clinical practice. Behaviour change theories have also attempted to move beyond knowledge dissemination, which educates health professionals about what information and advice they should relay to patients, to assessing and building their capability, skills and confidence to deliver advice more effectively. Professional self-efficacy (PSE) describes a practitioner’s beliefs and confidence in their skills and capability to carry out a designated task. Health professionals with low PSE are less likely to follow clinical guidelines, offer patients lifestyle advice and perform antimicrobial stewardship. Few studies have explored PSE in community pharmacy staff; the studies that have assessed this have been restricted to only pharmacy students or community pharmacists providing smoking cessation advice or prescribing medication. No studies to date have explored PSE in both pharmacy support and pharmacy professional staff specifically related to managing children’s dental problems. This study had three objectives to address this research gap. The first objective assessed the perceptions of different community pharmacy staff about their previous oral health training and their interest in further training to give parents advice about managing three common dental problems in children: dental pain, mouth ulcers and dental trauma (injuries to the teeth and surrounding tissues). The second objective assessed the PSE scores of different community pharmacy staff related to them giving parents’ advice about managing children’s dental pain. The final objective compared PSE between staff based on whether or not they worked at a pharmacy-based minor ailment scheme (MAS). It was hypothesised that community pharmacy staff working in MAS would report higher PSE in advising parents about managing their children’s dental pain than staff not working in pharmacy-based MAS because of their more frequent encounters with patients with acute pain conditions.

**Methods**

This study was part of the ‘Oral Health in Community Pharmacy’ mandatory public health campaign and additional voluntary audit. It was one of the six public health campaigns that pharmacies must complete under the NHS Community Pharmacy Contractual Framework Essential Service – Promotion of Healthy Lifestyles (Public Health) service specification that do not require ethical approval. It was carried out in January–February
A confidential online survey questionnaire was designed to collect information from pharmacy staff (see Data S1). The survey had questions adapted from previously used or validated questionnaires. The pharmacy staff role categories were Community Pharmacists, Pre-registration Community Pharmacists, Pharmacy Technicians, Dispensers/Pharmacy Assistants and Medicine Counter Assistants (MCAs). The survey participants were asked about their perceptions about the previous training that they had received on advising patients about managing dental pain, dental trauma and mouth ulcers. These questions were assessed on a six-point Likert scale (i.e. excellent, very good, good, fair, poor, no training received). The question about their interest in further oral health training was assessed on a four-point Likert scale (i.e. very interested, interested, somewhat interested, not interested). Professional self-efficacy related to being confident about advising parents about managing their child’s dental pain was assessed by asking participants ‘how confident do you feel about giving parents advice about managing your child’s dental pain?’ This question had five response categories (not at all confident; somewhat confident; moderately confident; very confident; completely confident). Information about whether community pharmacies were a MAS pharmacy was obtained centrally from the regional commissioning team (NHS England London Region) based on the pharmacy unique ODS code. The online survey questionnaire was piloted in November 2016 on a group of community pharmacy staff for face validity.

The 1851 community pharmacies in London were sent an introductory email in January 2017 with a link to the online survey. All staff working in the pharmacy were invited to complete the survey, accessed from their pharmacy or home computer or laptop, smartphone, tablet or smart watch. Community pharmacy staff had four weeks to complete the survey. A biweekly reminder follow-up email was sent out until the survey closed.

Survey responses were automatically collated into an Excel spreadsheet (Microsoft Excel 2013) and analysed using the Statistical Package for Social Sciences (SPSS version 24 (SPSS Inc., Chicago, IL, USA)). Descriptive statistics were reported as frequencies and percentages for the main outcomes: staff perceptions about their previous training related to giving advice about managing dental pain, dental trauma and mouth ulcers and their confidence in giving parents advice about managing their child’s dental pain. These outcomes were dichotomised for the bivariate analyses using Pearson’s chi-square tests. Previous training was dichotomised as excellent/very good/good versus fair/poor/no training received. Interest in further training was also dichotomised as very interested/interested versus somewhat interested/not interested. Professional self-efficacy (PSE) was scored on an one to five scale where ‘1’ represented ‘not at all confident’ and ‘5’ represented ‘completely confident’. The independent (explanatory) variables for the chi-square bivariate analyses were pharmacy staff role and minor ailment scheme status. An analysis of variance (ANOVA) and a general linear model (GLM) were run using PSE as the dependent variable and pharmacy staff role, minor ailment scheme status and previous oral health training on dental pain as independent variables including significant interactions in the GLM. The level of statistical significance for all tests was set at $P < 0.05$.

## Results

Eight hundred and forty-six community pharmacy staff participated in the survey from 752 pharmacies in London (40%). Ninety-one percentage (765/846) of participants were Community Pharmacists; the remaining participants were MCAs (3.5%, 30/846); Pre-registration Community Pharmacists (2.5%, 21/846); Dispensers/Pharmacy Assistants (1.9%, 16/846); and Pharmacy Technicians (1.7%, 14/846). Eighty-one percentage of participants worked in pharmacies that did not participate in a minor ailment scheme (Table 1).

Table 2 shows the community staff perceptions’ about their previous oral health training on advising parents about common dental problems experienced by children.

### Table 1

| Pharmacy Role | Participants who worked in a MAS Pharmacy | Participants who did not work in a MAS Pharmacy |
|---------------|-------------------------------------------|-----------------------------------------------|
| Medicine counter assistants | 6 (20.7) | 23 (79.3) |
| Dispensers/pharmacy assistants | 3 (18.8) | 13 (81.3) |
| Pharmacy technicians | 4 (28.6) | 10 (71.4) |
| Pre-registration community pharmacists | 5 (25.0) | 15 (75.0) |
| Pharmacists | 146 (19.1) | 618 (80.9) |
| All pharmacy staff | 164 (19.5) | 679 (80.5) |

*Missing data from three participants (1 Community Pharmacists, 1 Pharmacy Technician and 1 Pre-registration Pharmacist).
While 79% (658/841) of all community pharmacy staff rated the previous training that they had received on advising patients about managing dental pain as excellent/very good, only 44% (373/841) of all community pharmacy staff gave high ratings for their previous training on managing dental trauma (Table 2). Sixty-four percentage of Pharmacy Technicians (9/14) gave high ratings for training related to managing dental trauma compared to only 31% (5/16) of Dispensers/Pharmacy Assistants. In contrast, MCAs gave higher (77%, 22/29) ratings for their previous training on managing mouth ulcers than Pharmacy Technicians (57%, 8/14) (Table 2). However, none of differences between the different community pharmacy staff related to their previous training on managing dental pain, dental trauma or mouth ulcers were statistically significant ($P > 0.05$). There were also no statistically significant differences between the previous training ratings of staff working and not working in MAS (Table 2).

Despite giving high ratings for their previous training on managing dental problems, almost all MCAs (97%, 29/30) and Dispenser/Pharmacy Assistants (94%, 15/16) were interested in receiving further training on giving patients advice about managing dental pain (Table 3). A statistically significant higher percentage of frontline pharmacy support staff were interested in further training on managing dental pain compared to Community Pharmacists ($\chi^2 = 5.88, P = 0.02$; Table 3).

Table 4 shows the mean PSE scores for community pharmacy staff related to giving parents’ advice about managing children’s dental pain. There were significant differences between community pharmacy staff where Community Pharmacists and Pre-registration Pharmacists rated their training significantly better than Technicians and Dispensers/Pharmacy Assistants (Table 4).

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### Table 2

Community pharmacy staff ratings of the previous oral health training that they had received on advising patients about managing dental pain, dental trauma and mouth ulcers by pharmacy role and minor ailment scheme

| Pharmacy role                  | Previous oral health training on advising patients about managing dental pain | Previous oral health training on advising patients about managing dental trauma | Previous oral health training on advising patients about managing mouth ulcers |
|-------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
|                               | Excellent/very good/good training Number (%)                              | Excellent/very good/good training Number (%)                                   | Excellent/very good/good training Number (%)                                   |
| Medicine counter assistants   | 24 (80.0)                                                                | 17 (56.7)                                                                      | 23 (76.7)                                                                      |
| Dispensers/pharmacy assistants| 12 (75.0)                                                                | 5 (31.3)                                                                       | 12 (75.0)                                                                      |
| Pharmacy technicians          | 10 (71.4)                                                                | 9 (64.3)                                                                       | 8 (57.1)                                                                       |
| Pre-registration community pharmacists | 16 (80.0)            | 7 (33.3)                                                                       | 13 (61.9)                                                                      |
| Community pharmacists         | 596 (78.8)                                                               | 335 (44.0)                                                                     | 520 (68.8)                                                                     |

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Table 3 Community pharmacy staff interest in receiving further training about advising patients about managing dental pain, dental trauma and mouth ulcers by pharmacy role and minor ailment scheme

| Pharmacy role                  | Interest in receiving further training on advising patients about managing dental pain | Interest in receiving further training on advising patients about managing dental trauma | Interest in receiving further training on advising patients about managing mouth ulcers |
|--------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|                                | Very interested/interested Number (%)                                  | Very interested/interested Number (%)                         | Very interested/interested Number (%)                         |
| Medicine counter assistants    | 29 (96.7)                                                                | 27 (90.0)                                                                | 28 (93.3)                                                                |
| Dispensers/Pharmacy assistants | 15 (93.8)                                                                | 12 (75.0)                                                                | 15 (93.8)                                                                |
| Pharmacy technicians           | 12 (85.7)                                                                | 12 (85.7)                                                                | 13 (92.9)                                                                |
| Pre-registration community pharmacists | 18 (90.0)                                                                 | 21 (100.0)                                                               | 15 (75.0)                                                                |
| Community pharmacists          | 624 (82.3)                                                               | 665 (87.8)                                                               | 634 (83.8)                                                               |
| Minor ailment scheme (MAS)     |                                                                            |                                                                        |                                                                        |
| Staff working in a MAS         | 141 (86.0)                                                               | 143 (88.3)                                                               | 143 (87.7)                                                               |
| Staff who did not work in a MAS| 555 (82.6)                                                               | 591 (87.7)                                                               | 560 (82.8)                                                               |
| All pharmacy staff             | 698 (83.8)                                                               | 737 (87.8)                                                               | 705 (83.8)                                                               |

*Comparing pharmacy roles and interest in further training on managing dental pain: Pearson’s chi-square test P = 0.02.
†Comparing pharmacy roles and interest in further training on managing dental trauma: Pearson’s chi-square test P = 0.23.
‡Comparing pharmacy roles and interest in further training on managing mouth ulcers: Pearson’s chi-square test P = 0.26.
§Comparing minor ailment schemes and interest in further training on managing dental pain: Pearson’s chi-square test P = 0.30.
¶Comparing minor ailment schemes and interest in further training on managing dental trauma: Pearson’s chi-square test P = 0.89.
††Comparing minor ailment schemes and interest in further training on managing mouth ulcers: Pearson’s chi-square test P = 0.16.

had the highest PSE scores (ANOVA $F = 3.79$, $P = 0.005$). Post hoc comparisons showed that pharmacy professionals had significantly higher PSE scores than Dispensers/Pharmacy Assistants (Table 4). There was no significant difference between pharmacy staff working and not working in MAS (ANOVA $F = 0.81$, $P = 0.34$). However, there was a significant interaction between MAS and previous training, demonstrating differences between PSE scores based on whether staff had previous training in managing dental pain and worked or did not work in MAS (ANOVA $F = 2.69$, $P < 0.001$).

A general linear model analysis tested the relationship between PSE (dependent variable) and the pharmacy staff role and previous training and MAS interaction as independent variables (Table 5). It showed a significant main effect for pharmacy role: pharmacy support staff (Dispensers/Pharmacy Assistants and MCAs) had significantly lower PSE scores than Pharmacy Technicians, Pharmacists and Pre-registration Pharmacists (ANOVA $F = 4.72$, $P = 0.009$). Pharmacy staff who worked in MAS and who had previous training rated as excellent/very good/good had statistically significantly higher PSE scores than staff who did not work in a MAS and who had no or poor training (ANOVA $F = 2.26$, $P = 0.04$; Table 5).

**Discussion**

This is the first study to include both pharmacy support and pharmacy professional staff to explore differences between their perceptions about their prior oral health.
training specifically related to managing children’s dental problems. Community pharmacy staff reported relatively favourable perceptions about their prior learning, giving higher ratings for their training related to advising parents about managing children’s dental pain compared to advising parents about managing dental trauma. Pharmacy support staff (Dispensers/Pharmacy Assistants and MCAs) had significantly lower PSE scores than pharmacy professionals (Pharmacy Technicians, Pre-registration Pharmacists and Pharmacists). Community pharmacy staff who had poorly rated prior training and who did not work in MAS had statistically significantly lower PSE scores related to giving parents’ advice about managing their children’s dental pain than staff who had highly rated training and who did work in MAS, demonstrating a significant interaction.

Despite the novel findings, this study had several limitations. Less than 10% (81/846) of our survey participants identified as pharmacy support staff, which may illustrate the contrast in role expectations of frontline staff with pharmacy professionals. We also did not collect information on potential confounders such as gender or years of practice. Future research work will need to explore how to engage all pharmacy staff when redesigning services and include potential confounders. Our study only assessed the perceptions of community pharmacy staff about their previous training rather than their actual knowledge of common dental problems. We do not know whether previous training has enabled them to provide parents with correct and evidence-based advice.

The findings related to previous oral health training from our study support a questionnaire-based study of 593 pharmacies in London, England, which found that only 26% of community pharmacists felt that they had sufficient knowledge to advise patients about dental trauma compared to 93% of community pharmacists who had sufficient knowledge to advise about mouth ulcers. Only two studies have assessed levels of knowledge in pharmacy counter assistants. Steel and Barton found that most counter assistants felt confident about providing advice about preventing tooth decay and tooth erosion in children, despite their lack of training in oral health promotion. Interestingly, this study also reported no association between PSE and knowledge with many counter assistants who felt confident about giving advice actually giving incorrect advice. Even though this study had a small sample size (n = 35), it does emphasise the need for further research that assesses perceptions of training and its effect on clinical practice.

In our study, pharmacy support staff gave high ratings about their prior learning despite the lack of oral health

| Pharmacy role* | Mean professional self-efficacy (PSE) score (S.D) |
|----------------|-----------------------------------------------|
| Pre-registration Community Pharmacists/Community Pharmacists | 3.7 (0.71) |
| Pharmacy Technicians | 3.5 (0.92) |
| Pharmacy support staff* | 3.1 (0.82) |

Post hoc Bonferroni comparisons for previous oral health training and MAS interaction: PSE scores for staff who had excellent/very good/good previous training in managing dental pain and staff not working in MAS | 3.8 (0.59) |

Post hoc Bonferroni comparisons for pharmacy staff role: PSE scores for Pharmacy Technicians were significantly higher than PSE scores for Dispensers/Pharmacy Assistants; P = 0.04; PSE scores for Pharmacists were significantly higher than PSE scores for Dispensers/Pharmacy Assistants; P = 0.006.

Table 4  Mean professional self-efficacy (PSE) scores related to their pharmacy staff confidence in giving parents advice about managing children’s dental pain by pharmacy role and working in a minor ailment scheme (MAS) pharmacy

| Pharmacy role* | Mean professional self-efficacy (PSE) score (S.D) |
|----------------|-----------------------------------------------|
| Pre-registration Community Pharmacists/Community Pharmacists | 3.7 (0.71) |
| Pharmacy Technicians | 3.5 (0.92) |
| Pharmacy support staff* | 3.1 (0.82) |

Post hoc Bonferroni comparison for pharmacy role: PSE scores for Pharmacy Technicians were significantly higher than PSE scores for Dispensers/Pharmacy Assistants; P = 0.04; PSE scores for Pharmacists were significantly higher than PSE scores for Dispensers/Pharmacy Assistants; P = 0.006.

Table 5  General linear model to show the relationship between mean professional self-efficacy (PSE) scores for pharmacy staff giving parents advice about managing children’s dental pain and pharmacy role, working in a minor ailment scheme (MAS) and previous oral health training and managing dental pain

| Pharmacy role* | Mean PSE (S.D) |
|----------------|---------------|
| Pre-registration Community Pharmacists/Community Pharmacists | 3.7 (0.71) |
| Pharmacy Technicians | 3.5 (0.92) |
| Pharmacy support staff* | 3.1 (0.82) |

Post hoc Bonferroni comparisons for previous oral health training and MAS interaction: PSE scores for staff who had excellent/very good/good previous training in advising parents about managing dental pain who also worked in MAS were significantly higher than staff who had no training/fair or poor training in managing dental pain and who did not work in MAS: P = 0.01.

Post hoc Bonferroni comparisons for pharmacy staff role: PSE scores for Pharmacy Technicians were significantly higher than pharmacy support staff; P = 0.03; PSE scores for Pharmacists and pre-registration Pharmacists were significantly higher than pharmacy support staff; P < 0.001.

Post hoc Bonferroni comparisons for previous oral health training and MAS interaction: PSE scores for staff who had excellent/very good/good previous training in advising parents about managing dental pain who also worked in MAS were significantly higher than staff who had no training/fair or poor training in managing dental pain and who did not work in MAS: P = 0.01.

Pharmacy support staff include Medicine Counter Assistants, Dispensers/Pharmacy Assistants.
teaching in the training curricula of recognised qualifications. The National Vocational Qualification Certificate in Pharmacy Service Skills only requires pharmacy support staff to have knowledge of how to sell commonly used non-prescription medicines and prescribed medications for dental conditions.\(^{[34]}\) It is therefore plausible that their ratings about their previous oral health training were related to some informal and experiential learning rather than any formal training. Almost all frontline pharmacy support staff were interested in receiving further training in giving patients advice about managing dental pain, which highlights a high level of interest and potential training needs. The lack of specific training requirements for pharmacy staff who work in MAS may be one possible explanation for the non-significant difference between staff working and not working in MAS. Furthermore, none of the recommended training and resources for MAS cover managing common oral conditions affecting children.\(^{[35]}\) This suggests a potential training gap.

Dispensers/Pharmacy Assistants had the lowest PSE compared to other staff. Steel\(^{[32]}\) also found that counter staff reported barriers to providing oral health advice that included not only lack of training but also uncertainties about not knowing when to refer children with dental problems. Our previous research showed that only 30% of children who had visited a community pharmacy seeking pain medication for toothache had already seen a dentist.\(^{[7]}\) Providing guidance about where and when community pharmacy staff should refer children with dental pain would enhance their role as care navigators, facilitating children’s access to local dental services.\(^{[36]}\)

Our hypothesis that community pharmacy staff who worked in MAS would report higher PSE was partly supported by the observed significant interaction. Community pharmacy staff who had poorly rated prior training and who did not work in MAS had significantly lower PSE scores related to giving parents’ advice about managing their children’s dental pain than staff who had highly rated training and who did work in MAS. According to Bandura’s social cognitive theory, mastery experiences, vicarious learning, verbal persuasion and positive affective and physical states at the time of the behavioural opportunity are four elements that can enhance self-efficacy.\(^{[37]}\) Mastery experiences mean having successful experiences that build personal efficacy.\(^{[38]}\) Community pharmacy staff who work in MAS may have more mastery experiential learning opportunities through their encounters with parents seeking their advice about managing their children’s dental problems. Community pharmacy staff working in MAS could also learn vicariously by observing other community pharmacy staff, who serve as role models when they manage difficult encounters with parents. This has implications for developing training opportunities for community pharmacy staff based on social cognitive theory that move beyond purely knowledge-based training. Such training should include a combination of teaching strategies, problem-solving approaches, modelling, practice and performance feedback to increase PSE related to giving oral health advice within their scope of practice.\(^{[25]}\)

We know that health professionals who exhibit high PSE are more likely to give patients public health advice such as smoking cessation\(^{[39]}\) and healthy eating advice.\(^{[40]}\) However, studies involving community pharmacies in advisory roles have found that training and improving PSE is not sufficient to produce effective changes in professional practices because of implementation barriers.\(^{[41,42]}\) Such barriers included lack of time and staff, fear of negative responses from patients and their tendency to engage only with clients who are more likely to accept advice. The Normalisation Process Theory (NPT)\(^{[43]}\) has been used in implementation science to develop a better understanding of the factors involved in implementing changes in healthcare practice.\(^{[44]}\) Further research using the NPT may help to identify implementation barriers and facilitators that could bridge the gap between knowledge, PSE and giving oral health advice to parents in pharmacy practice.

**Conclusion**

There is a high level of interest and a potential training need for frontline pharmacy support staff to provide advice about managing children’s dental pain. This training need seemed reinforced by the finding that community pharmacy support staff had significantly lower PSE scores than pharmacy professionals. MAS may be an optimal environment for frontline pharmacy staff to develop higher professional self-efficacy when combined with good-quality oral health training.

**Declarations**

**Conflict of interest**

The Author(s) declare(s) that they have no conflicts of interest to disclose.

**Funding**

This work was supported by NHS England London Region.
Acknowledgements

We thank Donal Markey (former Head of Primary Care Commissioning for Dentistry, Optometry and Pharmacy at NHS England London Region) for initiating this project. We acknowledge Wayne Rouse and Annette Kimber from NHS England who helped to design the online questionnaire and collated information about pharmacies participating in minor ailment schemes.

Authors’ Contributors

VM designed the study and analysed the data. VM, DD and VA all had access to the study data that support the publication; they interpreted the findings, drafted, critically revised the paper and approved the final version of the manuscript. All Authors state that they had complete access to the study data that support the publication.

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Supporting information
Additional Supporting Information may be found in the online version of this article at the publisher’s web-site:

Data S1. A list of questions included in the online survey questionnaire.