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Abstract:

Background: Pharmacy professionals have multiple opportunities to attend learning events run by a series of providers. However there has never been a large scale evaluation of events. Currently formats of learning sessions differ by provider with no optimum model identified. Pharmacy Education South London (PESL) was formed in April 2014 for the provision of education and training for pharmacy professionals in South London, running sessions multiple times across various locations.

Objective:

The objective of this work is to identify factors that influence the perceived success of a face to face supplementary education and training event from the perspective of attendees.

Methods: Evaluation forms from 600 participants at training events followed by semi-structured individual interviews with 11 participants.

Key findings: Participants over 55 years were more likely to attend lecture style events versus those aged under 25 years who attended more workshops ($P < 0.001$); there was no correlation with gender. 57.3% ($n=344$) of participants agreed fully that the event increased their understanding of the topics, although only 38.5% ($n=231$) stated that it would change their practice. Themes influencing an event fell into three broad themes; personal reasons affecting attendance, success factors for the session and application of learning, all with related subthemes. Subthemes included commitments, convenience, awareness, topic and personal relevance, content and delivery and reference, review and action.

Conclusions: In publicising events the topic, including the driver for the topic and the skills that will be obtained, the speaker and their experience plus how learning can be applied after the event should be included.

Keywords: education, professional training, CPD, teaching methods

Introduction:

The current pharmacy workforce in the United Kingdom is made up of approximately 150,000 people, ⁽¹⁾ including 50,000 registered pharmacists and 25,000 registered pharmacy technicians. The minimum training and qualification requirement for these populations is set out by the independent regulator for pharmacists, pharmacy technicians and pharmacy premises in Great Britain, the General Pharmaceutical Council (GPhC).

Whilst standards are set for early training and qualification, currently, post registration, pharmacy education is unregulated by the GPhC with no defined structure, except specific qualifications, such as prescribing. However, ongoing supplementary education and training is essential in order that pharmacy professionals can fulfil their role with the required skills and competencies, ^(2,3) as well as fulfilling GPhC set continuing professional development (CPD) requirements. ⁽⁴⁾Supplementary education and training is being defined as education and training that is outside the remit of formalised education or any mandatory employer led training, to support ongoing CPD and lifelong learning. It is learning that is self-driven and completed in addition to working requirements such as that run outside of formal education for school children. ^(5,6)

Supplementary education and training for pharmacy professionals, in England, is currently provided by a number of different national and local pharmacy organisations, for example, the Centre for Pharmacy Postgraduate Education (CPPE), Local Practice Forums (LPFs), and Local Pharmaceutical Committees (LPCs). Others include pharmacy employers, specialist training organisations, charities or voluntary organisations. Due to the multiple providers, often in a small locality, topics chosen by each education provider to deliver locally have often been duplicated across the same geographical area, wasting resources and potentially creating confusion amongst pharmacy professionals and their teams as to which is the most effective resource to access. For face to face events this leads to increased barriers to attendance. ^(7,8) South London echoes the national picture of training provision. A systematic literature search of publications using keywords pharmacy, education, training and model, has shown there is no specific study on supplementary education and training models in pharmacy.

Providing an integrated structure to supplementary education and training would ensure consistency and quality. Learning should also be seen as part of a structured career development pathway, with pharmacy professionals empowered to manage their own learning and development needs, with the support of an education infrastructure. ^(9,10)

Face to face training has occurred for many years for pharmacy professionals. In South London, a proposal was prepared, working with key stakeholders from the LPCs, CPPE, academia and the LPFs to bring learning together under one umbrella to help coordination of topics and dates for face to face events, based on local priorities. The ambition was to bring consistent training opportunities in South London for face to face training, holding multiple events on the same topic across twelve boroughs. Lectures and workshop based training opportunities were proposed, working in conjunction with the key stakeholders based on the current model of expert speakers, currently used in LPF events and facilitated workshop events run by CPPE.

Following submission of the proposal, funding from Health Education South London (HESL) was acquired to plan and deliver a collaborative programme of education and training to predominantly support community pharmacy as alternative sources of funding are available for hospital pharmacists through NHS trusts. This new collaborative, Pharmacy Education South London (PESL), was formed in April 2014. ⁽¹¹⁾ All pharmacists and pharmacy teams in South London were welcome at PESL events; however topics were chosen based on community pharmacy drivers and services, both national and local. PESL events were hosted by the South London LPF. During the period of May to November 2014, 37 events were held on 4 topics. 2 of these topics were workshop based (inhalation techniques and dementia) and 2 topics were lecture based (hypertension and Novel Oral Anticoagulants (NOACs)). The same expert speaker delivered all of the lecture events over the 2 topics, and each of the workshop topic series was delivered by the same facilitator. The reason for the selection was to show a comparison between the two different available styles. These topics were selected as they were all linked to national initiatives or national pharmacy services. The objective of this work is to identify factors that influence the perceived success of a face to face supplementary education and training event, from the perspective of the attendees using event evaluation forms and follow up interviews.

Method:

Design:

A mixed method approach was used to evaluate the success of PESL interventions; the use of evaluation forms at the end of each event to gain quantitative data, plus follow up semi structured interviews after the events for qualitative data.

The evaluation form consisted of 5 main sections. Section 1, demographics were tick box of gender, age and job role. Section 2 focused on pre-event, with tick box answers on how they heard about the event, the information received and their motivation for attendance. Section 3 focused on the event attended, using a 4 point Likert scale, using questions previously used in LPF events, intentionally omitted the middle point to capture definitive opinions. Free text responses provided to determine the most and least positive aspects of the event. Section 4 focused on the facilitator and expert speaker, using a 4 point Likert scale with section 5 using a free text response to look at an outcome based learning plan along with a tick box question asking about intended application of knowledge.

Face validity was confirmed by a pre-pilot with 7 pharmacists who are part of the LPF committee. No formal pilot was undertaken. All responses were anonymous, apart from where contact details were given.

On the PESL evaluation forms participants were invited to give their contact details if they would be willing to take part in any further activity. These were emailed an invitation to be involved in a follow up interview. The interview schedule included 6 questions which aimed to get more detail about the experience of the PESL training event(s), including preferred format, but also to gain more detail into the drivers and motivators for attendance, as well as understanding if any application of learning has taken place after the event(s). An open question was also included to understand how likely the participant was to recommend future events.

Data collection:

Evaluation forms specific to the date and venue were prepared. Following each of the 37 events, the evaluation form was given to attendees by an independent LPF committee member, not involved in data analysis.. Participants were informed by the LPF committee member about the purpose of the evaluation and that participation was voluntary. Forms were completed at the end of the event. Implied consent was given by participants by completing the evaluation form. After the event completed evaluation forms were returned to the lead researcher by the LPF committee member, for analysis.

Those who accepted an invitation for follow up interview were emailed to arrange a suitable time for the interview. A participant information sheet was emailed to those who arranged virtual interviews, and were given in person where face to face interviews occurred. The lead researcher travelled to places convenient for the participant where possible, or conducted interviews over the phone. Interviews lasted between 15 to 20 minutes. Interviews were audio recorded with written or verbal consent being give, and transcribed verbatim, before being deleted.

Data analysis:

Descriptive statistics were run on all variables and association between predefined independent and dependent variables were tested using the Chi square statistic.

For follow up individual interviews, thematic analysis was completed using an inductive thematic framework approach ⁽¹²⁾ using 5 phases of familiarisation of the data, generating initial codes, searching for themes, reviewing the themes and defining and naming the themes. NVIVO 10 software (QSR International Ply Ltd, Doncaster, Victoria, Australia) was used to support this. One member of the research team transcribed the data and two researchers conducted the analysis including coding. These codes were later compared, altered and modified during the consolidated analysis based on the full picture of the data as ideas developed until no new themes had occurred plus a stopping criterion of 3 ⁽¹³⁾ Results are shown as themes with corresponding subthemes. Quotes from interviews are used to illustrate the findings under each theme.

Ethics:

This study received ethical approval from a university ethics committee (1415/018).

Results:

Evaluation forms:

641 participants attended PESL events over the evaluation period. Nearly all the participants (93.6%, n=600) returned their evaluation form. 286 participants attended a workshop (n=126 at dementia, n=160 at respiratory) and 314 participants (n=154 at hypertension, n=160 at NOAC) attended a lecture.

Age of attendee by format, gender and job role can be seen in tables 1, 2 and 3.

By format there was a statistically significant correlation between age and format of learning attended ($P < 0.001$) with those over 55 attending lectures more frequently and those under 25 attending workshops more frequently. Correlating gender versus age, there was a statistical difference with highest attendance in males over 55 and females under 25 ($p < 0.05$).

Participants were able to choose multiple responses for their reason for attendance. The most common reasons stated for attendance, were; topics being relevant to role (59%), interesting topic (56.3%) CPD opportunity (51%) and updating knowledge on a condition (32.5%). Lectures were seen as preferable over workshops as a CPD opportunity (56.7% vs 44.7%) as well as being preferable as a way to update knowledge on a condition (35% vs 29.7%). When participants were asked to rate the benefits of the session using the rating scale from 1 being not at all and 4 being very/a lot, 54.8% ($n=329$) of participants agreed fully that the event increased their understanding of the topics, with 60% ($n=360$) agreeing fully that the learning was relevant to their role. However, only 41.5% ($n=249$) agreed fully that it would change their practice.

57.8% ($n=347$) stated they would complete a CPD cycle after the event. This varied for workshop and lectures with 16% more participants stating they would complete a cycle after attendance at a lecture versus a workshop.

Follow up interviews:

154 unique email addresses were provided. These were all contacted. 12 people (7.8%) responded to the request to be interviewed. Eleven face to face interviews were completed (two over the phone due to work constraints. One, after showing initial interest, did not return calls. Interviews took on average 20 minutes.

Themes identified:

All comments, from both the free text entries in the evaluation forms and follow up interviews, fit into three broad themes outlining a successful learning event, all with related subthemes, as shown in figure 1. Quotes supporting these themes can be seen in boxes 1-3.

1. Personal reasons affecting attendance - commitments, convenience, awareness, topic and personal relevance
2. Success factors for a session - content and delivery
3. Application of learning - reference, review and action

Attendance is impacted by various factors. These include personal, family and work commitments, as well as maintaining the work life balance (Box 1.1-1.4). Accessible, central venues were important (Box 1.5-1.6) along with clear aims and objectives for the session being published and well-advertised in advance (Box 1.7-1.9). However, it is evident that an interest in the topic increases engagement, even if not relevant to current role (Box 1.10-1.13). The speaker on the topic will impact attendance, with previous experience of a named speaker playing a part, as well as the speaker being an expert in their field (Box 1.14-1.15). CPD was a key driver for attendance, and was mentioned by all interviewees. Some of this CPD may have just been for personal interest, but for others it did fulfil the regulatory requirement (Box 1.16-1.18). Away from CPD, opportunities for networking with other

pharmacists and pharmacy team members, both in the same and different sectors was important (Box 1.18-1.23).

During an event, up to date evidence and guidance is required (Box 2.1-2.2). This is aided by an expert speaker, where appropriate (Box 2.3-2.5). A mixture of learning formats should be provided, to allow for individuals learning styles e.g. lecture, workshop or group discussion (Box 2.6-2.11).

To help cement learning from events and increase the application of knowledge into practice, a variety of tools can be considered, both during and after the event. These allow participants to refer back to information (Box 3.1-3.3) to allow cascade and use of information gained (Box 3.4-3.6).

Discussion: The results indicate that the key ingredients for a successful supplementary education and training session are topic and the ability to gain knowledge and skills on that topic. Engagement is also increased through an expert speaker or experienced facilitator

This is the first specific study on supplementary education and training models in pharmacy. However, the limitation of the study is that it did not capture the work sector of the responders. Furthermore, the anonymous analysis of the results did not differentiate potential multiple responses by the same individual, and it was only carried out in South London. Due to the comparison of workshops and lectures, the speaker and facilitators differed by format, so results may be person dependent. Although themes were identified from interviews, new themes may have emerged with a larger sample size.

Our results showed the highest attendance was from those aged under 25 and over 55, with a large amount of pharmacy student attendance. Over 55s attendance is disproportionate to the makeup of registered pharmacists which has highest percentage between the ages of 30-39, and lowest make up from those over 50. ⁽¹⁴⁾ Those studying or at the beginning of their career might see that gaining information may help them in their confidence. ⁽¹⁵⁾ In the over 55s attendance could be due to those in that age group attending for personal interest and networking. The least attendance came from those in the age group 36-45 perhaps due to caring responsibilities, as seen in the interviews. Attendance may be increased if virtual learning environments are offered concurrently. However format needs to be considered, with previous research showing that with online learning older students preferred to watch lectures, whereas younger students preferred more interactive learning strategies. ⁽¹⁶⁾

Our study found no statistical significance between format and gender, although it is interesting that male attendance increased with age as a previous study showed that women were more likely to favour lectures with older males having a greater interest in distance learning ⁽¹⁷⁾ Our findings could perhaps be correlated with ownership of pharmacies with the GPhC registrant survey of 2013 ⁽¹⁴⁾ noting that 44% of pharmacists working in independent pharmacies were over the age of 60, the highest of any setting. However, another study ⁽¹⁸⁾ suggests women favour teamwork which points towards workshop preference.

Personal interest, CPD completion and networking are the main motivators for attendance from our sample population with clear published objectives being key for an event. Personal interest was found to be a motivator for CPD completion in a previous study by Hanson.⁽⁸⁾

Previous studies highlight that clear objectives and what will be achieved will benefit the learner.^(19,20) Networking has also been highlighted in previous studies as providing benefits for the individual⁽²¹⁾ and better outcomes come from created partnerships.⁽²²⁾ Our study showed that an individual's commitments and time affected attendance. This is echoed by previous studies where time is cited as the most common barrier for engagement in learning and CPD.^(6,8,23,) Previous studies also echo our findings that venue and location are important factors to consider when looking to increase attendance at training events.⁽⁸⁾

The interviews indicated relevance was a motivator for attendance. Relevance to role could be interpreted differently by different attendees; this relevance could be linked to regulation and completion of CPD, or may also be impacted by an employer or local or national factors, for example job role or a new contracted service. It may also hold a personal relevance. Only limited previous work has been completed on ensuring relevance of learning in other professions, with medics identifying that more work is needed to integrate continuing education⁽²⁴⁾ and work place learning, and clear standards, procedures and consequences are needed to facilitate assessment for learning⁽²⁵⁾, and nurses identifying that concepts are only truly understood when integrated into the professional career.⁽²⁶⁾

Our results indicate that topic was a motivator for attendance. Clinical areas appeal when an expert speaker can share their knowledge and practice. Our results suggest that an expert speaker is key to the success of an event. The speaker's ability to identify key issues, engage the audience and share their expertise will increase knowledge.⁽²⁷⁻²⁸⁾ Our findings suggested lectures were more attended for up to date knowledge and CPD, although no statistical significant difference was found. Previous studies support this finding showing that workshops may not always be more effective than lectures.⁽²⁹⁻³⁰⁾ To be perceived as successful, workshop topics need a clear link to application and outcomes, supported by a quality facilitator.⁽³¹⁾ There is limited data about the most effective way of applying learning into practice although there is work looking at what mechanisms are most useful for pharmacists to translate learning into behavioural change.⁽³⁾ Previous studies have shown that interactive workshops may increase change in professional practice whereas lectures and didactic sessions alone are unlikely to have an effect on change in professional practice.⁽³²⁻³³⁾

Our results suggest that a mixture of learning formats should be considered to maximise engagement from all learning styles. Previous studies have shown that most adults can only focus on a speaker for between 20 and 30 minutes,⁽³³⁾ therefore learning activities need to be designed to offer verbal and visual content to accommodate a wider range of learning styles within a single learning activity.⁽³⁴⁾ Although multiple learning style instruments exist there is not one that can clearly capture the richness of all styles.⁽³⁵⁾ It has also been seen that learning styles do not affect performance⁽³⁶⁾ or increase knowledge.⁽²⁹⁾

Future work needs to be done to explore alternative methods for learning to allow its application into practice, and also to understand motivators and barriers for attendance and engagement from different learning types in face to face learning events and engagement in non-face to face learning events. More work needs to be completed to explore how pharmacy professionals determine relevance to ensure topics meet their needs, and this can be used to understand more about application into practice. Comparisons of other large scale education and training events would also identify any similarities or differences in different parts of the country.

These findings can be used to help plan and deliver events that pharmacy professionals will benefit from, and provide a basis for collaborative learning.

Conclusion:

These initial findings indicate that pharmacy professionals are keen to attend face to face learning events. Topic selection is central to effective engagement. Aims of the learning should be able to correlate to tangible actions after the event; therefore future work is also needed on how to follow up with participants after events to support them to change their practice, and learn about application of their learning. Funding also needs to be considered for future models.

A comprehensive strategy for picking local or nationally driver topics is crucial, which involves all stakeholders involved in providing supplementary education and training in a local area, plus those involved in commissioning of services to ensure the workforce has the appropriate skills and knowledge. In publicising events the topic, including the driver for the topic and the skills that will be obtained, the speaker and their experience plus how learning can be applied after the event should be included.

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Age of attendee	Overall (N=600) %	Workshop (N=286) %	Lecture (N=314) %
less than 25	25.2 (n=151)	31.8 (n=91)	19.1 (n=60)
26-35	16.8 (n=101)	14.3 (n=41)	19.1 (n=60)
36-45	15.3 (n=92)	14.3 (n=38)	17.2 (n=54)
46-55	17.8 (n=107)	14.3 (n=41)	21 (n=66)

over 55	20 (n=120)	16 (n=46)	23.5 (n=74)
no response	4.8 (n=29)	10.1 (n=29)	0 (n=0)

Table 1 – Age of attendee versus format attended

	Male (N=207)	Female (N=343)
Less than 25	22.7% (n=47)	30% (n=103)
26-35	15.9% (n=33)	19.2% (n=66)
36-45	10.6% (n=22)	19.8% (n=68)
46-55	22.2% (n=46)	15.2% (n=52)
Over 55	27.5% (n=57)	13.7% (n=47)
No response	1.1% (n=2)	2.1% (n=7)

Table 2: Gender versus age of attendees

	Overall %(N=600)	Workshop (N=285) %	Lecture (N=315) %
pharmacist	56.7 (n=340)	45.8 (n=131)	66.6 (n=209)
medicines support staff	1.7 (n=10)	2.8 (n=8)	0.6 (n=2)
dispensing assistant	5.5 (n=33)	4.2 (n=12)	6.7 (n=21)
technician	4.3 (n=26)	3.5 (n=10)	5 (n=16)
pre-registration trainee	7.5 (n=45)	11.1 (n=32)	4.1 (n=13)
pharmacy student	12.5 (n=75)	16 (n=46)	9.2 (n=29)
other	6 (n=36)	6.6 (n=19)	5.4 (n=17)
no response	5.8 (n=35)	9.4 (n=27)	2.2 (n=8)

Table 3 – Role of attendees versus learning attended

- 1.1 *'I know I signed up for antiplatelets but then something came up.'* **Interview 1**
- 1.2 *'Unfortunately when they work from 9-9 it is very difficult for them to get out.'* **Interview 8**
- 1.3 *'Another barrier is personal commitments. Our jobs are getting more stressful, so for many pharmacists...you are in your pharmacy 8-7, you need a personal life and you need to be able to go home and relax.'* **Interview 11**
- 1.4 *'Lots of people have family commitments, children, elderly members of the family they may look after.'* **Interview 6**
- 1.5 *'I live five minutes away so it is good and very close.'* **Interview 3**
- 1.6 *'...wherever I can get on the tube, as I don't drive.'* **Interview 4**
- 1.7 *'To be honest a very small number of people turn up. I am wondering, is it they don't actually realise it is happening?'* **Interview 2**
- 1.8 *'With a lot of the ones I have attended I only heard about them a week or so in advance. If they could do it more in advance that would be good.'* **Interview 3**
- 1.9 *'I remember the format in which the objectives were set out and what objectives I was particularly interested in learning.'* **Interview 6**
- 1.10 *'I think all of the topics have been good in the sense that they all helped us to support the key services.'* **Interview 5**
- 1.11 *'It was topics that were for education and training purposes.'* **Interview 6**
- 1.12 *'My primary reason for attending would have been for making sure I was aware of current evidence and practice.'* **Interview 1**
- 1.13 *'just an interest in the topic I think. It came up and seems like something I really wanted to go to, something I could learn from. It wasn't necessarily something that was a CPD need''* **Interview 9**
- 1.14 *'(the main motivator for attendance was) Mainly the speaker, because I have heard her at other things before and I just felt I really enjoyed listening to her.'* **Interview 4**
- 1.15 *'For all of those courses the talks were being run by (the expert speaker), who I have a lot of respect for, and I knew that by going I would learn a lot as she is the guru of cardiology and medicines, so that was my main reason for attending.'* **Interview 5**
- 1.16 *'I got called up last year (CPD) and I was actually surprised that I had done quite a lot, so I am trying to be conscientious and keep up.'* **Interview 2**
- 1.17 *'I know I did a CPD entry on it,' 'I definitely did complete a CPD cycle'* **Interview 3**
- 1.18 *'I did roughly speaking I believe about 7 CPD cycles as a result of these PESL.'* **Interview 6**
- 1.19 *'Sometimes you work in isolation, it gives you opportunity to talk to someone else in a different field and just network, and compare what is going on.'* **Interview 8**
- 1.20 *'What was good was there was a mixture of hospital and community as well as primary care based pharmacists.'* **Interview 1**
- 1.21 *'I do recommend them regularly to my colleagues, peers and others and I do it because I personally like them as they are a good opportunity to meet people from different walks of life, different jobs, different areas, and you meet people and you always learn something.'* **Interview 10**
- 1.22 *'I feel that it is a necessity for our pharmacy staff to be partaking in these events, not only for the networking opportunity, but for the education opportunity.'* **Interview 6**
- 1.23 *'Actually I brought some of my staff with me from the practice, and they enjoyed it.'* **Interview 8**

Box 1: Motivators for attendance

- 2.1 *'Making sure I was aware of current evidence and practice for using those types of medication, keeping up to date with the latest things and to look at any new updates on the subject areas concerned'* **Interview 3**
- 2.2 *'evidence for the NOACs, when we would use them in practice, the different indications.'* **Interview 1**
- 2.3 *'(the speaker) is the expert', I liked (the expert speaker)'s presentation. She is an excellent speaker, and she knows her subject inside out and it is a subject I deal with a lot'* **Interview 8**
- 2.4 *'(the speaker) is obviously a very excellent speaker who is knowledgeable on her expert areas and very passionate about what she does.'* **Interview 10**
- 2.5 *'I remember her engaging speaking'* **Interview 1**
- 2.6 *'I prefer the more lecture based as that is stuff I wouldn't hear otherwise'* **Interview 3**
- 2.7 *'(the speaker) was very happy for people to interject and ask questions as we went along.'* **Interview 1**
- 2.8 *'I think there was a little bit of a discussion towards the end which was also quite nice, with some questions from others of what they have come across and what they wanted to know.'* **Interview 4**
- 2.9 *'...as I said I do learn better in a group.'* **Interview 8**
- 2.10 *'The workshop style was most interactive which I thoroughly enjoyed because we participated in our groups, and were able to contribute our thoughts and learn from each other.'* **Interview 6**
- 2.11 *'It was open and interactive, and I am one of those people who learns better by seeing, as opposed to reading lots of books. I am a practical hands on person. So they suit me very well. They were small groups, which made it more comfortable,'* **Interview 8**

Box 2. Comments about the format and running of the session

3.1 *'I remember taking notes and the handouts that come out of it'* **Interview 6**

3.2 *'I love to look back at the slides and go over them to see if there is anything I missed. I can save them and go back to them if I want to in the future.'* **Interview 7**

3.3 *'we were sent the slides, and anything we asked for was sent too, especially the inhaler slides were very useful. In fact I used them, especially with the GPs.'* **Interview 8**

3.4 *'it is also good to have an overview of what is going on so I can discuss these with my colleagues'* **Interview 10**

3.5 *'having a better understanding of the drugs, especially the newer drugs that are around, getting my head around those, so I can better listen to the students and correct them, or to direct them on the right path.'* **Interview 9**

3.6 *'I know with the dementia training that was linked in to the dementia friend's website so we got the pack on that and cascaded it to staff as well.'* **Interview 3**

Box 3. Comments about tools to support application of learning