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Improving patient safety culture in general practice:

an interview study

Abstract

Background
When improving patient safety a positive safety culture is key. As little is known about improving patient safety culture in primary care, this study examined whether administering a culture questionnaire with or without a complementary workshop could be used as an intervention for improving safety culture.

Aim
To gain insight into how two interventions affected patient safety culture in everyday practice.

Design and setting
After conducting a randomised control trial of two interventions, this was a qualitative study conducted in 30 general practices to aid interpretation of the previous quantitative findings.

Method
Interviews were conducted at practice locations (n = 27) with 24 GPs and 24 practice nurses. The theory of communities of practice — in particular, its concepts of a domain, a community, and a practice — was used to interpret the findings by examining which elements were or were not present in the participating practices.

Results
Communal awareness of the problem was only raised after getting together and discussing patient safety. The combination of a questionnaire and workshop enhanced the interaction of team members and nourished team feelings. This shared experience also helped them to understand and develop tools and language for daily practice.

Conclusion
In order for patient safety culture to improve, the safety culture questionnaire was more successful when accompanied by a practice workshop. Initial discussion and negotiation of shared goals during the workshop fuelled feelings of coherence and belonging to a community wishing to learn about enhancing patient safety. Team meetings and day-to-day interactions enhanced further liaison and sharing, making patient safety a common and conscious goal.

Keywords
intervention; interview study; patient safety; primary health care; safety; safety culture.

INTRODUCTION

A constructive safety culture is important for patient safety improvement efforts.[1] Safety culture reflects the values, competencies, and behaviour that determine the commitment to, and the proficiency of, an organisation's safety management.[2]

Patient safety is also a prominent issue in primary care.[3] In 2008, a national collaboration project was launched aiming to engage Dutch primary care professions in patient safety.[4] A safety culture questionnaire was also developed, which was applicable to all primary care professions.[5] Previous research indicated raised awareness and possible intervention effects of culture surveys.[6,7] A questionnaire can be deployed as a feasible culture intervention because results can be reflected and acted on.[8] However, although it is easy to implement, it is not very likely that a questionnaire alone leads to meaningful improvements.[9–13] Therefore, an additional practice-based workshop on safety culture was developed.[14]

A randomised trial was conducted to study the two culture interventions:[14] administering a safety culture questionnaire; and the questionnaire combined with a practice-based workshop, compared with a control group. The combination of a questionnaire with a workshop was found to be significantly more effective than the questionnaire alone when using incident reporting as a proxy for openness and safety culture.[15] Compared with the control group, the workshop group reported 42 times more incidents, whereas the questionnaire group reported five times more incidents, measured 1 year after the intervention. In addition, incidents were more often analysed systematically and patient safety was more often on the team meetings' agenda. With regard to patient safety culture measurements, no differences were found between the three groups at follow-up, nor was there a significant change over time in the intervention groups. Nonetheless, patient safety was rated more positively after the interventions, particularly in the practices that participated in the workshops (questionnaire group: 61% to >69%; workshop group: 55% to >85%). This study aims to explain these results using a qualitative approach.

Theoretical framework

The theory of communities of practice was used to interpret the interviews and explain the differences in intervention effect. A community of practice is described as a set of people who 'share a concern, a set of problems or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing

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Box 1. Intervention 1: safety culture questionnaire

- The contact person received a letter informing them of the allocation of their practice in the three research arms and the request to fill in the SCOPE questionnaire with their whole practice.
- Details of login procedures were given directly in this letter.
- The feedback report could be downloaded by the contact person.
- A reminder to complete the questionnaire and download the report was sent after 1 week and 1 month.

SCOPE questionnaire

- 43 culture items (five-point scales), two outcome questions.
- Demographic variables.
- 15–20 minutes to complete.

Feedback report

- Oversight of the eight dimensions and percentages of positive scores.
- Mean score of the practice per item compared with a benchmark score.
- Tips for improvement and further information.
- The contact person was responsible for disseminating the report.

Box 2. Intervention 2: practice-based patient safety workshop

- At practice location.
- ≥75% of staff were required to attend.
- 3.5 hours.
- SCOPE questionnaire was completed a few weeks before the workshop.

Workshop elements

- Education on safety science/human factor engineering/culture (systems approach) filling in and discussing two of nine MaPSaF vignettes.[17]
- Presentation and discussion of the SCOPE results.
- Guided discussion on own culture and possible improvement.
- Drawing up of an action plan to improve patient safety (culture).

MaPSaF = Manchester Patient Safety Assessment Framework.

How this fits in

An open and positive culture is seen as a prerequisite for successfully improving patient safety. However, little is known about how to achieve this in general practice. This study found that those working in practices participating in a combination of a patient safety culture questionnaire and workshop had increased risk awareness, understood the terminology and tools associated with patient safety, and spoke more frequently about the subject. The workshop was found to be an effective way to transfer questionnaire results to clinical practice.

basis'.[16] Central to learning is exchanging experiences and reflecting on everyday practice. Since the concept was introduced in 1991 by Lave and Wenger,[18] and further elaborated on by Wenger in 1998,[19] it has been used as a tool for quality improvement, problem solving, and innovation. Three dimensions need to be present in order to be a community of practice:

- a joint enterprise (the domain);
- mutual engagement (the community); and
- a shared repertoire (the practice).[19–22]

The interest that members share defines the domain, which in this study was patient safety. By sharing information and engaging in activities and discussions, members build relationships enabling them to learn from each other, thereby establishing a community.[20,23] This mutual engagement refers to the level of communication and interaction with each other. By interrelating, the members are motivated to give meaning to, and negotiate about, their practices. Members of a community of practice develop 'a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems'.[20]

SCOPE intervention study, the trial, and intervention components

Details of the SCOPE (systematic culture inquiry on patient safety in primary care) intervention study design and its findings have been reported elsewhere.[14,15] The first intervention was administering a patient safety culture questionnaire, the SCOPE questionnaire.[23] Participants in this intervention are referred to as being in the SCOPE group (Box 1). The contact person in each practice could download the results of the survey.

The second intervention consisted of the SCOPE questionnaire complemented with a workshop. Participants in this intervention are referred to as being in the workshop group (Box 2). Instead of downloading their results, these were presented during the workshop and used for discussion.

METHOD

Design and participants

Interviews were conducted between May 2013 and July 2013 in all participating practices ($n = 27$); one practice (out of the nine control groups) refused to do interviews. Interviews were conducted with 24 GPs and 24 practice nurses from the two intervention groups as well as the control group. Interviews in the control group revealed no change in patient safety activities, therefore results are only described from the intervention practices (eight of nine control practices were interviewed but the data were not analysed in this paper). Table 1 details the 36 interviews with the participants of the two intervention groups (16 GPs and 20 practice nurses).

Data collection and analysis

A topic list was used to direct the interviews. This addressed opinions on the prevailing patient safety and culture, and actual implementation of tools following their particular intervention. In the control practices, additional questions asked whether their focus on patient safety was influenced by governance, insurance agencies, or otherwise. All interviews were audiotaped with consent from the participants, transcribed verbatim, and transcripts were presented to the participants for approval. Both observations and participants' notes from the workshop sessions were used as additional data with consent of the participants. Data analysis was performed using NVivo software (version 10) for qualitative data for coding.

Before coding, important themes were discussed within the research team to develop a coding template that focused on safety culture, behaviour, and activities attributable to the intervention.[24] After initial coding, the communities of practice theory was used to analyse and interpret the findings.

RESULTS

The interviews showed the importance of the practice following up the questionnaire with the workshop. When explicitly asked at the end of the interviews, all workshop group participants stated that their results

Table 1. Characteristics of participants per intervention group

	SCOPE group (10 practices)	Workshop group (9 practices)
GPs, *n*	8	8
Practice nurses, *n*	10	10
Female sex, %	77.8	66.7
GPs	50.0	37.5
Practice nurses	100.0	90.0
Age, years, mean (SD)	43.4 (9.7)	40.7 (14.1)
GPs	46.0 (8.8)	48.6 (9.4)
Practice nurses	41.4 (10.3)	33.4 (13.9)
Hours per week in practice, mean (SD)	33.6 (15.8)	34.2 (10.7)
GPs	39.6 (19.9)	35.8 (14.7)
Practice nurses	27.6 (7.4)	32.9 (6.6)
Qualified since, years, mean (SD)	15.2 (9.6)	13.1 (10.2)
GPs	14.3 (9.0)	16.7 (8.9)
Practice nurses	16.0 (10.5)	10.3 (11.0)
Working in practice, years mean (SD)	8.9 (7.1)	9.7 (6.8)
GPs	10.3 (9.1)	12.5 (7.0)
Practice nurses	7.8 (5.3)	7.5(6.0)
Duration of interview, mins, mean (SD)	38.9 (16.8)	34.2 (11.4)
GPs	42.2 (10.2)	38.6 (7.1)
Practice nurses	36.4 (20.7)	30.7 (13.2)

would not have been achieved had they only completed the questionnaire.

Moreover, those in the SCOPE practices felt that results would have been different had they participated in the workshop. The following text explains why the workshop was regarded as necessary to intervene in the patient safety culture.

Joint enterprise

According to the theory on communities of practice, the problem or the so-called identity of the community concerned patient safety in general practice.[18] The workshop was shown to contribute to the awareness of patient safety in two ways.

First, getting together and spending time on the topic sends the message that the subject is important. Second, the workshop changed their views on patient safety. Discussing international and national data about iatrogenic harm startled the participants, creating a sense of urgency. Participants expressed how the workshop changed their perception of the problem when discussing what action was taken on patient safety after the workshop:

'Anyway, we now have all become very alert … in any case, we all had our minds on the job after the workshop … You really were facing the facts.' (Practice nurse, workshop group 20)

One of the assignments during the workshop illustrated the process of reaching agreement on their own culture and the gaps. When assigning maturity stages to the Manchester Patient Safety Assessment Framework (MaPSaF) vignettes, participants were asked to assess their own practice by adjudging a maturity stage on two vignettes of the MaPSaF. These vignettes describe patient safety dimensions according to five levels of maturity of safety culture (that is, pathological, reactive, calculative, proactive, generative).[17] We noticed that the individually chosen maturity stages at the start of the workshop were mostly relatively high, meaning that the first, individual impression of their own safety culture was rather positive. However, after discussion in pairs and with the whole team, negotiation of the best fit arose and team members agreed to a lower stage of maturity of their safety culture than initially chosen.

Conversely, in the SCOPE practices, patient safety mostly was not perceived to be an urgent problem. Participants often stated that no action was undertaken because patient safety was seen as adequate. It seemed that no risk awareness for safety problems was generated by the questionnaire:

Interviewer (I): *'Do you think that the questionnaire had an impact on your practice?'*
Participant (P): *'I don't think so. Since things are already going well.'* (Practice nurse, SCOPE group 8)

P: *'Until now, not one complaint and not one incident. That is perhaps also the reason that until now, we haven't put anything on paper.'*
I: *'OK, are there no incidents or aren't they noticed?'*
P: *'Yes … that could be. So, it is not reported as such … maybe also because it is not noticed.'* (GP, SCOPE group 9)

Mutual engagement

The key element in a community is learning from each other and discussing experiences, that is, knowledge sharing. Workshop participants stated that the workshop was a very positive experience, which also nourished the team feeling and mutual trust. The workshop initiated discussions about patient safety (activities) during the day and during team meetings, for instance, by asking each other to write an incident report:

P: *'Yes. I think that, since we had the workshop, we all improved, or at least things are set up. We already had a sort of reporting procedure. But due to the workshop, there came a sort of awareness in the whole team.'*
I: *'And what would you see as your success factor, why did it work so well for you?'*
P: *'I do think the organisation, thus, the workshop we had. Getting aware of reporting incidents and the explanation on that, what the pros and cons are so to speak, to discuss that among each other. As a result, we have started a reporting week. We started reporting more. We give feedback during work meetings. I mean during general meetings, the practice assistants' meetings, the nurses' meetings. Allowing discussing it together, become aware and learn about it. So I think these are major steps we made, making it successful.'* (Practice nurse, workshop group 5)

I: *'Suppose that you only filled out the questionnaire. Would the effect have been similar?'*
P: *'No, because in a certain way you have*

to be shown the facts and be made more aware of the problem. And that is certainly what happened in this intervention [the workshop]*, it more did get to us. So, that also the fear for reporting, that culture and the usefulness of reporting was more clear than if we had not done it* [the workshop]*. I think that, if I had only had the SCOPE questionnaire for the employees … nothing would have been achieved regarding the reporting week. So, in that respect it has a clear effect and added value to for the whole team … and its progression and improvement.'* (GP, workshop group 5)

In the SCOPE group such impetus for change in daily practice was lacking. The feedback report bearing the results and benchmark (580 practices from previous research),[25] known to be an incentive for improvement,[26] was mostly not read or, if read by the contact person, only shared once with colleagues:

I: *'Last year you have had a report with feedback. So, then you get a summary of the whole practice results compared to other practices in the Netherlands. Do you remember that you have received it* [the report]*. Or that you have seen it?'*
P: [silence] *'That doesn't ring a bell.'*
I: *'Or discussed during the team meeting?'*
P: *'No, oh no, that would … no, than I would have* [remembered] *… No, I dare not say.'* (Practice nurse, SCOPE group 13)

However, there were two participants from different SCOPE practices who stated that the SCOPE spurred them on to think about the topic. One practice used the opportunity to focus on patient safety. In this case the strong and weak points of the results were discussed within the team leading to a joint conclusion that an incident-reporting procedure was lacking in their practice. They decided that a nurse would participate in a course about incident reporting (outside the study as they were in the questionnaire-only group) and implemented this in their practice. Hereby, the interaction between, and learning from, each other was clearly established, as was the enthusiasm:

'It [SCOPE] *has certainly given a boost, because discussing, openly, the things that don't go well … That is something that clearly comes from the SCOPE, and that you emphasise that again … It is a guide to discuss things and further elaborate on, OK, how are we going to improve this further?'* (GP, SCOPE group 21)

In the other practice the contact person read the report but did not share it within the team. The subject remained the responsibility of this one nurse. She stated that her awareness of the topic was raised and that this was indirectly the case for the other staff as she broached it. However, no mutual relations were established in the sense of team interaction about patient safety:

I: *'Do you think that the results of the questionnaire raised awareness? Did it foster your reflective thinking?'*
P: *'Yes, it did. The rest* [of the team] *indirectly. Because I bring it up. Somebody has to take the lead. And that is what we are missing here, also due to the situation, that nobody takes it on. If I only put it on the desk of the practice assistants, nothing will be done. I really have to bring it up and then maybe something will be done with it.'* (Practice nurse, SCOPE group 26)

In addition, the workshop was perceived as a shared experience. Participants experienced the success of the workshop to a large extent to be the 'communality', a team moment to focus on patient safety. According to one participant, the team often referred in particular to the workshop when patient safety was discussed:

I: *'OK, and how did that go* [the workshop]*? Or do you discuss these things more often together* [incidents]*?'*
P: *'Eh, well not really. We do not … Yes, you know, you all do the workshop together and so it is easier to refer to it like "gosh, how was that again, do you remember?" So then, yes, it makes it easier to come back to it when you did it together, so to say.'* (Practice nurse, workshop group 6)

Unlike these workshop practices, those in the SCOPE practices expressed precisely the opposite, missing this 'getting together'. It was stated by several participants that they missed the attention that was given to the workshop practices, claiming that would have made a great difference. An 'event' was thought to be key in involving staff and to make the subject tangible when discussing the lack of change following the SCOPE and what would be needed to effect change:

'Well, maybe such a workshop it will make us all more involved. It would probably help. Now it stays all a bit theoretical [having only the SCOPE results]*.'* (GP, SCOPE group 2)

In some SCOPE practices the

questionnaire even became perceived as an exercise in the fulfilment of the research obligations. The interviews revealed that a few practices even thought of themselves as a non-intervention practice:

'I hoped I would not be in the control group, but in the intervention group that was to work systematically [on the topic during the intervention]*, but we weren't, unfortunately …'* (GP, SCOPE group 9)

Shared repertoire

The workshop and subsequent interactions around the topic contributed to the alignment of terminology. The workshop started by asking participants what they thought common definitions meant, which showed differences between staff. By discussing these terms, the team made them their own and negotiated a mutual understanding of them.

Interviews also showed that, without an action plan, nothing happened. The workshop group were asked if they thought the results would be the same when they had only completed the questionnaire. They claimed that the questionnaire solely would not have done enough; they needed this joint meeting to convert the message into action. An action plan conveys commitment to change and, more importantly, how to address it. This point was also demonstrated by two practices, one in each intervention group. Only one practice in the workshop group did not realise an action plan and only one practice in the SCOPE group was able to discuss the matter and draw up joint activities. Interviews indicated that only the practices that commonly agreed on activities showed improvements. The workshop helped the conversation and enhanced ideas for improvement and subsequent implementation. The interviews in the SCOPE practices showed the conversion of ideas and results to activities to be a bottleneck: the conversion of ideas and results into actual activities mostly appeared to be the insurmountable obstacle.

I: *'Can you explain this, what was the reason for it* [discussion about already having a reporting procedure, but only after the workshop was there more attention for reporting]*?'* (Caregivers were more aware of the possibility for reporting; they noticed at an earlier stage that an event should be reported and actually did report it.)
P: *'Well, just the importance of it I guess, that due to such a workshop. Yes, and it is more in your system. So you can, so to say, put flesh on the bones.'* (Practice nurse, workshop group 20)

And when discussing what is picked up on the subject of patient safety reporting and what you want to do in practice:

'You are right that if you read something, if you read articles on the subject, it makes you more aware. But implementing it in daily practice is something else and that is where it often falters.' (GP, SCOPE group 29)

Last, the start-up of activities in turn also helped to reinforce the actual repertoire and community. Workshop practices started to implement or revive an incident-reporting procedure. As this is an ongoing or an iterative tool, it also strengthened the interaction around the subject of patient safety. Some practices installed reporting committees, forms were downloaded or created, and reporting weeks were organised. Participants said that they reminded each other to write a report after an incident had happened. Reports were discussed during the day and during team meetings. This invigorating process again conveyed the message of importance and also created a learning effect. In other words, the shared repertoire of terms and tools in itself added to establishing knowledge sharing and interaction.

DISCUSSION

Summary

This study examined qualitatively how administering a patient safety culture questionnaire solely or combined with a workshop affected patient safety culture in general practice. Previous trial data showed that incident reporting increased significantly in the workshop group, compared with the control and SCOPE group. The latter showed some increase, but the effect was not significant when discarding an outlier.[15] The concept of communities of practice, and its key concepts of joint enterprise, mutual engagement, and shared repertoire, was applied to explain the differences between the two interventions.

As a result of the workshop, risk awareness arose. In addition, it contributed to team feelings regarding patient safety and helped align terminology and negotiate subsequent activities, for instance, following improvement actions, or team discussion on an incident. Patient safety was discussed more often and the atmosphere was more open to discussing incidents. In the practices in the SCOPE group, on

the contrary, the questionnaire did raise some awareness, but did not lead to actual changes. Almost none of the participants in this group had read the report with their findings and only once they were discussed with the remainder of the team. This study, therefore, showed that a workshop is a valuable addition to a questionnaire and, in contrast to the quantitative findings with the culture questionnaire, helps to improve patient safety culture.

Strengths and limitations

This qualitative study has been conducted alongside a randomised controlled trial. By studying observations and perceptions of participants the trial results are supported and better understood. In addition, the authors believe the intervention itself to be a strength because it was built up from elements known as effective interventions such as education, the MaPSaF, team-assignments, and discussion of practical applications. Even though a workshop itself is a one-time event, this study showed that it can be used to set the focus on patient safety and set behavioural change in motion. Moreover, with one workshop the whole team can be reached. The advantage of one team meeting, reaching all disciplines at one time, enables the intervention to be unifying. This reduces the risk of 'in-silo' behaviour, which negatively interferes with collaboration.[27]

A limitation of this study could be the recall bias of the participants. The interviews were held a year after the intervention and most of the participants found it hard to recall details of the workshop or the action plan they drafted. In addition, the interviews were partly conducted by one of the researchers, which could trigger social desirability bias. However, responses from different practices in each group were consistent.

Comparison with existing literature

Through the years, patient safety culture questionnaires were developed, modified, and validated in primary care, adding to an evidence-based means of assessing culture in practice.[28–33] A survey as a change instrument is comprehensible, usable, and affordable for practices. However, Sexton and colleagues[11] stated it to be unlikely that questionnaire results and spontaneous discussion would lead to meaningful improvements and developed a discussion tool. Analogous to this, an assessment and discussion tool, the MaPSaF, was found to be a meaningful instrument in primary care.[34,35] In addition, there have been numerous improvement approaches based on team efforts such as CRM, TeamSTEPPS, and variable safety workshops that showed promising results.[36–40] A successful team that strives for a clear common goal and that regularly discusses how to achieve this is seen as valuable in improvement programmes.[10]

The current study found that combining the assessment and the team approach has added value. This is in line with reviews showing that multifaceted or multicomponent interventions are most successful in improving patient safety culture.[6,41]

Implications for research and practice

The findings exposed the interaction between targeting safety culture and implementing a structure simultaneously, as these reinforced each other.[42] A generative culture is needed to raise risk awareness. It is also a prerequisite for conducting activities that require openness and trust, such as reporting.[43] In turn, incident reporting is a recurrent activity, leading to regular discussions of safety issues each time reports are analysed. These discussions contribute to openness and trust.[44,45] Indeed, in this study, participants indicated that discussions around reports helped them remain aware of incidents and to address each other regarding safety issues during daily practice. In this way, safety management was embedded in everyday work. The structure with recurrent features provided improvement of safety culture, and vice versa. A frequently heard, almost unanimous response during the interviews in the SCOPE practices was that it would certainly have made a difference when more serious attention, as occurred in the workshops, was paid to the subject of improving patient safety culture. For future research, therefore, it would be interesting to conduct a similar trial in a stepped wedge design (a fairly newly developed study design, assumed to be appropriate for studying the effect of complex interventions). To conclude, the authors can confidently encourage GPs to invest time in a team event in their practice to effectively put patient safety on the map in primary care.

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Ethical approval

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Competing interests

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