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Safety climate and its association with office type and team involvement in primary care

KATRIN GEHRING[1], DAVID L.B. SCHWAPPACH[1,2], MARKUS BATTAGLIA[3], ROMAN BUFF[4], FELIX HUBER[5], PETER SAUTER[6] AND MARKUS WIESER[7]

[1]Swiss Patient Safety Foundation, Asylstr. 77, Zuerich 8032, Switzerland, [2]Institute of Social and Preventive Medicine (ISPM), University of Bern, Bern, Switzerland, [3]Praxis Bubenberg, Bubenbergplatz 11, Bern 3011, Switzerland, [4]Medizinisches Zentrum Arbon, Schlossgasse 4, 9320 Arbon, Switzerland, [5]mediX Gruppenpraxis, Rotbuchstrasse 46, Zuerich 8037, Switzerland, [6]eastcare AG, Ikarusstrasse 9, St.Gallen-Winkeln 9015, Switzerland, and [7]hawadoc AG, Garnmarkt 1, Winterthur 8400, Switzerland

Address reprint requests to: Katrin Gehring, Swiss Patient Safety Foundation. Asylstr. 77. 8032 Zuerich, Switzerland. Tel: +41-43-2437670; Fax: +41-43-243-7671; E-mail: gehring@patientensicherheit.ch

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Abstract

Objective. To assess differences in safety climate perceptions between occupational groups and types of office organization in primary care.

Methods. Primary care physicians and nurses working in outpatient offices were surveyed about safety climate. Explorative factor analysis was performed to determine the factorial structure. Differences in mean climate scores between staff groups and types of office were tested. Logistic regression analysis was conducted to determine predictors for a 'favorable' safety climate.

Results. 630 individuals returned the survey (response rate, 50%). Differences between occupational groups were observed in the means of the 'team-based error prevention'-scale (physician 4.0 vs. nurse 3.8, $P < 0.001$). Medical centers scored higher compared with single-handed offices and joint practices on the 'team-based error prevention'-scale (4.3 vs. 3.8 vs. 3.9, $P < 0.001$) but less favorable on the 'rules and risks'-scale (3.5 vs. 3.9 vs. 3.7, $P < 0.001$). Characteristics on the individual and office level predicted favorable 'team-based error prevention'-scores. Physicians (OR = 0.4, $P = 0.01$) and less experienced staff (OR 0.52, $P = 0.04$) were less likely to provide favorable scores. Individuals working at medical centers were more likely to provide positive scores compared with single-handed offices (OR 3.33, $P = 0.001$). The largest positive effect was associated with at least monthly team meetings (OR 6.2, $P < 0.001$) and participation in quality circles (OR 4.49, $P < 0.001$).

Conclusions. Results indicate that frequent quality circle participation and team meetings involving all team members are effective ways to strengthen safety climate in terms of team-based strategies and activities in error prevention.

Keywords: patient safety, safety climate, medical errors, primary care

Introduction

Safety of health care has gained increasing attention in the past years. While most research has been conducted in hospital care, the available studies suggest that patients are at considerable risk in the outpatient care setting as well. The incidence of medical errors in primary care ranges from 5 to 80 per 100 000 consultations as Sanders and Esmail report [1]. In particular, preventable adverse drug events are frequent among patients in outpatient care [2, 3]. Gurwitz *et al.* report an overall rate of adverse drug events among older patients in the ambulatory setting of 50.1/1000 person-years, of which 28% were considered preventable [4]. Sarkar *et al.* recently estimated that ~4.5 million ambulatory visits related to adverse drug events occur each year in the US [5]. Studies based on staff members' incident reports in the UK yielded an error report rate of 75/1000 patient contacts in outpatient care [6]. In a similar study conducted in the US, errors and preventable adverse events were reported after 24% of outpatient visits [7]. In Australia, the incidence of error reported to an anonymous reporting system by general practitioners was 0.24% per patient seen per year [8].

Safety culture has been identified as a fundamental characteristic of and requirement for organizations that value and promote patient safety [9, 10]. It has been described as 'the product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organization's health and safety management' [11]. Safety climate, the measurable manifestation of safety culture, has been defined as the 'surface features of the safety culture from attitudes and perceptions of individuals at a given point in time' [12]. Safety climate is usually assessed with self-administered staff survey instruments, of which a number have been developed in the

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last years [13, 14]. Moderate positive associations of safety climate with safety performance and health outcomes have been reported previously [15, 16]. Research conducted in hospitals suggests that safety climate perceptions differ between occupational groups, specialty, function and, in particular, proximity to clinical care [17–21]. However, little research has been conducted to investigate differences in safety climate perceptions in primary care. In outpatient primary care, different occupational groups work often together in small teams, and it is unclear whether different perceptions of safety climate exist in these teams. There is also a large variety in the organizational type of primary care offices ranging from small single-handed offices in which the physician is also owner of the office and employer, over joint practices with two or more physicians, to large medical centers with employed physicians. These differences in office organization may also determine how team-based learning from and prevention of errors is established. The aim of this study was to assess safety climate in outpatient primary care. We investigated differences between occupational groups and types of medical office organization and analyzed the association of office organization with office teams' strategies for prevention and management of errors.

Methods

Survey

In a cross sectional study, primary care physicians and nurses working in outpatient offices were surveyed about the safety climate in their offices by questionnaire. The survey also asked participants to report the frequency of occurrence of specific safety incidents in their offices and the harm resulting from these incidents (data not reported here) [22]. The safety climate items were adapted from the SAQ (ambulatory office version), the PC-QUEST and the FRASIK (Frankfurt Patient Safety Climate Questionnaire), a German language safety climate survey for general practice [23–25]. English language items were translated into German forward and backward by two independent translators. All items were adapted to the Swiss health care system, culture and context. Nine items were newly developed, and 22 were derived from existing instruments. The final survey included 30 items relating to teamwork, stress recognition, job satisfaction, working conditions, perception of management, safety systems and climate. One additional item asked for a global rating of safety in the office. Respondents rated their agreement with each item using a 5-point Likert scale ranging from 1 (disagree strongly) to 5 (agree strongly). Background information on the respondent and their working environment were also obtained. The questionnaire was tested iteratively with eight practitioners. We focused on the comprehension of the single items and reduced ambiguous or unclear wordings. The questionnaire was adapted accordingly.

Sample

The sample consists of all primary care physicians ($n = 627$ physicians) and 627 nurses formally organized in four large physician networks (labeled A–D hereinafter) and included 472 offices. The physician networks were selected because they cover a broad range of office types and regions in the German-speaking part of Switzerland including two metropolitan areas, smaller cities as well as rural regions. Two networks (C and D) oblige their members to adhere to guidelines and quality of care standards (e.g. participation in quality circles) and have medical network directors. Networks A and B predominantly collaborate in organizational and financial issues. In addition to the heterogeneity of affiliated offices, we chose to approach networks because network affiliation of physicians facilitated organization of data collection. The physicians were mailed the questionnaire together with a cover letter and pre-paid envelope. Each physician received two complete survey sets. The physician was instructed to pass the set labeled 'nurse' to one nurse according to the alphabetic position of the first letter of the last names of all nurses working in the office. The nurses of each participating office were sent a letter to inform about the study, announce the survey and explain how they would receive the questionnaire by the physician. The survey was completely anonymous. A reminder including an identical set of questionnaires was sent after two weeks to the entire sample.

Data analysis

Returned questionnaires were digitally scanned. Negatively worded items were reverse-coded. All items were considered to have equal weighting. Explorative factor analysis (EFA) was performed by principal-component analysis with oblique rotation to determine the factorial structure of the instrument. Factors were selected based on a scree plot and eigenvalues. Following the criterion that the eigenvalues of the new factors should be >1 (Kaiser–Guttmann criterion), a four-factor solution is suggested. Elbow criteria tended to favor a five-factor solution, but this fifth factor represented no meaningful constellation. The four-factor solution showed the best interpretation of the data. Items that showed loadings <0.40 or nearly identical loadings on two or more factors (high cross-loadings) were excluded from analysis and are not considered in the final factor solution. Internal consistency of the remaining items in the scales was measured using Cronbach's Alpha. For the final factor composition, item loadings <0.40 were not considered. For each identified scale, scale scores were calculated by summing the item scores for each scale and dividing it by the number of completed items of the scale. The scale score thus ranges from 1 to 5. Higher scores represent a more positive attitude. For each respondent, a mean score of ≥4 for the items in a particular factor implies a 'positive safety attitude' for that factor. To ease interpretation of results and comparison with other safety climate survey studies, the percentage of responders with a 'positive' safety climate response was calculated by dichotomizing scores <4 as 'unfavorable' and scores ≥4 as 'favorable' [23, 26]. T-tests and analyses of variance were conducted to test for differences in mean scale scores, single item measures of safety climate and overall ratings of patient safety between occupational groups (physicians vs. nurses) and types of office (single handed vs. joint practice vs. medical center).

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Logistic regression analysis was conducted to determine predictors for a 'favorable' safety climate (dependent variable). To systematically include a broad range of potential influential factors, we used variables from the individual, the office, and the network level to predict safety climate scores: respondents' characteristics (age, occupational group, years of professional experience, years of staff membership in this office), office characteristics (type of medical office, number of staff in the office, office location, whether there is a staff member in charge of quality assurance, whether there are regular team meetings with the entire office team, participation in quality circles) and network affiliation were entered as independent variables. We also estimated a linear multiple regression model with climate scores as dependent variable. However, this model yielded essentially the same results. To study the joint effects of respondent and office characteristics, the logistic regression model was then used to predict probabilities for a favorable (≥4) 'team-based error prevention'-score by occupational group, type of office and frequency of team meetings and quality circle participation. Finally, we investigated the level of inter-rater agreement in climate scores by office type and network to assess whether individuals' agreement was stronger on the office or the network level. We estimated r_{wg}, an index of inter-rater agreement for groups defined by office type and network affiliation [27, 28]. All tests were two-sided, and a P-value < 0.05 was regarded significant.

Results

Of the 1254 invited individuals, 630 (50.2% physicians, 49.8% nurses) returned the questionnaire (response rate in both groups: 50%). Details of responders and the offices are provided in Table 1.

Explorative factor analysis

Kaiser–Meyer–Olkin measure for sampling adequacy (KMO = 0.89) and Bartlett's Test of sphericity (Chi-square = 3406.31; $P < 0.001$) confirmed that the data are suitable for factor analysis. The exploratory factor analysis yielded a four-factor solution for 24 items. Six items were excluded from the final factor composition. The four factors were labeled based on the items contained in the cluster: office climate (nine items, Cronbach's Alpha = 0.82), team-based error prevention (seven items, Cronbach's Alpha = 0.77), assignment of responsibilities (five items, Cronbach's Alpha = 0.70) and rules and risks (four items, Cronbach's Alpha = 0.51). Cronbach's Alpha of the entire instrument was 0.85. Results of the factor analysis are presented in Table 2. The four-factor structure explained 47% of the total variance.

Safety climate scores

The percentage of participants with a positive climate response ('favorable score' ≥4) differs strongly between the safety-climate scales (range, 97–48%, Table 3). The 'team-based error prevention'-scale and the 'rules and risks'-scale have the

Table 1 Characteristics of responders and their work environment (n = 630 responders)

Variable	n (%) responders
Occupational group	
Physician	316 (50.2)
Nurse	314 (49.8)
Female gender	363 (58.3)
Age, years	
<31 years	185 (29.5)
31–50 years	235 (37.5)
51–60 years	135 (21.5)
>60 years	72 (11.5)
Years of professional experience	
1–5 years	153 (24.7)
6–10 years	109 (17.6)
>10 years	358 (57.7)
Years of work in this office	
1–5 years	246 (39.4)
6–10 years	113 (18.1)
>10 years	265 (42.5)
Percent by position in this office	
Full time in this office	403 (64.6)
Part-time >50%	154 (24.7)
Part-time ≤50%	67 (10.7)
Type of medical office	
Single-handed practice	333 (53.3)
Joint practice	189 (30.2)
Medical center (group practice)	103 (16.5)
Location of medical office	
Large or medium city	243 (39.0)
Agglomeration of city	99 (15.9)
Town or village	281 (45.1)
Professionals in the office	
More than two physicians	165 (26.6)
More than two nurses	304 (49.4)
At least one apprentice	386 (74.7)
Other health professionals working in the office (e.g. physiotherapists)	152 (34.5)
Designated staff member in charge of quality assurance	
Yes	499 (81.8)
Regular team meetings with the entire office team	
Never	77 (12.5)
Several times a year	226 (36.6)
At least monthly	315 (51.0)
Regular participation in a quality circle[a]	
Never	140 (23.2)
Several times a year	205 (34.0)
At least monthly	258 (42.8)
Associated physician network	
A	266 (42.2)
B	128 (20.3)
C	106 (16.8)
D	130 (20.6)

They are organized for nurses and physicians separately.
[a]Quality circles are not attended by entire office team.

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Table 2 Factor loadings for explanatory factor analysis (principal-component analysis with oblique rotation) and Cronbach's Alpha for each factor (n = 515 with no missing data)

Nr.	Item	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1. Office climate (Cronbach's Alpha = 0.82)					
1	The physicians and nurses here work as a well-coordinated team.	0.70			
7	This office is a good place to work.	0.73			
2	Nurse input is well received in this office.	0.67			
27	The culture in this office makes it difficult for me to take responsibility for my errors.[a]	0.66			
26	The culture in this office makes it easy to learn from errors of others.	0.60			
24	Personnel in this office is treated unfairly in case of errors happening.[a]	0.56			
4	It is easy for personnel in this office to ask questions when there is something that they do not understand.	0.50			
3	I have the support I need from other personnel to care for patients.	0.44			
11	This office does a good job of training new personnel.	0.43			
Factor 2. Team-based error prevention (Cronbach's Alpha = 0.77)					
10	Patient safety is commonly an agenda item at team meetings.		0.81		
9	In this office, we have trainings and courses on a regular basis to have less errors happening.		0.72		
25	Errors that occur in this office are discussed in the team.		0.66		
21	In this office, we have trainings of the most frequent emergency situations (e.g. cardiac arrest, respiratory arrest, anaphylactic shock, etc.) on a regular basis.		0.66		
23	There is a well-defined procedure how to report errors and critical incidents.		0.62		
29	In case an error occurred, we take action to prevent similar errors from happening again.		0.50		
Factor 3. Assignment of responsibilities (Cronbach's Alpha = 0.70)					
17	All drugs, vaccines and other supplies with limited shelf-life are regularly checked for expiry dates.			0.73	
16	Equipment in this office is regularly checked and maintained.			0.71	
18	I am aware of the person responsible for maintenance of equipment and drug evaluation in our office.			0.66	
13	Work processes are well coordinated in this office.			0.53	
14	Everyone in the team knows the field of work he or she is responsible for.			0.49	
Factor 4. Rules and risks (Cronbach's Alpha = 0.51)					
20	During shift change or transfer of responsibility for a patient, important information gets lost.[a]				0.71
5	Workload in this office increases risk for errors.[a]				0.65
22	Staff frequently disregards rules and guidelines that are established for this office (e.g. hand washing, treatment protocols/clinical pathways, sterile filed, etc.).[a]				0.55
15	Staff in this office follows the established rules for issuing prescriptions.				0.40

Factor loadings <0.40 are not presented.
[a]Reverse-scored items.

lowest percentages of favorable scores (55 and 48%, respectively). The mean of the global safety climate item was 4.64 (SD = 0.59) across all offices. Ninety-seven percent of responders provided a favorable response to this item.

Differences between occupational groups and medical office type

Significant differences between occupational groups were observed in the means of the 'team-based error prevention'-

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Table 3 Mean, standard deviation percentage of favorable scores (≥4) and group differences (occupational group, type of office) for the safety climate scales

Scale or item	Mean (SD)	% Favorable scores	Occupation			Office type			
			Nurse mean (SD)	Physician mean (SD)	*P*	Single-handed mean (SD)	Joint practice mean (SD)	Medical center mean (SD)	*P*
Scale 1: office climate	4.57 (0.44)	92.54	4.55 (0.52)	4.60 (0.36)	0.16	4.61 (0.44)	4.51 (0.46)	4.57 (0.41)	0.06
Scale 2: team-based error prevention	3.93 (0.73)	55.40	3.83 (0.74)	4.04 (0.70)	<0.001	3.83 (0.72)	3.91 (0.77)	4.30 (0.55)	<0.001
Scale 3: assignment of responsibilities	4.66 (0.39)	95.56	4.65 (0.42)	4.67 (0.36)	0.52	4.70 (0.36)	4.58 (0.45)	4.68 (0.33)	0.01
Scale 4: rules and risks	3.80 (0.67)	48.10	3.87 (0.71)	3.72 (0.63)	0.007	3.91 (0.64)	3.74 (0.69)	3.54 (0.67)	<0.001

scale and the 'rules and risks'-scale. Significant differences between office types were observed for means of scale 2 ('team-based error prevention'), scale 3 ('assignment of responsibilities') and scale 4 ('rules and risks'). Medical centers scored higher compared with single-handed offices and joint practices on the 'team-based prevention of error'-scale but less favorable on work load and compliance with rules ('rules and risks'-scale).

Predictors for a favorable 'team-based error prevention' climate

Table 4 presents results of the logistic regression model on the dichotomized scale score of the 'team-based error prevention'-scale. The Hosmer–Lemeshow test (chi-square 9.77, $P = 0.282$) indicates that the estimates of the model fit the data well. Characteristics on the individual, the office and the network level predicted favorable 'team-based error prevention'-scores. Physicians and less-experienced individuals were less likely to provide favorable scores. Individuals working at medical centers were three times more likely to provide positive scores compared with single-handed offices. The largest positive effect is associated with at least monthly team meetings and participation in quality circles. Affiliates of network D were also more likely to provide favorable scores.

The joint effects of respondent and office-level characteristics on the likelihood of a favorable 'team-based error prevention'-score are displayed in Fig. 1. Irrespective of occupational group and type of office, team meetings and quality circle participation at least monthly result in a high probability of favorable scores ($P > 0.5$). In single-handed and joint offices, team meetings and quality circle participation several times a year (but less than monthly) yield positive scores in nurses, but not in physicians. The highest likelihood of a favorable 'team-based error prevention'-score is observed for nurses and physicians in medical centers with team meetings and quality circle participation at least monthly ($P = 0.89$).

Level of agreement among responders in 'team-based error prevention' climate

To illuminate whether agreement among responders was higher on the office type or network level, we estimated r_{wg}, an index of inter-rater agreement for the 'team-based error prevention'-scale (scale 2) by office type and network. All scores exceeded the recommended 0.7 threshold (r_{wg} range, 0.79–0.90), suggesting a good level of inter-rater agreement. However, there were no substantial and systematic differences in r_{wg} between office types and networks. The highest level of agreement among responders was found for medical centers ($r_{wg,}$ 0.89) and network D affiliates ($r_{wg,}$ 0.90).

Discussion

Summary of main findings

In this study, we report about an instrument to assess different dimensions of safety climate and its application to Swiss

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Table 4 Results of logistic regression on favorable scores on the 'team-based error prevention'-scale ($n = 567$ with no missing data)

Variable	Odds ratio	(CI)	*P*
Physician	0.40	0.20, 0.78	0.01
Years of professional experience <6 years	0.52	0.27, 0.98	0.04
Years of work in this office <6 years	0.69	0.40, 1.21	0.19
Type of medical office (base: single-handed practice)			
Joint practice	1.07	0.67, 1.70	0.79
Medical center (group practice)	3.33	1.62, 6.82	0.001
Staff member in charge of quality assurance	1.80	1.07, 3.02	0.03
Regular team meetings with the entire office team (base: never)			
Several times a year	2.96	1.42, 6.15	0.01
At least monthly	6.20	2.93, 13.09	<0.001
Regular participation in a quality circle (base: never)			
Several times a year	2.24	1.22, 4.12	0.01
At least monthly	4.49	2.01, 10.05	<0.001
Physician network organization (base: A)			
B	1.02	0.60, 1.74	0.94
C	1.38	0.75, 2.54	0.30
D	4.23	2.20, 8.12	<0.001
Constant	0.12	0.05, 0.28	<0.001
Likelihood chi-square overall model			<0.001
Hosmer–Lemeshow goodness-of-fit test			0.28
McKelvey and Zavoina's R2	0.38		

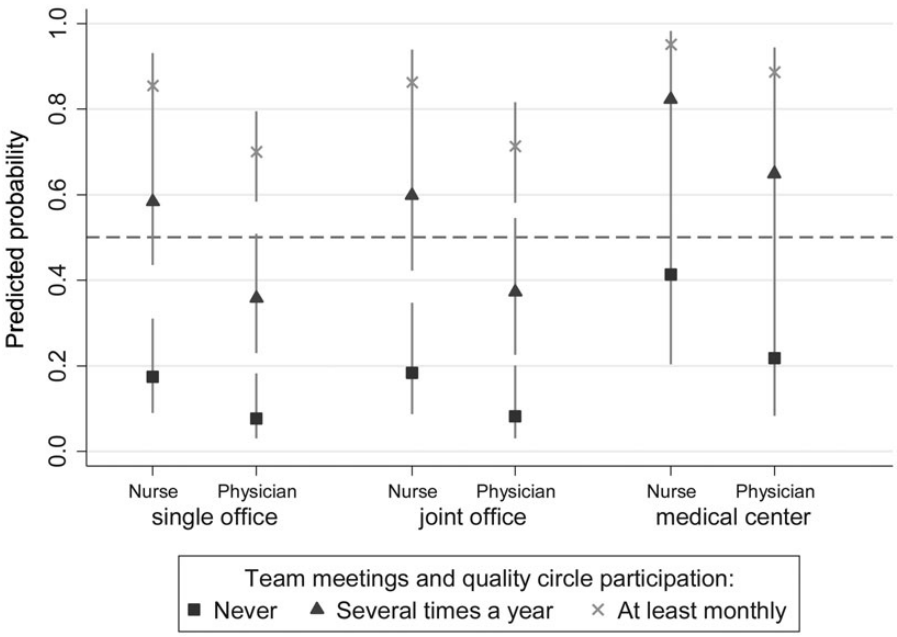

Figure 1 Predicted probabilities of a favorable (≥4) team-based error prevention score (scale 2) by occupational group (individual level), type of office and frequency of team meetings and quality circle participation (office level). All other variables set constant at their median. The red dashed line indicates the threshold probability of 0.5.

primary care offices. Nurses scored significantly higher than physicians on the 'rules and risks'-scale (scale 4), and significantly lower on the 'team-based error prevention'-scale (scale 2). The comparison of the office types shows highest scores for single-handed offices on 'office climate' (scale 1), 'rules and risks' (scale 4) and 'assignment of responsibilities' (scale 3).

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Contrary, medical centers scored significantly higher on the 'team-based error prevention'-scale (scale 2) compared with single and joint offices. We found large variability in safety climate scores in the team-based error prevention dimension. Items in this scale represent procedures and standards in the office that support a shared understanding of all team members regarding office processes on safety.

Favorable scores on the team-based error prevention dimension were significantly determined by predictors on the individual level, the office level as well as the affiliated network level. The largest fraction of variance in 'team-based error prevention'-scores can be attributed to non-individual characteristics, namely the type of medical office, practice procedures (regular team meetings, quality circle participation) and the affiliation to a specific network. The relevant practice procedures (participation in team meetings and quality circles) focus on team processes and emphasize the importance of joint activities and exchange amongst professionals in the prevention, management and work-up of errors in the offices. The effect of network association can in part be explained by the obligations these networks place on associated physicians in terms of quality management and certification. For example, network D fosters quality circles for nurses. Network affiliation may also cover latent, unmeasured office and staff characteristics.

Strengths and limitations of the study

The main strengths of this study are the large sample size and the nearly equal participation of physicians and nurses. We were able to relate differences in perceived safety climate to individual and office characteristics. We acknowledge the limitations of our study: first, we sampled only offices associated with a physician network organization that limits the generalizability of our results. Network organizations place specific requirements on their members, which leads to rather high standards in these networks [29]. In addition, we cannot rule out response bias. Unfortunately, no data are available to allow comparison of responders with non-responders, or even our sample with national or regional data of offices on relevant characteristics. Second, due to the small number of cases in some cells, we could not explore associations of staff and office characteristics with office climate (scale 1) and assignment of responsibilities (scale 3). Third, the internal consistency of scale 4 (rules and risks) was rather moderate. As Cronbach's Alpha is affected by the number of items in a scale, which is small in scale 4, we accepted the limited internal consistency of this factor. Future research in other samples is needed however to explore other factor solutions and confirm or disregard our four-factor model. Finally, we do not know whether scores on our safety climate instrument are in fact related to patient safety. Recent research suggests that SAQ safety climate scores are moderately associated with mortality and length-of-stay in intensive care [16]. In general, however, there is yet little strong evidence that safety climate is linked to clinical outcomes [30].

Comparison with existing literature

In our study, safety climate, especially team-based safety activities, was determined by individual-, office- and network-level characteristics. Our analyses of inter-rater agreement suggest that staff working at medical centers and affiliates of network D share a high level of agreement in evaluating team-based error prevention climate. However, our results do not indicate which of the two characteristics (office type and network) are more relevant. Thus, to understand differences in safety climate and their origin, these different levels have to be considered. This mirrors results from the hospital setting: Deilkas *et al*. report that variance in safety culture scores is related to both, the ward level, at which teams are constituted, and the department level [31]. Thus, to study variations and potentially improve safety climate, the hospital level may not be the most relevant organizational unit to be addressed. In analogy, in primary care, analyses on the office level may not suffice. Rather, the consideration of higher organizational levels, such as network affiliation, may provide additional valuable insight into safety climate. This may become even more relevant as primary care will be increasingly organized within managed care frameworks.

In our study, office type was an important predictor of favorable team-based error prevention climate scores. Gaal *et al*. report that there is an effect of practice size on patient safety management features in primary care. Larger offices with three and more physicians scored higher, e.g. in medication safety management, practice building safety, incident reporting or medical record keeping [32]. Larger primary care offices seem to put stronger emphasis on team involvement into error prevention activities as well as in the implementation of specific measures of patient safety management. Obviously, with higher numbers of staff involved and more complex structures, there is more need for rules and team-based procedures. Our results add to that evidence that monthly team meetings with the entire office team are an important feature, irrespective of the specific office type. Non-compliance and overriding of rules was reported more frequently among larger offices compared with single-handed offices. However, this effect may simply be due to the fact that larger offices may establish rules for behaviors under risk (that can then be broken), while smaller offices do not. In other words, the observed difference does not necessarily reflect a higher frequency of rule-breaking, and thus risky behavior in larger offices but a higher degree of self-perceived non-compliance with implemented rules.

Implications for future research or clinical practice

Our study provides important findings on safety climate in primary care and its organizational precursors. Despite the limitations due to the correlational nature of our data, the results suggest that primary care offices can benefit from regular team meetings involving nurses and physicians and from rather frequent participation in quality circles. These positive effects of quality circles and team meetings were

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observed for all types of offices and in both professional groups. This implies that perceptions of team-based error prevention climate are influenced by processes and structures implemented at the office level. However, quality circles are mainly implemented for physicians whereas quality circles for nurses and entire teams are still rare. Future research is clearly needed regarding the optimal frequency and configuration of team-based activities and their effects on safety culture and safety incidents. It will also be valuable to examine whether team-based activities decrease differences between safety perceptions of different groups of staff and foster a shared understanding of safety in the medical office. Our study also revealed that single offices, joint offices and medical centers differ in strengths and weaknesses regarding safety climate. This suggests that safety climate in primary care should be analyzed and discussed relative to office type rather than 'lumping together' all primary care offices. Moreover, research is needed to gain a more detailed understanding of the relationship between office size and the different dimensions of safety climate.

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Ethical approval

Ethical approval is not required for this study in Switzerland.

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