Journal of the
Bahrain Medical Society

Shaheen H et al., J Bahrain Med Soc. 2022;34(2):1-9

ORIGINAL ARTICLE

Assessing the Perception of Safety Climate in Primary Care Doctors in Bahrain: A Cross Sectional Study

Hanin Shaheen[1,*], Ali Ahmed[2], Fatima Al Mulla[2], Hamad Al Jalahma[2], Ejlal Al-Alawi[3]

[1]Primary care, Ministry of Health, House: 3077, Road :3956, Block 939, East Riffa, Kingdom of Bahrain
[2]Family Medicine Resident, Primary Health Care, Ministry of Health, Kingdom of Bahrain
[3]Family Medicine Resident, Primary Health Care, Ministry of Health, Kingdom of Bahrain
[4]Family Medicine Resident, Primary Health Care, Ministry of Health, Kingdom of Bahrain
[5]Family Medicine Consultant, Ministry of Health, Kingdom of Bahrain

***Corresponding author:**
Dr.Hanin Shaheen, Primary care, Ministry of Health, House: 3077, Road: 3956, Block 939, East Riffa, Kingdom of Bahrain; E-mail: haninmurad87@gmail.com

Received date: August 6, 2021; **Accepted date:** December 2, 2021; **Published date:** June 30, 2022

Abstract

Background: Safety climate is the behavior and perception of health care providers in maintaining a safe environment. The study of safety climate in primary health care was limited. In Bahrain the concept of assessing safety climate were understudied, which drew attention to this important aspect in health care quality to be studied.

Objective: The aim of the study was to evaluate the perception of safety climate practice in primary health care in Bahrain.

Methods: This was a cross sectional observational study. A Safety-Tool "Primary Care-Safe Quest" questionnaire was distributed among 28 health centers in Bahrain, to 279 doctors. The questionnaire consists of 30 items that are grouped into five subscales: Workload, Communication, Leadership, Teamwork and Safety system & Learning.

Results: There was no significant difference in perception of safety climate in primary care doctors according to region (p=0.753), and work experience (p=0.301). Male doctors had higher perception of workload compared to the female doctors(p=0.039). There was no significant difference in perception in communication, leadership, teamwork, safety system and learning. Workload aspect showed low level of safety perception, while the other domains showed moderate level of safety perception.

Conclusion: Overall the perception of safety climate among primary doctors in Bahrain was found to be moderate. Workload was an important area to be improved as it would lead to a better safety climate. Although the other domains were considered moderate there is still room for improvement.

Keywords: Communication, Leadership, Perception, Primary Health Care, Workload.

Background

Patient safety is defined as the avoidance and prevention of adverse events in healthcare services.[1] Safety climate is the collective value, behavior, and

perception of healthcare providers in maintaining safety environment.[2] The field of safety climate assessment has been heavily evaluated in various industries where immediate consequences exist, for instance aviation, nuclear energy and mining. [3-8]

Worldwide, assessing safety climate in health care facilities has been under evaluated in general, and particularly in primary health care facilities.[9-10] In Scotland, many healthcare organizations have begun to look critically at ways to improve their safety climate. Various instruments and toolkits have been developed for this purpose. One of these toolkits is the "Primary Care-SafeQuest" questionnaire. This questionnaire has been used to measure the perception of safety climate in primary health care.[3, 11-13] The purpose of developing this questionnaire was to enable the benchmarking of results for important safety climate factors so that healthcare organizations can monitor, compare and influence these factors over time.[5] In addition to benchmarking, it is aimed to aid in focusing attention on safety related issues and to work on enhancing interventions toward these issues. [13]

In England, family practice is wrongly perceived as a low-risk environment.[14] Although critical errors may lead to serious morbidity and mortality, it is equally important to focus on hospital errors and to develop and evaluate the safety climate by providing quantitative results.[11-12,15] An extensive literature search conducted in England by Campbell, *et al.* studied six different patient safety toolkits and revealed that "Primary care-SafeQuest" was favored; this was because of its simplicity and ease of completion.[16]

In Ireland, a study was conducted by Curran*, et al.* which evaluated safety climate in Irish primary care and examined whether perceptions of safety-related domains varied significantly according to respondents' characteristics.[17] They also compared their sample to data from English and Scottish studies.[18] The study showed that General practitioners perceived their work as a greater threat than practice administrators do. They also perceived more negative impact of workload on safety than administrative staff. These results were similar to those published from English and Scottish studies.[17]

SafeQuest:
Measuring perceptions of safety climate in primary care

Please read each item below and circle the number that best represents the extent to which each statement **applies to or characterises** your practice. Don't take too long over your replies. Your immediate reaction to each item will more likely be accurate than a long, thought-out response.	7. to a very great extent 6. to a great extent 5. to a considerable extent 4. to a moderate extent 3. to a limited extent 2. to a very limited extent 1. not at all						
1. Workload							
a) The performance of team members is impaired by excessive workload.	1	2	3	4	5	6	7
b) Team members always have enough time to complete work tasks safely.	1	2	3	4	5	6	7
c) The level of staffing in the practice is sufficient to manage the workload safely.	1	2	3	4	5	6	7
d) When pressure builds up, team members are expected to work faster even if it means taking shortcuts.	1	2	3	4	5	6	7
2. Communication							
a) Team members feel free to question the decisions of those with more authority.	1	2	3	4	5	6	7
b) Team members are comfortable in expressing concerns to the practice leadership about the way things are done in the practice.	1	2	3	4	5	6	7
c) There is open communication between team members across all levels in the practice.	1	2	3	4	5	6	7
d) Team members are kept up to date about practice developments.	1	2	3	4	5	6	7
e) The practice leadership communicates its vision for the development of the practice.	1	2	3	4	5	6	7
3. Leadership							
a. The hierarchy in the practice is a barrier to effective working.	1	2	3	4	5	6	7
b. Highlighting a significant event will likely result in negative repercussions for the person raising it.	1	2	3	4	5	6	7
c. The practice leadership does not deal effectively with problem team members.	1	2	3	4	5	6	7
d. When team members suggest ways to improve how things are done, the practice leadership does not take this seriously.	1	2	3	4	5	6	7
e. There is a low level of trust between practice team members.	1	2	3	4	5	6	7
f. Practice team members frequently disregard rules, protocols and procedures.	1	2	3	4	5	6	7

Please read each item below and circle the number that best represents the extent to which each statement **applies to or characterises** your practice. Don't take too long over your replies. Your immediate reaction to each item will more likely be accurate than a long, thought-out response.	7. to a very great extent 6. to a great extent 5. to a considerable extent 4. to a moderate extent 3. to a limited extent 2. to a very limited extent 1. not at all						
4. Teamwork							
a) Team members treat each other with respect.	1	2	3	4	5	6	7
b) Team members always support one another.	1	2	3	4	5	6	7
c) Disagreements within the practice team are resolved appropriately.	1	2	3	4	5	6	7
d) Team members work well together at all levels within the practice.	1	2	3	4	5	6	7
e) The practice is a good place to work.	1	2	3	4	5	6	7
f) Team members are generally satisfied with their jobs.	1	2	3	4	5	6	7
g) The need to work well as a team is promoted by the practice leadership.	1	2	3	4	5	6	7
5. Safety Systems & Learning							
a) All team members are encouraged to highlight significant events that happen in the practice.	1	2	3	4	5	6	7
b) Practice procedures help to prevent significant events from happening.	1	2	3	4	5	6	7
c) Decision-making relating to the development of practice protocols uses input from all team members.	1	2	3	4	5	6	7
d) The practice takes the time to formally assess risks (e.g. to patients, to team members and to the practice).	1	2	3	4	5	6	7
e) All team members have the opportunity to participate in the analysis of significant events.	1	2	3	4	5	6	7
f) The quality and safety of patient care in the practice is taken seriously.	1	2	3	4	5	6	7
g) The practice supports the continuing educational development of all team members.	1	2	3	4	5	6	7
h) The practice encourages learning from the ideas and concerns of team members at all levels.	1	2	3	4	5	6	7

Please add any comments regarding your practice's safety climate in the space below:

 SafeQuest www.hf.gpsafetyclimate.com

Regionally, there were limited studies found in measuring safety climates in health care systems with no research focusing on the perception of safety climate.[19] In Saudi Arabia, health care

organizations were working on improving patient safety and quality care through implantation of safety system and creating a culture of safety. This was seen in a study published by Alahamdi H which evaluated the extent to which the culture supports patient safety in Saudi hospitals. The study showed leadership was one of the important elements that affect culture safety; the area of improvement focused on eliminating fear of blame, creating a climate of open communication, and continuous learning.[19]

In The Kingdom of Bahrain, the concept of assessing the perception of safety climate was lacking. Due to the importance of this matter, it is of value to focus attention on this topic.

It is believed that the conducted study can be used as reference for further studies in the future. It can also help in determining whether there is a culture of blame or other problems that can be associated with a poor safety climate. It might also contribute in health care quality improvement as the aim of this study was to increase awareness of safety climate among doctors in primary health care centers in Bahrain. This was done by evaluating the perception of safety climate practice in primary health care in Bahrain.

Material and Method

Study design

A cross-sectional observational study was conducted in all primary health centers in Bahrain. This included 28 primary health centers distributed between the five health regions in Bahrain.

Sample Size

At the time of this study, there were 333 doctors in Primary health care in Bahrain. According to the population size, Slovin formula was used to calculate the sample size needed for this study. This was estimated at 182 doctors. In order to achieve the target, questionnaires were distributed to all the doctors who were available in service during the data collection period (1st of February 2020 to 14th of February 2020). Doctors who were on leave or not available during the data collection period were excluded.

Ethical statements

In assessing the perception of safety climate in primary health care centers, the data was collected after taking a verbal consent from the doctors and a written consent was sent to the head of each health center. Participants received information regarding the purpose of conducing the study. All the questionnaires were filled anonymously.

The Research committee in the Ministry of Health in Bahrain approved the submitted study protocol.

The Study Tool

The study used a Safety-Tool "Primary Care-Safe Quest" questionnaire as the study tool. [20] This questionnaire was developed, validated and implemented in Scotland to measure the perception of safety climate in primary health care. It consists of 30 items that are grouped into five subscales. 1. Workload, 2. Communication, 3. Leadership, 4. Teamwork 5. Safety system & Learning. It is filled by numbers ranging from (1-7), 1= not at all, 2= To a very limited extent, 3=To a limited extent, 4= To a moderate extent, 5= to a considerable extent, 6 = to a great extent, 7= To a very great extent. (index 1)

Index 1

Background:

How long have you worked in this position in your practice?	
< 1 year	
1 – 5 years	
5 – 10 years	
10 – 20 years	
> 20 years	

How long have you worked overall in primary care in any job or practice?	
< 1 year	
1 – 5 years	
5 – 10 years	
10 – 20 years	
> 20 years	

Please select your work pattern	
Full time	
Part time	

Please indicate your gender	
Male	
Female	

Thank you for your time and participation

If you have any further questions regarding SafeQuest, please direct them to the following contact:
Dr. Carl de Wet (carl.dewet@nes.scot.nhs.uk)
NHS Education Scotland, 3rd Floor, 2 Central Quay
89 Hydepark Street, Glasgow, G3 8BW

 SafeQuest www.hf.gpsafetyclimate.com

The workload subscale is the average of the first 4 items on the scale (Q1 through Q4), the communication subscale is the average of the next 5 items (Q5 through Q9), the leadership subscale is the average of the next 6 items (Q10 through Q15), the teamwork subscale is the average of the next 7 items (Q16 through Q22), and the safety systems subscale is the average of the next 8 items (Q23 through Q30). (Index 1)

Data collection and Procedure

The sampling technique involved selecting all doctors in primary health care in Bahrain. A written consent was sent to the head of each health center through email and a written consent was taken before filling each of the questionnaires by the participants. Each questionnaire was numbered to calculate the response rate. The questionnaire was handed to the head doctor of each health center and then distributed among the doctors. After filling the questionnaire, it was inserted by the doctor into a sealed envelope and was collected by the researchers in a box to maintain anonymity.

Scoring

Campbell*, et al.* in their study used a mean score ranging from 4 to 6, and consider the scale score of 4 as moderately well-developed, and a scale score of 6 was considered to a great extent well-developed safety climate.[14] Due to the limited scoring system in literature, the statistician was involved to identify the cut off point for the total score , first and third quartiles were computed and found that Q1 = 4.1 and Q3 = 5.43 upon which the categorization was set for the total score as follows. Below < 4.1 was considered low perception, 4.1 – 5.4 was considered moderate perception and above 5.4 was considered high perception of safety climate. Negatively phrased questions were reverse scored for consistency. Each question in the domain had equal weight. The average for each domain for all the collected questionnaire was measured and analyzed as per region, gender, work experience and collectively. Also, an average score of all answered questionnaires was measured.

Statistical analysis

SPSS version 23 software was used for data entry and analysis. Frequencies and percentages were computed for categorical variables, mean and standard deviation were computed for continuous variables. T test was used to determine significant difference between two groups, while ANOVA was used to determine significant difference in mean score between more than two groups. A *p*-value of less than 0.05 was considered statistically significant.

Results

A total of 333 doctors are registered in primary health care services in Bahrain at the time of the study, 279 doctors were available during the time of data collection. The total number of questionnaires collected and reviewed were 222. With a response rate of 79.5%; doctor characteristics and the overall working experience is demonstrated in Table1.

Table 1: Demographic characteristics of the respondents. Values are numbers (%).

Demographic characteristics		n (%)
Health region N=222	Health region 1	59 (26.6)
	Health region 2	23 (10.4)
	Health region 3	48 (21.6)
	Health region 4	42 (18.9)
	Health region 5	50 (22.5)
Overall practice in current position N=221	<5 years	51 (23.1)
	5-10 years	53 (24)
	10-20 years	65 (29.4)
	>20 years	52 (23.5)
Overall practice in primary care N=221	<5 years	26 (11.8)
	5-10 years	56 (25.3)
	10-20 years	74 (33.5)
	>20 years	65 (29.4)
Work pattern N=217	Full time	208 (95.9)
	Part time	9 (4.1)
Gender N=219	Male	56 (25.6)
	Female	163 (74.4)

The mean score of the five domains is shown in Table 2.

Table 2: Mean Score in Studies Safety Domains

Mean Score in Studies Safety Domains	Mean (SD)
Workload	2.97 (1.03)
Communication	4.71 (1.49)
Leadership	4.75 (1.31)
Teamwork	5.30 (1.12)
Safety system & Learning	4.88 (1.34)
Total score	4.67 (1.00)

Total score

The overall safety perception was highest for Teamwork 5.30 (SD 1.12) and the lowest was for Workload 2.97 (SD 1.03). No significant difference between region (p=0.753), overall years of practice in position (p=0.442), overall years of practice in primary care (p=0.301) and gender (p=0.261) was noted. (Table 3)

There was no significant difference while comparing the demographic data with safety climate domains except for workload domain in gender category that showed significant difference (p- 0.039) in which females had a mean of 2.9 (SD 1.06) compared to 3.2 (SD 0.86) among males. (Table 3)

Table 3: Relationship between demographic characteristics and safety domains

Mean (SD)		Workload	Communication	Leadership	Teamwork	Safety system & Learning	Total score
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Health region	Health region 1	2.9 (1.01)	4.71 (1.31)	4.83 (1.09)	5.35 (1.02)	4.84 (1.34)	4.68 (0.95)
	Health region 2	2.99 (1.16)	4.89 (1.47)	4.57 (1.46)	5 (1.14)	4.65 (1.32)	4.54 (0.93)
	Health region 3	2.94 (0.99)	4.73 (1.57)	4.94 (1.16)	5.23 (1.07)	4.72 (1.43)	4.65(1.01)
	Health region 4	3.2 (1.02)	4.36 (1.64)	4.23 (1.65)	5.41 (1.15)	4.85 (1.33)	4.57 (1.15)
	Health region 5	2.87 (1.05)	4.92 (1.51)	5 (1.22)	5.37 (1.23)	5.19 (1.25)	4.84 (0.97)
	P-value	0.517	0.575	0.102	0.537	0.408	0.753
Overall practice in current position	<5 years	2.83 (1.15)	4.53 (1.65)	4.67 (1.35)	5.15 (1.24)	4.66 (1.54)	4.51 (1.17)
	5-10 years	2.89 (0.98)	4.75 (1.25)	4.89 (1.21)	5.22 (0.99)	4.95 (1.25)	4.69 (0.84)
	10-20 years	2.96 (0.93)	4.73 (1.32)	4.82 (1.32)	5.43 (0.99)	4.81 (1.24)	4.7 (0.93)
	>20 years	3.21 (1.06)	4.89 (1.73)	4.68 (1.34)	5.44 (1.2)	5.17 (1.24)	4.83 (0.99)
	P-value	0.250	0.672	0.787	0.408	0.240	0.442
Overall practice in primary care	<5 years	2.77 (1.29)	4.75 (1.76)	4.6 (1.33)	5.27 (1.23)	4.83 (1.59)	4.6 (1.15)
	5-10 years	2.79 (1.02)	4.46 (1.39)	4.71 (1.26)	4.98 (1.09)	4.74 (1.39)	4.48 (0.99)
	10-20 years	3.11 (1.01)	4.79 (1.46)	4.87 (1.29)	5.49 (1.02)	4.95 (1.26)	4.8 (0.96)
	>20 years	3.06 (0.91)	4.88 (1.47)	4.78 (1.36)	5.42 (1.11)	4.98 (1.22)	4.77 (0.92)
	P-value	0.181	0.417	0.713	0.064	0.889	0.301
Gender	Male	3.2 (0.86)	4.96 (1.41)	4.72 (1.17)	5.49 (1.12)	5.04 (1.26)	4.83 (0.94)
	Female	2.9 (1.06)	4.67 (1.5)	4.8 (1.34)	5.29 (1.07)	4.87 (1.32)	4.66 (0.98)
	P-value	0.039	0.208	0.695	0.229	0.406	0.261

Discussion

In this study the overall perception of safety climate among primary doctors in Bahrain was found to be moderately developed with a mean of 4.67 (SD 1.00).

The "Workload" aspect assessed the level of sufficiency of staff in managing workload, completing their tasks in time, and focusing on the doctor's performance under excessive workload. The study showed that male doctors had higher perception of workload compared to female doctors (*p*- 0.039). However, there was no significant difference in the perception of workload between regions, overall years of practice in their current position and in primary care. The overall mean scores of 2.97 (SD 1.03) of the workload aspect showed low level of perception of safety. This might be due to limited consultation time of 7-8 minutes per consultation, high flow of patients, and insufficient numbers of doctors covering the duties which could lead to increased pressure among the doctors to complete the consultation safely. The authors believe that to improve the perception of safety among the doctors in the domain of workload, it is recommended to increase the consultation time, consider recruiting more staff and ensure equal distribution of patients regardless of the doctor's gender. In the study by Curran *et al.* general practitioner principals perceived a significantly more negative impact of workload on safety and performance within the practice than perceived by the administrative staff.[17] A survey of general practitioners in the United

Kingdom reported that majority of the practitioners believe that their workload has negatively affected the quality of care.[21]

The "Communication" aspect evaluates the relationship between the staff and their freedom in providing feedback. In this study there was no significant difference in the perception of communication between gender, region, overall years of practice in their current position and in primary care. The overall mean score was 4.71 (SD 1.49); this indicates that primary health doctors had a moderate level of perception in terms of communication. Fear of reporting error due to the culture of blame and the lack of a well-developed channel of reporting in work place can be a major role in affecting the perception of communication between the doctors. In the study by Alahamdi H patient safety climate was assessed with a different methodology. With respect to the communication aspect it showed that in order to build safety culture, it is required to eliminate three destructive elements in the organization: blame, fear and silence regarding errors and create areas of open communication.[19] The authors believe that to improve communication in Bahrain ,it is recommended to regularly schedule monthly meetings to encourage discussing feedback and provide an opportunity for the doctors to share their thoughts and ideas which encourage collaboration and open exchange of information.

The "Leadership" aspect assesses the ability of the leader to deal with issues between the practice team in an effective way. In this study there was no significant difference in the perception of leadership between gender, regions, overall years of practice in their current position and in primary care. The overall mean score was 4.75 (SD 1.31); this indicates that the primary health doctors had a moderate level of perception in terms of leadership. It is assumed that the cause behind moderate perception of leadership might be due to low levels of trust between the team members in the practice, as well as inability of the leader to deal with the problems and reach appropriate solutions. It is important to set a high standard of selection when choosing the team leader. As discussed in the study by Alahamdi H, they emphasize the importance of effective leadership in building a strong and proactive safety culture and commitment to learning from errors, and encouraging and practicing teamwork.[19]

The "Teamwork" aspect assesses the relationship between all levels of team members working together in the primary care practice. The study showed no significant difference in the perception of teamwork between gender, region, and overall years of practice in their current position and in primary care. The overall mean score was 5.30 (SD 1.12); this indicates that the primary health doctors also had a moderate level of perception of the teamwork. The reason could be due to the level of trust, support, and respect which differs from each team member. A feeling of job satisfaction, having a good work environment and work place might also play a major role in effecting the perception of teamwork among the primary health care doctors in Bahrain. Team work may be improved by staff training on team work and communication skills to empower them to work as a team.

In the study by Curran *et al.* there was a positive perception of the impact of leadership and teamwork on work place performance and safety, due to greater independence and autonomy associated with private practice in Ireland which positively influenced perception of safety climate.[17]

The "Safety systems and learning" aspect considers quality and safety of patient care and continuous learning. The study showed no significant difference in the perception of safety systems and learning between gender, region, and overall years of practice in their current position and in primary care. The overall mean score was 4.88 (SD 1.34); this indicates that the primary health doctors also had a moderate level of perception in terms of the safety systems and learning. The moderate level of perception could be due to inappropriate highlighting of the negative events that occur in primary practice. Also, the lack of involvement of some team-members in participating and managing of significant event in the primary care might lead to these results. Regarding learning, the authors believe that this could be due to the fact that some doctors lack the encouragement for continuous education and development in their practice. To improve this aspect, the authors encourage emphasis

on scheduling proactive continuous learning hours, involving latest protocols, guidelines and updates.

Limitation/Recommendation

During the process of conducting this study, the lack of using the questionnaire in other published literature in this part of the region limits the ability to compare with other studies.

This research can be a reference for ongoing sets of data regarding the perception of safety climate, which can be used for future studies. As this study involves primary care doctors in Bahrain, comparing the perception of safety climate with other healthcare facility members such as nurses, dentists, pharmacists, and receptionists etc. could provide more data regarding the overall perception of safety climate in the health centers.

Implications for future research and clinical practice

Based on the findings of this study, the information could be used for further improvement and adjustments in the primary care of Bahrain:

- It can help decision makers link the relationship between increase or decrease in workload and the chances of medical mistakes that occur in primary care.
- Help the primary care leadership in assessing if appropriate relationship and communication exists between the staff and their freedom in providing feedback.
- Help the decision makers assess the primary care leadership and abilities.
- Safety systems and learning help to provide decision makers with information regarding improving continuous education development.

Conclusion

The overall level of perception of safety climate among primary health care doctors in Bahrain was moderate. Male doctors had higher perception of workload than female doctors. There was no difference in the study results in relation to region, years of practice in current position, and total years of practice in primary care.

Conflict of interest

The authors have no conflict of interest to declare.

Acknowledgment

This study was conducted as part of the Family Physician Residency Program.

References

1. NationalPatientSafetyFoundation.Patient Safety Dictionary. Available at: http://www.npsf.org/?page=dictionarynz&hhSearchTerms=%22avoidance%2c+prevention%2c+and+amelioration+of+adverse%22.Accessed feb, 2019.
2. INSAG (International Nuclear Safety Advisory Group).SafetyCulture.1991;75-INSAG-4:1-44.
3. Nieva VF, Sorra J, et al. Safety culture assessment: a tool for improving patient safety in healthcare organizations. Qual Saf Health Care 2003;12(Suppl II):ii17e23
4. Colla JB, Bracken AC, Kinney LM, et al. Measuring patient safety climate: a review of surveys. Qual Saf Health Care 2005;14:364e66.
5. .Reason J. Human error: models and management. BMJ 2000;320:768e70.
6. Flin R. Measuring safety culture in healthcare: A case for accurate diagnosis. Saf Sci 2007;45:653e67.
7. Parker D, Lawrie M, Hudson P,et al. A framework for understanding the development of 11rganizational safety culture. Saf Sci 2006;44:551e62.
8. Crichton M. Attitudes to teamwork, leadership and stress in oil industry drilling teams. Saf Sci 2005;43:679e96.
9. Hann M, Bower P, Campbell S, et al. The association between culture, climate and quality of care in primary health care teams. Fam Pract 2007;24:323e29.
10. Curoe A, Kralewski J, Kaissi A, et al. Assessing the cultures of medical group practices. J Am Board Fam Pract 2003;16:394e8.
11. Spencer R, Campbell S, et al Tools for primary care patient safety; a narrative review. BMC Fam Pract. 2014;15:166.

12. Bell BG, Spencer R, Avery AJ, et al. Tools for measuring patient safety in primary care settings using the RAND/UCLA appropriateness method.BMC Fam Pract. 2014;15:110.

13. Wet C. The development and psychometric evaluation of a safety climate measure for primary care. BMJ. 2010;19(578e584):

14. Sheikh A, Panesar SS, Larizgoitia I, et al. Safer primary care for all: a global imperative. Lancet Glob Health. 2013;1:e182–e183.

15. Ricci-Cabello I, Avery AJ, Reeves D, et al. Measuring patient safety in primary care: the development and validation of the "Patient Reported Experiences and Outcomes of Safety in Primary Care" (PREOS-PC).Ann Fam Med. 2016;14:253–261.

16. Campbell S. A Patient Safety Toolkit for Family Practices . J Patient Saf. 2018;00(00):

17. Curran C, Lydon S, Kelly ME, Murphy AW, Madden C, O'Connor P, et al. Perceived safety climate in Irish primary care settings-a comparison with Scotland and England. Eur J Gen Pract. 2018;24(1):252–7.

18. O' Dea B, O'Connor P, Lydon S, et al. Prevalence of burnout among Irish general practitioners: a cross sectional study. Ir J Med Sci. 2017;186:447–453.

19. Alahmadi H.Assesment of patient saftey culture in Saudi Arabian Hospital.BMJ Quality&Safety.2010;19(5),pp.e17-e17.

20. De Wet, C., Spence, W., Mash, R., Johnson, P., & Bowie, P.. (2012) . SafeQuest . Measurement Instrument Database for the Social Science.

21. Rimmer A. GPs want longer consultations, BMA survey finds. BMJ. 2015;350(apr10 3):h1910.