Assessment of Patient Safety Culture Among Healthcare Workers in the Primary Care of Bahrain

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ABSTRACT

Objectives: This study was conducted to assess patient safety (PS) culture in primary health care (PHC) in Bahrain, identify strengths and areas for improvement and create patient safety awareness among primary health care professionals.

Design: Descriptive cross-sectional study.

Method: A validated self-administered questionnaire, the Medical Office Survey on Patient Safety (MOSOPS), developed by the Agency of Healthcare Research (AHRQ), was distributed online to all occupational categories in 27 primary healthcare centres (PHCs) in Bahrain.

Results: The average score of the 10 studied composites was 72.5%. The overall perception of patient safety and quality was positive, with respondents having a mean score of 71.2± 10.1. The highest positive scores were for teamwork (82.9%), patient care tracking and follow-up (80.4%), and organisational learning (77.7%). The lowest score was for work pressure and pace (46.8%), with 64.9% of the participants feeling rushed when taking care of patients, and 76.3% having too many patients to handle.

Conclusion: Patient safety culture (PSC) in primary care in Bahrain is generally positive. It is important to ensure that legislation and regulations are introduced to encourage healthcare organisations to implement patient safety reporting systems, which will help identify risks in patients and help them learn from their mistakes. The safety culture should be assessed regularly to evaluate the effectiveness of patient safety programs and interventions.

Keywords: Patient safety, Primary healthcare, Bahrain.

INTRODUCTION

Organisational culture refers to the beliefs, values, and norms shared by staff throughout an organisation that influences their actions and behaviours. Patient safety culture is the extent to which beliefs, values, and norms support and promote patient safety. Organisations with a positive safety culture are characterised by communications founded on mutual trust, shared perceptions of the importance of safety, and confidence in the efficacy of preventive measures[1].

The World Health Organization (WHO) defines patient safety as the "prevention of errors and adverse effects to patients associated with health care" and "to do no harm to patients", whereas according to the Institute of Medicine, safety is defined as "the freedom from accidental injury"[2].

Patient safety in hospitals has received more attention than in primary care worldwide. However, in most healthcare systems, most patient consultations occur in primary care, making the need for primary care patient safety research even more important[3]. Few studies have been conducted on primary care in countries such as the USA, Brazil, Spain, Portugal, and Poland. Similarly, in primary care settings in Arab countries, a small number of studies were conducted in Saudi Arabia, Kuwait, Oman, Qatar, and Yemen, compared to a larger number of studies conducted in hospital settings.

Achieving a safety culture requires leadership, providers, and staff to understand their organisational values, beliefs, and norms regarding what's important and what attitudes and behaviours are expected and appropriate.

As with international accrediting organisations, Bahraini health authorities require all healthcare organisations, including PHCs, to support PS by reporting incidents. Ministerial Administrative Policy no. (28) and (29) were issued in 2007 in relation to incident reporting, assigning the medical review office as the responsible party for supervision[4]. Committees managing incident reporting, risk assessment, and risk registry have already been established to cover all health centres in Bahrain.

The generation of a safety culture starts with an evaluation of the present safety level in an institution because safety precautions implemented without a proper assessment may elevate costs and cause unpredicted new risks[5].

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Therefore, we decided to conduct this study in Bahrain, and our objectives were to (i) Assess PSC in PHC in Bahrain, (ii) Identify strengths and areas for improvement, (iii) Create PS awareness among PHC professionals, (iv) Contribute to the strategic objective of PS in PHC, and (v) Compare results to those of similar regional and international studies.

METHODS

Objectives: This study was conducted to assess patient safety (PS) culture in primary health care (PHC) in Bahrain, identify strengths and areas for improvement, and create patient safety awareness among primary health care professionals.

Study Design, Setting, and Duration: A descriptive cross-sectional study was performed between October and November 2021. It assessed patient safety culture in 27 PHCs in Bahrain. All primary healthcare professionals in Bahrain were eligible for enrolment in the study.

Research Tool: A validated self-administered questionnaire, the Medical Office Survey on Patient Safety (MOSOPS), developed by the Agency of Healthcare Research (AHRQ), was used[1].

A validated Arabic version of the questionnaire was adopted[6].
The (MOSOPS) instrument consists of dimensions of patient safety and quality, exchange of information with other institutions, teamwork, work pressure and pace, staff training, working process and standardisation, communication openness, patient care follow-up, communication about errors, support from managers in patient safety, organisational learning, and overall perceptions of PS and quality.

Sample Size: The study population was primary healthcare professionals in Bahrain (N). These reflect 27 PHCs.

The sample size (n) has been determined according to the following formula:

n=N/ (1+N×e^2)

Where, N=2300 is the estimated number of healthcare workers in PHC in Bahrain, and e denotes the probability of committing an error in selecting a sample from the population. Therefore, the sample size was

n=2300/ (1+2300×□0.05□^2) =341

Data Collection and Management: The questionnaire was administered to health care professionals via a Google form link through their heads of sections in all health care centres. Demographic data of the participants were provided in one part of the questionnaire. No identifying information was obtained from participants, and confidentiality and anonymity were assured and maintained.

Statistical Analysis: SPSS version 26 was used for data entry and analysis. Frequencies and percentages were computed for the categorical variables. Means and standard deviations were computed for the quantitative variables. A t-test was used to determine whether there was a significant difference in mean scores between two independent groups if the sample size was greater than 30 in each group. ANOVA test was used to determine whether there was a significant difference in mean scores between more than two independent groups if the sample size was greater than 30 in each group. Kruskal Wallis was used to determine whether there was a significant difference in the mean scores between more than two independent groups if the sample size was less than 30 in at least one group. The chi-Square test was used to determine whether there was a significant association between two categorical variables. In all statistical tests, a p-value of less than 0.05 was statistically considered significant.

There were no missing values in the original data. Answers such as (don't know and not applicable) were excluded from the scoring, as per the instructions from the author of MOSOPS. [1]

Ethical Considerations: The study protocol was approved by the Research and Ethical Committee of the Primary Health Care in Bahrain. A permission letter was distributed to all heads of the sections through email from the chief of the medical staff in PHC. No identification field was required for the questionnaire.

RESULTS

The total number of participants in this study was 358 employees from all governmental PHCs in Bahrain (25 health centres and two health clinics).

Demographic Data: The majority of participants were females (82.7%). Most respondents were nurses (29.9%), and 26.5% were physicians. More than half of the participants (63%) had a work experience of three years, at least. Moreover, 84.1% worked more than 32 hours per week. (Table 1)

Table 1: Sociodemographic characteristics of the patients (Total = 358)

	n (%)
Health region	
Region one	78 (21.8)
Region two	42 (11.7)
Region three	61 (17)
Region four	68 (19)
Region five	109 (30.4)
Gender	
Male	62 (17.3)
Female	296 (82.7)
Position	
Physician	95 (26.5)
Dentist	23 (6.4)
Nurse	107 (29.9)
Pharmacist	11 (3.1)
X- ray technician	23 (6.4)
Laboratory technician	13 (3.6)
Member of head of council	18 (5)
Others	68 (19)
Number of working hours per week	
1 - 16 hours	21 (5.9)
17 - 32 hours	36 (10.1)
33 - 40 hours	164 (45.8)
>40 hours	137 (38.3)
Working duration	
<1 year	73 (20.4)
1 - <3 years	59 (16.5)
3 - <6 years	79 (22.1)
6 - <11 years	85 (23.7)
≥11 years	62 (17.3)

Staff perception of a patient's safety culture dimensions: The study composites measure average mean and SD is 72.5± 10.1.

The overall perception of patient safety and quality mean score is 71.2 ± 13.7. The dimensions with the highest mean scores were teamwork (82.9 ±14.8), patient care tracking and follow-up (80.4±16.4), and organisational learning (77.7± 17.3). On the other hand, the lowest mean score was for work pressure and pace (46.8±16.7) (table 2).

Table 2: Mean scores and standard deviations of study composites

	Mean ± SD
Teamwork	82.9 ± 14.8
Patient care tracking/follow-up	80.4 ± 16.4
Organizational learning	77.7 ± 17.3
Overall perceptions of patient safety and quality	71.2 ± 13.7
Staff training	75.8 ± 15.8
Communication about error	75.1 ± 15.9
Communication openness	73.8 ± 16.8
Office processes and standardization	73.5 ± 14.1
Owner/Managing partner/Leadership support for patient safety	71.9 ± 14.7
Work pressure and pace	46.8 ± 16.7
Composite measure average	72.5 ± 10.1
Note: Mean ± SD was computed out of 100.	

There was no significant difference in the mean score of the study composite in terms of sex, number of working hours per week, or working duration, but a significant difference was observed in relation to the type of profession. Members of the council had the highest perceptions of PSC (80± 9.7), compared to the lab technicians (69.9 ±8) (p = 0.021) (table 3) who scored the lowest.

Table 3: Differences in mean score of Composite measure average according to Sociodemographic characteristics

	Composite measure average	P-value
	Mean ± SD	
sex		
Male	71.1 ± 8.6	0.223[a]
Female	72.8 ± 10.4	
Position		
Physician	72.0 ± 11.2	0.021[b]
Dentist	74.4 ± 8.7	
Nurse	71.6 ± 9.0	
Pharmacist	74.7 ± 11.7	
X- ray technician	75.5 ± 9.5	
Laboratory technician	69.9 ± 8.0	
Member of head of council	80.0 ± 9.7	
Others	71.1 ± 10.4	
Number of working hours per week		
1 - 16 hours	68.8 ± 9.9	0.326[b]
17 - 32 hours	73.7 ± 10.2	
33 - 40 hours	73.0 ± 9.0	
>40 hours	72.2 ± 11.4	
Working duration		
<1 year	72.5 ± 10.4	0.993[c]
1 - <3 years	72.2 ± 11.8	
3 - <6 years	72.8 ± 9.6	
6 - <11 years	72.2 ± 10.0	
≥11 years	72.8 ± 9.4	
Note: Mean ± SD was computed out of 100. a. Independent-Samples t-test b. Kruskal-Wallis test. c. ANOVA test		

Teamwork had the highest mean score among the survey dimensions, which was clearly seen with 89.2% of staff agreeing that they treat each other with respect, 88.4% reported a good working relationship between staff and providers. In the least scored dimension of work pressure and pace, 64.9% of the participants felt rushed when taking care of their patients, and 76.3% had the perception of having too many patients to handle. (Table 4)

Table 4: Agreement with statement concerning working in the medical office

	Agree/ Strongly agree
	n (%)
Teamwork	
1. When someone in this office gets really busy, others help out	275 (78.3)
2. In this office, there is a good working relationship between staff and providers	313 (88.4)
3. In this office, we treat each other with respect	313 (89.2)
4. This office emphasises teamwork in taking care of patients	276 (79.8)
Staff training	
1. This office trains staff when new processes are put into place	276 (80.5)
2. This office makes sure staff get the on-the-job training they need	251 (72.8)
3. Staff in this office are asked to do tasks they haven't been trained to do	67 (20.5)
Office processes and standardisation	
1. This office is more disorganised than it should be	58 (17.2)
2. We have good procedures for checking that work in this office was done correctly	230 (68.9)
3. We have problems with workflow in this office	114 (33.1)
4. Staff in this office follow standardised processes to get tasks done	281 (81.4)
Work pressure and pace	
1. In this office, we often feel rushed when taking care of patients	226 (64.9)
2. We have too many patients for the number of providers in this office	261 (76.3)
3. We have enough staff to handle our patient load	99 (28.5)
4. This office has too many patients to be able to handle everything effectively	197 (58.3)

Regarding patient care and tracking, 81.1% of the participants agreed that the office followed up with patients who needed monitoring most of the time, if not always. In the same dimension, 76.9% of the participants stated that most of the time, if not always, the office reminded patients when they needed to schedule an appointment for preventive or routine care. (Table 5)

Table 5: Frequency of communication and follow-up in the medical office

	Most of the time/Always
	n (%)
Patient care tracking/follow-up	
1. This office reminds patients when they need to schedule an appointment for preventive or routine care	259 (76.9)
2. This office documents how well our chronic care patients follow their treatment plans	236 (76.6)
3. Our office follows up when we do not receive a report, we are expecting from an outside provider	170 (62.7)
4. This office follows up with patients who need monitoring	249 (81.1)

Communication about error	
1. Staff feel like their mistakes are held against them	95 (30)
2. Providers and staff talk openly about office problems	194 (58.6)
3. In this office, we discuss ways to prevent errors from happening again	252 (75.7)
4. Staff are willing to report mistakes they observe in this office	232 (68.8)
Communication openness	
1. Providers in this office are open to staff ideas about how to improve office processes	215 (63.2)
2. Staff are encouraged to express alternative viewpoints in this office	207 (60.5)
3. Staff are afraid to ask questions when something does not seem right	44 (13.6)
4. It is difficult to voice disagreement in this office	67 (21.1)

On the dimension of organisational learning, the research identified that around 75.5% of participants agreed that the office was good at changing office processes to ensure that the same problem did not occur again. (Table 6)

Table 6: Agreement with statements about the medical office

Statements	Agree/Strongly agree
	n (%)
Organisational learning	
1. When there is a problem in our office, we see if we need to change the way we do things	256 (75.5)
2. This office is good at changing office processes to make sure the same problems don't happen again	259 (75.5)
3. After this office makes changes to improve the patient care process, we check to see if the changes worked	238 (72.8)
Overall perceptions of patient safety and quality	
1. Our office processes are good at preventing mistakes that could affect patients	257 (74.1)
2. Mistakes happen more than they should in this office	27 (8.1)
3. It is just by chance that we don't make more mistakes that affect our patients	60 (18)
4. In this office, getting more work done is more important than quality of care	147 (43.4)

It is worth to highlight, that only 28.5% of the participants felt that they had sufficient staff to handle their patient load (table 4), and that 30% of the staff felt that their mistakes were held against them, yet 68.8% were still willing to report the mistakes they observed (table 5)

According to our sample results, there was a difference in how respondents felt about reporting mistakes. Half of lab technicians and pharmacists felt that their mistakes were held against them most of the time. Around 20% of the pharmacists and x-ray technician responded with never/rarely when inquired about how frequent providers and staff talk openly about office problems. On the contrary, the data shows that the members of head of council score the opposite (Table 7)

Table 7: Association between and each of "Staff feel like their mistakes are held against them" and "Providers and staff talk openly about office problems"

Position	Staff feel like their mistakes are held against them	Providers and staff talk openly about office problems
	Most of the time/ Always	Never/ Rarely
	n (%)	n (%)
Physician	24 (27.6)	11 (12.1)
Dentist	6 (33.3)	0 (0)
Nurse	27 (27.3)	17 (16.8)
Pharmacist	5 (45.5)	2 (22.2)
X- ray technician	5 (25)	4 (19)
Laboratory technician	6 (50)	2 (16.7)
Member of head of council	2 (13.3)	1 (5.6)
Others	20 (36.4)	12 (20)
P-value	0.164	0.582

Note: P-values were computed by using Chi-Square test.

Studying the overall ratings of the medical office and the areas of healthcare quality, the majority of participants were satisfied with the service (Table 8).

Table 8: Overall ratings of the medical office

Areas of healthcare quality	Poor/ Fair	Good/ Very good/ Excellent
	n (%)	n (%)
1. Patient centred: The medical office is responsive to individual patient preferences, needs, and values.	26 (7.3)	332 (92.8)
2. Effective: The medical office is based on scientific knowledge	26 (7.3)	332 (92.8)
3. Timely: The medical office minimises waits and potentially harmful delays	49 (13.7)	309 (86.3)
4. Efficient: The medical office ensures cost-effective care (avoids waste, overuse, and misuse of services)	45 (12.6)	313 (87.4)
5. Equitable: The medical office provides the same quality of care to all individuals regardless of gender, race, ethnicity, socioeconomic status, language, etc.	25 (7)	333 (93)
6. Patient Safety: Overall rating of the systems and clinical processes the medical office has in place to prevent, catch, and correct problems that have the potential to affect patients	28 (7.8)	330 (92.1)

Table 9: Differences in mean score of Teamwork, Patient care tracking/follow-up, Organisational learning, Overall perceptions of patient safety and quality, and Staff training according to Sociodemographic characteristics

	Teamwork	Patient care tracking/ follow-up	Organisational learning	Overall perceptions of patient safety and quality	Staff training
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
sex					
Male	82.2 ± 14.6	76.8 ± 15.8	72.8 ± 16.9	73.0 ± 11.7	73.3 ± 15.6
Female	83.0 ± 14.8	81.1 ± 16.4	78.8 ± 17.2	70.8 ± 14.0	76.3 ± 15.8
P-value[2]	0.683	0.061	0.014	0.259	0.174
Position					
Physician	82.9 ± 13.0	78.3 ± 15.5	78.0 ± 15.1	70.8 ± 14.5	76.0 ± 16.5
Dentist	85.4 ± 10.9	81.7 ± 15.6	78.8 ± 13.8	73.8 ± 14.8	76.2 ± 11.3
Nurse	81.4 ± 17.3	81.5 ± 14.7	76.9 ± 18.0	70.0 ± 12.9	75.6 ± 16.0
Pharmacist	85.0 ± 10.0	83.3 ± 14.6	78.0 ± 10.9	77.0 ± 14.3	78.5 ± 17.2
X- ray technician	85.3 ± 12.3	81.8 ± 18.8	84.1 ± 13.0	73.2 ± 13.3	76.8 ± 13.6
Laboratory technician	78.1 ± 13.3	83.6 ± 11.9	73.3 ± 19.7	70.5 ± 9.2	76.7 ± 14.3
Member of head of council	91.9 ± 8.2	86.3 ± 14.1	86.3 ± 15.4	73.2 ± 13.1	85.6 ± 12.8
Others	81.6 ± 16.3	77.8 ± 20.5	74.3 ± 21.2	70.8 ± 14.4	72.0 ± 16.5
P-value[3]	0.105	0.488	0.129	0.614	0.142
Number of working hours per week					
1 - 16 hours	79.6 ± 18.1	74.0 ± 18.6	70.5 ± 24.5	67.9 ± 12.9	74.0 ± 14.0
17 - 32 hours	84.1 ± 17.3	84.0 ± 12.6	77.3 ± 21.7	68.3 ± 15.3	77.8 ± 16.1
33 - 40 hours	83.6 ± 13.1	80.3 ± 17.5	78.6 ± 15.5	73.0 ± 12.0	75.8 ± 14.6
>40 hours	82.2 ± 15.4	80.4 ± 15.3	77.9 ± 16.6	70.4 ± 14.9	75.5 ± 17.3
P-value[3]	0.664	0.253	0.639	0.171	0.785
Working duration					
<1 year	83.5 ± 11.6	80.3 ± 15.5	77.2 ± 17.6	72.2 ± 13.8	76.0 ± 15.2
1 - <3 years	81.1 ± 19.2	79.8 ± 17.1	77.4 ± 19.5	70.6 ± 14.2	74.0 ± 18.0
3 - <6 years	83.0 ± 14.1	82.3 ± 14.9	78.9 ± 17.1	72.2 ± 13.8	76.0 ± 15.9
6 - <11 years	83.5 ± 13.7	79.7 ± 16.7	76.5 ± 17.5	70.9 ± 13.8	75.2 ± 15.5
≥11 years	82.9 ± 15.9	79.6 ± 18.2	78.8 ± 14.8	69.8 ± 12.8	77.6 ± 14.6
P-value[1]	0.890	0.843	0.896	0.803	0.788

Note: Mean ± SD was computed out of 100. 1. ANOVA test 2. Independent-Samples t-test 3. Kruskal-Wallis test

Table 10: Differences in mean score of Communication about error, Communication openness, Office processes and standardisation, Owner/ Managing partner/Leadership support for patient safety, and Work pressure and pace according to Sociodemographic characteristics

	Communication about error	Communication openness	Office processes and standardisation	Leadership support for patient safety	Work pressure and pace
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
sex					
Male	72.4 ± 13.0	69.6 ± 14.5	72.5 ± 12.6	72.4 ± 12.8	50.3 ± 15.6
Female	75.7 ± 16.5	74.7 ± 17.2	73.7 ± 14.4	71.8 ± 15.1	46.0 ± 16.8
P-value[2]	0.092	0.032	0.532	0.749	0.065
Position					
Physician	75.5 ± 16.9	76.4 ± 16.0	69.9 ± 15.5	72.1 ± 15.9	42.9 ± 16.1
Dentist	77.8 ± 10.9	73.0 ± 15.5	75.9 ± 11.2	66.5 ± 17.3	56.7 ± 17.7
Nurse	74.8 ± 14.7	72.1 ± 17.0	72.9 ± 13.3	69.7 ± 12.8	46.3 ± 15.7
Pharmacist	74.4 ± 19.6	74.1 ± 22.1	84.0 ± 11.5	75.0 ± 18.4	43.9 ± 12.7
X- ray technician	73.7 ± 14.5	78.2 ± 12.2	77.8 ± 15.5	75.9 ± 14.6	51.2 ± 14.7
Laboratory technician	71.2 ± 17.9	66.0 ± 16.6	71.4 ± 13.9	72.7 ± 13.1	45.4 ± 19.7
Member of head of council	82.8 ± 16.6	85.8 ± 15.6	79.7 ± 13.2	81.3 ± 10.1	48.3 ± 16.1
Others	73.5 ± 17.2	69.8 ± 17.1	74.4 ± 13.1	72.7 ± 14.7	48.2 ± 18.0
P-value[3]	0.421	0.003	0.012	0.045	0.038

Note: Mean ± SD was computed out of 100. 1. ANOVA test 2. Independent-Samples t-test 3. Kruskal-Wallis test

There was no relationship between the patient safety score and type of profession, years of experience, or number of working hours per week. Interestingly, a significant relationship was found between sex and organisational learning (p = 0.014). (Table 9)

Another significant relationship was found between the type of profession and each of the following factors: communication openness, office processes and standardisation, leadership support for patient safety, and work pressure and pace. Members of the council showed higher positive scores for communication openness and support for patient safety. Pharmacy staff scored significantly better on the office process and standardisation, with a mean score of 84 ± 11.5. Work pressure and pace were also significantly related to the type of profession of respondents (P = 0.038). Physicians were found to have the least positive scores for work pace and pressure. (Table 10)

DISCUSSION

It is evident that there is an increasing demand to focus on the quality and safety of patients in all healthcare settings because of the large number of patients seeking primary healthcare as their first point of contact. A typical primary healthcare centre in Bahrain consists of several service providers, such as family physicians, dentists, nurses, pharmacists, radiology, and lab technicians. Therefore, it was essential to stress the participation of all PHC workers (professional and non-professional) to comprehensively evaluate the PSC in PHC.

This study was conducted to assess PSC in PHC in Bahrain by identifying the strengths and areas of improvement in comparison to other countries, hoping that the findings from this study could increase patient safety culture awareness among PHC staff.

To benchmark this research with other international publications, a validated and widely acknowledged tool (MOSOPS) was used.

This study showed positive results for PSC within the PHC setting in Bahrain with the participation of more than eight different healthcare staff categories. The average positive response score in our study (72.5%) was similar to that of the US medical office (71%)[7], but higher than Yemen (67%)[8], Oman (59%)[3], and Eastern Saudi (43%)[9]. This indicates that a positive safety culture was well disseminated among the PHC staff in Bahrain. The seven reliability sections, expressed as Cronbach's alpha ranged from 0.56 - 0.97. The lowest values of Cronbach's alpha were observed in the questions related to leadership support (0.56) and working in a medical office (0.63), while all the other sections scored higher than 0.78.

Our results revealed that the "teamwork" dimension scored the highest (82.9%), almost similar to the US medical office (85%)[7], and Portuguese (81%)[10] but slightly higher than the Iranian study (77%)[11]. This was probably related to the small size of the workplace setting, easy communication pathway, shared decision-making, and shared common health goals. Despite the fact that teamwork is one of our strong dimensions, we would still like to stress the need to find ways to sustain and facilitate this important aspect through workshops and training. Comprehensive regular staff education on how teamwork affects PSC, in addition to the importance of maintaining and promoting PSC within healthcare organisations, is crucial.

The "patient care tracking/ follow up" dimension was the second highest positive dimension with a score of 80.4%, compared to 85% in the US for the same dimension[7]. The strength of this element was expected, as this concept is a core attribute of PHC. The electronic file system (I-Seha) across all governmental healthcare institutes in Bahrain assists in the straightforward exchange of patient information in an accurate, complete, secure, and timely manner. The strength of patient care and tracking is also evident in our systemized specialised clinic appointments and follow-up, phone and text message reminders, and child screening defaulters' follow-up. It was also largely seen in the Covid pandemic where huge efforts were directed to ensure the stability of all home isolated positive cases through teleconsultations providing them with options of referrals to covid centres and the arrangement of medication delivery when needed.

Organisational learning" secured the third place among the study composites (77.7%), which is similar to the US office[7] and higher than Portuguese counterparts (67%)[10].

The top three positive domains in this study were recurrent top-ranking themes, in similar or different orders, across the majority of publications studying PSC worldwide.

It should be noted that communication about error and "communication openness" fall into the sixth (75%) and seventh place (73%), respectively. These two closely linked domains play a key role in improving PSC. Health workers are unable to learn from their mistakes if a mistake is not reported first. This study exhibited a remarkable percentage of participants (55.6%) who felt that their mistakes were held against them. This is consistent with other studies that reported that the rate of non-punitive response to error ranged from 17% to 35%[11-13]. The study observed that 36.4% of the participants were afraid to ask questions when something did not seem right. These findings might be related to health workers being hesitant to report mistakes for various reasons, including feeling uncomfortable reporting teammates' mistakes, fear of damaging personal relationships, worries of punishment and harming career prospects, lack of knowledge of what and how to report, complicated processes of reporting incidents, ''shame and blame" work culture, and lack of allocated time to report, all of which hinder the quest to learn from mistakes. When discussing errors, efforts should be focused on how to critically analyse a problem without fear of penalty or stigma. Incidents, especially near misses, can be used as teaching tools if communicated properly. A no-shame, no-blame culture should be empowered. We must highlight that most errors result from human mistakes, but these mistakes are mostly stimulated by systemic deficiencies that cause individuals to fail[13].

It is clear that healthcare staff in the Arab world are concerned about having a supportive organisational structure that encourages error reporting. Growing evidence suggests that the rate of medical errors and adverse events is associated with the attitudes and perceptions of professionals toward safety. Moreover, a study by Najjar et al., which examined the relationship between patient safety culture and adverse event rates in Palestinian hospitals, found that departments with positive patient safety culture had lower rates of adverse events[13]. It should be emphasised that adverse event-reporting systems will not be efficient within a punitive culture. Leadership is significant in-patient safety, as it should recognize safe care as most often a system, not a human-related problem. Balancing safety and staff accountability is another important cultural principle that leadership should focus on when dealing with reported incidents[9]. To minimise the gap between leaders and employees in their views on safety, more interactive meetings and actual field visits are recommended, in which ideas and views are exchanged. Leaders can then correct any unrealistic positive view they have, and employees' awareness could be enhanced and any of their unrealistic negative views could be tackled. Leaders, in particular, should also be open to criticism and encourage staff feedback. Having leaders and employees on a common ground would facilitate the

provision of a safe, high-quality service. The lack of coordinated care or teamwork failure and breakdown in communication will result in unfavourable outcomes for the patient.

This study underscored that the most challenging dimension of safety culture was work pressure and pace with participants' positive perception hardly reaching an average mean score of 46%, which was not surprising considering that it scored the least in most PSC studies. Nevertheless, our perception of this dimension was still higher than most other publications, Kuwait (39%)[14], Iran (29%)[11], Tunis (38%)[12] and Portugal (25%)[10]. This finding is expected, as PHC is the gatekeeper for the health system, with easy accessibility being its main feature. Studying the relationship between type of profession and perception of work pressure and pace, this study found that there was a significant relationship, with physicians viewing work pressure more negatively (42.9 ± 16.1) (P = 0.038).

With the implementation of a new era of autonomy in Bahrain and the advantages of this structural change, we still have a high share of the population assigned to each family physician via capitation. The target ratio for capitation per family physician was around 1:2300, which is equal to 43:100000. This is in comparison to a ratio range of 49.1 to 131 per 100000 in 2019 in the United States.[15]

The time allocated per consultation in primary care is another key factor affecting workplace pressure. Our allocated consultation time in Bahrain was 8 minutes per patient. A systematic review of primary care consultations in 67 countries, conducted in 2017[16], showed that 40% of those countries had a consultation time of more than 10 minutes, and 24% had a consultation time of more than 15 minutes. Sweden had the longest consultation time of 22.5 minutes. In the setting of health centres in Bahrain, walk-in patient registration is still used as an option of registration. These patients are usually triaged by nurses and registered as extra patients over the regular registered list to be reviewed by physicians in between the originally registered patients. This would have an impact on the eight-minute allocated time per patient. Hopefully, walk-in registration will stop with the proposed change and addition of an ambulatory department in each health region to accommodate walk-in patients and screen them around the clock.

One of the WHO's health-related sustainable development goals (SDGs) is to have an adequate, well-distributed, motivated, enabled, and supported health workforce[17]. A workforce is required to strengthen PHC and progress towards universal health coverage[18]. Improving the availability and distribution of PHC workers is essential, and it is also important to improve the productivity and performance of the existing workforce.

Having had work pressure as the most negatively viewed PSC composite in this study and knowing how overload can threaten patient safety and workforce performance, highlights the importance of alleviating this pressure and allowing employees to work at a relaxed pace. In Bahrain, efforts and resources should be mobilised to increase the density of physicians in the population and increase the allocated consultation time. Available resources and skills should be utilised to shift our practice from the current physician-led model by task shifting or sharing to include other employees. In Bahrain, with the healthcare system autonomy reform, nurses are currently more empowered, sharing with physicians the task of ordering some investigations and providing screening services. This should be extended to the prescription of some medications, especially for midwives, with an ongoing need to prescribe supplements to pregnant women.

Alleviating the work pressure should also include improving work conditions. This would involve improvements to the interface design by empowering and training receptionists on how to accommodate client queries and guide them instead of having patients walking into the clinics requesting some administrator-related information. This would also involve improvements to the physical environment and the ergonomics of equipment, especially the speed of I-seha computers, and the reduction in interruptions that influence the propensity to error. A basic requirement for a safe system is the use of protocols, checklists, and other reminders for patient and clinician interactions. The use of these aids would benefit from making informed decisions and creating a culture of safety by complying with rules and procedures. A Work environment in which providers and clients are aware of their rights and obligations would also soothe the workflow and relieve a great deal of pressure.

Limitations and Strengths: The length of the questionnaire was a limitation, as it takes 10–15 minutes to fill. Using a validated and widely acknowledged tool (MOSOPS) was one of the study's strengths, as well as having a reliability of more than o.78.

CONCLUSION

The key finding of our study is that patient safety culture in primary care in Bahrain is generally positive when benchmarked to global studies. Areas of strength are generally teamwork and patient tracking and follow-up, whereas work pressure and pace was found to be the main area that needs improvement, as perceived by primary healthcare workers. To increase patient safety in Bahrain's primary healthcare system, it is necessary to promote patient safety culture by addressing these concerns. All parties involved in improving the patient safety culture, such as policymakers, healthcare professionals, and those in charge of medical education, should be included. A well-designed national patient safety initiative is required, which should be integrated into primary health care policies and in the upcoming ten-year organisational plan. In view of our staff's PSC perceptions, staffing levels require closer attention.

It should be highlighted that patient safety is a serious public health concern which costs lives. Non-punitive response to error is a serious issue that needs to be improved, as healthcare professionals still tend to think that a 'culture of blame' still exists that prevents them from reporting incidents. Thus, policymakers need to establish a culture in the workplace where employees are encouraged to report any adverse events, errors, incidents, or near misses so that lessons can be learned. It is also particularly important to ensure that legislation and regulations are introduced to encourage healthcare organisations to implement patient safety reporting systems that will help identify risks to patients and help them learn from their mistakes. More importantly, safety culture should be assessed regularly to evaluate the effectiveness of patient-safety programs and interventions.

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