



## **Enhancing primary healthcare quality using the Physician Performance Matrix (PPM) from the Press Ganey patient experience surveys in Eastern Region, Saudi Arabia**

Malak Alhaddad <sup>\*1</sup>, Ghaida Bukhamsin <sup>2</sup>, Maryam Alaithan <sup>3</sup>, Wejdan Aldrees <sup>4</sup>,  
Qasem Mohammed Aljabr <sup>5</sup>, Abdul Sattar Khan <sup>6</sup>

*1,2,3,4. Al Ahsa Academy of Family Medicine, Saudi Arabia.*

*5. Al Ahsa health cluster, Ministry of Health, Saudi Arabia.*

*6. Family & Community Medicine Department, College of Medicine, King Faisal University, Alahsa Saudi Arabia.*

**\*Correspondence to:** Malak Alhaddad. Al Ahsa Academy of Family Medicine, Saudi Arabia.

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## **Abstract**

**Introduction:** *Providing a good patient experience is crucial for quality improvement. Therefore, several initiatives have been established to enhance the overall quality of provided health services. This study aimed to measure the relationship between patient experience and quality of care after applying a physician performance matrix (PPM).*

**Methods:** *The study was a retrospective descriptive cross-sectional study. It was carried out among Al-Ahsa primary healthcare visitors during 2020 - 2022. The study population is 589,777 registered patients in the primary healthcare electronic system. Study participants including all patients receiving a service at primary healthcare centers—the patient experience was measured through a self-administered survey using the Arabic version of the Press Ganey Survey. The physician performance matrix evaluates healthcare providers depending on Key performance indicators (KPI) quarterly. Obtained data was entered using (SPSS version 20). Two analyses were performed: a descriptive analysis that measures frequency as it has been expressed in terms of numbers and percentages, a measure of dispersion, and the mode of central tendency. The inferential analysis applied several statistical tests to determine the relationship between different variables.*

**Results:** *After implementing the physician performance matrix, there was an increase in the total number of visits per month, up to 138,895 by Sep 2022, a total of 49,170 visits in Nov 2020. Electronic chart registration also increased from 178,780 by the end of 2020 to 607,895 by 2022. The Press Ganey score improved from 78.9 by the 4th quarter of 2020, with -0.56 below the national average, up to 81.71 with +2.83 above the national average in the 4th quarter of 2022.*

**Conclusion:** *It is evident that (PPM) plays an integral role in improving healthcare institutions. Setting key performance indicators such as screening, geriatric care, and patient experience enhanced patient outcomes and improved patient experience.*

**Keywords:** *Press Ganey, Patient Experience, Performance, Practice, Physician.*

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## Abbreviations and Acronyms

Physician Performance Matrix: (PPM)

Key Performance Indicators: (KPI)

Primary Health Care: (PHC)

Ministry of Health: (MOH)

health information System: (HIS)

Patient Reported Outcome Measures: (PROMS)

Continuous Medical Education: (CME)

Press Ganey: (P.G.)

World Health Organization: (WHO)

## Introduction

Several definitions, conceptual frameworks, improvement tools, and metrics have been developed over the last 40 years, addressing the demands of healthcare providers and policymakers to achieve quality goals. Increasingly, patients and the general public became aware of differences in the quality of care among providers. The dramatic development of technologies such as Patient Reported Outcome Measures (PROMS) allows patients to have a chance to evaluate care based on their experiences, empowering them to make better decisions.[1]

Patient experience is recognized as an interaction of the patient with the health care system, which is influenced by different factors, for example, physicians, staff, and care plan. [2] It has been known to use patient experience and satisfaction as one term. However, these two terms have significant differences. Patient satisfaction is an uncertain concept as it is subjective to patient experience. In the context of patient satisfaction meaning, it is affected by patients' expectations and preferences for care plans. Patient satisfaction is considered a part of patients' experience. [3] A complementary association has been found between patient experience and clinical outcomes, for instance, (health screening, self-care management, and healthcare cost reduction). Providing a good patient experience is vital to high-quality medical care. [2]

The literature suggested a potential relationship between patient experience and overall quality of care. A recent systematic review of 55 studies investigated the association between patient experience, clinical safety, and effectiveness outcomes. It concluded that patient experience is positively linked to clinical efficacy and patient safety and supports that patient experience is considered the core of healthcare quality. It also proved that clinicians should consider the patient experience more objective and mood-oriented. However, it is valuable in maintaining patient safety and clinical effectiveness. [4] Wray, J. and Oldham, G. in London created and implemented a system for collecting and analyzing parent experience data (in and outpatient pediatric cardiothoracic services), utilizing quality improvement methodologies to achieve a change. It concluded that parent-reported experience measures are an effective tool for quality improvement. Resources, training, and sustainability are among the issues that must be addressed. [5] Another study by Gleeson H et al. in London documented that patient experience could be measured and reported for healthcare quality improvement. It also found that the key to successful patient-centered healthcare services is using patient experience data. [6]

Primary healthcare is a nucleus of the overall healthcare system. It is the first line of interaction between the patient and the secondary and tertiary healthcare system. The Alma-Ata Declaration of 1978 emerged as a chief milestone of the twentieth century in the field of public health, and it recognized primary health care as the key to achieving Health for All. In 2018 a new declaration was endorsed by Astana, which emphasizes the importance of primary healthcare. With this declaration, Saudi Arabia identified the development of primary health care as one of its most important strategies. Today, the Ministry of Health (MOH) operates 2261 primary care centers nationwide. [7]

Kingdom of Saudi Arabia 2030 Vision has established The Health Sector Transformation Program. It intended to upgrade the health sector to face demanding situations associated with health services by increasing their quality and efficiency. (Sehhaty and Mawid) are applications had been established as part of this program to modernize the health industry and expand service coverage throughout the Kingdom. [8] These efforts are restructuring the health sector in the Kingdom to be comprehensive and powerful and provide a higher quality of care through enhancing patient experience. [9]

Patient Experience Measurement Programs are examples of Saudi MoH programs providing chances for patients to interact with the MoH and give feedback according to their experience. The Patient Experience Measurement Program is conducted by Press Ganey's regional partner Saudi-based company, an independent third party, to ensure valid measurement of patients' experiences. [9,10]

Press Ganey's program covers primary, secondary, and tertiary health services the Saudi MoH provides. [12] In August 2018, the Saudi MoH revealed its first report of patient experience through a Press Ganey survey.

Press Ganey survey is a tool established by Press Ganey Company in Indiana, United States. This Company has been known for measuring and improving patient experience for over three decades. It works with over 35,000 health facilities globally. [9,10] Press Ganey's regional partner is a Saudi-based company that performs more than 2,500,000 surveys annually. The Press Ganey survey is a matrix assessing different healthcare delivery dimensions. The survey covers nine domains: access, moving through, nurse assistant, physician, investigation, personnel issues, pharmacy, and overall assessment. [11] This survey helps policymakers gather patient experience data to reflect physicians' performance and enhance quality improvement. [12]

In improving patient experience, the Physician performance matrix (PPM) was established by the Alahsa health cluster directory in 2021. It had been designed upon the demand of Alahsa culture. This matrix measures primary healthcare physician performance based on multiple key performance indicators (KPI). Indicators are divided into essential and bounce elements. Essential KPI includes continuous medical education (CME), screening of diabetes, dyslipidemia, hypertension, obesity, breast and colon cancer, osteoporosis, geriatric care, and the daily average of patients seen per physician. Bounce KPI includes providing influenza vaccination, working in the evening, screening more cases than the target, being a trainer in a family medicine program, having several sick leaves of absence not exceeding one day every three months, and working in remote PHC. The essential indicators have an accumulative score out of 100 points.

Until soon, patient experience in Saudi Arabia/UAE has been measured primarily by using surveys that were not psychometrically examined to be used in quality improvement. For example, a survey by Ali and Mahmoud (1993) was done by final-year medical students [13]. Waleed, Alswat, and Abdel-Wahab (2015) used a self-administered questionnaire [14]. These two surveys have been translated into Arabic: the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey and the Critical Care Family Satisfaction Survey (CCFSS). However, neither of these tools met the demand of Middle Eastern culture. A study was conducted by Donald I, Bradley r, Fulton, and Sharon (2017) to develop a patient experience measure for usage in Saudi Arabia and the United Arab Emirates.

It found that a Saudi-modified measure of the U.S. Press Ganey survey has good reliability, convergent validity, divergent validity, construct validity, and predictive validity to be used in the Middle East [15].

Recent recognition of Patient Reported Outcome Measures (PROMS) emphasizes that patient experience is a tool for improving healthcare services. Thus, physicians and policymakers are increasingly focusing on remodeling the patient experience [1]. However, there need to be more well-designed studies that measure interventions between patient experience and healthcare quality. Furthermore, there are no previous studies about the effect of physician performance matrix (PPM) on patient experience and healthcare quality. Therefore, the main goal is to evaluate patient experience before and after implanting the physician performance matrix (PPM). This study hypothesized a positive effect of the physician performance matrix (PPM) on patient experience.

## **Methodology**

### **Setting**

The current study is a descriptive retrospective cross-sectional survey. It was conducted in all primary healthcare facilities (PHCs) at Alahsa, Eastern Province of the Kingdom of Saudi Arabia, from October 2020 to December 2022.

### **Study Population**

The target population was all patients registered at primary care facilities (HIS) who responded to Press Ganey's survey after receiving medical care. (KPIs) of physicians in Alahsa PHCs was also included. 66 PHCs are divided into four zones (East, middle, southern, and north).

### **Inclusions and Exclusions Criteria**

The inclusion criteria were for all registered patients in (HIS) at Alahsa (PHC) who had completed the Press Ganey survey. Gathered (KPIs) that physicians achieve through (HIS) were also included. Patients who did not complete filing the survey were excluded from the study.

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## Questionnaire Validation

Data was collected using a self-administered questionnaire based on the Arabic version of the Press Ganey Survey. Press Ganey survey is a tool established by Press Ganey Company Indiana, United States, for measuring and improving patient experience. The survey covers nine domains: access, moving through, nurse assistant, physician, investigation, personnel issues, pharmacy, and overall assessment. [7] The survey uses a 5-point Likert scale including "Very Good," "Good," "Fair," "Poor," and "Very Poor." 5 points for "Very Good," 4 points for "Good," 3 points for "Fair," 2 points for "Poor," and 1 point for "Very Poor." Out of 100%, 1 point scores 0%, 2 points score 25%, 3 points score 50%, 4 points score 75%, and 5 points score 100%. This study focuses on the physician domain (5 questions). The questionnaire was sent out and collected via a link to be completed online after receiving service at primary healthcare facilities to the study sample. [4] Data were gathered for 2020 –2022 using a cohort divided into four quarters per year.

## Sample Size and Sampling Technique

There were 600,000 files of patients who had registered in HIS. In total, 589,777 participants for the study have participated from all of the registered patients in the primary healthcare electronic system (HIS) who had completed the Press Ganey survey.

The key performance indicators of physicians in Alahsa PHCs comprise screening for diabetes, dyslipidemia, hypertension, obesity, colon and breast cancer, osteoporosis, geriatric care, and the daily average of patients physicians see. After gathering the KPIs, a quarterly report is released.

## Data analysis

Statistical Package of the Social Sciences (SPSS), IBM version 22, was used for data entry and analysis. Two analyses were performed: a descriptive analysis that measures frequency as it has been expressed in terms of numbers and percentages, a measure of dispersion, and the mode of central tendency (Mean et al. & Standard Deviation). The inferential analysis applied several statistical tests to determine the relationship between different variables.



## Ethical Considerations

The involved competent authorities have granted ethical approval (12/13/2022). In addition, each study participant provided written informed consent. Each participant had the option to leave the survey at any time. No personal information about survey participants was obtained. The collected data was kept confidential and only used for research purposes.

## Results

Variables	Frequency (%)
<b>Age groups of the patients</b>	
<= 5 years	58,977.7(10%)
6-12 years	100,262.09(17%)
13-20 years	76,671.01 (13%)
21-40 years	188,728.64(32%)
41-60 years	100,262.09 (17%)
>=60 years	35,386.62(6%)
<b>Total</b>	589,777 (100%)
<b>Sex groups of the patients</b>	
Male	288,991(49%)
Females	300,786 (51%)
<b>Working physicians</b>	
Family medicine consultant	39 (10.05%)
Obstetrics and gynecology consultant	1(0.25%)
Family medicine specialist	131(33.76%)
Pediatrician	3(0.77%)
Internal medicine	2(0.51%)
Dermatologist	1(0.25%)
Chest Physician	1(0.25%)
Resident Physician	208(53.60%)
Gynecologists	3(0.77%)
<b>Total</b>	388 (100%)
<b>PHC distribution</b>	
Southern	42 (20%)
Middle	73 (34.76%)
Northern	38 (18.09%)
Eastern	57 (27.14%)
<b>Total</b>	210 (100%)

**Table 1:** Sociodemographic data

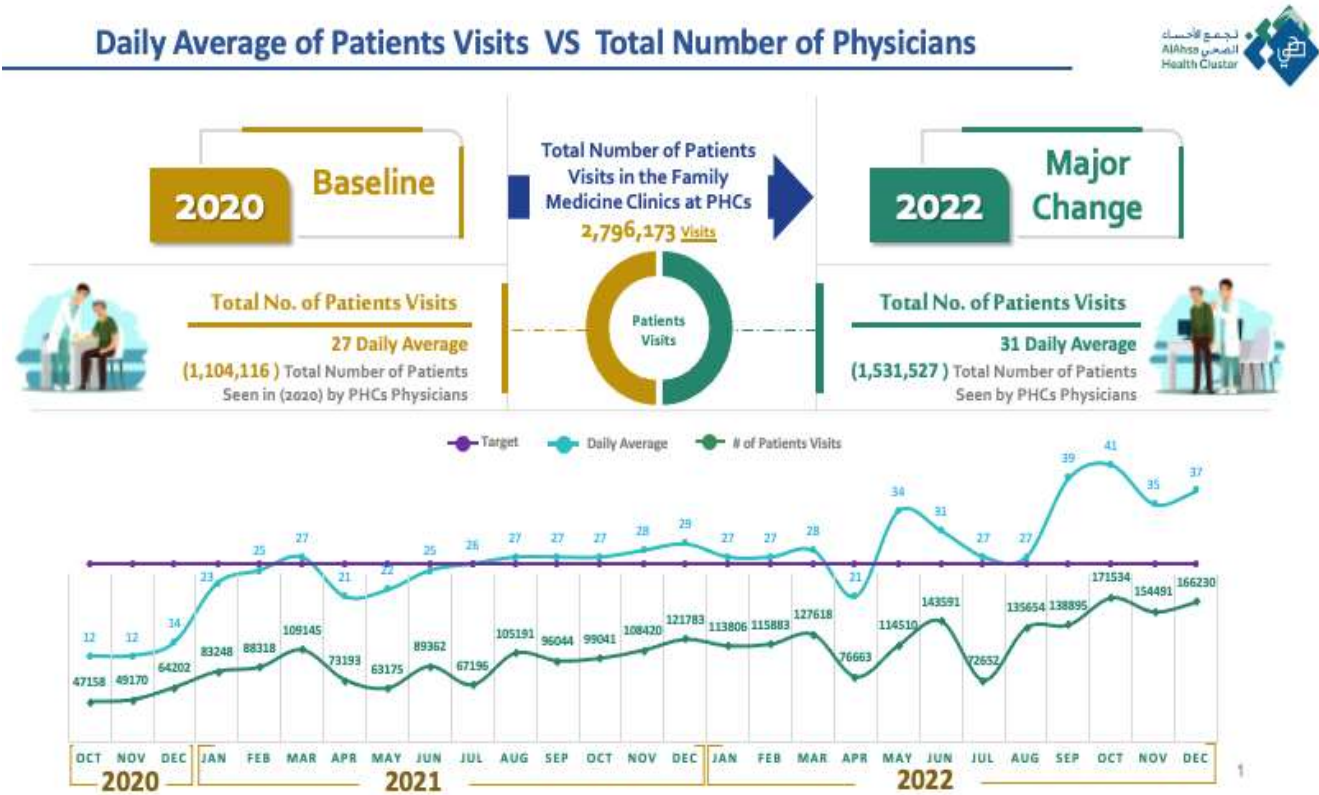


According to Table 1, the majority of participants were between the ages of 13 and 20 (13%), 21 and 40 (32%), and 41 and 60 (17%). As a result, 49% of the population was male, according to the ratio of men to women. From a total of 388 practicing doctors, the majority were resident doctors (53.6%), family medicine specialists (33.7%), and consultants (10%). Out of the 210 primary health care (PHC) facilities across the Eastern province, 20 percent are in the Southern region, 34.7% are in the Middle, 18 percent are in the Northern, and 27.1% are in the Eastern region.

Duration	1 <sup>st</sup> quarter, 2022			2 <sup>nd</sup> quarter, 2022			3 <sup>rd</sup> quarter, 2022			4 <sup>th</sup> quarter, 2022		
	PHC Score	MoH Mean	Mean	PHC Score	MoH Mean	Mean	PHC Score	MoH Mean	Mean	PHC Score	MoH Mean	Mean
Items of Physicians Survey												
The interest your doctor has shown in your questions or concerns	88.04	85.04	3	85.03	82.72	2.31	86.28	83.06	3.22	85.15	82.2	2.95
The explanation your doctor gave you about your problem or health condition	87.3	84.06	3.24	84.3	81.74	2.56	85.43	82.15	3.28	84.29	81.44	2.85
Your doctor is keen to include you in decisions about your treatment.	86.39	83.25	3.14	83.1	80.71	2.39	84.4	81.21	3.19	83.29	80.49	2.8
The doctor discusses the proposed treatment methods (options, risks, benefits, etc.).	85.68	82.47	3.21	82.4	79.49	2.46	83.66	80.39	3.27	82.51	79.72	2.79
The likelihood that you would recommend this doctor to others	85.41	81.52	3.89	81.93	78.88	3.05	84.01	80.2	3.81	83.84	79.84	4
Mean	86.564	83.268	3.296	83.352	80.798	2.554	84.756	81.402	3.35	83.82	80.74	3.08

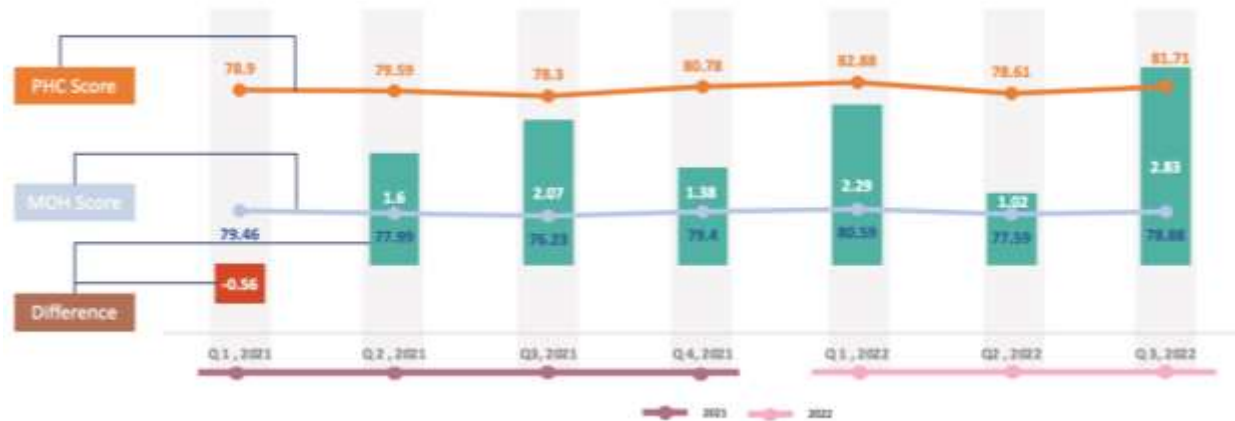
**Table 2:** Responses of the Patients on Physician Survey on Quarterly Bases

Table 2 provides information about patient responses to the Press Ganey (P.G.) survey and its results. It is based on a four-quarter comparison of PHC and MoH scores. Most of the questions focused on five areas directly related to doctors' attitudes and behaviors. For instance, the average of all PHC scores is higher than the average of all other MoH services. Regarding the first question in the list related to doctors' interest, PHC scored 88.04 in the first quarter, which was higher than MoH services, and similar results were also seen in the second, third, and fourth quarters. There were also mean differences between PHC and MoH responses for the second question, and PHC doctors scored higher. Again, the PHC scores are higher than other MoH scores regarding informed shared decision-making, but it was better in the first quarter than in the fourth. The second query concerns the patients' detailed explanation of the management plans. The same pattern was again evident in the responses to this and the final question about recommending these doctors to others.



**Figure 1:** Patient visit and ratio

This graph shows that by Nov 2020, there was a total of 49,170 visits, and after implementing the physician performance matrix, there was an increase in the total number of visits per month, up to 138,895 by Sep 2022. Electronic chart registration also increased from 178,780 by the end of 2020 to 607,895 by 2022.



**Figure 2:** Press Ganey score of Patient Experience

This graph shows the Press Ganey score improved from 78.9 by the first quarter of 2021, with -0.56 below the national average, up to 81.71 with +2.83 above the national average in the third quarter of 2022.

## Discussion

The present study addressed the gap by examining interventions between the physician performance matrix (PPM) and the patient experience. The PPM (physician performance matrix) was expected to impact patient experience in this study favorably.

The sociodemographic characteristics of the data are shown in Table 1. The vast majority of participants were between the ages of 21 to 40 (32%), 41 to 60 (17%), then 13 to 20 (13%). Regarding the gender of the participants, the ratio of male to female is 49% to 51% which is almost equal. Out of the 210 primary health care (PHC) facilities across Alahsa, 20 percent are in the Southern region, 34.7% are in the Middle, 18 percent are in the Northern, and 27.1% are in the Eastern region.

According to the findings, all PHCs had higher average scores than other MoH programs. The first item in Press Ganey Survey covered the attention demonstrated by doctors in patients' inquiries or concerns. Remarkable results were recorded from the first quarter after applying PPM, with a score of 88.04 for Alahsa PHCs compared to 85.04 for MoH services. Similar results were found for the rest of the quarters as Alahsa PHCs scores were higher than MoH services.

Doctors' active listening is associated with better patient experience and fewer patient concerns. Two studies conducted by Beck RS, Daughtridge R, and the other by Fassaert T and van Dulmen S enhanced the importance of doctors' active listening in improving patient experience. [16,17] The second item was about the explanation given by doctors about patients' problems or health conditions.

Similarly, AlAhsa PHCs scored 87.30 compared to 84.06 for MoH services, which is higher for all quarters. The third item illustrated doctors' intention to involve their patients in decisions making about treatment. AlAhsa PHCs scored 86.39, higher than 83.25 for MoH services, with a similar pattern in all quarters. Forth item showed if the doctor discusses treatment options with the patient. In comparing AlAhsa PHCs and MoH services, Alahsa PHC scored 85.68 while MoH services scored 82.47, similar in all quarters. The second, third, and fourth items showed a positive relationship between shared-decision making and patient satisfaction. A study by Won S Suh concluded that patients who participate in care-related decisions and are given an explanation of their health problems are more likely to be satisfied with their care. [18] The fifth item represented the likelihood of recommending this doctor to others. AlAhsa PHCs scored higher in all quarters, scoring 85.41 in the first quarter, while MoH services scored 81.52. Patients' recommendation of their doctors to others indicates high patient satisfaction, which was proved by a study by J Kersnik. [19] Overall, the mean of all items in AlAhsa PHCs was higher in the first, second, third, and fourth quarters.

As mentioned in the result section, by Nov 2020, there was a total of 49,170 visits, and after implementing the physician performance matrix, there was an increase in the total number of visits per month, up to 138,895 by Sep 2022. In 2022, the average number of patients seen by physicians in Alahsa was found to be 34 patients per day, as compared to 13 patients per day in 2020. A research study using America's Physicians Practice Patterns & Perspectives survey in 2018, involving 8,774 physicians, found that respondents see an average of 20.2 patients daily. Therefore, the average number of patients seen by physicians in Alahsa is higher compared to patients in the United States. [20]

Further comparisons depicted that the Press Ganey score was 78.9 by the first quarter of 2021, which was still below the national average. In the third quarter of 2022, the score increased to 81.71, above the national average. In the present study, patient experience was measured and reported to be used in healthcare quality improvement. As it was emphasized by a study done by Gleeson H et al. in London documented that patient experience can be measured, reported on, and used to help improve the quality of healthcare. It also discovered that patient experience data is essential for providing patient-centered healthcare services. [14]

Identical results were shown in a study done by Wray, J. and Oldham, G. in London; the study concluded that measurements of parent-reported experience help raise the standard of health care. [13] Furthermore, a recent systematic analysis by Doyle C, Lennox L, and Bell D included 55 research studies that found a favorable relationship between patient experience and clinical efficacy and patient safety, supporting that patient experience is the core of high-quality medical care. [6]

Key performance indicators (KPIs) must be meaningful, up-to-date, evidence-based, and repeatable to support assessment. Performance key indicators promote organization director accountability and provide chances to compare different organizations. The increased awareness of quality and safety in healthcare emphasizes the significance of performance and quality assessment even more. [21] Another study in Oman (2020) found that KPIs in PHCs showed considerable variation between facilities, with workload and outcome performing lower than other components. The findings of this study signify a measure of internal strengths in PHCs to be sustained and challenges to be improved. [22] Therefore, implementing (KPIs) in primary health care promotes measured, digitized, and trustful data, which helps compare Alahsa (PHCs) records to other (MOH) sectors.

## Conclusion

It is clear that (PPM) plays an important role in the improvement of healthcare institutions. Setting key performance indicators represents a measurement instrument for assessing (PHCs') internal strength and obstacles. As a result, KPIs increase healthcare quality and contribute to a healthy work environment for healthcare providers. Overall, our analysis discovered evidence that Alahsa patients have a better experience at PHC when compared to patients receiving care from other MoH programs. In addition, incorporating the physicians' performance matrix enhances the patient experience in Alahsa.

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