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An integrative framework of health administration and patient satisfaction at health-care centre's: perspectives of Riyadh, Saudi Arabia

Un marco integrado de la administración de la salud y la satisfacción del paciente en los centros de atención médica: perspectivas de riad, Arabia Saudita

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ABSTRACT

Aim of the present study is to make satisfied the visitors (patients) through the offered services. There are private and public sector health care Centre's in the Kingdom of Saudi Arabia, particularly in the diplomatic city of Riyadh. However, present study targeted public sector health care centers due to easy access. Later the study conceptualized a theoretical study framework and suggested the hypotheses based on the previous studies and recommendations. Thus, the study investigated the considered hypotheses for the mentioned variables. Total four (4) constructs were considered and four hypotheses were developed. Among 350 participants of the survey, valid responses were counted as 262. The collected data were analyzed through SPSS version 22. Descriptive part also included in the distributed questionnaire in order to obtained the respondents demographics. After analysis of the data, results showed all the hypotheses are having a significant relationship with each other. Findings of this study also important for the practitioners in health care sectors.

Keywords: Staff, Staff cooperation, Patient satisfaction, Health care quality

RESUMEN

El objetivo del presente estudio es lograr que los visitantes (pacientes) estén satisfechos a través de los servicios ofrecidos. Hay centros de atención médica del sector público y privado en el Reino de Arabia Saudita, particularmente en la ciudad diplomática de Riyadh. Sin embargo, el presente estudio se centró en los centros de salud del sector público debido al fácil acceso. Posteriormente el estudio conceptualizó un marco teórico de estudio y sugirió las hipótesis basadas en los estudios y recomendaciones anteriores. Así, el estudio investigó las hipótesis consideradas para las variables mencionadas. Se consideraron un total de cuatro (4) constructos y se desarrollaron cuatro hipótesis. Entre los 350 participantes de la encuesta, las respuestas válidas se contaron como 262. Los datos recopilados se analizaron a través de SPSS versión 22. La parte descriptiva también se incluyó en el cuestionario distribuido para obtener los datos demográficos de los encuestados. Después del análisis de los datos, los resultados mostraron que todas las hipótesis tienen

una relación significativa entre sí. Los resultados de este estudio también son importantes para los profesionales de los sectores de atención de la salud.

Palabras claves: Personal, Cooperación del personal, Satisfacción del paciente, Calidad asistencial.

1-INTRODUCTION

The health sector in Saudi Arabia has undergone significant development over the past few decades, with the government investing heavily in healthcare infrastructure, facilities, and workforce (Almutairi et al., 2014). The Ministry of Health is the main regulatory body responsible for overseeing the healthcare system in the country, while the Saudi Arabian National Guard and the Ministry of Defense also have their own healthcare facilities (Almalki et al., 2011).

Primary healthcare services are provided through a network of over 2,000 primary healthcare centers (PHCs) across the country (Alkhamis et al., 2014). PHCs are staffed by general practitioners, nurses, and other healthcare professionals and provide a wide range of services, including preventive care, diagnostic services, and treatment of acute and chronic illnesses (Almutairi et al., 2014).
In addition to PHCs, there are also several specialty hospitals and medical centers, including cardiac centers, cancer centers, and children's hospitals (Alkhamis et al., 2014). These facilities provide specialized care and advanced medical treatments, including surgery and intensive care.

The Saudi Arabian healthcare system has faced several challenges in recent years, including rising healthcare costs, a shortage of healthcare workers, and the need to improve the quality of care (Al-Omar & Al-Rawashdeh, 2019). To address these challenges, the government has implemented several reforms, including the introduction of a mandatory health insurance scheme and increased investment in medical education and training.

Overall, the health sector in Saudi Arabia is continuing to grow and develop, with a focus on improving access to quality healthcare services for all citizens and residents of the country. Novelty and innovation in healthcare continues to be a driving force in the quest to balance cost containment and health care quality. Innovation is considered to be a critical component of business productivity and competitive survival (Zaltman, et al., 1973).

The last century has produced a proliferation of innovations in the healthcare industry aimed at enhancing life expectancy, quality of life, diagnostic and treatment options, as well as the efficiency and cost effectiveness of the healthcare system (Varkey, Horne and Bennet, 2006).

Innovation and creativity work to provide appropriateness to human needs in a pure and effective manner that ensures the achievement of its goal. However, in the Kingdom of Saudi Arabia in their vision 2030, innovation was promoted with a strategic goal in the health field, which called for the contribution of researchers to find methodologies and rules that could support innovators and organize innovative work and contribute to spreading the culture of innovation and creativity among employees of the health sector. Based on the past studies and critical review of literature, present study reaches to raise the following research question.

- Is there a relationship between availability of staff and health care quality?
- Is there a relationship between availability of staff and medical staff cooperation?
- Is there a relationship between heath care quality and patient satisfaction?
- Is there a relationship between cooperation of medical staff and patient satisfaction?

However, the novel administration of healthcare centers can involve various factors that impact patient satisfaction. Some of the important factors involved in the novel administration of healthcare centers are; access to care, such as extended clinic hours, telemedicine that can increase patient satisfaction by reducing wait times and increasing convenience. Similarly, patient engagement, in their healthcare can improve patient satisfaction by promoting their involvement in decision-making and care planning (Graffigna et al., 2017). Another perspective is, health literacy, that improves patients' health literacy for understanding and their health conditions which can lead to better health outcomes and increased patient satisfaction (Paasche-Orlow et al., 2010). Staff attitudes and behavior is also important factor and may have a significant impact on patient satisfaction (Scherer et al., 2015). Quality of care and healthcare services are also provided by healthcare centers is crucial for patient satisfaction (Levinson et al., 2018).

2. LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

2.1 Availability of staff and health care quality

The availability of staff is an important factor in ensuring the delivery of high-quality healthcare. Staff availability refers to the number of healthcare workers available to provide care. A sufficient number of staff is necessary to provide timely care, ensure patient safety, and meet patient needs. Several studies have investigated the relationship between staff availability and healthcare quality. For example, a study by Aiken et al. (2014) found that hospitals with higher nurse staffing levels had lower rates of adverse patient outcomes, such as hospital-acquired infections and patient mortality. The study also found that higher staffing levels were associated with higher levels of patient satisfaction. Another study by Needleman et al. (2011) found that hospitals with higher nurse staffing levels had lower rates of Readmission and Shorter lengths of hospital stay. Furthermore, a study by Kane et al. (2007) found that higher staffing levels were associated with better adherence to clinical guidelines and improved patient outcomes.
Thus, past literature has witnessed the importance of the availability of staff and considered an important factor to ensure the delivery of high-quality healthcare. Healthcare providers should strive to ensure that there are enough staff available to provide care and that the staff is appropriately trained and supported to provide high-quality care. Based on the following discussion the study then formalized and developed the following hypothesis. **H1**: *There is a positive and significant relationship between availability of staff and health care quality.*

2.2 Availability of staff and medical staff cooperation

Availability of staff and the cooperation of health care staff are two important factors that contribute to the delivery of high-quality healthcare. Staff availability refers to the number of healthcare workers available to provide care, while medical staff cooperation refers to the level of collaboration and communication between different healthcare providers. Several studies have investigated the impact of staff availability and medical staff cooperation on healthcare quality. For example, a study by McHugh et al. (2013) found that hospitals with higher nurse staffing levels had lower rates of patient mortality and fewer adverse events.
Another study by Blegen et al. (2011) found that better nurse-physician collaboration was associated with lower rates of hospital-acquired infections and shorter lengths of hospital stay. In addition, a study by Haidet et al. (2008) found that effective communication and collaboration between physicians and nurses was associated with higher patient satisfaction and better healthcare outcomes.

Therefore, staff availability and medical staff cooperation are important factors that contribute to the delivery of high-quality healthcare. Moreover, healthcare providers should strive to ensure that there are enough staff available to provide care and that medical staff work collaboratively to provide coordinated and effective healthcare. Based on the discussion the following study has developed the following below

hypothesis. **H2:** There is a positive and significant relationship between availability of staff and medical staff cooperation.

2.3 Health care quality and patient satisfaction

Patient satisfaction and Health care quality are two important measures of the effectiveness of health care delivery. Quality of health care refers to the degree to which health care services meet the needs and expectations of patients while patient satisfaction reflects the extent to which patients are satisfied with the care they receive.

There is a growing body of research that has explored the relationship between health care quality and patient satisfaction. For example, a study by Sofaer and Firminger (2005) found that patients who received higher quality care were more satisfied with their health care experiences. Similarly, a study conducted by Sitzia and Wood (1997), found that patients who were satisfied with their care had better health outcomes than those who were not satisfied. Moreover, another study conducted by Glickman et al. (2010) and found that hospitals with higher patient satisfaction scores had lower rates of readmission and better adherence to clinical guidelines. Additionally, a study conducted by Fenton et al. (2012) and found, that patient-centered care, which is characterized by active patient involvement in decision making and a focus on patient needs and preferences, was associated with higher patient satisfaction and improved health outcomes.

Thus, based on the past evidences and critical literature review it was found and suggests that health care quality and patient satisfaction are closely connected. Discussion and witnessed are kept in mind and developed the following below hypothesis. **H3:** There is a positive and significant relationship between health care quality and patient satisfaction.

2.4 Medical staff cooperation and patient satisfaction

Cooperation of medical staff is an important element to ensure the delivery of high-quality healthcare setup. This refers to the level of collaboration and communication between different healthcare providers, such as physicians, nurses, and other healthcare professionals. Several studies have investigated the relationship between medical staff cooperation and patient satisfaction. For example, a study conducted by Kuo et al. (2012) and found that better collaboration between physicians and nurses was associated with higher patient satisfaction. Additionally, study results also show that communication between different healthcare providers was an important factor in improving patient outcomes and reducing the risk of adverse events. Similarly, another study conducted by Gittell et al. (2010) found that higher levels of collaboration and communication between different healthcare providers were associated with better patient outcomes, including lower rates of hospital-acquired infections and shorter lengths of hospital stay. Furthermore, a study by Lee et al. (2011) found that better communication and collaboration between healthcare providers were associated with higher levels of patient satisfaction and better quality of care.

Thus, in a relation the medical staff cooperation is an important factor to ensure the delivery of high-quality healthcare setup and healthcare service providers should endeavor to improve collaboration and communication between different healthcare providers to provide coordinated and effective healthcare.

The following literature and discussion has been argued in the association between medical staff cooperation and patient overall satisfaction and thus suggested the following below hypothesis. H4: There is a positive and significant relationship between medical staff cooperation and patient satisfaction.

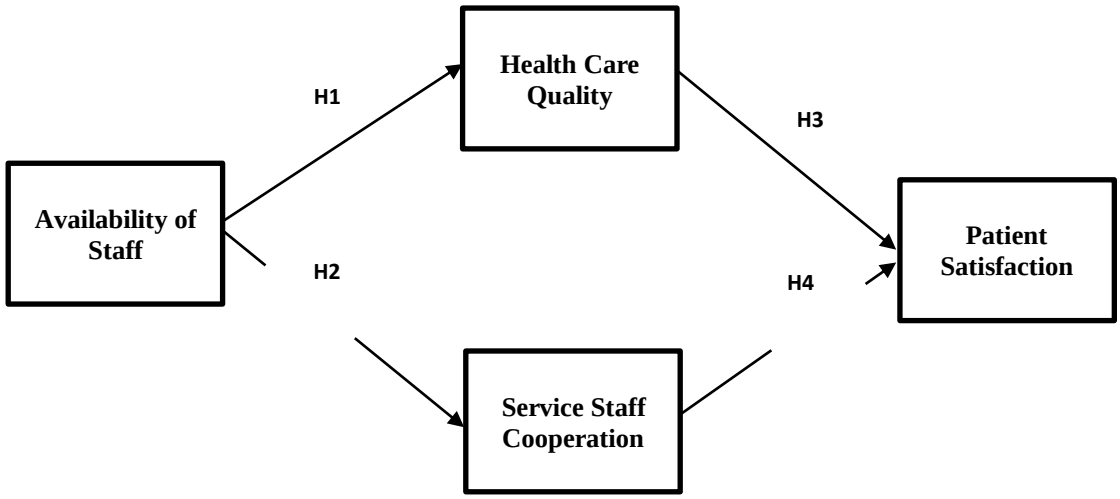

Figure 1. Theoritical Framework

3. METHODS

3.1 Procedure and data collection process

Data collection and other procedure took place in Saudi Arabia Riyadh PHC's, randomly Fifteen (15) PHC's were chosen in Riyadh, the capital city of Saudi Arabia. These PHC's are run by the government of Saudi Arabia. The reason for choosing these PHC's were convenient and easy to access to the respondents. The target were the visiting patients to these PHC's, thus Unit of analysis were either patients or attended. Upon approval of the visitors they were handed over the questionnaire containing items and guided briefly.

4. DATA ANALYSIS PROCESS

4.1 Measurements

Respondents as earlier discussed were the either patients or attendant with the patients. Therefore, randomly survey questionnaire were distributed. Total (350) surveys were distributed among the targeted respondents where (262) valid responses were obtained. The rest were discarded due to insufficient and false information. According to the previous studies such as (Hair et al., 2010), to have at least (5) five times the high numbers of the total constructs and variables. Thus, the counted items were 26*5= 130. Whereas, the collected valid data was counted as 262 and thus considered for further analysis For measuring the construct items, the five point Likert scale were used as = (1) strongly disagree and = (5) strongly agree. Twenty-six (26) items were considered for the present study.

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4.2 Descriptive analysis

Table below shows the respondents and their descriptive analysis. It shows frequencies of nationalities, genders, age group, marital status, education, age group, profession etc. Total 173 respondents were male and 89 respondents were female respondents counted. 144 respondents were counted as Saudi nationals, whereas 118 were counted as having other nationalities. In addition, maximum age group were counted 111 respondents whose age group were in between 31-40 years of age. 221 respondents were counted as married and 41 were counted as unmarried. Highest education was recorded as the ones who had bachelor's degree

and recorded the respondent as 137. Moreover, maximum respondents were fully employed and counted as 151 respondents.

Table 1.Respondents Demographics

Demographics	Options	Frequency = 262	%age.
Gender	Male	173.00	66.03
	Female	89.00	33.96
Nationality/Race	Saudi Nationals	144.00	54.96
	Other Nationalities	118.00	45.03
Age	Up to 20 Years	9.00	03.43
	30-21	48.00	18.32
	40-31	111.00	42.36
	50-41	75.00	28.62
	50 & above	19.00	07.25
Marital Status	Married	221.00	84.35
	Non-Married	41.00	15.64
Education	Diploma/Certificate/etc.	13.00	04.96
	Undergraduate	137.00	52.29
	Graduate	110.00	41.98
	PhD	2.00	00.76
Occupation	Employee(full-time)	151.00	57.63
	student	33.00	12.59
	own business	37.00	14.12
	re-tired	15.00	05.72
	unemployed	26.00	9.92

4.3 Testing the validity

Cronbach alpha and Composite reliability(CR) are the conventional method to test the reliability and validity among the construct items. Hence, contemporary study conducted the Cronbach alpha test in order to check the validity and reliability construct items (Cronbach, 1951). According to Vinzi *et al.*, (2010) the minimum required Cronbach alpha value is equal or greater than (0.70) is considered as acceptable. Validity and reliability test were conducted using SPSS version 23. Table below shows all the Cronbach's Alpha values according to the minimum criteria.

Table 2. Cronbach's Alpha Values Results

Constructs	Cronbach Alpha Values
Availibility of staff (AS)	0.799
Health care quality (HCQ)	0.781
Service staff cooperation (SSC)	0.933
Patient satisfaction (PS)	0.921

4.4 Standard deviation and mean value

Standard deviation is the variability amount in dataset. Usually (SD) *Standard deviation* test are conducted to identify the values and how far are they from the mean level (Pritha Bhandari, 2023). Below table reflects the calculated SD values, mean, and the level of mean. For instance, Mean value of (AS) calculated 4.372, whereas, standard deviation recorded as 0.733, and thus considered as middle to the mean. Similarly, (HCQ) the mean value counted as 4.889, where standard deviation calculated as 0.718 and considered as middle to the mean. In addition, (SSC) values of mean were reflected as 4.879, and value for standard deviation

reflected as 0.771, also included in the domain of middle to the level of mean. Sd. value of (PS) mean calculated 4.112, and standard deviation calculated as 0.721, that also found in the middle to the level of mean. All the values can be seen in the table below.

Table 3. Means & Standard Deviation

Constructs	Mean	Standard Deviation	Mean Level
Availability of Staff (AS)	4.372	0.733	Middle
Health care quality (HCQ)	4.889	0.718	Middle
Service Staff Cooperation (SSC)	4.879	0.771	Middle
Patient satisfaction (PS)	4.112	0.721	Middle

4.5 Hypotheses and correlation test

For testing the correlation of constructs, present study conducted Pearson test that is usually conducted for the correlation among the constructs. The considered constructs that includes availability of staff, health care quality, service staff cooperation and patient satisfaction were tested using SPSS version 22 for correlation. The rule of thumb suggestions is that values 0.01 are considered as significant at two tailed.

Table 4. Hypotheses Correlation Test

	--	Availability of Staff (AS)	Health Care Quality (HCQ)	Service Staff Cooperation (SSC)	Patient Satisfaction (PS)
Availability of Staff (AS)	Pearson Correlation	.414**	.224**	.332**	.673**
	Sig. (2-tailed)		.000	.000	.000
		N=262	N=262	N=262	N=262
Health Care Quality (HCQ)	Pearson Correlation	.472**	.532**	.403**	.376**
	Sig. (2-tailed)	.000		.000	.000
		N=262	N=262	N=262	N=262
Service Staff Cooperation (SSC)	Pearson Correlation	.313**	.438**	.492**	.487**
	Sig. (2-tailed)	.000	.000		.000
		N=262	N=262	N=262	N=262
Patient Satisfaction (PS)	Pearson Correlation	.441**	.502**	.598**	.463**
	Sig. (2-tailed)	.000	.000	.000	
		N=262	N=262	N=262	N=262

**Correlations are significant at 0.01 level (2-tailed)

4.RESULTS

Below table reflects the all the values and hypotheses. The H_1 links (AS) and (HCQ) are significant at (0.000) and calculated the t-value with 8.414, thus the link found positive. Similarly, hypothesis link of (AS) and (SSC) were also tested and found significant at (0.000), whereas, the t-value 8.153, these values are also recorded positive link. Further the link between (HCQ) and (PS) were also found significant at (0.000), and the t-value recorded as 8.724, with this value this link also been found positive. Relation between (SSC) and

(PS) is also found significant at (0.000), and value for (t) calculated as 8.201, thus, also this link found positive association.

Table 5. Hypotheses Results

	Constructs	t-value	Significant	Result
H_1	Availability of Staff → Health Care Quality	8.414	0.000	Positive
H_2	Availability of Staff → Service Staff Cooperation	8.153	0.000	Positive
H_3	Health Care Quality → Patient Satisfaction	8.724	0.000	Positive
H_4	Service Staff Cooperation → Patient Satisfaction	8.201	0.000	Positive

5. DISCUSSION

Present study conducted in the Kingdom of Saudi Arabia. Theoretical framework has been developed after a critical literature review and hypothesized the relationship among the considered constructs. Four (4) constructs and four (4) hypotheses were developed. 262 valid responses were obtained and run the data set through SPSS application. The results however showed that all the suggested hypotheses are having significant relationship with each other. Hypotheses were tested through SPSS and found significant at all levels.

However, in this research staffing levels are just one of many factors that contribute to healthcare quality. Other important factors include the availability of medical resources, the quality of medical equipment and supplies, the accessibility of healthcare facilities, and the expertise of healthcare professionals. To ensure high-quality healthcare, it is important to address all of these factors and to develop policies and programs that promote and support a strong healthcare system. This includes investing in healthcare infrastructure, providing ongoing training and education for healthcare professionals, and developing evidence-based guidelines and protocols for the delivery of care.

6. CONCLUSION

Dependent variable in present research is patient satisfaction. Patient satisfaction is an important measure of healthcare quality. It refers to how satisfied patients are with the care they receive, including their interactions with healthcare providers, the quality of care, the timeliness of care, and other aspects of their healthcare experience. Research has shown that higher levels of patient satisfaction are associated with better health outcomes, increased patient adherence to treatment plans, and improved patient safety. On the other hand, lower levels of patient satisfaction can lead to decreased trust in healthcare providers, poorer health outcomes, and decreased utilization of healthcare services. To improve patient satisfaction, healthcare providers can focus on several key areas, including communication, empathy, and patient-centered care. Effective communication involves listening to patients' concerns and providing clear, understandable information about their diagnosis, treatment options, and care plan. Empathy involves understanding and responding to patients' emotional needs and concerns, as well as providing emotional support and reassurance. Patient-centered care involves involving patients in their care decisions and prioritizing their preferences and values. In addition, healthcare providers can also focus on improving the physical environment of healthcare facilities, providing timely and efficient care, and addressing patient concerns and complaints in a timely and respectful manner. By prioritizing patient satisfaction, healthcare providers can improve the overall quality of care and promote better health outcomes for their patients.

7. STUDY LIMITATIONS AND FUTURE DIRECTIONS

Studies are always with flaws. Likewise, other studies, present study also has some clear and visible limitations. Firstly, future studies should consider Hospitals rather targeting PHC's. Secondly, future studies should consider other variables such as atmospheric impact with might leads patients towards more satisfaction. Thirdly, study took place in Saudi Arabia and data were collection process took place domestically, future studies can be conducted in other Gulf countries. Fifthly, future studies can have considered other new variable that may change the dynamics of the study.

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