




“Effect of healthcare workers’ personalities on health service quality: A case study of hospitals on the Malaysia-Indonesia border”

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EFFECT OF HEALTHCARE WORKERS' PERSONALITIES ON HEALTH SERVICE QUALITY: A CASE STUDY OF HOSPITALS ON THE MALAYSIA-INDONESIA BORDER

Abstract

The personality of healthcare workers, including doctors, nurses, and any employee who directly provide supportive services to a patient, is vital in health service quality, contributing to the hospital's brand image. Malaysia has successfully built that brand image attracting many Indonesians to have health treatment in this country. This study aims to examine the effect of healthcare workers' personalities on health service quality at Malaysian hospitals. The study adopted the Big Five Traits and SERVQUAL models to measure healthcare workers' personalities and health service quality. One hundred respondents from the families in West Kalimantan, Indonesia, who had health treatment in Malaysia, were selected to respond to the statements based on a Likert scale. The regression model was employed in data analysis in which the healthcare worker's personality was an independent variable, and health service quality was a dependent variable. The regression test results show that agreeableness and emotional stability positively and significantly influenced health service quality at the 5% level, with each coefficient of 0.332 and 0.701. Due to less varied responses, conscientiousness, extraversion, and openness to experience did not significantly influence health service quality. That was supported by the high average index of health workers' personalities (4.14) and hospital services (4.27), indicating that the respondents agreed with healthcare workers' excellent personalities and health service quality in Malaysia. Each indicator in healthcare workers' personalities also significantly correlated with each indicator in health service quality.

Keywords

personnel management, organizational performance,
health treatment, psychology, business economics

JEL Classification

M12, I11, D91, M59, L84

INTRODUCTION

Health service quality is crucial in determining customers' preferences for a hospital, which is essential for organizational performance. Service quality is essential for business success (Hossain & Leo, 2009; Vilares & Coehlo, 2003). Thus, hospital management needs to identify the number of satisfied patients with the services (Rehman & Husnain, 2018) to improve service quality and patient loyalty (Eleuch, 2011; Maqsood et al., 2017; Fatima et al., 2018). The hospital needs visionary leaders who can plan relevant education and training and availability of resources, manage resources effectively, and collaborate with fellow healthcare providers (Mosadeghrad, 2014).

Human resource quality is one of the determinants of health service quality. It is a way to meet customer expectations (Parasuraman et al., 1991) through interactions between customers and service providers (Brady & Cronin, 2001), which are responsive, polite, and competent



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(Ekinci & Dawes, 2009). For instance, patients in India choose a hospital by considering basic facilities, reputation and quality, buildings and infrastructure, convenience and affordability, experience, responsiveness, and clinical support (Kamra et al., 2016). Meanwhile, patients in Nigeria intend to return to hospitals that are sensitive and reliable in their services (Mahmoud et al., 2019).

The Malaysian government pays attention to the medical tourism industry by improving the quality of healthcare workers and health services. As a result, Malaysia obtained several recognitions, such as the “Destination of the Year” for healthcare travel by UK-based International Medical Travel Journal and “Best Country in the World for Healthcare” by US-based International Living magazine (Malaysia Healthcare, 2019). In addition, Malaysia also ranked first in Asia as a country chosen by expatriates to live during retirement based on 13 assessments, such as health industry, healthy lifestyle, and the country’s level of development (Expatriate Financial, 2022).

Malaysia offers health services for foreign patients, including Indonesian middle-class families who are dissatisfied with health service quality at home. Every year, around 2 million Indonesians seek medical treatment overseas, such as in Singapore, Malaysia, Japan, and the USA, with the outflow of foreign exchange to nearly 100 trillion rupiahs (around USD 6.7 billion) per year (Primadhyta, 2021). Patients in Indonesia often complain about inaccurate diagnoses, incompetent healthcare workers, and a lack of communication and interaction between healthcare workers and patients (Md Zain et al., 2022; Ratnasari et al., 2022; Abdullah et al., 2019; Setyawan et al., 2019; Ormond & Sulianti, 2017). This study focuses on the experience of Indonesians who had health treatment in Malaysia.

1. LITERATURE REVIEW

Many indicators of health service quality are used to choose a hospital. These indicators include workers’ attitudes and behavior, the reputation and image of the hospital, service quality, and cleanliness of health facilities (Berkowitz & Flexner, 1980). Other indicators are distance, availability of specialist doctors, use of the latest technology, hygienic environment, familiarity with hospital staff, experience with hospitals, hospital fees and size, and religious orientation (Boscarino & Steiber, 1982). Parasuraman et al. (1991) classify various indicators of health service quality into five indicators in the SERVQUAL method: tangibility, reliability, responsiveness, assurance, and empathy. SERVQUAL is a standard instrument for measuring service in hospitals and other industries (Ramez, 2012).

People who require health services tend to be under pressure and need a more personal touch from healthcare workers. Thus, personality will determine the performance of healthcare workers and the organization. Personality is a character that underlies behavior in response to ideas and objects in an environment (Glass et al., 2014). It can predict employee performance (Sanders, 2008; Barrick et

al., 2001) and shape positive behavior (Comeau & Griffith, 2005). Suitability between personality and job will affect job satisfaction, organizational commitment, and performance (Kristof-Brown et al., 2005). The personality of healthcare workers influences health service quality (Gur et al., 2020; Hajek et al., 2017).

Organizations may create and develop their brand image through the personality of workers to attract customers. Therefore, the management should pay attention to personality in employee recruitment for sustainable business performance to reduce turnover and increase organizational performance (Echchakoui, 2013). Personality can be used to build a strong brand image, competitiveness, efficiency, and high productivity (Ekinci & Dawes, 2009). Costa and McCrae (1997) introduced the Big Five Traits model consisting of five indicators of personality: conscientiousness, agreeableness, extraversion, emotional stability, and openness to experience. Many studies used that model linking organizational behavior with job performance (Echchakoui, 2013).

Conscientiousness has a positive influence on service quality. Conscientiousness is the attitude of individuals who tend to be careful in making deci-

sions. It is reliable (Gur et al., 2020), a valid predictor (Lin et al., 2001), and the most potent performance indicator of service (McCrae & Costa, 1997; Yang & Hwang, 2014). Conscientiousness affects the service quality of an organization for various reasons. The reasons include employees who have a high desire to pay attention to customers, such as in Indonesia (Qaniah & Nurwianti, 2021), are responsible and organized, and like to provide services to others, such as in Turkey (Köşker et al., 2019). Conscientiousness positively and significantly affects nurses' work quality in Seoul (Kim & Lee, 2016), Thailand (Mechinda & Patterson, 2011), and Malaysia (Johari & Hee, 2013). For example, nurses in Malaysia work more responsibly, kindly, thoroughly, hardily, and reliably in meeting patient needs (Johari & Hee, 2013).

However, the effect of conscientiousness on service quality is not always significant. On the one hand, conscientiousness has a positive but insignificant effect on service quality in the UAE (Al-Mutawa & Ibrahim, 2013). On the other hand, conscientiousness may contribute to poor services due to depressing factors. For example, low conscientiousness accompanied by time pressure triggered service failure among nurses in Taiwan (Teng et al., 2014), which may deteriorate the company's image (Malhotra & Dash, 2016). Therefore, companies need to prevent service failures by recruiting highly conscientious employees (Teng et al., 2014) suitable for service-oriented jobs (Köşker et al., 2019).

Openness to experience is another indicator of personality influencing service quality. Patients need much help from healthcare workers and will be comfortable with the openness to experience personality. Nurses with a high level of openness tend to be flexible in identifying patients' needs and responding to patients' requests (Teng et al., 2007) and creative in solving patient problems (Johari & Hee, 2013).

Openness to experience positively and significantly affects organizational services. That was found in studies in several countries, such as Turkey (Köşker et al., 2019), Taiwan (Teng et al., 2007), Korea (Kim & Lee, 2016), and Malaysia (Johari & Hee, 2013). However, a positive but insignificant effect of openness to experience on service quality was found in Indonesia (Qaniah & Nurwianti,

2021) and the UAE (Al-Mutawa & Ibrahim, 2013). The role of personality in health service is less visible in a work environment dominated by employees working confidently according to standards and procedures as a reflection of organizational values (Al-Mutawa & Ibrahim, 2013).

Agreeableness is another indicator of personality required by health services. Persons with agreeable personalities like to help and can be trusted. Agreeableness has a positive and significant effect on service in Thailand (Mechinda & Patterson, 2011) and Turkey because employees are polite, pleasant, and helpful (Köşker et al., 2019). Meanwhile, two studies in Indonesia revealed the opposite results – a positive relationship between agreeableness and service quality, which was significant (Qaniah & Nurwianti, 2021) and not significant (Wibowo & Andriyanto, 2018). On the other hand, the effect of agreeableness on service is negative and significant in Taiwan (Teng & Hsu, 2012) and not significant in the UAE (Al-Mutawa & Ibrahim, 2013).

Health service quality also requires an extraversion personality. Extraversion is characterized by being confident, sociable, assertive, and relationship-oriented. Extraversion positively and significantly influences services in Indonesia due to employees working confidently and striving to perform better (Hastuti et al., 2017), similar to the findings in Turkey (Köşker et al., 2019) and Taiwan (Teng et al., 2007). Extraversion has a positive but insignificant effect on customer-oriented behavior in Thailand (Mechinda & Patterson, 2011) and Seoul (Kim & Lee, 2016), as well as on service-oriented industries in Indonesia (Qaniah & Nurwianti, 2021). Extraversion negatively but not significantly affects customer-oriented behavior in Malaysia (Johari & Hee, 2013).

Finally, health service quality requires emotional stability. High emotional stability/low emotional instability reflects the ability to manage pressure leading to high health service quality. Some studies used emotional instability instead of emotional stability. The findings may show the opposite sign of the relationship between personality and health service quality, but they have the same meanings. Emotional stability positively and significantly affects service quality in Turkey (Köşker et al., 2019) and Thailand (Mechinda & Patterson, 2011).

Similarly, emotional instability influences service quality negatively and significantly in Taiwan (Teng et al., 2007) and Seoul (Kim & Lee, 2016), but it is not significant in Malaysia (Johari & Hee, 2013). In Seoul, nurses must comply and be disciplined in following complex procedures and meeting customer needs. They should be able to socialize, actively serve, identify various characteristics and customer needs and provide accurate services (Kim & Lee, 2016). In other studies, emotional instability has a positive but insignificant effect on services (Qaniah & Nurwianti, 2021) and interaction quality due to employee attitudes that do not reflect openness to experience (Ekinci & Dawes, 2009). Emotional stability is not a valid predictor of service quality in the service industry in Taiwan (Lin et al., 2001).

Though personality is an essential determinant of health service quality, previous studies tended to be carried out in non-health industries (Teng & Hsu, 2012; Lin et al., 2001; Al-Mutawa & Ibrahim, 2013; Tung, 2021). Moreover, the workers' personalities tended to be used as an indicator of health service quality (Eleuch, 2011; Maqsood et al., 2017; Setyawan et al., 2019; Fatima et al., 2018) rather than a variable influencing health service quality. The effect of various indicators of employee personality on organization services also provided mixed findings. Therefore, this study attempts to fill the gap by examining the effect of healthcare workers' personalities on health service quality at Malaysian hospitals.

2. METHODS

The object of this study is Malaysian hospitals located in Kuching, the capital city of Sarawak state, Malaysia, sharing a land border with West Kalimantan province, Indonesia. The distance between Kuching and Pontianak, the capital city of West Kalimantan, via Entikong/Tebedu border post is around 350 kilometers, or it takes 7 hours by bus (5 hours in Indonesia and 2 hours in Malaysia). There are at least five private hospitals in Kuching whereby around 90% of their patients are from Indonesia. Incomplete health facilities in West Kalimantan require people in this province to obtain subsequent medical treatment outside their residential region, either in Java, especially

Jakarta, the capital city of Indonesia, or Kuching. People in West Kalimantan benefit from relatively equal health infrastructure distribution between states in Malaysia. The Pontianak-Kuching flight is unavailable daily and less frequent than the Pontianak-Jakarta flight. However, a wide range of land transport for the Pontianak-Kuching route is available daily, such as buses, taxis, and private cars.

The Big Five Traits and SERVQUAL models were employed in this study. For example, the healthcare workers' personalities variable used five indicators from the Big Five Traits model: conscientiousness, agreeableness, extraversion, emotional stability, and openness to experience (Costa & McCrae, 1997). Meanwhile, the health service quality variable also used five indicators from the SERVQUAL model: tangible, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 1991). In addition, this study classified tangible into two sub-indicators: reputation and physical evidence.

As many as 100 respondents from families in West Kalimantan who had health treatment at Malaysian hospitals were selected as respondents. They are living in Pontianak (40 respondents) and Singkawang (40 respondents) cities and Sanggau district (20 respondents). Pontianak and Singkawang were chosen because there are Malaysian hospital agents in these cities, while Sanggau was chosen because it is directly adjacent to Sarawak. Primary data were collected through surveys in 2018 and in-depth interviews and observations in 2022.

The survey data were collected using a questionnaire in the form of statements, with the answer choices being perceptions in the form of a Likert scale consisting of 5 scores ranging from 1 (strongly disagree) to 5 (strongly agree). There are 13 statements on healthcare workers' personalities and 25 on health service quality, with the number of statements for each indicator varying from 2 to 6 (Tables 2 and 3). Healthcare workers in this study refer to all employees who provide health treatment to the patients, such as doctors and nurses, and supporting staff, such as administrative and frontline staff (B. Joseph & M. Joseph, 2016).

This study employed a regression model with healthcare workers' personalities as an independent variable and health service quality as a dependent variable. Examination of the regression model was preceded by descriptive analysis. The analysis involves the characteristics and responses of the respondents and the correlation between the independent and dependent variables.

3. RESULTS

Table 1 presents the characteristics of the respondents. The number of male respondents (59%) and female respondents (41%) was similar. Most respondents are former patients (94%) and were 25 years old and over (78%). In addition, they mostly were Muslim (89%), completed senior high school education or higher (95%), and were businesspersons (74%).

Table 1. Characteristics of the respondents

Source: Survey data.

Characteristics	Frequency	Percentage (%)
Gender		
Male	59	59
Female	41	41
Total	100	100
Status		
Former patient	94	94
Patient companion	6	6
Total	100	100
Age at the time of interview (years)		
17-24	22	22
25-34	22	22
35-44	27	27
45 or older	29	29
Total	100	100
Religion		
Islam	89	89
Others	11	11
Total	100	100
Highest completed education		
Junior High School or lower	5	5
Senior High School	62	62
First and Master degrees	33	33
Total	100	100
Occupation of household head		
Businesspersons	74	74
Government employees	10	10
Private employees	16	16
Total	100	100

Respondents answered all statements about the personality of healthcare workers with an average index of 4.14 (Table 2). Conscientiousness had the highest index (4.32), while openness to experience had the lowest index (4.03). Nine out of 13 statements in the four indicators (openness to experience, agreeableness, extraversion, and emotional stability) received the "agree" response. The statement "Healthcare workers in Malaysia want to know about a patient's illness in detail" on the openness to experience had the lowest index (4.00). All statements on conscientiousness received a "strongly agree" response, with the highest index on "healthcare workers in Malaysia are experts in providing medical treatment" (4.35).

Respondents also answered all statements about the health service quality at Malaysian hospitals with an average index of 4.27 (Table 3). The average index on tangible, consisting of reputation (4.43) and physical evidence (4.34), was the highest, while that of assurance (4.05) was the lowest. Of the 25 statements, most (17) had a "strongly agree" response, including all three statements in reputation and reliability, five out of six statements in physical evidence, and three out of four in responsiveness. The rest (8 statements) received an "agree" response, mainly in assurance (4 statements) and empathy (3 statements). The statement "Hospitals in Malaysia have international standards" in reputation had the highest index (4.48), while "Hospital fees in Malaysia are relatively cheap" in assurance had the lowest index (3.43).

Table 4 presents the results of the Person correlation. A significant correlation was found between healthcare workers' personalities (X) and health service quality (Y) (0.666). There was a significant correlation between indicators in healthcare workers' personalities and health service quality, with the most correlation between indicators above 0.5. The correlation ranged from the highest between emotional stability (ES) and health service quality (0.657) to the lowest between openness to experience (O) and health service quality (0.482).

Table 4 also presents that most indicators in healthcare workers' personalities were strongly correlated (above 0.5) with two to four indicators in health service quality. For example, a strong

Table 2. Statements on the personality of healthcare workers in Malaysia

Source: Survey data.

No.	Statement	Score*					Total Score	Index	
		SD	D	QA	A	SA			
Conscientiousness									
1.	Healthcare workers in Malaysia are experts in providing medical treatment.	-	-	-	65	35	435	4.35	Strongly agree
2.	Healthcare workers in Malaysia provide medical treatment rapidly.	-	-	-	66	34	434	4.34	Strongly agree
3.	Healthcare workers in Malaysia ask about patients' complaints actively.	-	-	1	69	30	429	4.29	Strongly agree
4.	Healthcare workers in Malaysia provide medical treatment on time.	-	-	-	70	30	430	4.30	Strongly agree
	Average index						4.32	Strongly agree	
Openness to experience									
1.	Healthcare workers in Malaysia want to know about a patient's illness in detail.	-	-	23	54	23	400	4.00	Agree
2.	Healthcare workers in Malaysia are transparent about patients' illnesses.	-	-	17	61	22	405	4.05	Agree
	Average index						4.03	Agree	
Agreeableness									
1.	Healthcare workers in Malaysia are warm and pleasant.	-	-	10	67	23	405	4.05	Agree
2.	Healthcare workers in Malaysia can be trusted.	-	-	5	74	21	416	4.16	Agree
3.	Healthcare workers in Malaysia are eager to help.	-	-	17	57	26	409	4.09	Agree
	Average index						4.10	Agree	
Extraversion									
1.	Healthcare workers in Malaysia explain the patient's illness in detail.	-	-	11	60	29	418	4.18	Agree
2.	Healthcare workers in Malaysia are friendly.	-	1	19	58	22	401	4.01	Agree
	Average index						4.10	Agree	
Emotional stability									
1.	Healthcare workers in Malaysia are patient though patients ask many questions.	-	-	5	71	24	419	4.19	Agree
2.	Healthcare workers in Malaysia do not complain though patients take up much time.	-	-	12	64	24	412	4.12	Agree
	Average index						4.16	Agree	
Total average index							4.14	Agree	

Note: * SD = Strongly Disagree, D = Disagree, QA = Quite Agree, A = Agree, SA = Strongly Agree.

Table 3. Statements on health service quality in hospitals in Malaysia

Source: Survey data.

No.	Statement	Score*					Total Score	Index	
		SD	D	QA	A	SA			
Reputation									
1.	Malaysia has reputable hospitals.	-	-	1	62	37	436	4.36	Strongly agree
2.	Malaysia has international standard hospitals.	-	-	2	48	50	448	4.48	Strongly agree
3.	Malaysia has famous hospitals for medical treatment.	-	-	-	55	45	445	4.45	Strongly agree
	Average index						4.43	Strongly agree	
Physical Evidence									
1.	Hospitals in Malaysia have many medical doctors with various specialties.	-	-	1	70	29	428	4.28	Strongly agree
2.	Hospitals in Malaysia have complete health facilities.	-	-	1	60	39	438	4.38	Strongly agree
3.	Hospitals in Malaysia have modern equipment.	-	-	-	66	34	434	4.34	Strongly agree

Table 3 (cont.). Statements on health service quality in hospitals in Malaysia

No.	Statement	Score*					Total Score	Index	
		SD	D	QA	A	SA			
4.	Hospitals in Malaysia provide pick-up/drop-off services at the lodging/hotel.	–	–	9	63	28	419	4.19	Agree
5.	Hospitals in Malaysia provide a prayer room.	–	–	3	56	41	438	4.38	Strongly agree
6.	Hospitals in Malaysia are clean and comfortable.	1	–	–	49	50	447	4.47	Strongly agree
Average index								4.34	Strongly agree
Empathy									
1.	Hospitals in Malaysia provide good services.	–	–	1	68	31	430	4.30	Strongly agree
2.	Hospitals in Malaysia offer a wide range of medical treatments.	–	–	1	69	30	429	4.29	Strongly agree
3.	Hospitals in Malaysia provide convenient service hours for administrative affairs.	–	–	2	63	35	433	4.33	Strongly agree
4.	Hospitals in Malaysia pay attention to patients.	–	1	13	67	19	404	4.04	Agree
5.	Hospitals in Malaysia provide transparent diagnose of the patient's illness.	–	–	31	41	28	397	3.97	Agree
Average index								4.19	Agree
Assurance									
1.	Hospital fees in Malaysia are suitable for provided services.	–	–	1	60	39	438	4.38	Strongly agree
2.	Hospital fees in Malaysia are relatively cheap.	5	1	50	34	10	343	3.43	Agree
3.	Hospitals in Malaysia provide flexible payment methods.	2	–	9	67	22	407	4.07	Agree
4.	Hospitals in Malaysia provide a high level of safety.	–	–	1	72	27	426	4.26	Agree
5.	Hospitals in Malaysia have a low failure rate in medical treatment.	–	–	11	69	20	409	4.09	Agree
Average index								4.05	Agree
Responsiveness									
1.	Healthcare workers in Malaysia are treating patients skillfully.	4	–	2	49	45	431	4.31	Strongly agree
2.	Healthcare workers in Malaysia handle patients carefully.	–	–	10	49	41	431	4.31	Strongly agree
3.	Healthcare workers in Malaysia provide medical treatment seriously.	–	–	1	72	27	426	4.26	Agree
Average index								4.29	Strongly agree
Reliability									
1.	Healthcare workers in Malaysia deal with patients' illnesses carefully.	–	–	1	68	31	430	4.30	Strongly agree
2.	Healthcare workers in Malaysia provide the promised services.	–	–	1	69	30	429	4.29	Strongly agree
3.	Healthcare workers in Malaysia provide the information required by the patients.	–	–	2	63	35	433	4.33	Strongly agree
Average index								4.31	Strongly agree
Total average index								4.27	Agree

Note: * SD = Strongly Disagree, D = Disagree, QA = Quite Agree, A = Agree, SA = Strongly Agree.

correlation occurred between emotional stability (ES) and four indicators of health service quality (tangible/T, reliability/RE, assurance/AS, and empathy/EM); between conscientiousness (C) and three indicators of health service quality (tangible/T, reliability/RE and assurance/AS); between agreeableness (A) and tangible (T), assurance (AS), and responsiveness (RES). Meanwhile, extraversion (E) was strongly correlated with only two indicators of health service quality (tangible/T and assurance/AS).

Furthermore, the regression test results show that agreeableness and emotional stability positively and significantly influenced hospital services at the 5% level, with each coefficient of 0.332 and 0.701, respectively. The effect of emotional stability on health service quality was much stronger than the effect of agreeableness. The other personality indicators (conscientiousness, openness to experience, and extraversion) had a negative and insignificant effect on health service quality (Table 5).

Table 4. Person's correlations between healthcare worker's personality and health service quality

Source: Survey data.

Variable/ Indicator	Correlation/ p-value	1. X	C	O	A	E	ES	2. Y	T	RE	AS	EM	RES											
1. X	Pearson's r	–																						
	p-value	–																						
C	Pearson's r	0.901	**	–																				
	p-value	< .001		–																				
O	Pearson's r	0.853	**	0.692	**	–																		
	p-value	< .001		< .001		–																		
A	Pearson's r	0.862	**	0.736	**	0.644	**	–																
	p-value	< .001		< .001		< .001		–																
E	Pearson's r	0.864	**	0.707	**	0.698	**	0.659	**	–														
	p-value	< .001		< .001		< .001		< .001		–														
ES	Pearson's r	0.839	**	0.690	**	0.705	**	0.608	**	0.715	**	–												
	p-value	< .001		< .001		< .001		< .001		< .001		–												
2. Y	Pearson's r	0.666	**	0.578	**	0.482	**	0.621	**	0.545	**	0.657	**	–										
	p-value	< .001		< .001		< .001		< .001		< .001		< .001		–										
T	Pearson's r	0.667	**	0.595	**	0.476	**	0.666	**	0.518	**	0.606	**	0.941	**	–								
	p-value	< .001		< .001		< .001		< .001		< .001		< .001		< .001		–								
RE	Pearson's r	0.566	**	0.527	**	0.409	**	0.452	**	0.466	**	0.609	**	0.920	**	0.791	**	–						
	p-value	< .001		< .001		< .001		< .001		< .001		< .001		< .001		< .001		–						
AS	Pearson's r	0.648	**	0.525	**	0.486	**	0.616	**	0.548	**	0.638	**	0.922	**	0.831	**	0.791	**	–				
	p-value	< .001		< .001		< .001		< .001		< .001		< .001		< .001		< .001		< .001		–				
EM	Pearson's r	0.502	**	0.435	**	0.384	**	0.362	**	0.457	**	0.574	**	0.798	**	0.614	**	0.837	**	0.740	**	–		
	p-value	< .001		< .001		< .001		< .001		< .001		< .001		< .001		< .001		< .001		< .001		–		
RES	Pearson's r	0.463	**	0.371	**	0.301	**	0.509	**	0.368	**	0.439	**	0.799	**	0.761	**	0.701	**	0.635	**	0.498	**	–
	p-value	< .001		< .001		0.002		< .001		< .001		< .001		< .001		< .001		< .001		< .001		< .001		–

Note: ** significant at the 1% level. X = Healthcare Worker's Personality, C = Conscientiousness, O = Openness to experience, A = Agreeableness, E = Extraversion, ES = Emotional Stability, Y = Hospital Services, T = Tangible, RE = Reliability, AS = Assurance, EM = Empathy, RES = Responsiveness.

Table 5. Regression results

Source: Survey data.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	49.718	7.164		6.940	0.000
Conscientiousness	-0.600	0.708	-0.103	-0.848	0.398
Openness to experience	-0.760	0.905	-0.094	-0.840	0.403
Agreeableness	2.045	0.671	0.332	3.045	0.003*
Extraversion	-0.648	0.916	-0.082	-0.708	0.481
Emotional stability	6.369	1.024	0.701	6.220	0.000*

Note: Dependent variable: Hospital Services. * significant at the 5% level.

4. DISCUSSION

By employing the Big Five Traits (Costa & McCrae, 1997) and SERVQUAL (Parasuraman et al., 1991) models, this study found that two out of five personality indicators, agreeableness and emotional stability, had a positive and significant effect on health service quality (Table 5). The positive and significant effect of agreeableness on health service quality at Malaysian hospitals was similar to the findings in Turkey (Köşker et al., 2019), Thailand (Mechinda & Patterson, 2011), and Indonesia (Qaniah & Nurwianti, 2021). However, the result of this study is different from the other studies, which found that agreeableness had a positive but insignificant effect on services in Indonesia (Wibowo & Andriyanto, 2018), negative and significant in Taiwan (Teng & Hsu, 2012), and negative and insignificant in the UAE (Al-Mutawa & Ibrahim, 2013). Meanwhile, emotional stability that significantly affects services was also found in Turkey (Köşker et al., 2019), Thailand (Mechinda & Patterson, 2011), Taiwan (Teng et al., 2007), and Seoul (Kim & Lee, 2016), but not in Malaysia (Johari & Hee, 2013).

The significant effect of agreeableness on health service quality reflects the importance of healthcare workers' warm and pleasant personalities. The patients are uncomfortable with their illnesses. They need trustworthy healthcare workers with whom they can share their suffering and feeling due to illness. The workers who are eager to help make the patients feel comfortable, especially since not all patients who need help are willing to ask for help quite often. Similarly, employees in Turkey are required to be polite, pleasant, and helpful (Köşker et al., 2019). Moreover, the significant effect of emotional stability on health ser-

vice quality reflects that patients need healthcare workers who are patient and understand their curiosity about the disease. In Seoul, nurses must be able to socialize and provide accurate services to patients (Kim & Lee, 2016).

The high index of emotional stability supported the significant effect of agreeableness and emotional stability on health service quality. For example, the index includes "Healthcare workers in Malaysia are patient though patients ask many questions" (4.19) and "Healthcare workers in Malaysia do not complain though patients take up much time" (4.12). Meanwhile, the high index of agreeableness includes "Healthcare workers in Malaysia can be trusted" (4.16) and "Healthcare workers in Malaysia are warm and pleasant" (4.05).

The significant effect of agreeableness and emotional stability on health service quality was also supported by their stronger correlations (0.621 and 0.657) than the correlation between the other indicators of healthcare workers' personalities and health service quality (Table 4). Emotional stability had an above 0.5 correlation with more indicators of health service quality (four indicators: tangible/T, reliability/RE, assurance/AS, and empathy/EM) than the other indicators of personality. That may lead to a greater coefficient of regression of emotional stability (0.701) than agreeableness (0.332) (Table 5).

Moreover, the strongest correlation between indicators in healthcare workers' personalities and health service quality occurred between agreeableness (A) and tangible (T) (0.666) and between emotional stability (ES) and assurance (AS) (0.638) (Table 4). Tangible is reflected by reputation, including the hospital's reputation, interna-

tional recognition, and popularity, and by physical evidence indicated by a sufficient number of medical doctors with various specialties, complete and modern health facilities and equipment, free pick-up/drop-off services, and availability of prayer room and cleanliness. Both reputation and physical evidence in the tangible are indicators for customers to choose a hospital (Berkowitz & Flexner, 1980). Meanwhile, assurance is reflected by promised services, worthwhile hospital fees, flexible payment methods, safety, and a low failure rate.

The insignificant effect of the other three personality indicators (conscientiousness, openness to experience, and extraversion) on health service quality in this study is similar to the findings in some countries. For example, health service quality was not significantly influenced by conscientiousness in the UAE (Al-Mutawa & Ibrahim, 2013) and openness to experience in Indonesia (Qaniah & Nurwianti, 2021). It was also not significantly determined by extraversion in Indonesia (Qaniah & Nurwianti, 2021), Thailand (Mechinda & Patterson, 2011), Seoul (Kim & Lee, 2016), Malaysia (Johari & Hee, 2013) and the UAE (Al-Mutawa & Ibrahim, 2013).

However, findings in other countries show different results. For example, conscientiousness positively and significantly influenced the work quality of healthcare workers in Seoul (Kim & Lee, 2016), Thailand (Mechinda & Patterson, 2011), and Malaysia (Johari & Hee, 2013). Meanwhile, studies in Turkey (Köşker et al., 2019), Taiwan (Teng et al., 2007), Seoul (Kim & Lee, 2016), and Malaysia (Johari & Hee, 2013) reveal that openness to experience positively and significantly influenced services. Moreover, extraversion positively and significantly influences services in Indonesia (Hastuti et al., 2017), Turkey (Köşker et al., 2019), and Taiwan (Teng et al., 2007).

The insignificant effect of conscientiousness, openness to experience, and extraversion on health service quality does not mean that these three personality indicators do not contribute to health service quality. On the contrary, on average, the respondents either strongly agreed or agreed with healthcare workers' excellent personalities and quality of health services. That is supported by the high average index of health workers' personalities (4.14)

(Table 2) and health service quality (4.27) (Table 3) and the significant correlation between healthcare workers' personalities and health service quality.

Healthcare workers in Malaysia have personalities required by the health industry. They generally work responsibly, kindly, thoroughly, hardy, and reliably in meeting patient needs (conscientiousness) and tend to be creative in solving patients' problems (openness to experience) (Johari & Hee, 2013). Employees could also be flexible (Teng et al., 2007) and highly attentive to patients (Qaniah & Nurwianti, 2021; Köşker et al., 2019). Those might be due to the role of management in emphasizing organizational values to employees, such as in the UAE, leading to the domination of well-performed employees in the organization (Al-Mutawa & Ibrahim, 2013).

The respondents were satisfied with the overall quality of healthcare workers' personalities and hospital services. They mostly were former patients (94%) who were served directly by healthcare workers. The respondents believe that hospitals in Malaysia assure them of excellent health service quality, including a low failure rate in medical treatment, flexible payment methods, and worthwhile hospital fees. The low failure rate might relate to the highest average index of conscientiousness (4.32) (Table 2). For example, low conscientiousness and time pressure combined lead to service failure in Taiwan (Teng et al., 2014).

Medical treatment in Malaysia is not cheap. That was indicated by the lowest index of "Hospital fees in Malaysia are relatively cheap" (3.43) among the statements in all indicators. Nevertheless, the respondents could afford the hospital fees since they were mostly businesspersons (74%) (Table 1). The fees were considered worthwhile, given the excellent quality of health services. In addition, flexible payment methods are a great help to patients. That includes late service hours for administrative services and the possibility to pay hospital fees through hospital agents in Indonesia for patients who do not bring sufficient money.

This study confirms that respondents pay attention to healthcare workers' personalities and health service quality, leading to trust in Malaysian hospitals. As a result, hospital management in Malaysia

is successfully building a solid brand image for their health industry through the personality of healthcare workers. That is in line with Ekinçi and Dawes (2009), arguing that a strong brand image can be built through personality development, enabling the organization to be highly competitive, efficient, and productive.

The hospital management in Malaysia recognizes the importance of service quality to meet customers' expectations through interactions between customers and service providers through competent personalities. The importance of such a strategy has been mentioned by Hossain and Leo (2009), Vilares and Coehlo (2003), Parasuraman et al. (1991), Brady and Cronin (2001), and Ekinçi and Dawes (2009). The strategy was executed by recruiting healthcare workers with qualified personalities reducing turnover and increasing organizational performance (Echchakoui, 2013) through improving service quality and patient loyalty (Eleuch, 2011; Maqsood et al., 2017; Fatima et al., 2018) and patient satisfaction (Rehman & Husnain, 2018).

Positive perceptions of Indonesian respondents toward the personality of healthcare workers and health service quality at Malaysian hospitals contradict patients' perceptions of the service quality at Indonesian hospitals. The former patients in Indonesia are less satisfied with the personality of healthcare workers, who lack communication and interaction with the patients, are incompetent, and provide inaccurate diagnoses (Md Zain et al., 2022; Ratnasari et al., 2022; Abdullah et al., 2019; Setyawan et al., 2019; Ormond & Sulianti, 2017).

Above all, other than the high quality of healthcare workers' personalities and health services at Malaysian hospitals, some contextual factors may influence affluent people from West Kalimantan, Indonesia, to have health treatment in Sarawak, Malaysia. These factors include close location, similar language and religion, and availability of transport facilities and information on Malaysian hospitals. Those are some essential factors for customers' preferences for a hospital (Boscarino & Steiber, 1982).

CONCLUSION

This study has met the objective of examining the effect of healthcare workers' personalities on health service quality. The regression results show that two out of five personalities of healthcare workers, agreeableness and emotional stability, positively and significantly influenced health service quality, with each coefficient of 0.332 and 0.701, respectively. On the other hand, three out of five indicators in the personality of healthcare workers, conscientiousness, openness to experience, and extraversion, did not significantly affect health service quality due to less varied responses. Hospitals in Malaysia generally had good working conditions leading to well hospital services. On average, the respondents either strongly agreed or agreed with healthcare workers' excellent personalities and quality of health services. That is indicated by the high average index of health workers' personalities (4.14) and health services quality (4.27) and a significant correlation between healthcare workers' personalities and health service quality.

This study's results support the theory about the importance of service quality in meeting customers' needs through workers' personalities contributing to the organization's image leading to trust and customer loyalty. This study's findings also confirm that not all indicators of healthcare workers' personalities significantly influence health service quality. The study suggests that the Indonesian government should pay attention to healthcare workers' personalities other than advanced health technology and medical expertise to improve health service quality. The success of hospital management in developing its brand image in Malaysia attracts Indonesians to seek health treatment in this country. It is vital to gain the trust of Indonesian citizens who demand better health treatment at home to reduce the outflow of foreign exchange overseas. Finally, a similar study in modern private hospitals in Indonesia should be carried out in the future.

AUTHOR CONTRIBUTIONS

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