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The Effect of Perceived Value, Trust, and Commitment on Patient Loyalty in Taiwan

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Abstract

Increasing patient loyalty through improved health care quality and patient–provider relationships becomes the key factor in medical providers' successes. This study explored the mediated relationship of patients' perceived value, patient commitment, and patient loyalty and the moderating effect of patient trust on the mediated relationship. A cross-sectional research design was adopted. Mediation and moderated mediation were tested using the PROCESS macro v3.5 for the SPSS supplement. Convenience sampling was used for the distribution of questionnaires to members of the public with experience of seeking medical attention in Taiwan. Among the 254 valid questionnaires recovered, 59.4% of the respondents were male, 38.6% were married, 90.2% were in the 20 to 49 year age range, and 54.7% had a bachelor's degree or above. This study indicated a significant mediated relationship among patients' perceived value of medical services, commitment to the patient–provider relationship, and patient loyalty. Furthermore, when the patient demonstrated higher levels of trust in a healthcare provider, the relationship of perceived value, commitment, and patient loyalty was also enhanced. This study discussed and demonstrated the effect of perceived value, trust, and commitment on patient loyalty. The research suggests that improving patient loyalty benefits sustainable operation of medical providers and the treatment effects for patients.

Keywords

perceived value, trust, commitment, patient loyalty, moderated mediation

What do we already know about this topic?

Patient loyalty is the key successful factor for medical providers in Taiwan, this study provides a more complete understanding of how the value of medical services affects the patient's willingness to continue seeking medical attention through their commitment to the patient–provider relationship and indicates the moderating effect of patient trust on the mediated relationship.

How does your research contribute to the field?

This study indicated a significant mediated relationship among patients' perceived value of medical services, commitment to the patient–provider relationship, and patient loyalty, when the patient demonstrated higher levels of trust in a healthcare provider, the relationship between perceived value, commitment, and patient loyalty was also enhanced.

What are your research's implications toward theory, practice, or policy?

Improving patient loyalty is conducive to sustainable operation of medical providers and the treatment effects for patients, healthcare providers should focus on increasing diverse value of medical services and improving patient-provider relationship.

Introduction

Competition within the medical industry encourages medical providers to actively improve the quality of their services.[1] In Taiwan, due to the compulsory National Health Insurance policy, a portion of medical expenses is passed on to and absorbed by the government and employers, and citizens pay medical expenses according to their incomes.[2,3] When medical expenses are not the primary consideration for citizens' choices regarding whether they seek medical attention, increasing patient loyalty through improved health care quality and patient–provider relationships becomes the key factor in medical providers' successes.[1,3]

Three attitudinal phases during which patients establish psychological loyalty to healthcare providers are noted.[4] In the cognitive loyalty phase, after receiving medical services from a healthcare provider, patients develop perceived value according to their experience. In the affective loyalty phase, patients develop affective commitment to the healthcare provider. Finally, in the conative loyalty phase, patients develop loyalty to the healthcare provider. Therefore, in the context of medical treatment, the relationships among perceived value by the patient, commitment, and loyalty merit investigation.

Studies on perceived value among patients, commitment, and patient loyalty have yielded inconsistent findings on the influence of perceived value on patient loyalty.[1] Most studies measuring the perceived value of medical services evaluate the quality of medical services obtained and the relative price paid.[5-7] Quality and price are key elements for measuring the perceived value of products and services among customers. Patients' feelings of happiness and relief after using medical services[8] and their confidence in their medical provider's brand reputation[9] merit consideration—in addition to costs and the effects of the treatment—in measuring the perceived value of medical services among patients.

Commitment is a major factor affecting whether customer relationship persists or is terminated.[10] However, the patient's feelings of satisfaction in relation to medical services may not produce affective commitment to the medical provider.[11] Similarly, although the patient perceives the value of the medical services, depending on the varying levels of trust patients have in healthcare providers, they may develop inconsistent relationships with commitment, which influence subsequent levels of patient loyalty. Therefore, moderating effects of trust that may affect the relationship between perceived value and commitment merit investigation as well as their possible influences on subsequent patient loyalty. In summary, first, this study extensively explored patients' feelings regarding the medical services they receive in the context of medical treatment. Three attitudinal phases of loyalty were applied to define the relationship among perceived value of medical services, affective commitment to healthcare providers, and patient loyalty. Second, only when patients trust a healthcare provider do they perceive the value in medical services and willingly develop a long-term committed relationship with the healthcare provider, both of which affect the subsequent patient loyalty. By discussing the importance of trust in maintaining a long-term patient–provider relationship, we determined the moderating effect of trust on the relationship among perceived value, commitment, and patient loyalty. The objective of this study is to investigate the following: (1) the mediated relationships among perceived value by the patient, commitment, and patient loyalty and (2) the moderation effect that trust has on the mediated relationship.

Theoretical Background

Patient Loyalty

Patient loyalty refers to a patient's willingness to revisit the healthcare provider,[1] spread positive word-of-mouth about the healthcare provider, and recommend the healthcare provider to others.[12] Healthcare providers can enhance patient loyalty, thus making patients willing to share positive medical experiences in their personal social networks[2] and recommend them to others. Healthcare providers therefore benefit from the increase in patients,[1] and loyal patients benefit from revisiting the healthcare providers for receiving better treatment.[1]

Perceived Value

Patient loyalty is influenced by patients' perception of the value of medical services.[1] Perceived value is determined by the patients' experience of the entire medical treatment process.[13] Perceived value involves assessment of what the patients receive (eg, quality of the treatment, emotions during the treatment, and perceived reputation of a healthcare provider) and what they have to sacrifice, including monetary costs (eg, transaction cost), and nonmonetary costs (eg, travel time and waiting time).[7,9]

Commitment

Patient loyalty is also influenced by relationship commitment.[2] Patients' commitment to the patient–provider relationship suggests that they value the relationship and are willing to maintain a stable and long-term relationship with the healthcare provider. The patients' willingness to revisit the healthcare provider and recommend the healthcare provider to others is also dependent on said relationship.[11]

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The Mediated Relationship of Perceived Value, Commitment, and Patient Loyalty

Patients are medical providers' customers. In this study, the process of increasing patient loyalty was examined using the 3 attitudinal phases required for customers to establish psychological loyalty.[4] First, in the cognitive loyalty phase, the customer uses their past consumer experiences for decision-making and preliminarily selects a specific brand.[4] For example, the customer assesses post-purchase perceived value[14] by using comprehensive experience to evaluate the product or service in terms of its functional practicality, price reasonability, emotional responses during use, and level of social acceptance[8] as the basis for brand selection. In this phase, long-term brand loyalty has not yet been established. Second, when the customer has numerous satisfactory consumer experiences, they enter the affective loyalty phase.[4] In this phase, a relationship and connection with the brand is initiated, and the customer displays an emotional commitment to the brand; this commitment is similar to loyalty in concept and is the core factor in relationship marketing.[10,15] Therefore, this stage is crucial to improving the patient–provider relationship. However, brand preferences may nonetheless change during this phase. Last, because positive emotions toward the same brand produce the desire for repeat purchases, the customer enters the conative loyalty phase, which resembles consumer behavior intention.[4] For this study's investigation of patient loyalty, consumer scenarios are placed into a medical context. The 3 attitudinal phases explain the relationships involved in the establishment patient loyalty and the order in which this occurs: The patient first evaluates the consumer experience, then determines whether to commit to the patient–provider relationship, then finally establishes patient loyalty to the medical provider.

Trust

According to the commitment–trust theory, commitment and trust are the fundamental factors for establishing and maintaining valuable relationships.[10] Trust in this context refers to the mutual trust between the patient and the healthcare provider, and that the patient has positive expectations for the healthcare provider's services.[11] Patients believe in and respect the healthcare provider's clinical judgment, and trust that the treatment process is effective in eliminating their diseases.[16] Patients and healthcare providers are independent entities. Trust is established when both parties value the quality of the exchange relationship, which is long-term and reciprocal.[10]

Past studies have indicated that trust can be divided into cognitive and affective trust. Cognitive trust refers to the customer confidence established on the basis of the rational judgment and relevant experience or knowledge. Affective or emotional trust, based on intuition or emotions, may develop on the basis of care the other party demonstrates, through words or altruistic action.[17] Punyatoya[18] observed the cognitive process in and affective responses to the interaction between partners, and divided trust into cognitive trust and emotional trust. Cognitive and affective trust can be further divided into trust established under 2 different circumstances. One is cognitive trust and affective trust (Types A and B) established in consumption, which is built on the basis of the buyer–seller relationship.[17] The other is cognitive trust and affective trust established at work on the basis of interpersonal workplace relationships,[19,20] which can be superior–subordinate vertical trust (Types C and D) or colleague–colleague horizontal trust (Types E and F) within an organization.[21] Table 1 presents the typology of trust.

Table 1. Typology of Trust.

Trust	Buyer-seller relationships	Workplace relationships	
		Vertical	Horizontal
Cognitive	A	C	E
Affective	B	D	F

Our study mainly focused on the trust in patient–provider relationships, in which patients establish cognitive trust in healthcare providers on the basis of rational thinking, past experience, and knowledge.[22] Compared with affective trust, which is built on emotional subjective perceptions, cognitive trust is more critical in patient–provider relationships.[23] Moreover, because patients and healthcare providers are independent entities, the cognitive or affective trust based on workplace interpersonal relationships is not applicable.[23] Therefore, the concept of Type A is more suitable for the trust in patient–provider relationships, because it is the trust built through the cognitive process of patients and healthcare providers interacting with each other. Here, patients believe that healthcare providers will fulfill their obligations to the utmost of their abilities and are confident in the effectiveness of the treatment offered by the healthcare providers.

The Moderating Effect of Trust on the Mediated Relationship

Whether patients establish a long-term patient–provider relationship with the medical provider depends mainly on whether patients believe that the respective relationship is valuable or merely a transactional.[11] Similarly, customers believe that trust has a more prominent role in maintaining long-term relationships than in one-off transactions.[15] As such, when patients' feelings of trust are reduced, they are less willing to follow physicians' instructions or to remain in the hospital[24]; even if patients perceive the value of medical services, they are less willing to maintain long-term affective commitment. Therefore, this study predicted that, subject to contextual factors with various levels of trust, the relationship by which patients establish affective commitment on the

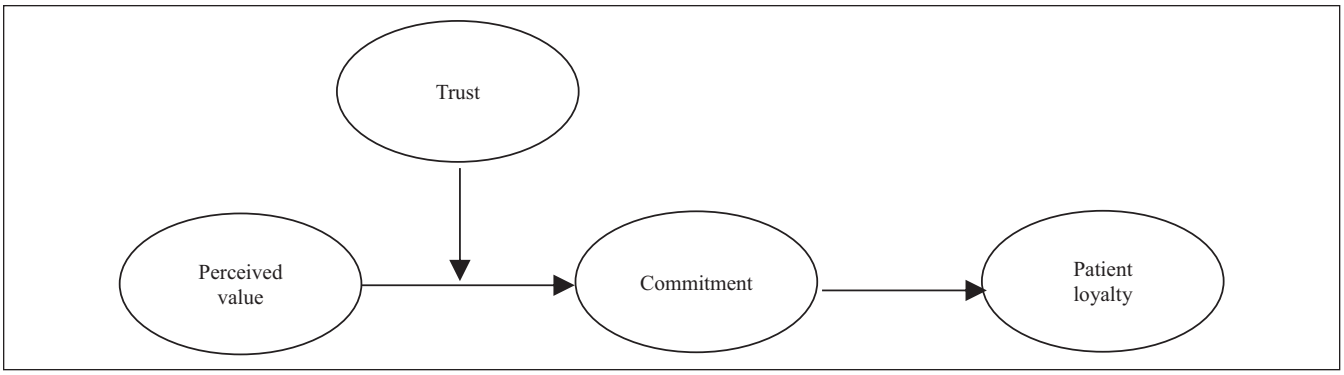

Figure 1. Proposed research framework.

basis of perceived value is moderated, which then further affects patient loyalty; the established research framework is presented in Figure 1.

Methods

Participants and Procedures

The survey in this study involved a 4-section questionnaire. The 4 sections were composed of the trust and commitment scale, perceived value scale, patient loyalty scale, and respondents' demographic information and that of the primary medical institution from which they seek treatment. The current researchers collected data by distributing the questionnaire in Taiwan. First, the researchers ensured the participants that their questionnaire responses would only be used for academic research purposes and that the survey was anonymous. Second, the researchers provided instructions on how the questionnaire should be completed—self-reported by the participants according to their personal experience. The participants of this study were members of the public with experience of seeking medical attention in Taiwan. Convenience sampling through questionnaire distribution was used to distribute 350 questionnaires. This study adopted a cross-sectional design, which required the researchers to collect data from a participant at a specific point in time. Verbal informed consent was obtained from participants at the beginning of responding the questionnaire. Participants completed the survey items based on their personal experiences of seeking medical attention in hospitals; invalid surveys that were incomplete or filled in by those who had not sought medical attention for more than 1 year were eliminated, leaving 254 valid surveys. The valid recovery rate was 72.57%.

Among the valid survey responses, 59.4% of respondents were male and 38.6% were married, suggesting that most respondents were male and unmarried; 90.2% were aged 20 to 49 years, with 41.7% in their 20s, 33.9% in their 30s, and 14.6% in their 40s, suggesting that most respondents were young adults; and 54.7% had received at least a college-level education, suggesting that more than half had a relatively high education level. Demographic characteristics of participants are presented in Table 2 mainly to demonstrate participants' demographic distribution in terms of gender, marital status, age, and education level. Most of the participants were male adults aged 20 to 49 years with a bachelor's degree or above, who had experience seeking medical treatment and could recall the situation and their feelings at the time.[8]

Table 2. Demographic Characteristics of Participants.

Demographics	n	%	Cumulative %
Gender			
Female	103	40.6	40.6
Male	151	59.4	100.0
Marital status			
Unmarried	156	61.4	61.4
Married	98	38.6	100.0
Age			
Under 20	3	1.2	1.2
20-29	106	41.7	42.9
30-39	86	33.9	76.8
40-49	37	14.6	91.3
50-59	15	5.9	97.2
60 and above	7	2.8	100.0
Education level			
Below a bachelor degree	115	45.3	45.3
Bachelor degree and above	139	54.7	100.0

Measurements

Perceived value was measured with 25 items adopted from the perceived value scale developed by Petrick.[9] Service provided by healthcare providers was evaluated on perceived value in terms of quality, emotional response, monetary price, behavioral price, and reputation. Example items include "The quality of medical attention at this healthcare provider is very reliable" and "Medical attention at this healthcare provider makes me feel good." Each item was graded on a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). The Cronbach's alpha was .94.

Table 3. Descriptive Statistical Analysis and Correlation Analysis.

Variable	*M*	SD	1	2	3	4	5	6
1. Gender	0.59	0.49	—					
2. Marital	0.39	0.49	−0.05	—				
3. Perceived value	3.57	0.49	0.04	−0.09	—			
4. Commitment	3.37	0.66	0.19**	−0.10	0.59**	—		
5. Patient loyalty	3.68	0.67	−0.03	−0.14*	0.73**	0.58**	—	
6. Trust	3.67	0.59	0.04	−0.04	0.62**	0.52**	0.50**	—

Note. Listwise n = 254. For gender, 1 = male, 0 = female. For marital status, 1 = married, 0 = unmarried.
*$P < .05$. **$P < .01$.

Trust and commitment items were adapted from the scale established by Smith,[16] which features 3 items each for trust and commitment to evaluate the quality of the relationship between individuals and healthcare providers. Reference items were "This healthcare provider and I trust each other," and "I believe we are both committed to this relationship." The items were graded on a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). The Cronbach's alpha values were .70 and .77, respectively.

Patient loyalty was measured with a 3-item version, which adapted from loyalty scale.[25] These items were used mainly to assess the respondents' willingness to recommend the healthcare provider to others, revisit the healthcare provider for treatment, and seek other medical services from the healthcare provider. One reference item was " I consider this healthcare provider as my first choice of seeking medical services." The items were graded on a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). The Cronbach's alpha value was .85.

Data Analysis

Descriptive statistical analysis and correlation analysis were performed using SPSS version 26. We conducted descriptive statistical analysis to calculate the frequency, mean, and standard deviation of each variable in the sample, thereby obtaining a general overview of the sample. Correlation analysis was conducted to examine the degree of correlation between variables. Subsequently, mediation and moderated mediation were tested using the PROCESS macro v3.5 for the SPSS supplement (Models 4 and 7[26]) with 5000 bootstrap resamples. Mediation analysis involved the calculation of regression coefficients to verify the mediation relationship and indirect effect. Moderated mediation analysis involved the calculation of regression coefficients to determine the moderated mediation relationship and index of moderated mediation. Furthermore, whenever the confidence interval did not include 0, the mediation and moderated mediation effects were considered statistically significant. Demographic variables including gender and marital status were also used as control variables.

Results

Descriptive Statistics and Correlations

The descriptive statistics and correlations between variables are presented in Table 3. Perceived value was significantly correlated with commitment, patient loyalty, and trust, and commitment was significantly correlated with patient loyalty and trust.

Mediation Relationship Testing

Table 4 reveals the results of mediation analysis; the indirect effects of perceived value on patient loyalty through commitment ($B = 0.20$, bootstrapping CI = 0.12, 0.29) was significant.

Moderated Mediation Relationship Testing

Figure 2 depicts the moderated mediation analysis results; the effect of perceived value on commitment was greater among patients with more trust in healthcare providers. The index of moderated mediation ($B = 0.05$, bootstrapping CI = 0.01, 0.10) in Table 5 indicates that the mediated relationship between perceived value and patient loyalty through commitment was significantly moderated by trust. The conditional indirect effect of perceived value on patient loyalty was greater among patients with more trust in healthcare providers ($B = 0.18$, bootstrapping CI = 0.10, 0.27) than among those with less trust ($B = 0.12$, bootstrapping CI = 0.06, 0.19).

Discussion

This study focused on the mediated relationships among perceived value, commitment, and patient loyalty as well as the moderating effects of trust on the mediated relationship. The mediated relationships were verified on the basis of Oliver's[4] 3 attitudinal loyalty phases, and the results indicated significant mediated relationships among the patients' perceived value of medical services, commitment to the patient–provider relationship, and patient loyalty. Furthermore, when patients demonstrate greater trust in medical providers, the

Table 4. Regression Coefficients with Confidence Intervals for Mediation Relationship.

	Commitment (M)				Patient loyalty (Y)			
Variables	Coeff.	SE	LLCI	ULCI	Coeff.	SE	LLCI	ULCI
Constant	0.42	0.25	−0.07	0.92	0.10	0.21	−0.32	0.51
Gender (U1)	0.22**	0.07	0.09	0.35	−0.13*	0.06	−0.25	−0.02
Marital (U2)	−0.05	0.07	−0.18	0.08	−0.09	0.06	−0.20	0.02
Perceived value (X)	0.80***	0.07	0.66	0.93	0.80***	0.07	0.66	0.94
Commitment (M)					0.25***	0.05	0.15	0.35
R^2		0.38***				0.58***		

Indirect effects of X on Y	Effect	Boot SE	Boot LLCI	Boot ULCI
X→M→Y	0.20	0.04	0.12	0.29

Note. n = 254. 95% confidence interval. 5000 bootstrap resamples.
LLCI = lower level confidence interval; ULCI = upper level confidence interval.
*$P < .05$. **$P < .01$. ***$P < .001$.

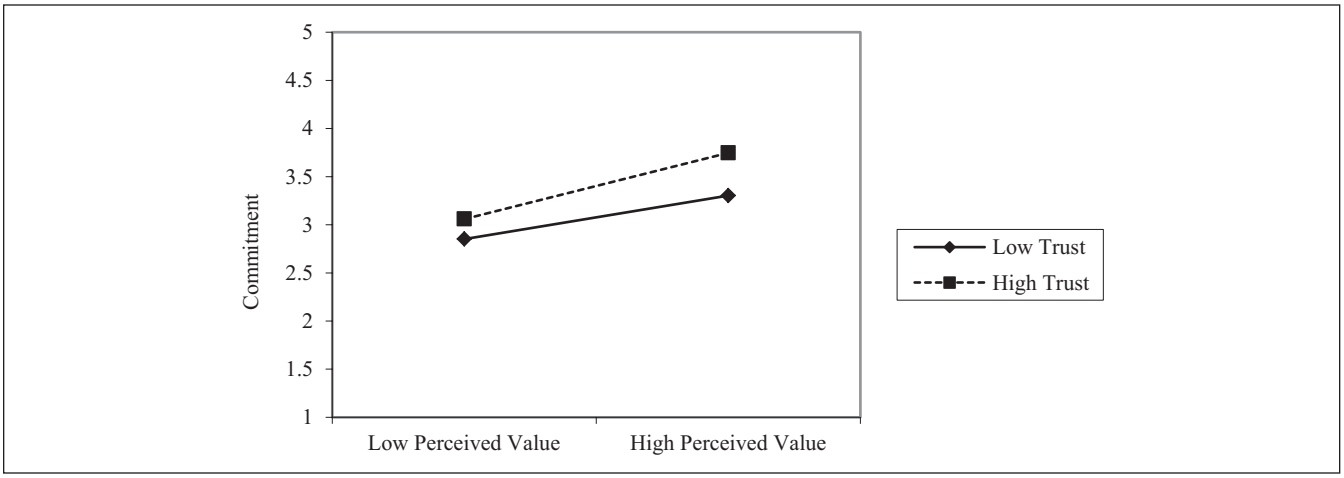

Figure 2. Interaction effect of perceived value and trust in predicting commitment.

relationships among perceived value, commitment, and loyalty also become more significant. The major contributions of this study can be divided into 2 parts:

Evaluations of Perceived Value among Patients and its Mediated Relationships with Commitment and Patient Loyalty

As suggested by Sweeney and Soutar,[8] the measurement of how customers evaluate the value of a product or service may broadly include the types of value perceived by the customer, such as functional value and emotional value,[8] and feelings regarding the provider's brand reputation.[5] Within the medical context, particularly if a patient is in a state of physiological and psychological discomfort when seeking medical attention,[27] this measurement approach should provide a more complete understanding of how the value of medical services, as perceived by patients after receipt of these services, affects the patient's willingness to continue seeking medical attention through their commitment to the patient–provider relationship.

Moderated Mediation by Trust Levels

Most studies on the establishment of patient loyalty have been explorations of the direct and mediating effects on patient loyalty.[1] This study focused on understanding the influences of contextual factors on mediated relationships. Trust levels exert moderating effects on the mediated relationships among perceived value, commitment, and patient loyalty. When patients demonstrate greater trust, they are more likely to perceive medical services as valuable; they are then willing to maintain long-term relationship commitment, and patient loyalty is enhanced. Patient trust is a key element in patient–provider relationships; patients' confidence that physicians will provide beneficial treatments[28] affects their perception of the monetary or nonmonetary value of medical services and their subsequent treatments, for example, their

Table 5. Regression Coefficients with Confidence Intervals for Moderated Mediation Relationship.

	Commitment (M)				Patient loyalty (Y)			
Variables	Coeff.	SE	LLCI	ULCI	Coeff.	SE	LLCI	ULCI
Constant	2.83*	1.18	0.50	5.15	0.10	0.21	−0.32	0.51
Gender (U1)	0.20**	0.07	0.07	0.33	−0.13*	0.06	−0.25	−0.02
Marital (U2)	−0.06	0.06	−0.19	0.07	−0.09	0.06	−0.20	0.02
Perceived value (X)	−0.17	0.34	−0.84	0.50	0.80***	0.07	0.66	0.94
Trust (W)	−0.46	0.32	−1.09	0.18				
X × W	0.21*	0.09	0.03	0.38				
Commitment (M)					0.25***	0.05	0.15	0.35
R^2	0.43***				0.58***			

Conditional indirect effects of X on Y	Effect	Boot SE	Boot LLCI	Boot ULCI
Trust (−1 SD)	0.12	0.03	0.06	0.19
Trust (M)	0.15	0.04	0.08	0.23
Trust (+1 SD)	0.18	0.05	0.10	0.27

Index of moderated mediation	Index	Boot SE	Boot LLCI	Boot ULCI
X→M→Y by W	0.05	0.02	0.01	0.10

Note. n = 254. 95% confidence interval. 5000 bootstrap resamples.
LLCI = lower level confidence interval; ULCI = upper level confidence interval.
*$P < .05$. **$P < .01$. ***$P < .001$.

responses to medicine costs and treatment plans. Patients with chronic conditions who require long-term treatments exhibit greater trust in their medical providers and are less likely to abandon treatment due to high costs.[29] Therefore, when greater trust is present in the patient–provider relationship, better perceptions of the medical service value increase commitment to the patient–provider relationship; patient loyalty to the pursuit of medical treatment also increases.

Theoretical Implications

Oliver's[4] attitudinal phases were selected from relevant literature on perceived value, relationship commitment, and loyalty. These were applied to a medical context to explain how patients' perceptions regarding the value of medical services affect their loyalty through commitment to the patient–provider relationships. However, the individual dimensions of perceived value may exert various effects on commitment and loyalty[30]; in future studies, the relationships of the individual dimensions of the perceived value of medical services with commitment and patient loyalty may be investigated. Furthermore, this study focused on the moderating effects of contextual factors on mediated relationships. However, patients' personal characteristics—age, education background, health status—affect their satisfaction with medical services.[31] Patient characteristics may explain differences in perceptions of medical services received[32] and differences in perceived value. Future studies can seek further understanding of the potential moderating effects from patient characteristics.

In addition, the physical and mental health of medical personnel may also influence the maintenance of a positive patient–provider relationship and, in turn, affect patients' willingness to revisit. This is particularly true during the COVID-19 pandemic, when medical personnel experience anxiety and fear from the threat of coronavirus disease and its unpredictability. In addition to increased impatience and irritability from coping with numerous patients, medical personnel become physically and mentally overwhelmed from the excessive working hours and workloads.[33] Therefore, future research may explore the physical and mental health of medical personnel as well as its potential effect on relationship commitment and patient loyalty.

Practical Implications

This study explored the process by which patient loyalty is established and the moderating effects of patient trust. For medical providers, improving patient loyalty reduces patient loss and benefits operational sustainability. Emphasis should be placed on increasing the value of medical services. For medical staff who may engage with patients, patient interaction approaches can be reinforced through training and applied to maintaining healthy patient–provider relationships and instilling patients with a sense of confidence. For patients, emphasis by providers on patient loyalty facilitates a peaceful and comfortable environment for patients' treatment, encouraging patients to continue seeking medical attention, which improves the treatment effects.

Therefore, healthcare providers should provide medical personnel with regular on-the-job training to improve their medical expertise. Medical personnel are also encouraged to engage in continual professional education. To improve patient loyalty, healthcare providers can also make the following arrangements: (1) Reduce administrative procedures in the process of seeking medical services, such as reducing the waiting time for medicine and enabling patients to make doctor's appointments. Thus, the overall time cost of patients in seeking medical care can be reduced. (2) Improve the waiting room environment or provide relaxing music to help the patients feel relaxed while they wait for their appointment. (3) Release information regarding the practice's medical achievements to enhance their reputation. (4) Encourage medical personnel to provide patients with health and education information related to their diseases. Because patients tend to feel worried and scared during the COVID-19 pandemic, healthcare providers can offer them relevant prevention and treatment information as well as consultation services to reassure them, enhance their trust, and increase their willingness to revisit for treatment. (5) Strengthen their relationship with their employees (ie, medical personnel) by offering relevant consultations and assistance to alleviate the negative impact of the COVID-19 pandemic on the physical and mental health of medical personnel.

Conclusions

This study indicated that patient loyalty is the key successful factor for medical providers in Taiwan. We further discussed and demonstrated the effect of perceived value, trust and commitment on patient loyalty. The research suggests that improving patient loyalty is conducive to sustainable operation of medical providers and the treatment effects for patients. This study involved a cross-sectional research design; the survey was completed by the respondents at 1 time. Future studies can collect variable data at multiple points in time. Furthermore, data collection in this study was concentrated in Taiwan. Future studies may use data from other locations to assess the generalizability.

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Data accessibility statement

The data underlying this article will be shared on reasonable request to the corresponding author.

References

1. Zhou WJ, Wan QQ, Liu CY, Feng XL, Shang SM. Determinants of patient loyalty to healthcare providers: an integrative review. *Int J Qual Health Care*. 2017;29(4):442-449. doi:10.1093/intqhc/mzx058
2. Huang CH, Wu HH, Lee YC, Li L. What role does patient gratitude play in the relationship between relationship quality and patient loyalty? *Inquiry*. 2019;56:46958019868324. doi:10.1177/0046958019868324
3. Shieh JI, Wu HH, Huang KK. A DEMATEL method in identifying key success factors of hospital service quality. *Knowl Based Syst*. 2010;23(3):277-282. doi:10.1016/j.knosys.2010.01.013
4. Oliver RL. Whence consumer loyalty? *J Mark*. 1999;63:33-44. doi:10.2307/1252099
5. Choi KS, Cho WH, Lee S, Lee H, Kim C. The relationships among quality, value, satisfaction and behavioral intention in health care provider choice: a South Korean study. *J Bus Res*. 2004;57(8):913-921. doi:10.1016/S0148-2963(02)00293-X
6. Kim Y, Kim S, Myoung H, Lee H. Perceived service quality and its influence on behavioral intention in South Korean public dental hospitals. *Asia Pac J Public Health*. 2012;24(2):391-405. doi:10.1177/1010539510379393
7. Zeithaml VA. Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *J Mark*. 1988;52(3):2-22. doi:10.2307/1251446
8. Sweeney JC, Soutar GN. Consumer perceived value: the development of a multiple item scale. *J Retail*. 2001;77(2):203-220. doi:10.1016/s0022-4359(01)00041-0
9. Petrick JF. Development of a multi-dimensional scale for measuring the perceived value of a service. *J Leis Res*. 2002;34(2):119-134. doi:10.1080/00222216.2002.11949965
10. Morgan RM, Hunt SD. The commitment-trust theory of relationship marketing. *J Mark*. 1994;58(3):20-38. doi:10.2307/1252308
11. Moreira AC, Silva PM. The trust-commitment challenge in service quality-loyalty relationships. *Int J Health Care Qual Assur*. 2015;28(3):253-266. doi:10.1108/ijhcqa-02-2014-0017
12. Fatima T, Malik SA, Shabbir A. Hospital healthcare service quality, patient satisfaction and loyalty. *Int J Qual Reliab Manag*. 2018;35(6):1195-1214. doi:10.1108/ijqrm-02-2017-0031
13. Wartiningsih M, Supriyanto S, Widati S, Ernawaty E, Lestari R. Health promoting hospital: a practical strategy to improve patient loyalty in public sector. *J Public Health Res*. 2020;9(2):1832.doi:10.4081/jphr.2020.1832
14. Moliner MA. Loyalty, perceived value and relationship quality in healthcare services. *J Serv Manag*. 2009;20(1):76-97. doi:10.1108/09564230910936869
15. Chow S, Holden R. Toward an understanding of loyalty: the moderating role of trust. *J Manag Issues*. 1997;9(3):275–298.
16. Smith JB. Buyer–seller relationships: similarity, relationship management, and quality. *Psychol Mark*. 1998;15(1):3-21. doi:10.1002/(sici)1520-6793(199801)15:1<3::aid-mar2>3.0.co;2-i
17. Johnson D, Grayson K. Cognitive and affective trust in service relationships. *J Bus Res*. 2005;58(4):500-507. doi:10.1016/S0148-2963(03)00140-1

18. Punyatoya P. Effects of cognitive and affective trust on online customer behavior. *Mark Intell Plan*. 2019;37(1):80-96. doi:10.1108/MIP-02-2018-0058
19. Chou HW, Lin YH, Chang HH, Chuang WW. Transformational leadership and team performance: the mediating roles of cognitive trust and collective efficacy. *SAGE Open*. 2013;3(3):215824401349702. doi:10.1177/2158244013497027
20. Gerlach G. Linking justice perceptions, workplace relationship quality and job performance: the differential roles of vertical and horizontal workplace relationships. *Ger J Hum Resour Manag*. 2019;33(4):337-362. doi:10.1177/2397002218824320
21. Hasche N, Höglund L, Mårtensson M. Intra-organizational trust in public organizations – the study of interpersonal trust in both vertical and horizontal relationships from a bidirectional perspective. *Public Manag Rev*. Published online May 22, 2020. doi:10.1080/14719037.2020.1764081
22. Lee C. Patient loyalty to health services: the role of communication skills and cognitive trust. *Int J Healthc Manag*. Published online April 25, 2020. doi:10.1080/20479700.2020.1756111
23. Lee C, Kim S. Patient fidelity to medical services: the roles of authenticity and affective trust. *J Ind Distrib Bus*. 2020;11(11):19-28. doi:10.13106/jidb.2020.vol11.no11.19
24. Bova C, Route PS, Fennie K, Ettinger W, Manchester GW, Weinstein B. Measuring patient–provider trust in a primary care population: refinement of the health care relationship trust scale. *Res Nurs Health*. 2012;35(4):397-408. doi:10.1002/nur.21484
25. Zeithaml VA, Berry LL, Parasuraman A. The behavioral consequences of service quality. *J Mark*. 1996;60(2):31-46. doi:10.2307/1251929
26. Hayes AF. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. 2nd ed. The Guilford Press; 2018.
27. Patawayati, Zain D, Setiawan M, Rahayu M. Patient satisfaction, trust and commitment: mediator of service quality and its impact on loyalty (An empirical study in Southeast Sulawesi Public Hospitals). *J Bus Manag*. 2013;7(6):1-14. doi:10.9790/487x-0760114
28. Jiang S. The relationship between face-to-face and online patient-provider communication: examining the moderating roles of patient trust and patient satisfaction. *Health Commun*. 2020;35(3):341-349. doi:10.1080/10410236.2018.1563030
29. Piette JD, Heisler M, Krein S, Kerr EA. The role of patient-physician trust in moderating medication nonadherence due to cost pressures. *Arch Intern Med*. 2005;165(15):1749-1755. doi:10.1001/archinte.165.15.1749
30. Pura M. Linking perceived value and loyalty in location-based mobile services. *Manag Serv Qual*. 2005;15(6):509-538. doi:10.1108/09604520510634005
31. Rahmqvist M, Bara AC. Patient characteristics and quality dimensions related to patient satisfaction. *Int J Qual Health Care*. 2010;22(2):86-92. doi:10.1093/intqhc/mzq009
32. Perneger TV. Adjustment for patient characteristics in satisfaction surveys. *Int J Qual Health Care*. 2004;16(6):433-435. doi:10.1093/intqhc/mzh090
33. Maciaszek J, Ciulkowicz M, Misiak B, et al. Mental health of medical and non-medical professionals during the peak of the COVID-19 pandemic: a cross-sectional nationwide study. *J Clin Med*. 2020;9(8):2527. doi:10.3390/jcm9082527