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RESEARCH ARTICLE

Association between Patient Satisfaction and the Willingness to Return for Rehabilitation- A Pilot Study

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Abstract:

Background:

Patient satisfaction has played an important role in the development of health systems. However, the information on patient satisfaction and the returning of the patients for rehabilitation is limited. This study aims to explore the role of different domains in patient satisfaction with the willingness to return for further rehabilitation.

Methods:

The cross-sectional study was conducted among all 163 patients who were treated at different departments but needed a combination of treatment with rehabilitation at Viettiép hospital, Haiphong city. The Patient Satisfaction Index (PSI) Questionnaire was applied to record the average score of satisfaction. Multivariate logistic regression was used to determine the association between each domain of the PSI and the return for rehabilitation treatment.

Results:

Among the PSI scale, the strongest correlation was observed between the attitude of medical staff and the equipment and infrastructure of the hospital ($r=0.305$). The linear regression model indicated that patient satisfaction was associated significantly with the willingness to return for further rehabilitation ($OR=58.442$). There were significant associations between the accessibility, equipment and infrastructure, quality of care and treatment, and cost of treatment with the returning for treatment of the patients.

Conclusion:

The patient satisfaction regarding individual domains should be considered in more detail in order to enhance the rehabilitation treatment of patients after discharging them from the hospital.

Keywords: Patient satisfaction, Willingness to return, Accessibility, Quality of care, Infrastructure, Treatment cost, Rehabilitation.

Article History

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1. INTRODUCTION

Despite being used commonly, the concept of patient satisfaction seems not to have a rigorous theoretical definition [1]. Patient satisfaction is known as a combination of a cognitive evaluation and an emotional reaction to healthcare

providers [2], which partly expresses the patient's perception of treatment effectiveness [3]. The assessment of patient satisfaction is also important information for evaluating and developing service quality in the healthcare system. According to the World Health Organization (WHO), patient's satisfaction evaluations can also address the reliability, responsiveness, and security of services as well as the courtesy of providers. The WHO also states that specific factors should be considered as the elements of patient's satisfaction, including the accessibility of services, the result and cost of treatment, staff

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communication, information resources, and time spent with a counselor [4]. Moreover, the infrastructure of the hospital was found to be correlating with patient satisfaction [5, 6]. Previous studies indicated that a decrease in the satisfaction of patients may lead them to change their health services provider [7]. Besides that, patient's satisfaction has been proven to affect healthcare utilization, the patient's recommendation of providers to others [8], and the willingness to return to the hospital for future requirements [9].

There has been an increase in studies on the assessment of patient satisfaction. The Ministry of Health of Vietnam has created a Patient Satisfaction Index (PSI) Questionnaire, which is provided to medical facilities for self-assessment and quality improvement [10]. So far, these studies have been conducted mainly among patients who had been treated within the same department or hospital to demonstrate the interaction between the patients and health workers and health services at the time of treatment [11 - 13]. There are no studies that describe the relationship between the patient's satisfaction and the willingness to return for further consulting and treatment if needed. Patients with different diseases who have a combination of treatment with rehabilitation are special subjects who need the same care and support as patients who are only officially treated at a rehabilitation department. However, no studies have been conducted to evaluate the effect of patient's satisfaction on the willingness to go back to the rehabilitation department for future services. Our study was conducted among this special population to evaluate the association between satisfaction and the willingness to return for the future rehabilitation.

2. MATERIALS AND METHODS

2.1. Study Population

A cross-sectional study was conducted at the Rehabilitation Department of Viettiép Hospital, the largest hospital in Haiphong city, from 1st December 2019 to 30th April 2020. All of the inpatients who received rehabilitation combined treatment while being officially admitted to departments other than rehabilitation, including the Internals and Surgery, were invited to participate in the study. The eligibility criteria included 1) being an inpatient at the time of collecting data; 2) using services at the Rehabilitation Department for at least 1 week; 3) the ability to respond to the questions of the interviewer, and 4) need for rehabilitation after discharge from the hospital (according to the doctor's advice).

2.2. Procedure

We approached a total of 163 patients who met the selection criteria, and none of them refused to participate in the study (response rate 100%). To limit any chance which can reduce the reliability of patients' answers due to the time of interview [14], we made an appointment for each participant to have an interview at their last time of using service at The Rehabilitation Department. On the days of appointments, after patients finished their treatment at Rehabilitation Department, we invited them to the private room for interviews. These processes were done by persons who did not involve in any activity related to the Rehabilitation Department as well as

medical providers to avoid the psychosocial determinants' bias [15]. Totally, data collecting from 163 patients were analyzed.

2.3. Patient's Satisfaction Assessment

The Patient Satisfaction Index Scale (PSI scale), which was proposed and approved by the Ministry of Health of Vietnam, was utilized in this study [16]. It was modified to apply to patients for determining their satisfaction with healthcare services for their rehabilitation experience in the hospital. The PSI scale contains a total of eleven questions under the following six domains of satisfaction: Accessibility; Information transparency; Equipment and infrastructure, Attitude of medical staff; Quality of care and treatment; and Cost of treatment. This scale prompted patients to rate their experience using the 5-point Likert scale (completely dissatisfied =1, dissatisfied =2, neutral =3, satisfied =4, and completely satisfied =5). The score will be summed for each domain and whole the scale, in which the higher score indicates the higher satisfaction of the patients. Cronbach's α for the total questionnaire and each domain of the scale was from 0.75 to 0.8.

2.4. Outcome

The main outcome was the patients' intention of returning to receive further rehabilitation services after discharge from the hospital. This was evaluated with the question: Are you willing to return to the rehabilitation department to continue your rehabilitation treatment after you are discharged from the hospital? Patients who answered "Yes" were classified as the willingness to return patients and patients who gave the answer "No" or "Not sure" were classified as the unwillingness to return patients.

2.5. Other Variables

Other information collected on the participants comprised age, gender, living location, occupation, having insurance, type of rehabilitation therapy, and the department where they received treatment, including Orthopedics, Neurology, Surgery, Geriatrics, and others.

2.6. Statistical Analysis

Data were examined for the normal distribution before choosing the appropriate test. Mann-Whitney U test was applied to compare the different average scores of PSI scale and six domains between the willingness to the return-patient group and the unwillingness to the return-patient group. Confounding variables were age, sex, occupation, living location, faculty treatment, having health insurance, and type of rehabilitation therapy. The Odds Ratios (ORs) and 95% Confidence Intervals (CIs) of each domain of the PSI scale were calculated using multivariate linear regression models with adjustments for potential confounding factors in order to assess the association between PSI domains and the willingness to return for further rehabilitation treatment. Analyses were performed using R software. The significance of differences was set at $p < 0.05$ for all analyses.

3. RESULTS

The percentage of female participants was 58.3%. The average age of the participants was 65.04 ± 15.04. Retired patients accounted for the highest percentage of occupation with 41.7% (Table 1). Patients lived in both urban and suburban locations. Participants were treated in several different departments; 34.4% were from the orthopedics department. Physical therapy was used for all the patients. In addition, 96.3% of participants used occupational therapy for treatment. 88.3% of patients were willing to return for further

rehabilitation after discharge from the hospital.

Table 2 showed the total PSI score was positively correlated to all the domains of the scale, of which the correlation between total PSI and the attitude of medical staff was the highest (r=0.568), followed by equipment and infrastructure (r=0.543). Among the domains, the strongest correlation was observed between the attitude of medical staff and the equipment and infrastructure of the hospital (r=0.305), following by the correlation between the accessibility and the quality of care and treatment (r=0.277).

Table 1. Participants' characteristics.

Characteristics	-	N (163)	%
Age	16-39	8	4.9
	40-59	43	26.4
	60-79	87	53.4
	≥ 80	25	15.3
	Mean: 65.04 ± 15.04	-	-
Gender	Male	68	41.7
	Female	95	58.3
Living location	Urban	85	52.1
	Suburban	78	47.9
Occupation	Student	3	1.8
	Officer	24	14.7
	Worker	27	16.6
	Farmers and freelance worker	25	15.3
	Housewife	16	9.8
	Retired	68	41.7
Department treatment	Geriatrics	21	12.9
	Orthopedics	56	34.4
	Neurology	30	18.4
	Surgery	18	11.0
	Other	38	23.3
Having health insurance	Yes	160	98.2
Rehabilitation therapy	Physical therapy	163	100
	Occupational therapy	157	96.3
	Others	19	11.7
Willingness to return for rehabilitation	No	19	11.7
	Yes	144	88.3

Table 2. Correlation between the PSI domains' score.

	Accessibility	Information transparency	Equipment and infrastructure	Attitude of medical staff	Quality of care and treatment	Cost of treatment
Accessibility	1.000	-	-	-	-	-
Information transparency	-0.190*	1.000	-	-	-	-
Equipment and infrastructure	0.013	-0.092	1.000	-	-	-
Attitude of medical staff	-0.002	-0.119	0.305**	1.000	-	-
Quality of care and treatment	0.277**	-0.112	0.191*	0.160*	1.000	-
Cost of treatment	0.079	0.019	0.112	0.241**	0.030	1.000
Total PSI	0.398**	0.210**	0.543**	0.568**	0.517**	0.417**

Spearman's correlation

*. Correlation is significant at the 0.05 level (2-tailed)

**. Correlation is significant at the 0.01 level (2-tailed)

Table 3. The difference between PSI domains' scores between the willingness to return-patient group and unwillingness to return-patient group.

	Unwillingness to Return-Patient Group (n= 19) Mean ± SD	Willingness to Return-patient Group (n = 144) Mean ± SD	P
Accessibility	4.05 ± 0.64	4.42 ± 0.48	0.030
Information transparency	4.16 ± 0.80	4.26 ± 0.56	0.607
Equipment and infrastructure	3.82 ± 0.67	4.28 ± 0.47	0.009
Attitude of medical staff	4.08 ± 0.63	4.43 ± 0.52	0.007
Quality of care and treatment	3.61 ± 0.72	4.11 ± 0.47	<0.001
Cost of treatment	3.42 ± 0.77	3.79 ± 0.72	0.038
Total PSI	3.89 ± 0.517	4.25 ± 0.21	0.080

Table 4. Odds ratios (95% CI) for the willingness to return for further rehabilitation according to the domains of patient satisfaction index.

Domains	aOR (95% CI)*	p
Accessibility	6.466 (1.959- 21.343)	0.002
Information transparency	1.370 (0.577- 3.252)	0.475
Equipment and infrastructure	4.996 (1.592- 15.679)	0.006
Attitude of medical staff	2.307 (0.887- 5.999)	0.086
Quality of care and treatment	5.545 (1.872- 16.419)	0.036
Cost of treatment	2.461 (1.062- 5.703)	0.036
Total PSI	58.442 (4.149- 823.270)	0.003

*Adjusted for age, gender, occupation, living location, department treatment, having health insurance, rehabilitation therapy

The study results in Table 3 showed that the group of patients who were not willing to return for further rehabilitation treatment had a lower mean score of satisfaction (3.89 ± 0.517) than the group of return patients (4.25 ± 0.21). However, the difference was not statistically significant. The significantly lower scores in 5 out of 6 domains were observed in the non-return-patients group, except for the domain of information transparency.

Results of logistic regression models demonstrated that patient satisfaction was associated significantly with the need for returning for further rehabilitation of patients with OR (95%CI) of 58.442 (4.149-823.270). Among the domains, the odds ratio of returning for rehabilitation related to the accessibility, equipment and infrastructure, quality of care and treatment, and cost of treatment domains were 6.466 (1.959-21.343), 4.996 (1.592- 15.679), 5.545 (1.872- 16.419) and 2.461 (1.062- 5.703), respectively. The information on transparency and the attitude of medical staff was not significantly associated with the return of patients (Table 4).

4. DISCUSSION

Our research suggests a significant association between the willingness to return for future rehabilitation and patient's satisfaction, especially with four domains, including accessibility, infrastructure, the result of treatment, and cost of treatment. To the best of our knowledge, this is the first study in Vietnam to demonstrate the influence of patient's satisfaction and the willingness to return for further rehabilitation treatment.

Patient's satisfaction is a very important index to evaluate services and improve the quality of the health system,

including facilities and personnel. Consistent with the previous finding among patients undergoing total hip replacement [9], this study revealed a strong positive association between PSI score and the willingness to return for further treatment of patients. Although measuring patient's satisfaction, these results were not representative of the same construct of satisfaction.

This study indicated that people who were satisfied with accessibility were more likely to return to rehabilitation. A study of inpatient's satisfaction with medical services quality at Bach Mai Hospital, a famous Vietnamese hospital, showed that more than 90% of patients were satisfied with the ability to access information at this hospital [17]. Moreover, it was found that overall satisfaction scores as well as domains related to care accessibility and hospital facilities [11]. In addition, the difficulty of accessibility to different facilities could attenuate the satisfaction of patients [18]. However, these studies did not show whether accessibility is related to a patient's desire to return for treatment. The results of this study suggested that the easier it was to access the facilities, the more likely it that patients are willing to return for rehabilitation.

On the other hand, the results also showed that the satisfaction with equipment and infrastructure was positively associated with the willingness of the patients to return. The previous study suggested that the development of the hospital, such as beautiful hospital decoration, modern examination facilities, and the design of reasonable examination areas would lead to higher patient satisfaction [19]. In addition, the satisfaction with the preprocedural waiting area in the hospital was associated with the willingness to return for repeat medical service [20]. It has been proposed that because patients cannot

reliably differentiate positive experiences with the physical environment from positive experiences with care, an improved patient-centered hospital environment with features such as reducing the noise, increasing natural light, visitor-friendly facilities, well-decorated rooms, and hotel-like amenities would lead to higher satisfaction of patients [19]. The need for renovating and upgrading the physical environment of the hospitals thus should not be overlooked.

This study clearly showed that the quality of care and treatment and the cost of treatment were significantly associated with the willingness to return for rehabilitation. This finding was in line with the previous results, which suggested the association between patients' willingness to return for future treatment and treatment outcome [21, 22]. Furthermore, patients who were considered to be suffering no complications after being discharged are more likely to return to the hospital for further treatment [9]. The results of treatment may reflect partly the professional qualifications of the doctors and the quality of care of the nurses in the hospital, so highly qualified manpower is one of the decisive factors in the ranking of the hospital as well as patient satisfaction. Rehabilitation therapy requires long-term and continuous treatment as well as much time of contact between patients and medical staff; therefore, patient supervision is essential. This is related to the concern and encouragement of the medical staff at the hospital. Research on both outpatients and inpatients suggested that the "health workers' attitudes" and "care and treatment" contributed to the highest satisfaction scores [22]. Another previous study also demonstrated that a patient's positive experience with health workers during their stay in the hospital was strongly correlated with the patient's assessment of the quality of medical care [23 - 25]. Beyond medical expertise, an adequate time that the physician spent for maintaining continuity of care and satisfaction for each patient was noted [7]. In addition, the literature on this topic emphasized the importance of professionalism and dedication to the profession of doctors and nurses on the perception of patients on care quality [17, 18]. This suggested that, in order to enhance the patient's satisfaction level, it is necessary to improve the factors related to the expertise and communication skills of medical staff [26]. Treatment cost is one of the factors that many people consider when choosing a hospital for treatment. Our finding was different from the suggestion of no relationship between patient satisfaction and cost and payment of rehabilitative services in China [27, 28]. Another retrospective study using data collected from a large hospital also did not result in a significant correlation between patient satisfaction and cost [29]. Nonetheless, a study conducted among Japanese showed that more participants indicated satisfaction with treatment in the group paying less [29]. The evidence of an influence of paying on the willingness to return for treatment, especially among patients with poor health and lower socioeconomic status, was demonstrated [30]. A rare study predicting factors affecting willingness to return for the treatment described the correlation between the explanation of billing procedure and the willingness to recommend/return to the hospital [31]. Although the majority of patients in our study already had health insurance, most of them are elderly and retired. This may explain the role of the cost of treatment among possible

factors influencing the ability to return for treatment.

Meanwhile, among domains, transparency of information did not show a significant statistical difference in the willingness to return for rehabilitation. One of the reasons to explain this finding was the ease of access to the information via the internet, radio, and television, instead of previous times when the patient could only get information from hospital staff. The behavioral attitude of medical staff was also not a factor affecting the patient's decision to return in our study. Previous studies have also shown that the elderly tend to be satisfied more easily than younger people [11, 20]. Research in Carolina about healthcare satisfaction in older and younger patients with cancer revealed that older patients with cancer had higher levels of satisfaction with care, in part due to a lesser financial burden of care, and satisfaction with care did not change over time post-treatment in multivariable analysis [32]. The population in our study was mainly elderly, which could provide a similar explanation for the findings.

5. LIMITATIONS

This initial cross-sectional study does not permit the assessment of causality owing to the uncertain temporality of the association. Because this study focused on a targeted patient group in one hospital with small sample size, it may affect the results of statistical analyses and the generalizability of the results. Moreover, the PSI scales have been modified then it limited evidence of reliability and validity. In addition, this study did not follow up with patients to determine their return. Therefore, this study cannot eliminate the bias in the answers of the patients. Further follow-up studies with larger numbers of participants should be considered to provide clearer findings.

CONCLUSION

The willingness to return for further rehabilitation treatment was associated with patient satisfaction, especially with the accessibility, equipment and infrastructure, quality of care and treatment, and cost of treatment. The patient satisfaction regarding individual domains should be considered in more detail in order to enhance the rehabilitation treatment of patients after discharging them from the hospital.

AUTHORS' CONTRIBUTIONS

Conceptualization, Nguyen.T.T.T, Nguyen.B.T, Nguyen.T.A, Nguyen.T.M.N; Data curation, Trinh.T.X, Nguyen.T.A, Nguyen.Q.D; Formal analysis, Nguyen.T.T.T; Investigation, Bui.T.H, Nguyen.T.A., Nguyen Q.D, Nguyen.T.N.T, Nguyen.T.T.T, Nguyen.T.H.N, Nguyen.V.K; Methodology, Nguyen.T.T.T, Nguyen.B.T, Nguyen.V.K; Supervision, Nguyen.T.M.N; Writing – original draft, Nguyen.T.T.T, Trinh.T.X; Writing – review & editing, Nguyen.T.M.N. All authors read and approved the final manuscript.

LIST OF ABBREVIATIONS

PSI	=	Patient Satisfaction Index
SD	=	Standard Deviation

OR = Odd Ratio
CI = Confidence Interval

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The procedure for this study was approved by the ethics committee of Haiphong University of Medicine and Pharmacy (Code: 2019.01.Stu/HPMU.IRB).

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

All participants were given an explanation of the aims and objectives of the study before oral consent was conducted.

STANDARDS OF REPORTING

STROBE guidelines and methodology were followed.

FUNDING

None.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of the article is available in the Zenodo Repository at [<https://zenodo.org/record/5535462#.YVQjHbgzaM8>], reference number [10.5281/zenodo.5535462].

CONFLICT OF INTEREST

The authors declare no conflict of interest financial or otherwise.

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