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Research Article

Patient's Perception of Postoperative Recommendations Orthopedic Surgery

Mohammad Ali Okhovatpour [1,2], Mina Fakhrzadegan [2], Mohammadreza Minator Sajjadi [2], Reza Zandi [2*]

[1] Bone Joint and Related Tissues Research Center, Akhtar Orthopedic Hospital, Shahid Beheshti University of Medical Sciences, Sharifi Manesh Street, Shariati Street, Tehran, Iran.

[2] Musculoskeletal Injuries Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

***Corresponding Authors**: Reza Zandi, Musculoskeletal Injuries Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran; Tel:(+98) 2123031633; E-mail: reza.zandi@sbmu.ac.ir. ORCID ID: https://orcid.org/0000-0001-9313-3977

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Abstract

Introduction: The patient's perception of postoperative medical advice effectively affects treatment outcomes. Some factors, including education level, patient-physician communication, and financial limitations, can affect the patient's perception. This study assessed the patient's perception of medical recommendations after orthopedic surgery.

Methods: This cross-sectional study was conducted on patients who referred for postoperative follow-up visit during the first half of 2022. Two separate questionnaires, for patients' and companions' questions and a surgeon's recommendations form, were designed and were asked to patients and their companions 10 minutes after finishing the visit. Education level, marital status, and city of residence were assessed among the samples. Also, the data were analyzed by R software.

Results: Literacy level was significantly related to patient perception (*P-value* = 0.004). In 15.9%, neither the patient nor the companions understood the surgeon's recommendations (Kapa Coefficient = 0.34).

Conclusion: Perception of the post-surgical recommendations at the postoperative follow-up is important in the final outcomes of orthopedic surgery. The patient's literacy level can affect the patient's perception.

Keywords: Perception, Treatment Adherence and Compliance, Patient Outcome Assessment, Orthopedics.

Introduction

Patient adherence to medical advice is one of the most important issues that can lead to successful health intervention, higher satisfaction, higher quality of care, and better outcomes [1-3]. Patients' failure to adhere to the physician's advice has been reported as a limiting factor in optimal medical management [4]. Healthcare should be safer, and the treatment outcomes depend on the patient's perception of the medical advice. The patient's incompatibility with the physician's recommendations can affect the treatment plan [5,6].

Some factors, including forgetting and ignoring the physician's advice, treatment-related side effects, financial limitations, and a lack of understanding of the physician's language, can be responsible for patient incoherence to medical care [7-9]. In addition, some studies suggested that factors such as higher education and age under 50 are important factors in patients' perception of medical advice [10]. Furthermore, a study observed that almost 50% of patients in the United States still need to adhere to the physician's recommendations 11 completely.

Considering the complexity of orthopedic surgery, the operation outcome is directly associated with the patient's education, cooperation, and adherence to the physician's instructions [12,13]. Operation-related complications, including infection, post-operative pain, joint stiffness, and limited range of motion, can be expected because of a lack of physician advice perception [14,15]. Research has yet to be conducted in Iran to assess the patient's perception of medical advice after

orthopedic surgeries. This study aimed to assess patient perception and related factors after orthopedic operations.

Methods

Study design

This prospective study was conducted during the first half of 2022 in the orthopedic clinic of an educational hospital. All patients who presented for postoperative follow-up during the study period were included in the study, and convenience sampling was used for patient selection; in addition, patients who were under 15, patients who had auditory disorders, and patients who were unsatisfied were excluded from the study.

Two separate questionnaires, including questions for practitioners and companion surgeons' recommendation forms, were designed to record the information provided by an orthopedic resident during a patient's visit. Two separate interviewers asked the questions of patients and their companions 10 minutes after the visit had finished. Patients who underwent surgery on their lower extremities (pelvis, hip, femur, knee, tibia, ankle, and foot) were asked about five questions regarding wound dressing status, weight-bearing, walking in the postoperative period, increasing the range of motion and time of the next follow-up visit. In addition, Patients who underwent surgery on their upper extremities (fingers, hand, wrist, forearm, elbow, and arm) were asked about three questions related to wound dressing, increasing the range of motion and time of the next follow-up visit.

In the context of more than 50% of correct answers, patients were assumed to be apprehensive.

The exclusion criteria were age under 15, auditory disorders, and patients'patients'

Statistical analysis

All statistical analyses were performed using R version 3.0.2. Quantitative variables were reported as mean, standard deviation, and median, and qualitative variables were reported as percentages. The Chi-square Test was used for assessing the relation between the perception and related factors; quantitative data was tested for normality using the Kolmogorov–Smirnov test, and the Mann-Whitney test was used to compare the age as the only nonparametric quantitative variable between the groups. Finally, the Kappa coefficient of agreement was used to examine the relationship between patient and companion perception. A P-value less than 0.05 is considered a statistically significant difference.

Results

After the exclusion of 48 patients, two hundred patients were enrolled in this study and included in the final analysis. One hundred fifty patients were male (75%), and 50 were female (25%). The mean age of the patients was 38.9 ± 15.5, median was 36 years, and ranged from 15 to 92. In terms of literacy level, half of them were below the level of a high school diploma, and the other half were diploma or college-educated. 63.5% were married, and 36.5% were single; the City of residence in 51.1% was Tehran, and 48.5% were from other provinces that came to the capital for treatment. 68.5% underwent surgery on their lower limbs, and 31.5% underwent surgery on their upper limbs.

One hundred fifty-eight patients (79%) understood the surgeons' advice, and 42 patients (21%) did not understand it satisfactorily.

There was no significant relationship between patient perception of medical advice and gender, age, city of residence, language barriers, and extremity surgery (P-value > 0.05). However, there was a statistically significant relationship between patients' perception and literacy level; as the level of education increases, the patient's understanding of the surgeons' instructions increases (P-value = 0.004). High-educated patients were 3.6 times more likely to understand surgeons' instructions than the others (Table 1).

Ninety-four patients (47%) had companions in their follow-up visit, 51 of whom (54.2%) were male and 32 of whom (45.7%) were female. The mean age of the companions was 39.8 ± 12.9, the median was 37 years, and the range was from 17 to 73.

As seen in Table 2, no significant relationship was found between gender, marital status, literacy level, and relation to the patient, with physician recommendations perceived in companions (P-value > 0.05) (Table 2).

Among 94 patients who presented to the clinic with a companion, in 53 patients (56.4%), both patients and companions perceived the surgeons' recommendation; however, in 16 patients (17.1%), the patient perceived the surgeons' recommendation, while the companion has no perception, in addition, in 10 patients (10.6%), the companion has perceived the surgeons'

recommendation while the patient had no perception. Furthermore, in 15 patients (15.9%), neither the patient nor the companions understood the doctor's instructions. The result of the kappa coefficient of agreement indicates that there is a weak concordance between patients' perceptions and their companions (r=0.34).

Table 1: Relationship between patients' perception and baseline characteristics

Patients characteristics		Patient Perception		P-Value
		Yes (n = 158)	No (n = 42)	
Gender	Male	120 (75.9%)	30 (71.4%)	0.548
	Female	38 (24.1%)	12 (28.6%)	
Marital status	Single	61 (38.6%)	12 (28.6%)	0.23
	Married	97 (61.4%)	30 (71.4%)	
Literacy level	High school diploma and academic degree	89 (56.3%)	11 (26.2%)	0.004*
	Under high school diploma	69 (43.7%)	l31 (73.8%)	
City of residence	Capital	82 (51.9%)	21 (50%)	0.827
	Other provinces	76 (48.1%)	21 (50%)	
Language barriers	No	158 (100%)	41 (97.6%)	0.21
	Yes	0	1 (2.4%)	
Extremity surgery	Upper extremity	108 (68.4%)	29 (69%)	0.931
	Lower extremity	50 (31.6%)	13 (31%)	
Age		38 ± 14.9 ,(35)	42.6 ± 17.2 ,(41)	0.138
Frequency (Percentage), Mean ± SD, (Median), *significant at 0.05 level				

Table 4: Relationship between companions' perception and baseline characteristics.

Companion characteristics		Companion's Perception		P-Value
		Yes (n = 63)	No (n = 31)	
Gender	Male	35 (55.6%)	16 (51.6%)	0.718
	Female	28 (44.4%)	15 (48.6%)	
Marital status	Single	11 (17.5%)	8 (25.8%)	0.343
	Married	52 (82.5%)	23 (74.2%)	
Literacy level	High school diploma and academic degree	36 (57.2%)	17 (54.8%)	0.83
	Under high school diploma	27 (42.8%)	14 (45.2%)	
Relation to the patient	Parents	17 (27%)	8 (25.8%)	0.827
	Others	12 (19%)	8 (25.8%)	
	Spouse	18 (28.6%)	12 (38.7%)	
	Children	16 (25.4%)	8 (25.8%)	
Age		41.5 ± 12.9 ,(38)	36.4 ± 12.4 ,(34)	0.085
Frequency (Percentage), Mean ± SD, (Median)				

Discussion

This study, the first to assess patients' and companions' perceptions of postoperative orthopedic advice in orthopedic science, observed that patients' perceptions of surgeons' advice were related to their literacy level. In addition, regarding companions, there was no relationship between perceptions and demographic factors.

Postoperative follow-up in orthopedic surgery plays an important role in patient management [16]. In other words, understanding the postoperative orthopedic surgeon's postoperative recommendations and adhering to them correctly is essential for enhancing recovery [17,18]. Recently, self-management during the postoperative period based on the surgeon's recommendations was known as a significant step of the optimum management [19-21]; thus, patient adherence to the medical recommendations plays a vital role in the effective

treatment [22]. In some points, non-adherence to medical advice can cause some morbidities for patients in addition to the loss of costs and health resources [23].

Several factors can be responsible for patient perception and adherence to medical advice, including physician-patient communication [24-26], social and cognitive beliefs [27], financial resources of the patient [28], ethnicity [29], and education level [30,31]. In this study, the patient's education level was related to their perception, which was associated with the previous studies [32,33]. Medical recommendations are more important for educated people. In addition, this study found no significant association between the companion's education and their perceptions. A higher level of education seems more advantageous for patients than their companions. Thus, for higher education patients, it is better to have patient companions outside the visiting room to prevent possible ambiguities in patients.

One of the challenging issues in this study was the agreement between the patient and the patient's companion about the physician's recommendations. This study asked patients and companions separately about the doctor's recommendations. In some cases, they needed to understand the surgeon's advice correctly. In addition, in some cases, the patient understood the advice correctly, but the relative could not understand the recommendations correctly, which could affect the patient's understanding. Therefore, avoiding the patient's companion's entry into the visitation room is better in the initial visit. It is better to measure the companion's level of understanding in the early stages of the follow-up and then enter the companion to the room with the patient. Furthermore, it would be better to ask the patient and the companion about the recommendations at the end of the visit to ensure their perception.

Future studies should ask patients in each visit for advice from the previous visit.

Conclusion

After orthopedic surgeries, the surgeon's recommendation for the postoperative follow-up is necessary. Adherence to physician advice can improve the outcome. Patients' education level is adequate in terms of patient perception. A companion's presence in some follow-up visits may affect the patient's perception.

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Conflicts of interest/ Competing interests

The authors declare that they have no competing interests.

Authors' Contributions

MA. O conceived the study and constructed the study design. M.F. carried out data analysis and drafted the manuscript. R.Z. and MR. MS reviewed and edited the final draft. All authors read and approved the final manuscript.

Declaration of Generative AI and AI-assisted technologies

Not cleared.

Ethical Statement

This study was approved by the ethics committee of the University of Medical Sciences (Ethical code: IR.SBMU.RETECH.REC.1398). All patients were voluntarily enrolled in the study, and informed consent was obtained from all patients at the baseline.

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