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A CROSS-SECTIONAL STUDY TO ASSESS QUALITY OF CARE AND PATIENT SATISFACTION USING THERANOW TELEREHABILITATION PROGRAM POST-THR AND TKR SURGERIES

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ABSTRACT

***Purpose**: to study the quality of care and satisfaction of patients using a telerehabilitation program after THR and TKR surgeries by checking their NPS*
***Methods**: A cross-sectional survey was conducted among the 40 patients planned for TKR and/or THR surgeries and participating in TheraNow telerehabilitation program. Net Promoter Score scale was used to assess patient's satisfaction and the likelihood of recommending TheraNow telerehabilitation program to others. Patients were asked to rate their satisfaction level on a scale of 0-10 after the program, 0 being the least satisfied and 10 being the most. Demographic details of the patients were also recorded.*
***Results:** Out of 40 Patients, 17 (42.5%) were males and 23 (57.5%) were females. The overall mean age of the study population was 65.20+8.41. The maximum number of patients (42.5%) belonged to 61-70 years of age group followed by the 71-80 years of age group (27.5%). The national average NPS score for the healthcare industry is 27 but the average NPS score in our study was 93.*
***Conclusion:** Excellent levels of patient satisfaction with total joint replacement were found and it shows that most patients who have had either a hip or knee replacement would be happy to recommend TheraNow rehabilitation programs in the future. The average NPS score in our study is 93 which is even more than the national average NPS score for the healthcare industry.*

INTRODUCTION

Joint replacement surgery is a prosthetic replacement of a damaged or arthritic joint and is considered only after other treatment options have failed to provide adequate relief from pain or disability. The most commonly performed joint replacement surgeries are total hip replacement (THR) and total knee replacement (TKR) surgeries. In TKR surgeries, the replacement of surfaces of the thigh bone and the shin bone that connect to the knee is done. During a hip replacement, a prosthetic head on a shaft replaces the head of the femur, and the joint surface of the acetabulum is lined with a bowl-shaped synthetic joint surface. The rates of THR and TKR surgeries have increased rapidly in the last few years. The number of patients

for TKR among U.S. Medicare enrollees increased from 145,242 in 2000 to 248,267 in 2006, an increase of 58%, which means an overall TKA incidence rate increase from 5.5 to 8.7 per 1,000 population. Centers for Disease Control and Prevention (2009) In a population-based study in Denmark, the incidence rates of THA increased by 30% (101 to 131 per 100,000) from 1996 to 2002 (Pedersen et al., 2005).

After an orthopedic procedure, rehabilitation as a multidisciplinary approach can improve the function of the joints and the ability to maintain a normal daily life, as well as relieve a patient's pain (Müller et al., 2015; Ritter et al., 2017). There have been various factors that prevent patients from using rehabilitation services like poor subjective health (Thomeit, 1999), immediate functional impairment Maier-Riehle & Schliehe (1999) financial, and personal issues. Therefore, to improve the sustainability of postoperative therapies and the clinical outcomes of operative procedures, telehealth technologies are becoming the first choice of the patients with time. In this regard, TheraNow telerehabilitation seems to be one of these options which can be accessed irrespective of location and time, and it has the potential to increase both utilization and therapy adherence resulting in better clinical outcomes using artificial intelligence.

Several studies stated low patient satisfaction as an outcome of barriers such as inadequate training on the use of telehealth technologies (Bagchi et al., 2018; Carrry et al., 2016; Jacobs et al., 2015; Parker et al., 2018). While some studies stated that patients preferred telehealth over standard in-person therapy programs or the benefits of telehealth outweighed the barriers (Desko & Nazario, 2014; Levy et al., 2015). Few studies also indicated no significant difference in patient satisfaction between telehealth and standard in-person therapy (Linder et al., 2015; Worboys et al., 2018). There is not enough research on patient satisfaction for the use of telehealth as a service delivery model for TKR and THR surgery patients. While access to a higher quantity and quality of health care services is assumingly desired, it is necessary to study patient satisfaction with telehealth services. Patient satisfaction leads to improved patient retention, profitability, positive clinic outcomes including improved safety, accessibility, comprehensiveness of care, and overall quality of health care (Xesfingi & Vozikis, 2016; Prakash, 2010).

One of the most effective ways to consistently measure the patient experience and satisfaction level is by utilizing the Net Promoter Score (NPS). It is a one-question metric that measures the services perceived by patients and how satisfied and loyal patients are. NPS is widely used—in fact by two-thirds of the Fortune 1000 companies (Geoff Colvin, 2022). In this article, we have also studied the quality of care and satisfaction of patients using TheraNow telerehabilitation after THR and TKR surgeries by checking their NPS scores.

METHODOLOGY

A cross-sectional survey was conducted among the 40 patients planned for TKR and/or THR surgeries and participating in TheraNow telerehabilitation program. Net Promoter Score scale was used to assess patient's satisfaction and likelihood of the patient to recommend TheraNow telehealth program to others. Patients were asked to rate their satisfaction level on a scale of 0-10 after the program, 0 being the least satisfied and 10 being the most. Demographic details of the patients were also recorded.

The responses are then segmented into three groups: Promoters, Neutrals, and Detractors. Those who provide a score of either 9 or 10 are promoters, 7 or 8 are neutrals, and 0-6 are detractors.

NPS = Percentage of promoters – Percentage of detractors

NPS can range from -100 to 100. If NPS score is more than zero, that means promoters are more than neutrals or detractors. NPS score above 50 is considered as 'Excellent' score and above 75 is considered as 'Outstanding' score.

RESULTS AND DISCUSSION

Out of 40 Patients, 17 (42.5%) were males and 23 (57.5%) were females. The mean age of the study population was 65.20+8.41. 42.5% of patients belonged to the 61-70 years of age group followed by the 71-80 years of age group (27.5%).

Table 1. Age Details of Patients

Variables		Number	%
Age	Mean±SD	65.20±8.41	
	41-50	3	7.5
	51-60	9	22.5
	61-70	17	42.5
	71-80	11	27.5
Total		40	100.0

Table 2. Gender of Patients

Gender	Female	23	57.5
	Male	17	42.5
Total		40	100.0

Table 3. Number of Promoters, Neutrals and Detractors on the Basis of their NPS Score

Group	NPS score	Number	%
Detractors	0-6	1	2.5
Neutrals	7-8	1	2.5
Promoters	9-10	38	95.0

The national average NPS score for the healthcare industry is 27. The average NPS score in our study is 93 which is even more than the national average NPS score for the healthcare industry.

Telehealth is the remote delivery of health-related services through telecommunication technology to clients for diagnoses, treatment, and prevention of disease and injuries, research and evaluation, and continuing education for health care providers. Rehabilitation services such as occupational therapy, physical therapy, and speech-language therapy can be delivered via telehealth (Koivunen & Saranto, 2018; Bagchi et al., 2018; Jacobs et al., 2015).

The American Occupational Therapy Association (AOTA, 2010) defines telerehabilitation as the "application of evaluation, preventative, diagnostic, and therapeutic services via two-way or multi-point interactive telecommunication technology" (American Occupational Therapy Association, 2010). In 2018, over 90% of health care executives in the United States stated their organizations were currently implementing more telehealth practices, which will provide an alternative to health care services outside of the standard in-person practice setting for an estimated 7 million patients (Flanagan, 2018). A systematic review on the effects of telehealth in occupational therapy practice found that telehealth can be used as an alternative service delivery model (Hung & Fong, 2019). TheraNow integrates artificial intelligence-powered tools and highly trained physical therapists in a care-navigation platform specially designed for rehabilitation after major joint replacement surgery.

In recent decades, patient experiences have gained a prominent place in research on the quality of care (Cleary, 1999; Delnoij et al., 2010). Information from patient experience

surveys can be used by healthcare providers to see which aspects of care need improvement and which aspects are to the patients' satisfaction, and also by patients to help them actively choose between health-care providers (Maarse & Ter Meulen, 2006; Hendriks et al., 2009). It has been shown that global ratings are associated with care aspects that are most important to patients and predominantly with patients' experiences regarding care processes (De Boer et al., 2010; Rademakers et al., 2011).

In the search for a more simple and straightforward way of assessing patient experiences and satisfaction in surveys, there is growing interest in including a Net Promoter Score (or NPS) (Graham & Maccormick, 2012). The NPS is based on a single question: How likely is it that you would recommend our company to a friend or colleague? Participants can give an answer ranging from 0 ('not at all likely') to 10 ('extremely likely'). The assumption is that individuals scoring a 9 or a 10 will give positive word-of-mouth advertising; they are called 'promoters'. Individuals answering 7 or 8 are considered indifferent ('neutrals'). Finally, individuals answering 0–6 are likely to be dissatisfied customers and are labelled as 'detractors'. The Net Promoter Score is then calculated as the percentage of 'promoters' minus the percentage of 'detractors'.

This study assesses the Net Promoter Score in the context of quality of care for TheraNow telerehabilitation of TKR and THR orthopedic patients. Assessing patient outcome survey responses, we found outstanding levels of patient satisfaction with total joint replacement and show that most patients who have had either a hip or knee replacement would be happy to recommend the procedure to someone else. Many factors were responsible for this satisfaction level like reduced costs, patient comfort, approachability, feasibility, and saved travel time. Legg and Langhorne (Trialists, 2004) completed a systematic review of randomized clinical trials of rehabilitation therapy provided at home, and found that therapy at home resulted in improved ability to undertake personal activities of daily living and reduce risk of deterioration in ability. In-home treatment was found to reduce the incidence of delirium, reduce the duration of rehabilitation, and reduce rehabilitation costs in a frail elderly population (Caplan et al., 2006).

CONCLUSION

Telerehabilitation is an emerging method of delivering rehabilitation services employing technology to serve clients, clinicians, and systems by minimizing the barriers of distance, time, and cost. An outstanding level of patient satisfaction with total joint replacement is found and it shows that most patients who have had either a hip or knee replacement would be happy to recommend the Telehealth virtual rehabilitation program in the future. The average NPS score in our study is 93 which is even more than the national average NPS score for the healthcare industry.

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