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Awareness and Acceptability of Total Joint Replacement among Patients Suffering From Severe Osteoarthritis

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Abstract **Original Research Article**

Introduction: Osteoarthritis (OA) is one of the most common joint disorders with pain, function loss, and disability among the older population. Osteoarthritis (OA) affects millions of people all over the world and accounts for a vast burden of pain, debility, functional limitations, loss of man hour and productivity, disability, and loss of quality life expectancy. Total joint replacement is the most effective and a successful treatment for the elderly patients suffering from end stages of osteoarthritis. ***Objectives:*** To study of the awareness and acceptance of total joint replacement surgery among patients suffering from severe osteoarthritis of the hip and knee joints. ***Methods:*** A prospective study was contacted at the Department of Ortho Surgery, National Institute of traumatology and orthopedic rehabilitation (NITOR), Dhaka, Bangladesh from January to June 2021. Forty nine (49) patients included in our study. A well-structured questionnaire was administered to the patient requiring information about their biodata, educational level, the joint affected by osteoarthritis, the level of pain using numeric rating scale (NRS), their knowledge of total joint replacement, their willingness to accept total joint replacement, reasons for not accepting the surgery, X-ray findings and radiological classification of the osteoarthritis using Kellgren and Lawrence classification. ***Results:*** A total of 49 patients were recruited for the study. The age ranged 13-88years with mean age 48 years ± SD 18.2 years; male and female ratio of 1:1.7. Of the 49 patients recruited for the study 32(65.30%) were aware of the role of total joint replacement in the treatment of osteoarthritis and among these 32(65.3%) (figure1) and among these 29(59.18%) accepted the procedure while 20(40.81%) of them rejected it. Thirty one (34.69%) patients had no knowledge of joint replacement but when they were educated on its relevance in their management 10(32.3%) accepted but 21(67.7%) rejected the surgery. There was relationship between educational level with the knowledge and acceptance of joint replacements in the treatment of osteoarthritis with p-value of 0.001. ***Conclusions:*** The study results lead to the conclusion that the majority of elderly patients were illiterate and had high concerns about total joint replacement, and approximately all of them had unsatisfactory knowledge about surgery. However, there is an appreciable number of patients with osteoarthritis who were willing to undergo joint replacement while others refused it because of the cost of the surgery. Additionally the educational level was the only statistically significant independent predictor of knowledge score.

Keywords: Total joint replacement, Elderly patients, Concerns, Knowledge.

INTRODUCTION

Ageing is a natural process; this process is a biological reality which has its own dynamic, largely beyond human control [1]. A among the most important statistical indicators related to the elderly people. Joint replacement surgery is an emerging surgical procedure in developing countries unlike in the developed world where it is routinely performed. In Bangladesh, awareness is still a challenge and on the other hand, the cost of surgery and fear of the outcome with a background cultural bias still post a hindrance to acceptability of this procedure. Total joint replacement (TJR) or arthroplasty is a successful treatment for the rapidly increasing population of elderly patients suffering from end stage of osteoarthritis [2]. Osteoarthritis (OA) is one of the most common joint disorder with pain, function loss, and disability among

the older population [3]. Osteoarthritis (OA) affects millions of people all over the world and accounts for a vast burden of pain, debility, functional limitations, loss of man hour and productivity, disability, and loss of quality life expectancy [4-6]. OA affects several joints in the body such as the shoulders, elbows, ankles, feet, and spine, but the most commonly affected joints are the knees, hips, and hands. In reality, the challenge of treatment of Osteoarthritis is encountered in the younger age group between the ages of 30and 50 years. However, different treatment modalities exist, these ranges from nonpharmacological, pharmacological, and surgical approaches [7-9]. The major determinants for the management of OA are severity of the disease, available resources, patient preferences, and standard management protocols. Demand for joint arthroplasty has risen dramatically in the last decade, which may be due to increasing obesity and an aging population [10]. Hip and knee replacements are the most commonly performed joint replacements, but replacement surgery can be performed on other joints, as well, including the ankle, wrist, shoulder, and elbow [11]. The goals of surgeons who perform total joint arthroplasty (TJA) are to improve patient quality of life, relieve pain, restore joint function, and ensure the ability to perform knee flexion activities that improve mobility and independence in patients who suffer from osteoarthritis [12]. The knowledge and understanding of the causes and biological aspects concerning the joint replacement therapy are important factors for improving the pain and physical activity [13]. Generally, for effective management OA, the patient must be educated about the disease condition, need for weight loss and engagement in basic exercises. Pharmacological treatment will include the use of analgesics such as non-steroidal anti-inflammatory drugs (NSAIDs) which are administered orally or topically, Intra-thecal steroids have also been used particularly for knee osteoarthritis. Several surgical options have been employed in the treatment stages of osteoarthritis ranging from arthroscopic interventions, osteotomies to joint replacements. However, many sufferers of the disease are unaware of joint replacement while others are not willing to have joint replacement done because of many reasons ranging from financial constraints to fear of complications such as any form of disability from the procedure.

METHODS

A prospective study was contacted at the Department of Ortho Surgery, National Institute of traumatology and orthopedic rehabilitation (NITOR), Dhaka, Bangladesh from January to June 2021. Forty nine (49) patients included in our study. A well-structured questionnaire was administered to the patients requesting information about their biodata, educational level, the joint affected by osteoarthritis, the level of pain using numeric rating scale(NRS), their knowledge of total joint replacement either from friends, media, through personal reading or through any formal teaching about joint replacement, their willingness to accept total joint replacement, reasons for not accepting the surgery, x-ray findings and radiological classification of the osteoarthritis using Kellgren and Lawrence classification. Informed consent was obtained from the patient and ethical approval granted by the institution's ethical committee. Informed consent was obtained from the patient and ethical approval obtained from the institution's ethical committee. Statistical analysis was done using Statistical Package for Social Sciences software version 20 for windows SPSS. P-value of 0.05 was considered statistically significant.

RESULTS

A total of 49 patients were recruited for the study. The age ranged 13-88years with mean age 48 years ± SD 18.2 years; most of the participants fells between the 31-40 age group 10(20.40%), their age range was from 13 to 88. Majority of the participants were females 32(65.30%) and most were married 27(55.10%). The most affected joint by osteoarthritis was the left hip 12 (24.48%) table 2. Of the 49 patients recruited for the study 29(59.18%) were aware of the role total joint replacement in the treatment of osteoarthritis, this awareness was largely from friends 32(65.3%) (fig-1) and among these 29(59.18%) accepted the procedure while 20(40.81%) of them rejected it (table 3 & 4). The most frequent reason for refusal of surgery was because of the high cost 16(32.65%) (Table-5). There was a significant relationship between educational level and occupation of the participants with awareness of joint replacements in the treatment of osteoarthritis (p=0.000, 0.012) (Table-6).

Table 1: Socio-demographic characteristics of respondents (N=49)

Variable	Frequency	Percentages
Age group		
10-20	2	4.08
21-30	5	10.20
31- 40	10	20.40
41-50	9	18.36
51-60	7	14.28
61-70	9	18.5
71-80	6	18.36

81-90	1	2.04
Total	**49**	**100.0**
Mean age	48.7± 18.2	
Range	75.0	
Max	88	
Min	13	
Sex		
Male	17	34.69
Female	32	65.30
Total	**49**	**100.0**
Marital status		
Single	13	26.53
Married	27	55.10
Divorced/sep	3	6.12
Widow/wid	6	12.24
Education		
Primary	4	8.16
Secondary	13	26.53
Tertiary	30	61.22
No formal	2	4.08
Occupation		
Professional	9	18.36
Business	13	26.53
Skill	14	28.57
Unskilled	6	12.24
Student	5	10.20
Housewife	2	4.08

Table 2: Shows the types of joints affected with osteoarthritis (N=49)

Joint affected	Frequency	Percentages
Right knee	5	10.20
Left knee	6	12.24
Right hip	5	10.20
Left hip	12	24.48
Both hips	10	20.40
Both knees	11	22.44
Total	49	100.0

Table 3: shows patients' awareness of joint replacement (N=49)

Awareness	Frequency	Percentages
Yes	32	65.30
No	17	34.69
Total	**49**	**100.0**

Table 4: Shows the acceptance of joint replacement (N=49)

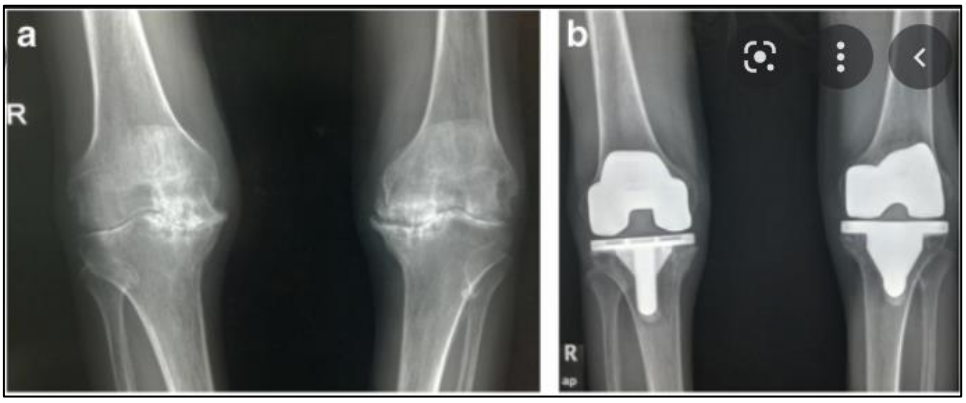
Awareness	Frequency	Percentages
Yes	29	59.18
No	20	40.81
Total	**49**	**100.0**

Table 5: Reasons patients refused joint replacement (N=49)

Reasons for refusal	Frequency	Percentages
Fear of complications	10	20.40
High cost	16	32.65
Just don't like	8	16.32
Not sure it will relief pain	15	30.61
Total	49	100.0

Table 6: Shows the relationship between the universal variables and awareness of joint replacement (N=49)

Variables	Level of awareness		Chi square	p-value
	Yes	No		
Age group			**12.042**	**0.070**
10-20	0(0.0)	3(100.0)		
21-30	3(75.0)	1(25)		
31-40	7(63.63)	4(36.36)		
41-50	6(66.66)	3(33.33)		
51-60	5(71.42)	2(28.57)		
61-70	4(44.44)	5(55.55)		
71-80	4(80.0)	1(20.0)		
81-90	1(100.0)	0(0.0)		
Sex			**0.061**	**0.802**
Male	10(60.0)	8(40.0)		
Female	20(62.7)	11(37.3)		
Marital stat			**2.206**	**0.536**
Single	10(55.55)	4(44.44)		
Married	17(60.71)	11(39.28)		
Div/sep	1(50.0)	1(50.0)		
Wid/widower	2(40.0)	3(60.0)		
Education			**22.911**	**0.000**
Primary	0(0.0)	4(100.0)		
Secondary	6(40.0)	9(60.0)		
Tertiary	23(82.14)	5(17.85)		
No formal	1(50.0)	1(50.0)		
Occupation			**13.718**	**0.013**
Professional	9(81.81)	2(18.18)		
Business	8(57.14)	6(42.85)		
Skilled	10(76.92)	3(23.07)		
Unskilled	1(16.66)	5(83.33)		
Student	2(50.0)	2(50.0)		
Housewife	0(0.0)	1(100.0)		



Pic-1

Pic-2

DISCUSSION

The current study findings revealed that the mean age of osteoarthritis elderly patients undergoing total joint replacement is 48.7±18.2 and their age ranged between 10-90 yrs. As in this age, the most common cause of TJR is osteoarthritis which indicates the relation between the advanced age and the incidence of TJR surgery, and the elderly is related to cumulative exposure to various risk factors and biological changes that occur with aging, such as thinning of the cartilage, decreased muscle strength and oxidative stress [14]. Similarly, a study in Einstein (São Paulo) reported that the majority of patients were aged over 65 years [15]. Reduction in pain and improvement in function and quality of life for patients with severe knee and hip disorders have been successfully achieved by surgical procedures which involve Total Hip and Total Knee Arthroplasty (THA and TKA) [16, 17]. The commonest indication for both THA and TKA is Osteoarthritis though there are other conditions that may warrant total joint arthroplasty; these conditions include dysplasias, fractures, malignancies and many others. Many patients with joint disorders have enjoyed enormous benefits following treatment with THA and TKA though with different outcomes because of the peculiar anatomies of both the hips and the knees [18]. Over all 60% of the patients who were aware of total joint replacement, got information from their friends. Among those who were aware of joint replacement, 70% were willing to undergo the surgery but 30% rejected it; this was contrary to the work by Hawker *et al.*, [19], and Frankel *et al.*, [20], where they had very few people willing to undergo the total joint replacement following severe osteoarthritis [20, 21]. The frequent reason for refusing the procedure was largely due to the cost of the surgery and there was a relationship between educational level and occupation of those who were aware and accepted to undergo a total joint replacement. This agrees with Malin Wetterholm *et al.*, who also noticed that Osteoarthritis was seen in the lower socio-economic class and joint replacement was frequently accepted by people of higher socio-economic class [22]. Regarding the concerns of surgery, the current study findings revealed that the majority of elderly patients had high concerns about ageing and intolerance of surgery, inability to move or paralysis, persistent pain after surgery, bedridden longtime and failure of surgery that could effect on outcome of surgery or refuse the joint. According the current findings, the elderly patients had unsatisfactory knowledge about total joint replacement. From the current findings that there was a relation between knowledge and concerns of the elderly patients toward surgery where the patients who had high concerns, especially concerns about joint refusing, aging and tolerance of surgery had unsatisfactory knowledge.

CONCLUSION

The study results lead to the conclusion that the majority of elderly patients were illiterate and had high concerns about total joint replacement, and approximately all of them had unsatisfactory knowledge about surgery. However, there were an appreciable number of patients with osteoarthritis who were willing to undergo joint replacement while others refused it because of the cost of the surgery. Additionally the educational level was the only statistically significant independent predictor of knowledge score.

Conflict of Interest: None.

Source of Fund: None.

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