ISSN 1413-3555
Rev Bras Fisioter, São Carlos, v. 14, n. 3, p. 244-51, May/June 2010
©Revista Brasileira de Fisioterapia

The influence of sociodemographic, clinical and functional variables on the quality of life of elderly people with total hip arthroplasty

A influência de variáveis sociodemográficas, clínicas e funcionais sobre a qualidade de vida de idosos com artroplastia total do quadril

Mariana K. Rampazo, Maria José D'Elboux

Abstract

Objectives: To evaluate the health-related quality of life (HRQOL) of elderly people with total hip arthroplasty (THA) and to investigate the relationships and influences of the sociodemographic, clinical and functional variables of these subjects. **Methods:** The HRQOL was evaluated by means of the Brazilian versions of the Medical Outcomes Study 36-item Short-Form Health Survey (SF-36), a general instrument, and the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), a specific instrument. Eighty-eight elderly people of both genders with primary unilateral THA were recruited. The data were subjected to descriptive analysss, univariate analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA) to investigate the influences of the variables studied in the dimensions of the SF-36 and WOMAC; and the Mann-Whitney and Kruskal-Wallis tests to compare instrument scores between the variables. **Results:** There was a predominance of women in the study sample, and their mean age was 68.8 (± 7.4) years. Hip function, as assessed by the Harris Hip Score, had a significant influence on HRQOL from the perspective of both the general and the specific instruments. The use of accessories for locomotion, hip functions and satisfaction with the surgery were the main variables that demonstrated significant differences in the dimensions of the SF-36 and the WOMAC. **Conclusions:** Investments in functional and rehabilitation programs aimed towards the peculiarities of elderly people with THA can benefit this population.

Key words: quality of life; hip arthroplasty; elderly people.

Resumo

Objetivos: Avaliar a qualidade de vida relacionada à saúde (QVRS) de idosos com Artroplastia Total de Quadril (ATQ) e investigar a relação e a influência de variáveis sociodemográficas, clínicas e funcionais nesses sujeitos. **Métodos:** A QVRS foi avaliada por meio das versões brasileiras dos instrumentos genérico *The Medical Outcomes Study 36-item Short-Form Health Survey* (SF-36) e específico Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) em 88 idosos com ATQ primária e unilateral de ambos os gêneros. Os dados foram submetidos às análises estatísiticas: descritiva; análise de variância univariada (ANOVA) e multivariada (MANOVA) para verificar a influência das variáveis estudadas nas dimensões do SF-36 e do WOMAC e testes de Mann-Whitney e Kruskal-Wallis para comparação dos escores dos instrumentos entre as variáveis. **Resultados:** A amostra estudada teve predomínio das mulheres, e a média de idade foi de 68,8(±7,4) anos. A função do quadril, avaliada pelo Harris Hip Score, foi a variável que apresentou influência significativa na QVRS sob a perspectiva do instrumento genérico e do específico. O uso de acessórios para a locomoção, a função do quadril e a satisfação com a cirurgia foram as principais variáveis que apresentaram diferenças significativas nas dimensões do SF-36 e do WOMAC. **Conclusões:** Investimentos no âmbito funcional e programas de reabilitação direcionados às peculiaridades dos idosos com ATQ podem beneficiar essa população.

Palavras-chave: qualidade de vida; artroplastia de quadril; idosos.

Received: 20/01/09 – **Revised:** 16/08/09 – **Accepted:** 18/08/09

Department of Gerontology, Universidade Estadual de Campinas (UNICAMP), Campinas (SP), Brasil
Correspondence to: Mariana Kátia Rampazo, Rua General Osório, 516, Centro, CEP 15900-000, Taquaritinga (SP), Brazil, e-mail: marianarampazo@yahoo.com.br

Introduction

Total hip arthroplasty (THA), characterized by replacement of the hip joint, is an effective treatment for patients with severe hip osteoarthritis (OA)[1] and some cases of femoral neck fractures[2]. The population who most benefit from this treatment are the elderly, since chronic non-transmissible diseases, such as OA and femoral neck fractures, are more prevalent in this age group[1,3]. Patients with hip OA suffer from subsequent worsening of hip pain due to progressive joint degeneration, which leads to physical disabilities and, therefore, considerable changes in their quality of life (QOL).

Because of all these affections, the THA has as primary aim to restore functions and improve QOL of those individuals who have suffered deterioration in their activities of daily living (ADLs) and waited, sometimes for long periods, for this surgical procedure in which they placed hope of returning to their daily lives free of pain and disability[1,3]. In the elderly who suffered femoral neck fractures, THA is associated with a better outcome than internal fixations, giving them back functions and QOL conditions equivalent to those prior to hospitalization[2].

Several clinical factors are related to this surgery, such as body mass index (BMI) and satisfaction with the results reported by patients. There is evidence that obese patients (BMI ≥ 30 kg/m^2) who underwent hip and knee joint replacement show acceptable functional results with considerable improvements in their QOL[4,5]. Other studies with patients undergoing THA have shown significant satisfaction in relation to the results obtained after surgery[6,7].

The effectiveness of THA still includes pain reduction and functional improvements in patients with hip OA[8-11] and, therefore, considerable benefits on their QOL related to health (HRQOL). HRQOL is understood to be a multifaceted approach that encompasses the physical, mental and social aspects related to the presence of symptoms, impairments and limitations caused by diseases[12]. In the evolution of research on HRQOL, several instruments have been developed to quantify the health status and are divided into two groups: generic and specific ones[13-15]. According to the literature, both generic and specific measures should be included in the assessment of HRQOL[13,16,17].

Thus, considering the influence of sociodemographic, clinical and functional variables on HRQOL, the literature recommendations on the use of generic and specific instruments to assess HRQOL, and also the scarcity of studies investigating the results of this highly invasive surgery, and of its effectiveness has been proven between elderly[18,19]. Therefore, this study aimed to evaluate the HRQOL of elderly patients with primary THA and to investigate the influences and the relationships of the variables: gender, age, BMI, pain, mobility accessories, hip function, time after surgery and satisfaction with the surgery.

Methods

Subjects

The sample was non-probabilistic convenience one and thus, there was no consideration of sample size. The sampling criterion used was the fixed period for data collection (seven months). Participants in the study selection were 132 patients of both genders, aged 60 years and over, who were outpatients at two of major referral hospitals in the state of Sao Paulo, Brazil, and who underwent primary and unilateral THA at least six months ago, considering the date of the interview. Patients who had the ability to understand and had verbal communication skills were included. Patients with visual deficits that might impair their functions, with hemiparesis or hemiplegia or with a history of other joint arthroplasty surgeries (in order to exclude the influence of different surgical interventions and sequel with functional impairments in the perception of HRQOL) or refused to participate in the study, according to Resolution 196/96, were excluded from this study. Patients available at the clinics mentioned above within the study period were recruited, and, of the 132 patients, 88 subjects met the inclusion criteria and they agreed to participate in the study and were evaluated after signing the informed consent. The study was approved by the Research Ethics Committee of the Medical Sciences Faculty of Universidade Estadual de Campinas (UNICAMP), Campinas (SP), Brazil (protocol nº 778/2006).

Data collection

Data collection was performed between September 2007 and March 2008 through consulted records to obtain data regarding the patients clinical condition as well as by interviews and evaluations for individual sociodemographic characteristics, measures of functional assessment and HRQOL. The evaluation of the subjects was carried out at the orthopedics clinic of two hospitals and the following instruments were used:

a) **Instrument for sociodemographic and clinical characterization (ICSC) was used** to obtain data regarding age and gender, as well as information about their clinical aspects: operated hip pain, other joint pain, use of accessories for locomotion and BMI. In this study, subjects

were considered obese when the BMI was ≥30 kg/m^2 according to the Pan American Health Organization (PAHO)[20]. Data for THA included: reason for surgery, postoperative time (day of surgery until the date of data collection) and satisfaction with the results of surgery.

b) **Hip functional evaluation** was made by the *Harris Hip Score* (HHS) questionnaire, an instrument developed by Harris[21], and internationally validated for patients with THA[22]. The inclusion of this instrument was justified by its frequent use in the local orthopedic community for functional hip assessments. It consists of a scale ranging from 0 to 100 points, and the domains include pain, functions, deformity and range of motion (ROM). The total score for the pain domain is 44 points and for the functional domain, 47 points, the latter being subdivided into ADL and gait, with 14 and 33 points, respectively. The scores of these domains resulted from the subjects' responses obtained through interviews. On the other hand, the deformity and ROM domains are evaluated by the examiner using a tape-measure and goniometer. For the deformity domain, it can be attributed up to four points and for ROM domain until five points. It is considered a poor functional outcome if the HHS total score is less than 70 points, regular if the score is between 70 and 79; good if the score is between 80 and 89, and excellent for 90-100 points.

c) **The Medical Outcomes Study 36-item Short-Form Health Survey (SF-36),** a generic instrument was used for assessing HRQOL[23], translated and validated in Brazil[24]. It consists of 36 items encompassing eight dimensions: functional capacity (10 items), physical aspects (4 items), pain (two items), general health (five items), vitality (4 items), social aspects (2 items), mental health (five items) and a question of comparative evaluation between their current health status and the status one year ago. The strategy used were interviews and the evaluation of results was done by assigning scores for each question, which were transformed into a scale of zero to 100, where zero corresponded to "poorer health" and 100 "the best state of health". There are no cut-off points, and each dimension was evaluated separately.

d) **Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)**, translated and adapted for Brazil[26], a specific instrument used for assessing the HRQOL in patients with hip and knee OA[25]. Its use is indicated for post-operative evaluation of the total knee and hip arthroplasty[27]. It consists of 24 items, divided into three dimensions. The pain dimension has five questions, the joint stiffness domain includes two questions, and the disability dimension has 17 questions, applied by interviews. Each question has five response possibilities on a Likert scale (none, mild, moderate, severe and very severe), with grades 0, 1, 2, 3 and 4, respectively. Thus, zero represents the absence of symptoms and 4 the worst result about those symptoms. The scores were summed for each dimension and receives a total that is transformed into a scale of zero to 100, zero being the best health and 100 the worst possible state.

Statistical analyses

Data were subject to the following statistical analyses: A) Descriptive analyses, with measurements of position and dispersion for sociodemographic and clinical data, related to the THA, functional data and scores of the instruments used to measure HRQOL; B) MANOVA to verify the influences of the variables of interest (gender, age, BMI, pain, use of accessories for locomotion, postoperative durations, satisfaction with the surgery and hip functions) on measures of the HRQOL of the SF -36, and the WOMAC. The ANOVA was used to evaluate the influence of each variable on the scores of each dimension of the SF-36 and WOMAC. About eight or nine factors on influences on the QOL were selected for multivariate analyses. The literature recommends approximately 8-15 subjects per factor or variable[28,29]. The variables were transformed into ranks for these analyses, because it was not a normal distribution; and; C) Comparative analyses, using the Mann-Whitney (two groups) and Kruskal-Wallis test (≥3 groups), followed by Dunn *post-hoc* test to compare the scores of SF-36 and WOMAC instruments between the variables of interest, due to the absence of a normal distribution of variables. The level of significance for statistical tests was set at 5%, ie, $p<0.05$

Results

According to Table 1, it is emphasized that of the 88 elderly patients studied, most of them were female, with their predominant age being between 60 and 69 years. Operated hip pain and other joints pain were reported by most of the assessed group, however, there was a predominance of elderly who were delighted with the results of the surgery. Table 2 shows the mean scores in each domain of SF-36 and WOMAC.

The HRQOL dimensions most affected, according to the SF-36, were physical aspects, functional capacity and pain. In relation to the WOMAC, patients had lower mean scores on the pain and stiffness dimensions, which indicated less interference of these aspects on the elderlys' QOL. However,

the physical activity dimension demonstrated higher mean scores. According to the WOMAC scores, poorer HRQOL is observed when the score is higher. So, the observed results demonstrated a greater commitment to the physical aspects when the specific instrument was used. It is noticeable that no subject had the highest score on the various dimensions of the WOMAC, and when analyzing the observed variations, it is noted that on the pain dimension,

Table 1. Sociodemografic, clinical, and functionality of the total of studied subject (n=88). Campinas, 2008.

Variable	N (%)	Means (±SD)	Medians	Observed variation
Gender				
Female	48 (54.6)			
Male	40 (45.4)			
Age (yrs)		68.8 (±7.4)	67.0	60-87
60–69	50 (56.8)			
70–79	28 (31.8)			
≥80	10 (11.4)			
BMI≥30 Kg/m^2	23 (26.1)			
Reason for the surgery				
Hip osteoarthritis	74 (84.1)			
Femoral neck fracture	11 (12.5)			
Femoral head necrosis	3 (3.4)			
Hip operated pain	49 (55.6)			
Other joints pain	82 (93.1)			
Use of accessories for locomotion				
No	49 (55.7)			
Yes	39 (44.3)			
Time of post-operative (months)		59.6 (±52.4)	45.5	6-216
≤23	26 (29.5)			
24-47	19 (21.6)			
47-71	19 (21.6)			
≥72	24 (27.3)			
Satisfaction with the surgery				
Much	68 (77.3)			
More or less	16 (18.2)			
Little	4 (4.5)			
Hip function (HHS)		73.4 (±19.0)	74.8	21.1-100
Excellent	21 (23.9)			
Good	20 (22.7)			
Fair	12 (13.6)			
Poor	35 (39.8)			

SD=standard deviations; BMI=Body mass index; HHS=Harris Hip Score.

Table 2. Descriptive analyses of the dimensions of the SF-36 and WOMAC of 88 elderly with ATQ.

Dimension	n	Means (±SD)	Medians	Observed variations	Possible variation
SF-36					
Physical function	88	45.45 (±21.9)	45.0	0-90	0-100
Physical	88	39.05 (±39.9)	25.0	0-100	0-100
Bodily pain	88	50.13 (±25.5)	51.0	0-100	0-100
General health	88	65.97 (±27.2)	77.0	0-100	0-100
Vitality	88	67.27 (±22.7)	75.0	10-100	0-100
Social functions	88	67.92 (±27.4)	75.0	0-100	0-100
Emotional role	88	55.30 (±41.9)	66.6	0-100	0-100
Mental health	88	62.20 (±23.5)	66.0	12-96	0-100
WOMAC					
Pain score	88	18.97 (±19.5)	12.5	0-85	0-100
Stiffness score	88	7.67 (±11.2)	0.0	0-50	0-100
Functional limitation score	88	27.85 (±16.9)	23.5	5.8-75	0-100

SD=Standard deviations.

the scores were higher than that observed on the physical activity dimension.

In the univariate analyses, hip functions was the variable that exerted a significant influence ($p<0.05$) on all dimensions of SF-36, except for the mental health and vitality dimensions. The gender variable showed a significant influence on the functional capacity ($p<0.007$) and physical aspects ($p<0.001$).

The variables of gender ($p=0.026$) and hip functions ($p<0.001$) showed statistical significance in the multivariate analyses. Other joint pain, post-operative duration and satisfaction with surgery influenced the emotional ($p=0.022$), pain ($p=0.016$) and general health ($p=0.030$) dimensions, respectively. In relation to the WOMAC instrument, the ANOVA analyses also showed that the hip functions was the variable that affected two of the three WOMAC dimensions: pain ($p<0.011$) and physical activity ($p<0.001$). Only this variable was statistically significant ($p<0.008$) in the MANOVA To better understand the differences observed in the ANOVA, comparative analysis it carried out , as shown in Table 5. The variables which showed significant differences on the dimensions of the two instruments used were: gender, operated hip pain, use of accessories for locomotion, hip functions and satisfaction with surgery. Considering all of the studied variables, it should be highlighted the hip functions, which showed a statistically significant difference in all domains of the WOMAC and SF-36, with the exception of the mental health dimension, suggesting that the elderly with better scores on the HHS, that is, with better hip functions, showed higher scores on the dimensions of instruments for the assessment of the HRQOL.

Discussion

The sociodemographic characteristics of the subjects in this study corresponded to findings in the literature regarding the prevalence of women and the mean age in the elderly[10,11,18,19]. Since the proportion of elderly increases and, hence, the rate of hip OA and femoral neck fractures, the THA should be increasingly applied. Such surgical techniques have evolved to become one of the most common and successful orthopedic operations today, because they promote great benefits to the elderly[30].

The data observed in this study related to obesity (BMI≥30 kg/m^2) corroborated the findings of another study[5], which

Table 3. Results of the analyses of MANOVA and ANOVA for the SF-36.

Variable	MANOVA	ANOVA							
	p-values	PF	RF	BP	GH	VT	SF	RE	MH
Gender	0.026	0.007	<0.001	0.080	0.634	0.984	0.635	0.892	0.902
Age	0.404	0.318	0.520	0.143	0.260	0.397	0.601	0.090	0.118
BMI	0.631	0.710	0.888	0.594	0.175	0.316	0.355	0.494	0.924
Hip operative pain	0.795	0.986	0.925	0.747	0.197	0.988	0.166	0.613	0.708
Other joint pains	0.307	0.421	0.051	0.091	0.650	0.959	0.710	0.022	0.811
Use of accessories for locomotion	0.411	0.892	0.801	0.208	0.945	0.239	0.926	0.054	0.219
Post-operative time	0.221	0.931	0.351	0.016	0.526	0.156	0.335	0.885	0.274
Satisfaction with the surgery	0.292	0.411	0.574	0.104	0.030	0.167	0.416	0.645	0.768
Hip function (HHS)	<0.001	<0.001	0.014	0.002	0.010	0.086	<0.001	0.003	0.383

BMI=Body mass index; HHS=Harris Hip Score; PF=physical function; RF=role physical; BP=bodily pain; GH=general health; VT=vitality; SF=social function; RE=role emocional; MH=mental health.

Table 4. Results of the analyses of the MANOVA and ANOVA for the WOMAC.

Variable	MANOVA	ANOVA		
	p-values	Pain	Stiffness	Functional limitation
Gender	0.334	0.091	0.848	0.122
Age (years)	0.425	0.166	0.803	0.193
BMI	0.090	0.427	0.667	0.133
Hip operated pain	0.122	0.035	0.632	0.267
Other joint pains	0.433	0.214	0.954	0.115
Use of accessories for locomotion	0.890	0.516	0.526	0.756
Post-operative time	0.095	0.727	0.051	0.288
Satisfaction with the surgery	0.451	0.716	0.586	0.154
Hip function (HHS)	0.008	0.011	0.201	<0.001

BMI=Body mass índex; HHS=Harris Hip Score.

Table 5. Comparisons of the means of the scores for the dimensions of SF-36 and WOMAC according to studied variables.

Variables	SF-36								WOMAC		
	PF	RF	BP	GH	VT	SF	RE	MH	D	S	FL
Gender*											
Female	51.0	52.0	54.5	69.7	67.4	68.3	55.5	62.1	16.2	7.5	25.2
Male	38.7	23.3	44.8	61.4	67.1	67.4	55.0	62.2	22.2	7.8	30.9
	p=0.007	p<0.001	p=0.053	p=0.286	p=0.930	p=0.888	p=0.965	p=0.860	p=0,136	p=0.939	p=0.120
Age**											
60-69	44.2	41.9	48.6	64.1	65.1	66.7	48.0	57.4	21.1	8.5	30.6
70-79	50.7	37.1	52.6	71.0	70.8	72.7	61.9	69.6	14.4	7.1	22.3
≥80	37.0	30.0	50.6	61.1	68.0	60.0	73.3	65.2	21.0	5.0	29.1
	p=0.161	p=0.545	p=0.753	p=0.516	p=0.566	p=0.288	p=0.138	p=0.094	p=0.452	p=0.882	p=0.211
BMI**											
<30 Kg/m^2	46.5	41.8	50.7	65.7	66.8	69.6	55.3	62,4	18.9	7.8	26.1
≥30 Kg/m^2	42.3	31.0	48.3	66.4	68.4	63.0	55.0	61.3	19.1	7.0	32.6
	p=0.597	p=0.421	p=0.672	p=0.610	p=0.804	p=0.242	p=0.960	p=0.875	p=0.796	p=0.753	p=0.119
Hip operated pain*											
No	52.1	46.8	56.3	69.7	70.3	72.5	56.4	64.2	12.3	6.6	23.9
Yes	37.0	29.2	42.3	61.2	63.4	62.1	53.8	59.6	27.3	8.9	32.8
	p=0.002	p=0.031	p=0.012	p=0.131	p=0.091	p=0.071	p=0.701	p=0.204	p<0.001	p=0.187	p=0.005
Others joint pains*											
No	50.8	58.3	60.6	74.6	74.1	68.7	100.0	70.0	14.1	2.0	20.0
Yes	45.0	37.6	49.3	65.3	66.7	67.8	52.0	61.6	19.3	8.0	28.4
	p=0.642	p=0.353	p=0.517	p=0.450	p=0.583	p=0.846	p=0.006	p=0.411	p=0.468	p=0.199	p=0.308
Use of accessories for locomotion*											
No	54.0	51.4	60.0	71.7	69.2	76.3	57.1	62.8	12.1	6.1	21.7
Yes	34.6	23.4	37.6	58.7	64.7	57.3	52.9	61.4	27.5	9.6	35.5
	p<0.001	p=0.001	p<0.001	p=0.014	p=0.292	p=0.001	p=0.591	p=0.695	p<0.001	p=0.042	p<0.001
Post-operative time**											
≤23	45.3	35.0	55.0	73.4	70.1	70.7	57.6	66.9	15.0	7.6	27.8
24-47	47.6	48.6	53.1	58.0	59.4	69.7	49.1	54.5	19.2	6.5	26.0
48-71	49.2	47.3	54.1	67.7	66.8	64.4	54.3	61.4	16.8	11.8	24.0
≥72	40.8	29.1	39.2	62.7	70.6	66.1	58.3	63.7	24.7	5.2	32.2
	p=0.584	p=0.211	p=0.056	p=0.386	p=0.361	p=0.941	p=0.824	p=0.249	p=0.233	p=0.084	p=0.201
Satisfaction with the surgery**											
Much	50.0	46.6	53.5	71.1	7.0	71.9	57.3	63.7	15.8	6.9	25.9
More or less	30.3	12.5	43.5	49.7	60.3	56.2	54.1	57.6	26.5	8.5	32.5
Little	27.5	16.2	19.2	42.7	47.5	46.8	25.0	53.5	42.5	15.6	42.2
	p=0.003[A]	p=0.004[B]	p=0.026[C]	p=0.004[C]	p=0.054	p=0.038[C]	p=0.289	p=0.449	p=0.031[D]	p=0.130	p=0.205
Hip function**(HHS)											
Excellent	70.7	73.1	74.2	85.4	77.6	91.6	76.1	69.0	5.7	7.1	15.7
Good	49.0	46.2	50.7	60.9	66.5	68.6	53.3	60.3	13.0	3.1	21.6
Fair	34.1	16.6	41.6	67.5	70.8	70.8	61.1	61.5	17.9	7.2	30.8
Poor	32.1	32.1	38.1	56.6	60.2	52.2	41.9	59.4	30.7	10.7	37.6
	p<0.001[E]	p<0.001[F]	p<0.001[G]	p<0.001[H]	p=0.032[I]	p<0.001[G]	p=0.026[I]	p=0.368	p<0.001[J]	p=0.043[K]	p<0.001[J]

PF=physical function; RF=role physical; BP=bodily pain; GH=general health; VT=vitality; SF=social function; RE=role emocional; MH=mental health; P=Pain; S=Stiffness; FL=functional limitation; BMI=body mass index; HHS=Harris Hip Score; *Test Mann-Whiney **Test Kruskal=Wallis (teste post-hoc Dunn; $p<0.05$): [A]'Much'≠'More or less'; [B]'Much'≠'More or lesss', 'Much'≠'Little'; [C]'Much'≠'Little'; [D]'More or less'≠'Much'; [E]'Excellent'≠'Good', 'Excellent'≠'Fair', 'Excellent'≠'Poor', 'Good'≠'Fair', 'Good'≠'Fair'; [F] 'Excellent'≠'Fair', 'Excellent'≠'Poor'; [G] 'Excellent'≠'Good', 'Excellent'≠'Fair', 'Excellent'≠'Poor'; [H] 'Excellent'≠'Good', 'Excellent'≠'Poor'; [I]'Excellent'≠'Good'; [J]'Excellent'≠'Fair', 'Excellent'≠'Poor', 'Good'≠'Poor';[K]´Good'≠'Poor'.

also did not demonstrate significant differences between obesity and outcomes of hip and knee joint replacements, unless the patient had morbid obesity (BMI≥40 kg/m^2). However, studies report that, in obese patients, assessments of improvements of QOL are still considerable, since they have knowledge of increased risks that this surgery entails[4].

Regarding the presence of operated hip pain (55.6%), demonstrated also in another study[7], but in a smaller proportion (40%), was not a variable that affected the HRQOL according to the MANOVA. In contrast, when comparing the mean scores of the HRQOL assessment tools between the elderly with THA who had or not operated hip pain, there were significant differences in the functional capacities, physical aspects and pain domains of the SF-36 and on the pain and physical activity domains of the WOMAC. The lowest means were related to the subjects who reported joint pain. Research suggests longitudinal studies, so that the pain issue can be effectively investigated. In this study, the time after surgery and the use of accessories for locomotion were variables which did not show significant statistical relevance for the HRQOL, suggesting no influences on the HRQOL of these subjects.

On the other hand, hip function was the variable that influenced the greatest number of dimensions of the SF-36 and the WOMAC. These results corroborated those of other studies which highlighted the major influences of issues related to the physical aspects of QOL of elderly patients with THA[2,31]. However, other authors who evaluated HRQOL with two elderly groups, one composed of elderly patients with OA, who had hip and knee joint replacements and another with no history of joint replacement surgery, noted that the influences of physical issues on the QOL is also due to the fact that OA usually affects more than one joint[11]. The functional aspects have strong associations with the QOL of patients who underwent THA, and the benefits of the HRQOL, after THA are most often related to increased mobility, improved function at work and domestic services, increases in leisure activities and pain relief[9]. In the comparisons of the SF-36 and WOMAC scores, it was shown that older people who scored better on the HHS had the best scores on the HRQOL assessment instruments, except in the mental health dimension of the generic instrument.

The functional assessment instrument Harris Hip Score measures issues concerning pain, gait, ADL, hip deformities in the hip and the hip ROM. The use of such an instrument shows the importance of adding hip functional assessments together with the assessment of the HRQOL in older aged groups with THA. This association is essential, since the greater expectations of the patient candidate with THA are related to functional gains.

Satisfaction with surgery results, reported by 77.3% of subjects, was a variable that showed significant differences in most scores of the SF-36 and WOMAC. According to the literature, this surgery can bring benefits of functional and psychological, emotional and social development, and patients who received post-operative rehabilitation had higher levels of satisfaction and of hip functions compared with patients without these interventions[8]. Another study showed that the satisfaction reported by a group of patients who received pre-operative physiotherapy intervention was higher (99%) than that reported by a group who received no such interventions (80%). From this viewpoint, it is evident that the need to optimize the functional results of the THA with the implementation of rehabilitation programs since the preparation of patients for the surgical procedure is essential until their return to their daily activities[8-10].

The results of this study revealed that hip function was the variable that significantly influenced the HRQOL of elderly patients studied, both with general and specific instruments. Thus, the investment on the functional aspects of elderly patients with THA improves pain levels, mobility and satisfaction, and is a strategy which can positively affect the HRQOL of these subjects. Future research with a longitudinal design and with a larger sample should be carried out to verify whether measures that reduce or eliminate functional deficits might provide improvements in HRQOL in elderly patients with THA.

References

1. Garbuz DS, Xu M, Duncan CP, Masri BA, Sobolev B. Delays worsen quality of life outcome of primary total hip arthroplasty. Clin Orthop Relat Res. 2006;447:79-84.

2. Wazir NN, Mukundala VV, Choon DS. Early results of prosthetic hip replacement for femoral neck fracture in active elderly patients. J Orthop Surg (Hong Kong). 2006;14(1):43-6.

3. Fujita K, Makimoto K, Hotokebuchi T. Qualitative study of osteoarthritis patients' experience before and after total hip arthroplasty in Japan. Nurs Health Sci. 2006;8(2):81-7.

4. Stickles B, Philips L, Brox WT, Owens B, Lanzer WL. Defining the relationship between obesity and total joint arthroplasty. Obes Res. 2001;9(3):219-23.

5. Hamoui N, Kantor S, Vince K, Crookes PF. Long-term outcome of total knee replacement: does obesity matter? Obes Surg. 2006;16(1):35-8.

6. McGregor AH, Rylands H, Owen A, Doré CJ, Hughes SP. Does preoperative hip rehabilitation advice improve recovery and patient satisfaction? J Arthroplasty. 2004;19(4):464-8.

7. Lavernia C, D'apuzzo M, Hernandez VH, Lee DJ. Patient-perceived outcomes in thigh pain after primary arthroplasty of the hip. Clin Orthop Relat Res. 2005;441:268-73.

8. Barrois B, Gouin F, Ribinik P, Revel M, Rannou F; Societé Française de Médicine Physique et Réadaptation (Sofmer). What is the interest of rehabilitation in physical medicine and functional rehabilitation ward after total hip arthroplasty? Elaboration of french clinical practice guidelines. Ann Readapt Med Phys. 2007;50(8):700-4.

9. Röder C, Staub LP, Eggli S, Dietrich D, Busato A, Müller U. Influence of preoperative functional status on outcome after total hip arthroplasty. J Bone Joint Surg Am. 2007;89(1):11-7.

10. van den Akker-Scheek I, Zijlstra W, Groothoff JW, Bulstra SK, Stevens M. Physical functioning before and after total hip arthroplasty: perception and performance. Phys Ther. 2008;88(6):712-8.

11. Linsell L, Dawson J, Zondervan K, Rose P, Carr A, Randall T, et al. Pain and overall health status in older people with hip and knee replacement: a population perspective. J Public Health (Oxf). 2006;28(3):267-73.

12. Seidl EMF, Zannon CMLC. Qualidade de vida e saúde: aspectos conceituais e metodológicos. Cad Saúde Pública. 2004;20(2):580-8.

13. Fayers PM, Machin D. Quality of life: the assessment, analysis and interpretation of patient-reported outcomes. Chischeste: John Wiley & Sons; 1998.

14. Ciconelli RM. Medidas de avaliação de qualidade de vida. Rev Bras Reumatol. 2003;43(2):9-13.

15. Lopes AD, Ciconelli RM, Reis FB. Medidas de avaliação de qualidade vida e estados de saúde em ortopedia. Rev Bras Ortop. 2007;42(11/12):355-9.

16. Ware JE. Measuring patients' views: the optimum outcome measure. SF-36: a valid, reliable assessment of health form the patient's pont of view. BMJ. 1993;306(6890):1429-30.

17. Guyatt GH, Naylor CD, Juniper E, Heyland DK, Jaeschke R, Cook DJ. Users' guides to medical literature. XII. How to use article about related quality of life. Evidence-based medicine working group. JAMA. 1997;277(15):1232-7.

18. Alfonso DT, Howell RD, Strauss EJ, Cesare PE. Total hip and knee arthroplasty in nonagenarians. J Arthroplasty. 2007;22(6):807-11.

19. Conlon NP, Bale EP, Herbison GP, McCarroll M. Postoperative anemia and quality of life after primary hip arthroplasty in patients over 65 years old. International Anesth Analg. 2008;106(4):1056-61.

20. World Health Organization. Anales da 36ª Reunión del comité asesor de investigaciones en salud. Encuesta multicentrica: salud, bien estar y envejecimiento (SABE) en América Latina y el Caribe; mayo 2001. Washington (DC): Wold Health Organization.

21. Harris WH. Traumatic arthritis of the hip after dislocation and acetabular fractures: treatment by mold arthroplasty. An end-result study using a new method of result evaluation. J Bone Joint Surg Am. 1969;51(4):737-55.

22. Söderman P, Malchau H. Is the Harris hip score system useful to study the outcome of total hip replacement? Clin Orthop Relat Res. 2001;384:189-97.

23. Ware JE Jr, Sherbourne CD. The MOS 36–item short-form health survey (SF-36). I. Conceptual framework and item selection. Med Care. 1992;30(6):473-83.

24. Ciconelli RM, Ferraz MB, Santos W, Meinão I, Quaresma MR. Tradução para a língua portuguesa e validação do questionário genérico de avaliação de qualidade de vida SF-36 (Brasil SF-36). Rev Bras Reumatol. 1999;39(3):143-50.

25. Bellamy N, Buchanan WW, Goldsmith CH, Campbell J, Stitt LW. Validation study of WOMAC: a health status instrument for measuring clinically important patient relevant outcomes to antirheumatic drug therapy in patients with osteoarthritis of the hip or knee. J Reumatol. 1988;15(12):1833-40.

26. Fernandes MI. Tradução e validação do questionário de qualidade de vida específico para osteoartrose WOMAC (Western Ontário and McMaster Universities) para a língua portuguesa [dissertação]. São Paulo (SP): Unifesp; 2002.

27. Soohoo NF, Vyas RM, Samimi DB, Molina R, Lieberman JR. Comparison of the responsiveness of the SF-36 and WOMAC in patients undergoing total hip arthroplasty. J Arthroplasty. 2007;22(8):1168-73.

28. Tabachnick BG, Fidell LS. Using multivariate statistics. 4ª ed. Boston: Allyn and Bacon; 2001.

29. Stevens J. Applied multivariate statistics for the social sciences. 2ª ed. New Jersey: Lawrence Erlbaum Associates; 1992.

30. Wood GC, McLauchlan GJ. Outcome assessment in the elderly after total hip arthroplasty. J Arthroplasty. 2006;21(3):398-404.

31. Oberg T, Oberg U, Svidén G, Nordwall Persson A. Functional capacity after hip arthroplasty: a comparison between evaluation with three standard instruments and a personal interview. Scand J Occup Ther. 2005;12(1):18-28.