

ORIGINAL ARTICLE

Assessment of social support provided during preparation for hip arthroplasty in patients aged 65 years and older

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ABSTRACT

Introduction: The hip joint is prone to degenerative changes leading to osteoarthritis. When conservative treatment fails, hip arthroplasty is performed to relieve pain and restore daily functionality. Psychological and social support from family and healthcare providers during preoperative preparation plays a key role in hospitalization and recovery.

Aim: To assess social support provided to patients over 65 years of age qualified for hip arthroplasty.

Material and Methods: The study involved 100 patients aged over 65 qualified for hip replacement based on physical and radiographic assessments. Data were collected via a diagnostic survey using a self-designed questionnaire, the ADL Scale, and the Krystyna Kmiecik-Baran Social Support Scale.

Results: Most participants were retirees reporting good living and economic conditions. High levels of pain and preoperative stress were reported. Almost all patients were independent in daily activities; independence did not correlate with sociodemographic factors or pain. Greater physical activity correlated with lower pain levels. Participants demonstrated strong social bonds with loved ones and the therapeutic team across emotional, evaluative, instrumental, and informational domains. Social support levels showed no statistically significant relationship with physical condition, stress, pain, or sociodemographic variables.

Conclusions: Patients exhibited high levels of social support from family and healthcare staff. This study highlights the importance of social support during surgical preparation, providing a foundation for future research.

KEYWORDS Osteoarthritis, surgical treatment, prosthesis, pain, patient care

1. Introduction

As a major lower-limb joint, the hip joint bears the body's weight for decades. Consequently, the joint is prone to degenerative changes leading to osteoarthritis (OA). Osteoarthritis involves the irreversible destruction of articular cartilage and its constituent tissues, resulting in the loss of the cartilage's shock-absorbing capacity [1]. OA is the most common joint disease, and its risk increases with age [2]. Indicators of active joint inflammation include pain during movement, alterations in joint appearance, crepitus, and joint effusion. A range of factors—such as overweight, obesity, degenerative microtraumas, tobacco smoking, and physical inactivity—contribute to the accelerated progression of the disease over time [3].

According to current medical knowledge, no pharmaceutical agent can completely cure the condition; however, active cooperation between the patient and the therapeutic team can significantly improve quality of life. This involves targeted pain management, rehabilitation to enhance range of motion in the affected joint, and ultimately, hip endoprosthesis implantation (arthroplasty)—the replacement of the diseased joint with an artificial prosthesis [2]. This surgical procedure is primarily performed in individuals for whom preventive measures and conservative management have proven ineffective, rendering pain-free daily activities impossible. With an increasingly younger patient demographic qualified for the procedure, patient expectations extend beyond pain relief and improved quality of life to include a return to physical activities [4].

In the process of preparing a patient for hip arthroplasty, social support provided by family, loved ones, and the entire multidisciplinary healthcare team plays a vital role. The level of support and comprehensive preparation across all domains significantly influence surgical success as well as the psychophysical status in both the preoperative and postoperative periods. Due to mandatory electronic medical record-keeping, all information regarding individuals with an implanted artificial hip joint is stored in a web application known as the Central Endoprosthesoplasty Database (Centralna Baza Endoprotezoplastyki – CBE). Identification and verification are conducted under the strict supervision of the National Health Fund (Narodowy Fundusz Zdrowia – NFZ) [5].

1.1. Aim of the Study

The primary objective of this study was to evaluate the social support provided during preparation for hip joint endoprosthesis implantation in patients over 65 years of age qualified for surgery.

2. Materials and Methods

The study utilized a diagnostic survey method incorporating a self-designed questionnaire, the Activities of Daily Living (ADL) scale, and the Social Support Scale developed by Krystyna Kmieciak-Baran. The questionnaire included items regarding demographic data, substance use, patient stress levels, as well as the level of social support received from family, loved ones, and members of the healthcare team. Patients were also asked about pain-coping strategies and alternative approaches used to prevent or delay surgery. Furthermore, the

questionnaire evaluated physical activity levels and basic activities of daily living (ADL), incorporating the Social Support Scale to assess support received across various social groups.

2.1. Study Setting and Participants

The study was conducted among 100 patients qualified for hip joint endoprosthesis implantation who were hospitalized in the Department of Trauma and Orthopedic Surgery at the Regional Hospital in Sucha Beskidzka between June 8, 2022, and April 25, 2023. Patients were qualified for the procedure based on the severity of joint osteoarthritis, confirmed by physical examination and radiographic imaging. Prior to starting the research, written approval was obtained from the hospital management in Sucha Beskidzka. Patients were informed about the study's objective, anonymity, voluntary nature, and instructions for completing the survey. Informed consent was obtained from each participant prior to questionnaire administration. The inclusion criteria for the study were age over 65 years and qualification for hip arthroplasty surgery.

2.2. Statistical Analysis

The collected data were entered into a database custom-designed for the study in Microsoft Excel. All statistical calculations were performed using the IBM SPSS Statistics software package (version 25.0). Statistical data processing utilized the Mann-Whitney U test, which does not require equal group sizes, normal distribution, or homogeneity of variance. Statistical tests were selected to examine differences based on the distribution of individual variables. The Kolmogorov-Smirnov test was used to assess data distribution. Differences between groups

were evaluated using the Kruskal-Wallis test. To determine the association between variables, the chi-square test of independence was applied. The threshold for statistical significance was set at $p < 0.05$.

3. Results

3.1. Sociodemographic Characteristics

A total of 100 patients participated in the study. The number of women was 55, representing 55% of the respondents, while the number of men was 45, accounting for 45% of the study group. All surveyed patients were over 65 years of age. The largest group of patients was in the 65–70 age range, accounting for 59%. There were 18 patients (18%) in the 71–75 age group and 17 patients (17%) in the 76–80 age group. Six participants were over 80 years old (6%).

The most common place of residence among the examined patients was a rural area—68 respondents (68%). A town with fewer than 50,000 inhabitants was the place of residence for 32 respondents (32%). The largest group of participants—45 individuals—comprised individuals with secondary education (45%). Patients with primary education accounted for 39% (39 individuals), and those with higher education accounted for 16% (16 individuals). Among the participants, 85 patients (85%) declared being retired at the time of completing the survey, representing the largest proportion of the entire study group. Professionally active patients accounted for 10 individuals (10%), while 5 individuals relied on a disability pension, representing 5% of the respondents. Living conditions and economic status were rated as average by 14 respondents (14%). The remaining 86 patients described their conditions as good or very good (86%).

Twenty-seven respondents admitted to cigarette smoking (27%). The remaining patients declared no addictions.

The present study revealed that 22 patients used orthopedic equipment for mobility, accounting for 22% of the surveyed group. This included crutches used by 20 individuals (20%) and a walker used by 2 individuals (2%). Meanwhile, 78% of respondents (78 individuals) qualified for the procedure did

not require mobility aids. Patients qualified for the orthopedic procedure managed pain using various strategies. Fifty-seven patients used pain medications (most commonly Doreta, Ketonal, paracetamol, Pyralgina), representing 57%. Additionally, 69% of respondents participated in rehabilitation and physical therapy sessions, comprising 69 individuals. Detailed data are presented in Table I.

Table I. Sociodemographic and Clinical Characteristics

		n	%
Gender	Female	45	45.0
	Male	55	55.0
Age	60–65 years	59	59.0
	71–75 years	18	18.0
	76–80 years	17	17.0
	Over 80 years	6	6.0
Place of residence	Village	68	68.0
	Town/City with fewer than 50.000 inhabitants	32	32.0
Education	Primary	39	39.0
	Vocational	0	0.0
	Secondary	45	45.0
	Higher	16	16.0
Occupational status	Manual/white-collar worker	10	10.0
	Retired	85	85.0
	Disability pensioner	5	5.0
Housing conditions	Very good	48	48.0
	Good	38	38.0

		n	%
Addictions	Average	14	14.0
	Cigarette smoking	27	27.0
	None	73	73.0
Use of assistive devices	Yes	22	22.0
	No	78	78.0
Type of orthopedic assistive device used	Crutches	20	20.0
	Walker	2	2.0
	None	78	78.0
Pain management methods	Analgesic pharmacotherapy	57	57.0
	Rehabilitation treatments	69	69.0

Source: Authors' own study

A total of 100 questionnaires consisting of self-designed survey questions, the ADL scale, and the Krystyna Kmiecik-Baran Social Support Scale were submitted for statistical analysis. Results were obtained regarding social support provided to patients over 65 years of age qualified for hip arthroplasty.

Among the respondents, 8% (8 individuals) reported severely limited mobility and

balance. Balance impairments during walking and sitting down occurred in 19% of patients (19 respondents). Twelve percent of respondents (12 individuals) required assistance from third parties. Periodic weakness was experienced by 34% of patients (34 individuals). Pain in the affected limb caused mobility difficulties in 21% of respondents (21 patients) (Table II).

Table II. Assessment of mobility and balance capacity

Assessment of mobility and balance capacity	Frequency	Percentage (%)
Severely limited	8	8
Balance impairments occur during sitting and walking	19	19
Slightly limited, assistance required	12	12
Independent	75	75
Periodic weakness experienced	34	34
Mobility difficulties due to pain in the affected limb	21	21

Assessment of mobility and balance capacity	Frequency	Percentage (%)
Complete inability to move (bedridden)	0	0

Source: Authors' own study

During the survey, patients were asked about participating in additional physical activities. These included, among others, walking, swimming, dancing, gymnastics, aerobics, and mountain hiking. Statistical analysis revealed no statistically significant

association between the sex of the respondents and the type of physical activity performed most frequently. Twenty-five women (45.5%) and 22 men (48.9%) did not engage in additional physical activities. Walking was the most popular activity among both women (29 women, 52.7%) and men (20 men, 44.4%) (Table III).

Table III. Comparison of patients' additional physical activity by sex

			Additional physical activity								Pearson Chi ²	p
			Gymnastics	Dancing	Swimming	Walking	Aerobics	Mountain hiking	None	Other		
Sex	Female	n	0	7	2	29	7	8	25	5	2.47	0.84
		%	0.0%	12.7%	3.6%	52.7%	12.7%	14.5%	45.5%	9.1%		
	Male	n	1	6	1	20	5	6	22	5		
		%	2.2%	13.3%	2.2%	44.4%	11.1%	13.3%	48.9%	11.1%		

Source: Authors' own study

Statistical analysis also revealed no statistically significant association between

the respondents' self-assessment of physical fitness and their preferred physical activity (Table IV).

Table IV. Comparison of patients' additional physical activity by subjective assessment of physical fitness

			Additional physical activity								Pearson Chi ²	p
			Gymnastics	Dancing	Swimming	Walking	Aerobics	Mountain hiking	None	Other		
Patient's physical fitness	Excellent	n	0	0	0	1	0	0	0	1	10.25	0.228
		%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%		
	Very good	n	0	9	1	40	8	14	0	5		
		%	0.0%	22.5%	2.5%	100.0%	20.0%	35.0%	0.0%	12.5%		
	Good	n	1	2	1	3	1	0	0	2		
		%	16.7%	33.3%	16.7%	50.0%	16.7%	0.0%	0.0%	33.3%		

			Additional physical activity								Pearson Chi ²	p
	Average	n	0	2	1	5	3	0	2	2		
		%	0.0%	25.0%	12.5%	62.5%	37.5%	0.0%	25.0%	25.0%		
	Low	n	0	0	0	0	0	0	28	0		
		%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%		
	Very low	n	0	0	0	0	0	0	17	0		
		%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%		

Source: Authors' own study

The statistical analysis showed a significant correlation between the respondents' lifestyle and their preferred type of physical activity. 86.8% of the subjects—46 people—whose

lifestyle did not require physical activity did not engage in any additional physical activity. Among the patients whose lifestyle required a high level of physical activity, 39 subjects (100%) chose walking, while 14 subjects (35.9%) chose mountain hiking (Tab. V)

Table V. Comparison of patients' additional physical activity by lifestyle

		Additional physical activity									Pearson Chi²	p
		Gymnastics		Dancin g	Swimming	Walking	Aerobics	Mountain hiking	None	Other		
tient's estyle	Requiring high physical activity	n	0	8	0	39	8	14	0	4	29.4	0.01
		%	0.0%	20.5%	0.0%	100.0%	20.5%	35.9%	0.0%	10.3%		
	Requiring moderate physical activity	n	0	2	3	4	1	0	1	5		
		%	0.0%	25.0%	37.5%	50.0%	12.5%	0.0%	12.5%	62.5%		
	Requiring no physical activity	n	1	3	0	6	3	0	46	1		
		%	1.9%	5.7%	0.0%	11.3%	5.7%	0.0%	86.8%	1.9%		

Source: Authors' own study

The study showed that 54.5% of women (30 individuals) and 55.6% of men (25 individuals) experienced pain in the affected limb, representing 55% of all respondents. These proportions are comparable relative to

the total number of patients of each sex; statistical analysis revealed no statistically significant association between the respondents' sex and whether they experienced pain in the affected limb (Table VI).

Table VI. Occurrence of pain in the affected limb in relation to age

			Pain in the affected limb			Total	Parson Chi ²	p
			Yes	No	Sporadically			
Sex	Female	n	30	23	2	55	0.171	0.918
		%	54.5%	41.8%	3.6%	100.0%		
	Male	n	25	19	1	45		
		%	55.6%	42.2%	2.2%	100.0%		
Total		n	55	42	3	100		
		%	55.0%	42.0%	3.0%	100.0%		

Source: Authors' own study

When analyzing pain levels among respondents across individual age groups, patients in every age category reported experiencing pain. Pain was most prevalent among patients in the 71–75 age group,

occurring in 11 out of 18 patients (61.1%). Statistical analysis revealed no statistically significant association between the respondents' age and whether they experienced pain in the affected limb (Table VII).

Table VII. Perception of pain in the affected limb among respondents of different age groups

			Pain in the affected limb			Total	Parson Chi ²	p
			Yes	No	Sporadically			
Age	65-70	n	31	26	2	59	1.85	0.933
		%	52.5%	44.1%	3.4%	100.0%		
	71-75	n	11	7	0	18		
		%	61.1%	38.9%	0.0%	100.0%		
	76-80	n	10	6	1	17		
		%	58.8%	35.3%	5.9%	100.0%		
	Over 80	n	3	3	0	6		
		%	50.0%	50.0%	0.0%	100.0%		
Total		n	55	42	3	100		
		%	55.0%	42.0%	3.0%	100.0%		

Source: Authors' own study

When analyzing the level of pain experienced in relation to the patients' physical activity

levels, the study found that patients whose lifestyles required high levels of physical activity reported the least pain. This group consisted of 39 patients (100%). Among patients whose lifestyle required moderate physical activity, 50% (4 people) experienced pain, 36.5% (3 people) did not experience pain, and one person experienced it

sporadically (12.5%). Among the 53 patients whose lifestyle did not require physical activity, 96.2% (51 patients) experienced pain, leading to the conclusion that the less physically active a patient's lifestyle is, the more pain they subjectively experience (Table VIII).

Table VIII. Perception of Pain in Relation to Lifestyle

			Pain in the affected limb			Total	Parson Chi²	p
			Yes	No	Sporadically			
The patient's lifestyle	Requiring high physical activity	n	0	39	0	39	95.08	0.001
		%	0.0%	100.0%	0.0%	100.0%		
	Requiring moderate physical activity	n	4	3	1	8		
		%	50.0%	37.5%	12.5%	100.0%		
	Requiring no physical activity	n	51	0	2	53		
		%	96.2%	0.0%	3.8%	100.0%		
Total		n	55	42	3	100		
		%	55,0%	42,0%	3,0%	100.0%		

Source: Authors' own study

Statistical analysis revealed a significant correlation between how respondents rated their physical fitness and whether they experienced pain in the affected limb. 83.3%—5 respondents who rated their physical

fitness as good—experienced pain in the affected limb. In contrast, 100% of respondents who rated their physical activity as “very good”—40 people—did not experience pain in the affected limb (Table IX).

Table IX. Perception of pain in relation to the respondents' subjective level of physical fitness

			Pain in the affected limb			Total	Parson Chi ²	p
			Yes	No	Sporadically			
Patient's physical fitness	Excellent	n	0	1	0	1	130.59	0.001
		%	0.0%	100.0%	0.0%	100.0%		
	Very good	n	0	40	0	40		

			Pain in the affected limb			Total	Parson Chi ²	p
		%	0.0%	100.0%	0.0%	100.0%		
	Good	n	5	1	0	6		
		%	83.3%	16.7%	0.0%	100.0%		
	Average	n	5	0	3	8		
		%	62.5%	0.0%	37.5%	100.0%		
	Low	n	28	0	0	28		
		%	100.0%	0.0%	0.0%	100.0%		
	Very low	n	17	0	0	17		
		%	100.0%	0.0%	0.0%	100.0%		
	Total		n	55	42	3		
%			55.0%	42.0%	3.0%	100.0%		

Source: Authors' own study

The ADL scale, also known as the Katz Index of Activities of Daily Living, is a method used to assess patient functional status when performing basic activities of daily living, such as bathing, dressing, eating, and locomotion. This scale also evaluates whether the patient independently maintains bowel and bladder control and the extent to which

they manage personal hygiene and self-care activities. In the conducted study, 97% of patients were functionally independent (97 patients), while 3% were classified as individuals with limited independence (3 patients). The present study revealed that individuals with significant limitation in performing activities of daily living belonged to the 71–75 (1 individual) and 76–80 (2 individuals) age groups (Table X).

Table X. ADL Levels Among Different Age Groups

			ADL		Total	Parson Chi ²	p
			Individuals with significant limitations	Functionally independent individuals			
Age	65-70	n	0	59	59	6.9	0.075
		%	0.0%	100.0%	100.0%		
	71-75	n	1	17	18		
		%	5.6%	94.4%	100.0%		

			ADL			Parson Chi ²	p
					Total		
	76-80	n	2	15	17		
		%	11.8%	88.2%	100.0%		
	Over 80	n	0	6	6		
		%	0.0%	100.0%	100.0%		
Total		n	3	97	100		
		%	3.0%	97.0%	100.0%		

Source: Authors' own study

Statistical analysis did not reveal a significant correlation between the respondents' place of

residence and their functional ability. All individuals with a significant degree of limitation in activities of daily living lived in rural areas—4.4% (3 people) (Table XI).

Table XI. ADL Level by Place of Residence

			ADL		Total	Parson Chi ²	p
			Individuals with significant limitations	Functionally independent individuals			
Place of residence	Rural area	n	3	65	68	1.45	0.31
		%	4.4%	95.6%	100.0%		
	Town with fewer than 50,000 inhabitants	n	0	32	32		
		%	0.0%	100.0%	100.0%		
Total		n	3	97	100		
		%	3.0%	97.0%	100.0%		

Source: Authors' own study

Statistical analysis also failed to reveal a significant correlation between the

respondents' educational level and their ability to perform activities of daily living (Table XII).

Table XII. ADL Level by Educational Attainment

			ADL		Total	Parson Chi ²	p
			Individuals with significant limitations	Functionally independent individuals			
Level of education	Primary	n	2	37	39	1.19	0.555
		%	5.1%	94.9%	100.0%		
	Secondary	n	1	44	45		
		%	2.2%	97.8%	100.0%		
	Higher	n	0	16	16		
		%	0.0%	100.0%	100.0%		
Total		n	3	97	100		
		%	3.0%	97.0%	100.0%		

Source: Authors' own study

Analyzing independence in performing activities of daily living among the respondents, the study showed that one out of 55 women was classified as a patient with a significant limitation in physical capacity

(1.8%). Among men, there were two such individuals (4.4%). Patients with a significant degree of functional limitation accounted for 3% of all respondents overall. Statistical analysis revealed no statistically significant association between the respondents' sex and their functional status (Table XIII).

Table XIII. ADL Level Among Respondents

			ADL		Total	Parson Chi ²	p
			Individuals with significant limitations	Functionally independent individuals			
Sex	Female	n	1	54	55	0.587	0.424
		%	1.8%	98.2%	100.0%		
	Male	n	2	43	45		
		%	4.4%	95.6%	100.0%		
	Total	n	3	97	100		
		%	3.0%	97.0%	100.0%		

Source: Authors' own study

Among the respondents, 49% experienced intense stress related to hospitalization and the necessity of undergoing a procedure, accounting for 45.5% of women (25 individuals) and 53.3% of men (24 individuals). Forty-one percent of respondents (41 individuals) did not experience stress. Ten percent of respondents

reported experiencing stress only prior to the qualification and pre-procedure preparation process (5 women and 5 men). Statistical analysis revealed no statistically significant association between the respondents' sex and whether they experienced stress related to hospitalization and procedures (Table XIV).

Table XIV. Levels of Perceived Stress by Gender

			Stress related to hospitalization and procedure			Total	Parson Chi ²	p
			Yes, I experience intense stress.	No, I do not feel stressed.	I felt stressed, but I overcame the stress after pre-procedure preparation.			
Sex	Female	n	25	25	5	55	1.06	0.605
		%	45.5%	45.5%	9.1%	100.0%		
	Male	n	24	16	5	45		
		%	53.3%	35.6%	11.1%	100.0%		
Total		n	49	41	10	100		
		%	49.0%	41.0%	10.0%	100.0%		

Source: Authors' own study

Patients in the 65–70 age group most frequently reported experiencing stress during preparation for the procedure, comprising 28 patients and representing 47.5% of this age group. Among patients in the 71–75 age group, 50% of patients (9 individuals) reported experiencing intense stress, while in the 76–80 age group, this

accounted for 10 individuals (58.8% of the entire age group). Among patients over 80 years of age (6 patients), 2 individuals experienced stress, while 4 patients declared an absence of this emotion. Statistical analysis revealed no statistically significant association between the respondents' age and whether they experienced stress related to hospitalization and procedures (Table XV).

Table XV. Level of Perceived Stress by Age

			Stress related to hospitalization and procedure			Total	Parson Chi ²	p
			Yes, I experience intense stress.	No, I do not feel stressed.	I felt stressed, but I overcame the stress after pre-procedure preparation.			

			Stress related to hospitalization and procedure			Total	Parson Chi²	p
	65-70	n	28	23	8	59		
Age		%	47,5%	39,0%	13,6%	100,0%	4,78	0,572
	71-75	n	9	7	2	18		
		%	50,0%	38,9%	11,1%	100,0%		
	76-80	n	10	7	0	17		
		%	58,8%	41,2%	0,0%	100,0%		
	Over 80	n	2	4	0	6		
		%	33,3%	66,7%	0,0%	100,0%		
Total		n	49	41	10	100		
		%	49,0%	41,0%	10,0%	100,0%		

Source: Authors' own study

When analyzing the obtained results, the relationship between the occurrence of stress among patients and a history of prior joint replacement procedures was examined. Patients who had previously undergone hip replacement surgery comprised a group of 21 individuals, 11 of whom still experienced intense stress (52.4%). Patients who had previously undergone knee replacement surgery comprised a group of 16 individuals, 11 of whom still experienced stress (68.8%).

Among the 4 individuals who had undergone both procedures, 100% experienced stress related to hospitalization and the procedure. Among individuals with no prior history of such procedures, 49.2% (29 individuals) did not experience stress. Statistical analysis revealed no statistically significant association between whether the respondents had undergone joint replacement surgery and whether they experienced stress related to hospitalization and procedures (Table XVI).

Table XVI. Level of Perceived Stress in Relation to Previous Hip Replacement Surgery

			Stress related to hospitalization and procedure			Total	Parson Chi ²	p
			Yes, I experience intense stress.	No, I do not feel stressed.	I felt stressed, but I overcame the stress after pre-procedure preparation.			
Prior joint replacement procedures	Yes, hip replacement	n	11	8	2	21	9.12	0.167
		%	52.4%	38.1%	9.5%	100.0%		
	Both	n	4	0	0	4		

			Stress related to hospitalization and procedure			Total	Parson Chi ²	p
		%	100.0%	0.0%	0.0%	100.0%		
	Yes, knee replacement	n	11	4	1	16		
		%	68.8%	25.0%	6.3%	100.0%		
	No	n	23	29	7	59		
		%	39.0%	49.2%	11.9%	100.0%		
Total		n	49	41	10	100		
		%	49.0%	41.0%	10.0%	100.0%		

Source: Authors' own study

When analyzing the types of emotions experienced by patients, tension was reported most frequently among women (83.9% – 26 individuals), followed by anxiety (51.6% – 16 individuals) and nervousness (32.3% – 10 individuals). Among men, the

distribution of emotions was very similar in percentage terms: tension (89.3% – 25 individuals), anxiety (42.9% – 12 individuals), and nervousness (17.9% – 5 individuals). Statistical analysis revealed no statistically significant association between the respondents' sex and the emotions they experienced (Table XVII).

Table XVII. Types of emotions experienced by patients, by gender

			Emotions experienced by patients					Total	Parson Chi ²	p
			Nervousness	Tension	Dejection	Anxiety	Low mood			
Sex	Female	n	10	26	3	16	2	31	2.25	0.441
		%	32.3%	83.9%	9.7%	51.6%	6.5%			
	Male	n	5	25	2	12	1	28		
		%	17.9%	89.3%	7.1%	42.9%	3.6%			

Source: Authors' own study

During the analysis of the study results, the level of knowledge regarding health behaviors prior to the procedure, the immediate pre-procedure preparation period, and the surgical procedure itself was compared with the emotions experienced by the respondents. Among patients with a subjective feeling of being well prepared,

tension was nonetheless present in 91.4% (32 individuals). Among patients with a subjective feeling of a very low level of preparation (1 individual), all emotions listed in the survey were present (nervousness, tension, dejection, anxiety, low mood). Statistical analysis revealed no statistically significant association between how the respondents assessed their level of

knowledge regarding health behaviors prior to joint replacement surgery, immediate in-hospital preparation for the procedure, and the surgical procedure itself, and the emotions they experienced (Table XVIII).

Table XVIII. Relationship between the patient's preoperative level of knowledge and accompanying emotions

Level of knowledge regarding health behaviors prior to joint replacement surgery, immediate in-hospital preparation for the procedure, and the surgical procedure itself			Emotions experienced by patients					Parson Chi ²	p
			Nervousness	Tension	Dejection	Anxiety	Low mood		
	Good	n	1	32	0	8	0	3.64	0.479
		%	2.9%	91.4%	0.0%	22.9%	0.0%		
	Average	n	11	17	3	15	0		
		%	64.7%	100.0%	17.6%	88.2%	0.0%		
	Low	n	2	1	1	4	2		
		%	33.3%	16.7%	16.7%	66.7%	33.3%		
	Very low	n	1	1	1	1	1		
		%	100.0%	100.0%	100.0%	100.0%	100.0%		

Source: Authors' own study

The Social Support Scale evaluates the type and level of strength of support received by specific social groups. The items included in the scale are divided into types of support: informational, instrumental, appraisal, and emotional. Questions representing both positive and negative perceptions were assigned to each type of support. Emotional support is based on verbal and non-verbal messages, such as "we love you." Appraisal

support indicates how important the patient is to an individual. Instrumental support is the assistance obtained through concrete help, such as assistance with preparing the living space, whereas informational support is based on providing the patient with necessary information and guidance. The mean and standard deviation (indicating how widely values are dispersed around the mean) were calculated for the respondents' results (Table XIX).

Table XIX. Results of the Social Support Scale among survey respondents

	Result	Discriminatory power	Mean	SD
INFORMATION SUPPORT				
They patiently explain things to me when I don't understand something	P	0.399	1.30	0.52
Sometimes they know something important that I should know too, but they don't tell me about it	N	0.958	4.50	0.59

	Result	Discriminatory power	Mean	SD
They warn me when I'm in danger	P	0.281	1.42	0.61
Sometimes they deliberately mislead me	N	0.247	4.53	0.52
When I ask for advice or guidance, I'm treated like an intruder	N	0.006	4.74	0.46
When making important decisions, their advice proved invaluable	P	0.676	1.62	0.56
INSTRUMENTAL SUPPORT				
They lend me money when I'm in need	P	0.825	1.43	0.54
They take care of me when I need it	P	0.883	1.68	0.51
When I ask for specific help, they don't hide their anger	N	0.385	4.65	0.73
It's generally not the case that they come forward on their own with a specific offer of help	N	0.182	4.34	0.50
When I'm in need, I can't count on their help	N	0.646	4.58	0.54
They set up contacts with the people I need	P	0.795	1.65	0.86
APPRAISAL SUPPORT				
Thanks to them, I know that I matter	P	0.453	1.68	0.86
They think I can't do anything right	N	0.068	4.51	0.54
When I'm with them, I feel like a nobody	N	0.791	4.53	0.54
When it comes to resolving important issues, my vote is the deciding one	P	0.649	2.60	1.29
People often ask me for advice	P	0.859	1.85	1.13
They usually assign me tasks that aren't very important	N	0.168	4.05	0.82
EMOTIONAL SUPPORT				
I feel uncomfortable around them	N	0.181	4.61	0.51
They're strangers to me	N	0.666	4.68	0.47
They understand me	N	0.256	1.76	0.71
They accept me just the way I am	P	0.226	1.46	0.54
He feels they are looking down on him	N	0.324	4.40	0.51
I feel safe when I'm with them	P	0.616	1.88	0.77

Source: Authors' own study; N-Negative; P-Positive; SD- standard deviation

A study based on the Social Support Scale among 100 respondents (n=100) showed a

score of 18.11 for informational support, 18.33 for instrumental support, an average score of 19.22 for evaluative support, and 19.22 for emotional support. Overall, the positive results for all types of support amount to an average of 74.45 (Table XX).

Table XX. Social Support Scale

Social Support Scale	N	Min	Max	Średnia	SD
INFORMATIONAL SUPPORT	100	16.00	22.00	18.11	1.12
INSTRUMENTAL SUPPORT	100	14.00	20.00	18.33	2.01
APPRAISAL SUPPORT	100	15.00	25.00	19.22	2.67
EMOTIONAL SUPPORT	100	17.00	22.00	18.79	1.32
Total	100	67.00	86.00	74.45	4.83

Source: Authors' own study

respondents' sex and obtaining informational support, instrumental support, appraisal support, or emotional support (Table XXI). Statistical analysis revealed no statistically significant association between the

Table XXI. Social Support Among Respondents by Sex

Płeć:		INFORMATIONAL SUPPORT	INSTRUMENTAL SUPPORT	APPRAISAL SUPPORT	EMOTIONAL SUPPORT
Female	Mean	18.1091	18.2727	19.4364	18.9455
	N	55	55	55	55
	SD	1.22735	2.07681	2.86591	1.32523
Male	Mean	18.1111	18.4000	18.9556	18.6000
	N	45	45	45	45
	SD	0.98216	1.93532	2.41167	1.30384
Total	Mean	18.1100	18.3300	19.2200	18.7900
	N	100	100	100	100
	SD	1.11821	2.00532	2.66886	1.32035
Z		0.000	0.099	0.802	1.706
p		0.993	0.754	0.373	0.195

Notes: N – number of observations; p – level of statistical significance; SD – standard deviation; Z – result of the Mann-Whitney U test

Source: Authors' own study

However, a significant correlation was found between the age of the respondents and the level of appraisal support. The older the respondents, the higher the level of appraisal support they received (Table XXII).

Table XXII. Respondents' Social Support by Age

Age		INFORMATIONAL SUPPORT	INSTRUMENTAL SUPPORT	APPRAISAL SUPPORT	EMOTIONAL SUPPORT
65-70	Mean	18.1356	18.2881	19.1356	18.6610
	N	59	59	59	59
	SD	1.13650	1.98313	2.52202	1.35964
71-75	Mean	17.9444	19.0000	20.6667	19.0000
	N	18	18	18	18
	SD	0.93760	1.94029	3.04863	1.08465
76-80	Mean	18.3529	17.9412	18.1176	19.1176
	N	17	17	17	17
	SD	1.27187	2.10566	2.36861	1.45269
Over 80	Mean	17.6667	17.8333	18.8333	18.5000
	N	6	6	6	6
	SD	1.03280	2.13698	2.40139	1.22474
Total	Mean	18.1100	18.3300	19.2200	18.7900
	N	100	100	100	100
	SD	1.11821	2.00532	2.66886	1.32035
H		0.717	1.015	2.957	0.780
p		0.544	0.390	0.036	0.508

Notes: N- number of observations; p – level of statistical significance; SD – standard deviation; H- results of the Kruskal-Wallis Test;

Source: Authors' own study

Statistical analysis revealed a significant relationship between the respondents' place of residence and evaluative support. Subjects living in urban areas receive a higher level of evaluative support (Tab. XXIII)

Table XXIII. Level of Social Support by Place of Residence

Place of Residence		INFORMATIONAL SUPPORT	INSTRUMENTAL SUPPORT	APPRAISAL SUPPORT	EMOTIONAL SUPPORT
Rural area	Mean	18.2353	18.3088	19.6029	18.9559
	N	68	68	68	68
	SD	1.10788	2.13889	2.85019	1.29792
Town with over 50.000 habitants	Mean	17.8438	18.3750	18.4063	18.4375
	N	32	32	32	32
	SD	1.11034	1.71803	2.04560	1.31830
Total	Mean	18.1100	18.3300	19.2200	18.7900
	N	100	100	100	100
	SD	1.11821	2.00532	2.66886	1.32035
Z		2.714	0.023	4.531	3.437
p		0.103	0.879	0.036	0.067

Notes: N – number of observations; p – level of statistical significance; SD – standard deviation; Z – result of the Mann-Whitney U test Source: Authors' own study

According to the study, a correlation was found between the respondents' educational attainment and emotional support.

Respondents with a high school education received a higher level of emotional support. No correlation was found between gender and the overall level of social support (Table XXIV).

Table XXIV. Level of Social Support by Educational Attainment

Educational Attainment		INFORMATIONAL SUPPORT	INSTRUMENTAL SUPPORT	APPRAISAL SUPPORT	EMOTIONAL SUPPORT
Primary	Mean	18.1026	18.0256	18.9487	19.2308
	N	39	39	39	39
	SD	1.16517	2.27674	2.81863	1.28681
Secondary	Mean	18.0000	18.4222	19.0000	18.3778
	N	45	45	45	45
	SD	1.06600	1.85238	2.16375	1.30190

Educational Attainment		INFORMATIONAL SUPPORT	INSTRUMENTAL SUPPORT	APPRAISAL SUPPORT	EMOTIONAL SUPPORT
Higher	Mean	18.4375	18.8125	20.5000	18.8750
	N	16	16	16	16
	SD	1.15289	1.68201	3.32666	1.14746
Total	Mean	18.1100	18.3300	19.2200	18.7900
	N	100	100	100	100
	SD	1.11821	2.00532	2.66886	1.32035
H		0.903	0.959	2.250	4.731
p		0.409	0.387	0.111	0.011

Notes: N- number of observations; p – level of statistical significance; SD – standard deviation; H- results of the Kruskal-Wallis Test; Source: Authors' own study

Statistical analysis did not reveal a significant correlation between the age of the respondents and the overall social support score (Table XXV).

Table XXV. Level of Social Support Among Respondents in Different Age Groups

Age	Mean	N	SD	H	p
65-70	74.2203	59	4.88865	1.710	0.172
71-75	76.6111	18	5.24840		
76-80	73.5294	17	4.18506		
Over 80	72.8333	6	3.43026		
Total	74.4500	100	4.83124		

Notes: N- number of observations; p – level of statistical significance; SD – standard deviation; H- results of the Kruskal-Wallis Test; Source: Authors' own study

Statistical analysis did not reveal a significant correlation between the respondents' place of residence and their overall social support score (Table XXVI).

Table XXVI. Level of Social Support by Place of Residence

Place of Residence	Mean	N	SD	Z	p
Rural area	75.1029	68	5.19224	3.990	0.058
Town with over 50.000 habitants	73.0625	32	3.65388		

Place of Residence	Mean	N	SD	Z	p

Notes: N – number of observations; p – level of statistical significance; SD – standard deviation; Z – results of the Mann-Whitney U test Source: Authors' own study

The statistical analysis did not reveal a significant correlation between the

respondents' educational attainment and their overall social support score (Table XXVII).

Table XXVII. Summary of Types of Social Assistance Received

Educational Attainment	Mean	N	SD	H	p
Primary	74.3077	39	5.25234	2.090	0.129
Secondary	73.8000	45	3.92891		
Higher	76.6250	16	5.70234		
Total	74.4500	100	4.83124		

Notes: N- number of observations; p – level of statistical significance; SD – standard deviation; H- results of the Kruskal-Wallis Test; Source: Authors' own study

4. Discussion

An increasing number of patients suffer from osteoarthritis. It is a progressive disease that limits patients due to pain when performing activities of daily living. Patients with advanced symptoms for whom conservative treatment has proved ineffective are qualified for joint replacement surgery. The patient preparation process for surgery is lengthy and consists of multiple stages, the thorough execution of which improves the perioperative prognosis and reduces the risk of complications. Social support provided by various social groups plays a key role in patient preparation. For patients, support from family members and members of the therapeutic team is of paramount importance. The process of preparing for

surgery encompasses not only psychological but also physical aspects.

In the present study, the social support provided to patients over 65 years of age preparing for hip replacement surgery was analyzed. The largest group of respondents consisted of patients in the 65–70 age group. The majority of patients were retirees living in rural areas, and the most common level of education was secondary education. Eighty-one percent of patients lived with their family. Among the surveyed patients reporting addictions, 27% admitted to cigarette smoking.

The conducted survey showed that progressing osteoarthritis, which leads to the necessity of joint replacement surgery, causes difficulty for patients in maintaining mobility and balance. Mobility among patients varied; however, only 8% of respondents reported severely limited mobility. Thirty-four percent of patients experienced high levels of

weakness during activity. In the present study, as many as 45.5% of women and 48.9% of men did not engage in additional physical activities. Patients whose lifestyle did not demand physical activity did not undertake any activities categorized as additional physical activities. Among patients reporting additional physical activities, walking and mountain hiking were the most common. In the present study, 22% of respondents used additional orthopedic mobility aids. These comprised crutches (20%) and a walker (2%). Up to 78% of respondents over 65 years of age did not require the use of additional orthopedic aids. In a study conducted by Stanek et al., 57.2% of patients required orthopedic aids [6]. Sixty-nine percent of patients qualified for surgery also utilized rehabilitation and physiotherapy treatments aimed at improving function and managing pain in the affected limb; by contrast, a study conducted at a specialized Rehabilitation Clinic in Krakow indicated that only 21.7% of patients qualified for joint replacement surgery used rehabilitation treatment [6].

The present study showed that 55% of respondents reported pain in the affected limb. No statistically significant association was found between the sex of respondents and the severity of pain complaints. Similarly, in the study conducted by Stanek et al., no association was found between pain symptoms and sociodemographic variables [6]. The present study demonstrated that patients whose lifestyle demanded high physical activity complained least about pain. One hundred percent of respondents who rated their physical activity as good did not experience pain in the affected limb. In a study conducted by Stanek et al. in Wrocław in 2013, 73.3% of patients used preoperative

pharmacotherapy [6]. In the present study, this proportion was 57%.

Ninety-seven percent of the study participants were independent in performing instrumental activities of daily living. Three percent of patients had limited independence. In the study by Stanek et al., 46.7% of outpatient clinic patients evaluated their ability to perform daily physical activities negatively, and 37.5% required assistance from others [6]. The present survey showed no association between the level of independence and the level of pain or the amount of social support received.

Stress was a common phenomenon among the respondents. It was experienced by 49% of respondents preparing for hip replacement surgery. In the present study, stress was reported most frequently by patients in the 65–70 age group. Despite having undergone prior joint replacement procedures, patients still experienced stress symptoms (52.4%). The emotions experienced by patients were categorized as tension, anxiety, and nervousness. Stress levels are also influenced by the subjective perception of the level of physical and psychological preparation for the procedure. Among patients with a subjective feeling of good preparation, tension was nonetheless present (91.4%), whereas 1% of respondents who rated their preparation level as very low experienced all negative emotions included in the survey (tension, nervousness, anxiety). In the present survey, no association was found between stress levels or pain tolerance and the respondents' sex; in contrast, this was observed in a study by Tomaszewski, who concluded that men have lower pain tolerance than women, thereby leading to higher stress levels in males [7]. In the present study, patients coped with stress

through the support of loved ones, conversations with a physician, pursuing interests, or meetings with acquaintances who had already undergone arthroplasty. For some patients, faith was key to coping with stress, similar to findings in a study by Kurowska et al., where patients likewise identified faith as a factor helping them cope with their current health status [8].

Social support received both from loved ones and from members of the therapeutic team plays a key role in the surgical preparation process. Results of the present study indicate that older individuals receive higher levels of appraisal support. However, no statistically significant association was found between the level of received social support and sociodemographic factors or the level of independence in activities of daily living. The present study, based on the Social Support Scale by Krystyna Kmiecik-Baran, demonstrated a high level of overall support received by the patient. Analysis of the present study's results showed that loved ones provide substantial psychological support in as many as 94% of respondents. A similar finding was reported by Kunikowska et al., who noted that patients receive the greatest support from immediate family members [9]. Preoperative support also encompasses education provided by healthcare staff. In the present study, 36% of respondents rated their level of knowledge as very good, and 7% as good. This has a significant impact on stress levels during hospitalization and the recovery period. Ninety-two percent of patients were satisfied with the level of psychological support provided by members of the therapeutic team, including specialist physicians, nurses, and physiotherapists. In the study conducted by Kunikowska et al., only 31.7% of patients

evaluated the support provided by staff as good [9]. Similar conclusions were reached in a study by Piekoszewska et al., in which up to 75% of patients cited inadequate preparation and information provision by specialist physicians [4]. In the present study, support from family members and the therapeutic team was motivating and led to the reduction of hospitalization-related stress; conversely, a study by Denys et al. examining quality of life and health locus of control during rehabilitation showed that patients whose social network actively participated in their recovery were less accepting of their condition, which negatively affected stress levels and their determination to fight the disease [10]. In the present study, patients residing primarily in rural areas rated their quality of life as very good despite having osteoarthritis. In a study conducted by Michalczyk et al., the impact of sociodemographic factors on pain levels, disease acceptance, and physical and mental health perception was investigated. The authors demonstrated that pain significantly impairs functional capacity, contributing to increased stress levels. Patients living in large cities subjectively rated their quality of life higher [11].

In summary, the majority of patients participating in the present survey were physically functional and did not require orthopedic mobility aids. Compared to other surveys, patients in the present study utilized restorative rehabilitation treatments much more frequently. The level of social support received from various social groups was found to be high, which is consistent with findings from other survey studies.

5. Conclusions

The majority of patients were physically functional and did not require additional orthopedic mobility aids.

Most patients supported their physical fitness by attending rehabilitation sessions.

The less active a patient's lifestyle was, the greater pain symptoms they subjectively experienced. Patients who subjectively rated their level of physical activity as very good reported no pain.

No association was found between sociodemographic factors and the level of pain experienced by patients.

The majority of patients were independent in performing basic activities of daily living.

No association was demonstrated between sociodemographic factors and whether patients experienced stress related to hospitalization and the necessity of undergoing surgery.

No association was found between whether respondents had undergone prior joint replacement surgery and the level of stress experienced related to hospitalization and surgery.

No association was found between the level of independence in activities of daily living and the subjective perception of pain symptoms among patients qualified for surgery.

No statistically significant association was demonstrated between sociodemographic factors and the level of independence in performing basic activities of daily living.

High mean scores were obtained across all received types of support (emotional, appraisal, instrumental, and informational).

No statistically significant association was found between the level of independence in performing basic activities of daily living and the level of perceived social support.

Respondents with secondary education received a higher level of emotional support.

Older patients received higher levels of appraisal support.

Respondents residing in urban areas received higher levels of appraisal support.

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