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## A Study to Determine the Effects of Physical, Psychological, and Socio-Emotional Factors on People with Knee Osteoarthritis Who Work in Various Occupations

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### Key Words:

Socio-Emotional, Psychological, Physical, Osteoarthritis, Knee.

### Abstract:

The most prevalent kind of arthritis is osteoarthritis (OA), which damages the joints. One of the leading causes of disability, OA affects approximately 100 million individuals throughout the globe. The most frequent kind of OA affects the knee. According to the World Health Organization's assessment on the global burden of illness, knee OA is the leading cause of disability among both sexes. Physical and mental health issues, as well as alterations in the joint's biomechanics, have all been linked to this disorder. Therefore, the purpose of this research is to identify the primary risk factor for developing knee OA. This report examines the impact of knee osteoarthritis on the physical, mental, and social lives of persons in the workforce.

### 1. Introduction

'Artho' means joint in Greek, and 'itis' indicates inflammation, thus together they form the root of our modern name for the disease: arthritis. In addition, several other conditions have been labeled arthritis. The term is used loosely to describe a variety of conditions that cause joint discomfort and inflammation rather than a specific illness. Diseases of the joints (such as the hip, knee, wrist, shoulder, etc.) are collectively referred to as arthritis. Knees, hips, and other weight-bearing joints are more visible than similar joints in the upper limbs. Arthritis is an autoimmune condition that develops within the body due to a combination of environmental and hereditary factors (1). Stiffness, discomfort, and swelling in the surrounding soft tissue and joints are all symptoms of arthritis. Pain in the lower back (tendinitis) is another possible symptom of arthritis. In the past, the aging process was often responsible for the onset of arthritis in humans. More than 50 million people and over

300,000 children (known as Juvenile arthritis) are affected by this condition (2). However, there are several factors besides the arthritis itself that might contribute to intermittent discomfort in the joints. Arthritis symptoms may be minimal, moderate, or severe.<sup>1</sup>

It is estimated that more than 350 million people throughout the world are living with arthritis, making it the leading cause of disability worldwide. When compared to other health issues like diabetes, heart disease, and neck and back problems, arthritis is seen as the leading cause of disability among persons in North America. Third, arthritis used to afflict everyone, regardless of age, gender, color, or ethnicity. However, before, women were more likely to have symptoms than males. At least three out of every five people under the age of 65 worldwide have arthritis (4). In fact, it has been predicted that the rising prevalence of arthritis throughout the world would

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have significant implications for healthcare expenditures and lost productivity.<sup>2-3</sup>

According to the WHO (World Health Organization), arthritis affects over 23 million people worldwide. Furthermore, 7.3% of those between the ages of 18 and 44 have been diagnosed with arthritis, while 30.3% of those between the ages of 45 and 64 have also been so labeled. Approximately 27 million Americans have been diagnosed with osteoarthritis (OA) (5). Two-thirds of those who are now obese also had OA in the past. More than 15 million Indians are diagnosed with arthritis each year, with prevalence estimates ranging from 22% to 39% in India.<sup>4</sup>

Arthritis may have a lengthy, slow, and perhaps worsening impact on a person's life. However, it has been noted that severe arthritis may result in persistent pain and the incapacity to do everyday activities, making it difficult for the person to move and execute the tasks required of them (3). Arthritic pain may be continuous or it may come and go over time. In many situations, stiffness and discomfort are worse in the morning or after a person has done some kind of physical work. Arthritis may cause persistent pain that lasts anywhere from three to six months, or even a lifetime. Pain in the joints may be constant if you have arthritis. Arthritic joint deformities, such as knobby finger joints, are obvious from the outside, and the intricacies of the alterations in the joint may be detected with the use of x-ray, MRI, etc.<sup>5</sup>

## 2. Material and Methods

### Choose Your Field and Your Major

Midland Healthcare & Research Center in Lucknow, India was the site of the current investigation. The research participants were recruited at random from this facility. Patients having a clinical diagnosis of knee OA who have had that diagnosis validated by imaging studies (0-4 on the Kellgren Lawrence scale, depending on patient radiological results) make up the research sample. According to the data collected, the average age of the group that participated in the study was. The University of Lucknow's Occupational Ergonomics Laboratory (Department of Physiology) will also be responsible for data analysis. The research population was evaluated on a wide range of

physical and performance-related physiological, psychological, and biochemical factors.

### Methods of Choosing Subjects

Around 354 OA knee sufferers from various regions were initially recruited to participate in the research. Only 328 of the patients met the inclusion criteria. The presence of another musculoskeletal condition (low back pain) prompted the exclusion of 38 individuals who also had knee discomfort. The remaining 290 patients volunteered to take part. The 260 participants in the research ranged in age from 30 to 60 and were able to complete all of the measures and questionnaires. There is sufficient data from 241 patients to draw any conclusions. Rheumatoid arthritis and hip arthritis affected 28 individuals, whereas knee ligament injuries affected 17. More than three months of knee discomfort was reported by 196 individuals. There were a total of 150 female patients and 46 male patients analyzed.

Four male patients met the inclusion criteria, allowing for a sufficient number of analyses to be performed.

Institutional Ethical Committee (IEC) for research on human participant - of University of Lucknow approval was obtained before to conducting this study in accordance with the ethical criteria for biomedical research involving human participants as specified by ICMR, Govt. of India. Participants who are giving their time voluntarily have given their written approval for this research.

The inclusion criteria were

- The ages of our patients vary from around 30 to 60.
- Patients were diagnosed with osteoarthritis of the knee using the radiographic Kellgren Lawrence (K-L) scale, which ranges from 0 to 4.
- It is said that those who suffer from chronic pain are more likely to engage in risky sexual behavior.

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The exclusion criteria were:

- Patients who have undergone a complete knee replacement, have severe arthritis in their hips or spine, or have another serious ailment will not be allowed to participate.
- Participants with septic arthritis or ligamentous injuries will be disqualified..

## Analysis of Variables

The following sections detail the methods used in the research.

### Analysis of Physical Variables

- I. An anthropometer and a weighing machine were used to get accurate measurements of each subject's stature and mass.
- II. All individuals' Body Mass Indices (BMIs) were determined using the standard formula. Adiposity is quantified using body mass index.

$$\text{BMI (kg/m}^2\text{)} = \text{Weight (kg)} / \text{Height}^2 \text{ (m}^2\text{)}$$

A sphygmomanometer was used to assess the systolic and diastolic blood pressures. Before anything else, wrap the cuff over your upper arm such that its bottom edge is an inch above your antecubital fossa.

### Popularity of Economic and Social Research:

In the realm of health studies, socioeconomic status (SES) is a crucial variable. The availability, cost, and usage of health related facilities are all indicators of an individual's socioeconomic level, making SES a proxy for the health and nutritional condition of a family. Several methods have been proposed for comparing the socioeconomic status (SES) of urban and rural regions. Kuppaswamy's socioeconomic scale was commonly utilized for SES measurement in metropolitan settings.

### Evaluating the Mental Health of a Population

Arthritis disorders share a wide range of

symptoms, including pain, swelling, stiffness, and, in some cases, a continuous discomfort in the affected joint or joints. People with knee OA are unable to accomplish many activities because of the discomfort they experience. It's likely that they won't be able to go about their normal lives. As they become less active in their communities, they are more likely to experience the onset of psychological problems. Recognizing the experience of someone with a chronic musculoskeletal condition requires an assessment of the effect of mood disturbance on that person's life.

### Statistical Analyses

Minitab 19 software was used to do statistical analysis on the collected data. Individually, we used descriptive statistics to examine the data from each experimental group. Standard deviations, means, and medians were utilized as descriptive statistics. Graphs and tables were used to depict these numbers. A one-way analysis of variance (ANOVA) was performed on all experimental data to see whether there was a statistically significant relationship between the various factors and illness severity. To determine whether there was a statistically significant correlation between the various experimental factors and the severity of this musculoskeletal disorder, a chi-square test was performed on all available data.

## 3. Results

### Remarks on the Investigation of Physical Variables

Patients with knee OA were included if they were either male or female and lived in a distinct area of Lucknow. This research is a prospective cross-sectional analysis of individuals with varying degrees of knee osteoarthritis (OA). Table 1 displays the gender breakdown of OA patients in the knee. The ratio of female to male participants was determined to be 3:1. One hundred fifty (75%) of the patients were female, whereas just fifty (25%) were male.

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**Table 1:** Gender Ratios of Patients with Knee Osteoarthritis

Gender	Frequency	Percent
Female	150	75.0
Male	50	25.0

All patients were diagnosed with knee OA using the K-L scale, which ranges from 0 to 4, and confirmed by radiology. Table 2 displays the K-L scale's usefulness in classifying varying degrees of knee

OA. Patients with knee OA fell into three distinct categories: Grade I (58.5%), Grade II (31.5%), and Grade III (10%).

**Table 2:** Radiographic OA Grading System "Kellgren-Lawrence" Distribution of Knee OA Patients

Gradation of Knee OA	Frequency	Percentage
Grade I	117	58.5
Grade II	63	31.5
Grade III	20	10.0

There were a total of 200 patients with knee OA, 75% of whom were female and 25% of whom were male. Table 5 displays the demographic data of the whole sample. Female patients with knee OA were 94.7% Hindu while male patients were 88.2% Hindu. Only 1.3% of women and 4% of men with

knee OA had genu varum, also known as knock knee, whereas 98% of women and 96% of men did not have any abnormalities. Both women (94.7%) and men (94%) made up the vast majority of non-vegetarian patients. Approximately 43.3 percent of the 150 female patients had regular menstrual cycles, whereas 52 percent were in menopause.

**Table 3:** Patient Demographics after Total Knee Replacement for Osteoarthritis

Demographic Profile	Gender		Frequency	Percentage
Femoral tibial angular deformities	Female	No deformities	147	98.0
		Genu Valgum	2	1.3
		Genu Varus	1	0.7
	Male	No deformities	48	96.0
		Genu Valgum	2	4.0
Ethnicity	Female	Hindu	142	94.7
		Muslim	8	5.3



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	<i>Male</i>	<b>Hindu</b>	44	88.0
		<b>Muslim</b>	6	12.0
<b>Dietary Status</b>	<i>Female</i>	<b>Vegetarian</b>	8	5.3
		<b>Non-Vegetarian</b>	142	94.7
	<i>Male</i>	<b>Vegetarian</b>	3	6.0
		<b>Non-Vegetarian</b>	47	94.0
<b>Genetic influence</b>	<i>Female</i>	<b>None</b>	88	58.7
		<b>Father</b>	12	8.0
		<b>Mother</b>	45	30.0
		<b>Father and Mother</b>	5	3.3
	<i>Male</i>	<b>None</b>	28	56.0
		<b>Father</b>	5	10.0
		<b>Mother</b>	9	18.0
		<b>Father and Mother</b>	8	16.0
<b>Menstruation status</b>	<i>Female</i>	<b>Menstruation</b>	65	43.3
		<b>Irregular</b>	7	4.66
		<b>Menopause</b>	78	52

## Physical Indicators for Diagnosing Knee Osteoarthritis:

Patients with knee OA were analyzed for their anthropometric characteristics. Carpenters' body mass indexes were determined by measuring both their height and weight. In accordance with the data given, it is concluded that there is a statistically significant correlation between the two variables. Grade I respondents had a mean

age of 45.569.35, Grade II respondents were 51.047.08, and Grade III respondents were 54.817.84. Patients in Grades I, II, and III had mean body mass index values of 27.474.53, 33.934.72, and 35.483.72, respectively. The average values of the patients' systolic and diastolic blood pressures were found to be within the normal range. Knee OA severity was shown to be inversely related to age, weight, body mass index, and systolic blood pressure.

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**Table 4:** Radiographic OA grading using the "Kellgren-Lawrence" system: a representation of physical parameters in women with knee OA

Physical Parameters	Gradation of Knee OA Patients						p- value (<0.05)
	Grade I		Grade II		Grade III		
	Mean	SD	Mean	SD	Mean	SD	
Age (y)	45.56	9.35	51.04	7.08	54.81	7.84	<0.0001*
Height (cm)	158.01	6.97	155.55	6.44	157.92	7.67	0.051≠
Weight (kg)	68.19	13.06	87.63	12.24	78.65	9.38	0.034*
BMI ( kg/ m <sup>2</sup> )	27.47	4.53	33.93	4.72	35.48	3.72	0.024*
SBP (mm Hg)	127.53	11.11	129.43	12.66	137.19	13.25	0.014 *
DBP (mmHg)	80.54	6.78	82.17	6.87	84.38	7.33	0.091≠
Pulse Pressure (beats/ min)	84.49	11.14	85.11	12.34	83.50	10.55	0.878≠
SPO <sub>2</sub> (%)	96.71	2.61	96.83	1.38	96.56	1.26	0.892≠

In Table 5 we see the demographics and physical features of men with knee OA. Grade I respondents had a mean age of 49.958.99, Grade II respondents were 53.677.75, and Grade III respondents were 55.754.72 years old. According to the data, the

average body mass index (BMI) of patients in Grade I, II, and III was 30.352.45 kg/m<sup>2</sup>, 35.72.23 kg/m<sup>2</sup>, and 32.823.75 kg/m<sup>2</sup>, respectively. Weight, body mass index, and systolic blood pressure were significantly correlated with knee osteoarthritis severity.

**Table 5 :** In accordance with the most recent scientific research, the average lifespan of a human being is about 80 years.

Physical Parameters	Gradation of Knee OA Patients						p- value (<0.05)
	Grade I		Grade II		Grade III		
	Mean	SD	Mean	SD	Mean	SD	
Age (y)	49.95	8.99	53.67	7.75	55.75	4.72	0.2759 #

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<b>Height (cm)</b>	169.32	5.89	167.47	3.81	162.56	8.03	<b>0.0621<math>\neq</math></b>
<b>Weight (kg)</b>	72.88	11.05	73.47	10.19	73.22	9.89	<b>0.0425*</b>
<b>BMI ( kg/ m<sup>2</sup>)</b>	30.35	2.45	35.37	2.23	32.82	3.75	<b>0.0383*</b>
<b>SBP (mm Hg)</b>	129.16	14.22	128.22	11.10	134.00	18.17	<b>0.7818<math>\neq</math></b>
<b>DBP (mmHg)</b>	79.49	6.99	80.56	4.22	82.25	6.90	<b>0.6922<math>\neq</math></b>
<b>Pulse Pressure (beats/ min)</b>	81.46	10.74	87.33	3.77	81.50	7.85	<b>0.2711<math>\neq</math></b>
<b>SPO<sub>2</sub>(%)</b>	96.51	1.76	95.22	2.54	94.25	1.71	<b>0.0324*</b>

## Discussion of the effects of socioeconomic status on pain perception and disability evaluations

### Socioeconomic Status: (SES)

Table 6 displays the socioeconomic status of women with knee OA. The study found that among 150 women with knee OA, about half were from the lower middle class (III), while

51.9% were from the middle class (II), and 43.75 % were from the upper middle class (I). Patients from the upper middle class (II) accounted for around 37.5 percent of those in Grades I and II, and 25 percent of those in Grades III.

**Table 6:** Women with knee osteoarthritis: a distribution by socioeconomic status and the "Kellgren Lawrence" grading system

Socioeconomic Status(SES)	Gradation of Female Knee OA Patients (n1=150)					
	Grade I		Grade II		Grade III	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
<b>Upper (I)</b>	2	2.5	2	3.7	3	18.75
<b>Upper Middle (II)</b>	30	37.5	18	33.3	4	25
<b>Lower Middle (III)</b>	40	50	28	51.9	7	43.75
<b>Upper Lower (IV)</b>	8	10	6	11.1	2	12.5
<b>Lower (V)</b>	0	0	0	0	0	0

Table 7 displays the economic status of men with knee OA. The majority of males with knee OA were from the Lower Middle Class (III) socioeconomic group, with 45.95% coming from that group for Grade I cases, 44.44% for Grade

II cases, and 50% for Grade III cases. Patients from the upper middle class (II) made up around 38% of those in Grade I, 33% of those in Grade II, and 25% of those in Grade III.

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**Table 7:** Socioeconomic Status and the "Kellgren Lawrence" Grading Scale in a Sample of Males with Knee Osteoarthritis

Socioeconomic Status (SES)	Gradation of Male Knee OA Patients (n2=50)					
	Grade I		Grade II		Grade III	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Upper (I)	2	5.41	1	11.11	0	0
Upper Middle (II)	14	37.82	3	33.33	1	25
Lower Middle (III)	17	45.95	4	44.44	2	50
Upper Lower (IV)	2	5.41	1	11.11	1	25
Lower (V)	2	5.41	0	0	0	0

**Remarks on the Research into Psychosocial and Mechanic Evaluations**

**Evaluating Mental Health and Social Conditions:**

**Table 7:** HAD Score (0–21) Rating and "Kellgren Lawrence" Grading System Correlation in Female Knee OA Patients

Rating of HADScore (0-21)		Gradation of Knee OA			Pearson Chi-Square	p-value (<0.05)
		Grade I	Grade II	Grade III		
Depression	Normal	28	8	2	16.972	0.002*
	Borderline Abnormal	28	24	2		
	Abnormal	24	22	12		
Anxiety	Normal	24	5	1	19.279	0.001*
	Borderline Abnormal	22	22	1		
	Abnormal	34	27	14		

The correlations between depression, anxiety, and

knee OA severity are shown in Table 8. According to the p value, there is a strong correlation between



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the severity of depression and anxiety and the progression of knee OA. There was statistical evidence for every correlation.

found to be normal on the HAD scale in roughly 32.4% and 55.5% of cases, respectively. Seventy-five percent of patients with Grade III knee OA had cases that were hardly atypical

Male patients with Grade I and II knee OA were

**Table 8:** Male Knee OA Patients' "Kellgren Lawrence" Grading System Scores and HAD Scores (0-21)

Rating of HAD Score (0-21)		Gradation of Knee OA			Pearson Chi-Square	p-value (<0.05)
		Grade I	Grade II	Grade III		
Depression	Normal	12	5	0	8.332	0.080
	Borderline	13	0	3		
	Abnormal	12	4	1		
Anxiety	Normal	17	3	2	2.708	0.608
	Borderline	13	2	1		
	Abnormal	7	4	1		

The correlations between sadness, anxiety, and knee OA severity are shown in Table 23. According to the p value, there was no correlation between depressive symptoms and the severity of knee OA.

housewives (87%, or 86.2%) fell into the "borderline abnormal" or "abnormal" range for their depression. In the abnormal range for anxiety, 85.3% of housewives fell.

Table 9 shows how they HAD score for women with knee OA varies with their line of work. Most

**Table 9:** Female knee osteoarthritis patients' HAD score distributions by occupation.

HAD Component	Occupation	Rating of HAD Score (0-21)		
		Normal	Borderline Abnormal	Abnormal
		Percentage	Percentage	Percentage
Depression	Housewife	84.2	87.0	86.2
	School Teacher	7.9	3.7	0

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	<b>Office Worker</b>	<b>5.2</b>	<b>7.4</b>	<b>3.4</b>
	<b>Others</b>	<b>2.6</b>	<b>1.9</b>	<b>10.3</b>
<b>Anxiety</b>	<b>Housewife</b>	<b>90</b>	<b>84.4</b>	<b>85.3</b>
	<b>School Teacher</b>	<b>3.3</b>	<b>6.6</b>	<b>1.3</b>
	<b>Office Worker</b>	<b>3.3</b>	<b>6.6</b>	<b>5.3</b>
	<b>Others</b>	<b>3.3</b>	<b>2.2</b>	<b>8</b>

Anxiety, depression, self-control, general health, and vitality were shown to have statistically significant differences (P<0.05) among women with varying degrees of knee osteoarthritis. One aspect of the PGWBI, however, showed no significant difference between knee OA severity

and grade (P>0.05): Positive Wellbeing. No correlation was found between the PGWBI's six dimensions and the severity of knee osteoarthritis in male individuals. The data reported here may be found in Table 10.

**Table 10:** Using the "Kellgren Lawrence Gradation of Knee OA Patients" to illustrate PGWBI results

<b>Gender</b>	<b>Components of PGWBI</b>	<b>Gradation of Knee OA</b>						<b>p- value (&lt;0.05)</b>
		<b>Grade I</b>		<b>Grade II</b>		<b>Grade III</b>		
		<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	
<b>Female</b>	<b>Anxiety (0-25)</b>	14.23	3.78	12.31	2.87	10.06	2.21	<b>&lt;0.0001*</b>
	<b>Depressed Mood (0-15)</b>	9.48	2.13	9.02	1.54	7.56	1.50	<b>0.0012*</b>
	<b>Positive Wellbeing (0-20)</b>	7.33	2.12	6.56	1.98	6.19	3.04	0.0515 #
	<b>Self-Control (0-15)</b>	8.06	2.17	7.33	1.73	6.56	1.59	<b>0.0085*</b>
	<b>General Health (0-15)</b>	6.19	2.05	5.37	1.57	3.50	2.16	<b>&lt;0.0001*</b>
	<b>Vitality (0-20)</b>	11.25	1.58	10.35	1.40	9.75	1.69	<b>&lt;0.0001*</b>
	<b>Global Score (0-110)</b>	56.53	12.31	50.94	8.76	43.63	10.74	<b>&lt;0.0001*</b>

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<b>Male</b>	<b>Anxiety (0-25)</b>	15.49	2.95	13.56	3.17	15.75	3.86	0.2274 #
	<b>Depressed Mood (0-15)</b>	10.51	1.82	9.33	2.06	10.00	1.83	0.2350 #
	<b>Positive Wellbeing (0-20)</b>	8.65	1.65	7.78	1.72	7.50	1.29	0.1996 #
	<b>Self-Control (0-15)</b>	9.43	1.59	8.89	1.54	8.25	0.96	0.2731 #
	<b>General Health (0-15)</b>	6.68	1.92	6.56	1.81	5.75	0.96	0.6390 #
	<b>Vitality (0-20)</b>	12.00	1.37	11.00	1.00	11.25	0.50	0.0878 #
	<b>Global Score (0-110)</b>	62.70	9.64	57.11	9.84	58.50	5.69	0.2429 #

**Evaluation of Biomechanical characteristics:**

Patients with knee OA of each grade had their mean scores for biomechanical characteristics such as knee angle and femoral bi condylar width shown in Table 11. It has been discovered that the biomechanical parameters (Knee angle, Femoral Bi Condylar breadth) in the case of

female knee OA patients significantly alter with the gradation of female knee OA (P<0.05). Whereas, among men with knee OA, no statistically significant differences in biomechanical measures (Knee angle, Femoral Bi Condylar breadth) were seen in relation to knee OA grading (P>0.05).

**Table 11:** Kellgren and Lawrence's "Knee Osteoarthritis Grading System" as a visual representation of biomechanical parameters

<b>Gender</b>	<b>Biomechanical Parameters</b>		<b>Gradation of Knee OA</b>						<b>p-value (&lt;0.05)</b>
			<b>Grade I</b>		<b>Grade II</b>		<b>Grade III</b>		
			<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>	
<b>Female</b>	<b>Knee Angle (°)</b>	<b>Right</b>	68.14	11.99	71.91	11.84	85.00	4.65	<b>0.000 *</b>
		<b>Left</b>	65.60	13.88	73.20	13.44	86.75	6.58	<b>0.000 *</b>
	<b>Femoral Bi Condylar Width (FBW) (cm)</b>	<b>Right</b>	5.83	.67	6.05	.67	6.30	.73	<b>0.021 *</b>
		<b>Left</b>	5.73	.69	6.06	.66	6.33	.79	<b>0.001 *</b>

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Male	Knee Angle (°)	Right	66.24	17.00	74.78	17.56	81.75	8.50	0.121 #
		Left	65.97	17.01	77.00	21.11	79.00	9.70	0.126 #
	Femoral Bi Condylar Width (FBW) (cm)	Right	6.23	0.78	6.67	0.61	6.58	0.99	0.263 #
		Left	6.26	0.76	6.64	0.59	6.38	1.06	0.392 #

## 4. Discussion

It was shown that people with knee OA also had psychological and social difficulties. Female patients' psychological well-being index sub-index scores were significantly different from those of patients with other stages of knee OA. There was no correlation between the dimensions of the psychological well-being index and the severity of knee OA in male patients with this condition.<sup>6-7</sup> The current research also discovered that there was a statistically significant difference between the occupational status of female knee OA patients and the positive wellbeing component of the psychological wellbeing index. There was a statistically significant variation in biomechanical characteristics across the various stages of female knee OA patients. ( $p < 0.05$ ).<sup>8-9</sup>

Consistent with the results the data showed that lower middle class group in case of both female and male knee OA patients had a higher incidence. The respondents' socioeconomic status may have a bearing on the health issues.<sup>10</sup> As a result, it's possible that poorer socioeconomic level is one of the factors contributing to the prevalence of musculoskeletal disorders.

## 5. Conclusion

There was an increase in the risk of radiographic and symptomatic knee OA among women who did housework and among men who did light, light manual or heavy manual labor. Evidently, the majority

of the people who read this article aren't as smart as you are. The hard manual labor required by skilled professions and retail salespeople disproportionately affects male patients with this musculoskeletal condition. The underlying problems that require fixing are far more fundamental and systemic. It's important to bring attention to this musculoskeletal condition and the measures that may be taken to avoid it in its early stages. Daily exercise is essential, and it is crucial to focus on knee movements such as knee extension and quadriceps contraction.

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