

Master of Science in Public Health



**Patients Perceived Helplessness and its
Association with Overall Health Status Among
Osteoarthritic Patients in District Chakwal**

By

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(Patients Perceived Helplessness and its Association with Overall Health Status Among Osteoarthritic Patients in District Chakwal)

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Declaration

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This dissertation is the result of an independent investigation. Where my work is indebted to others, I have made acknowledgments.

I declare that this work has not been accepted in substance for any other degree, nor is it currently being submitted in candidature for any other degree.

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*This thesis is dedicated to my
beloved parents and my supportive
family.*

ABSTRACT

Background: Osteoarthritis patients (OA) deal with, finances, caregiving, education, BMI, diagnosis, harming their overall health status.

Objectives: This study was aimed to identify perceived helplessness in patients with osteoarthritis and to assess the association between perceptions of their helplessness and their general health status in osteoarthritis patients.

Methodology: A cross-sectional study was carried at a primary healthcare center of Chakwal district. A total of 195 OA patients were selected through non-probability purposive sampling strategy. Data were entered and analyzed using SPSS version 26.0. Arthritis Helplessness Index (AHI) Arthritis Impact Measurement Scale (AIMS) were used to assess the overall health status of OA patients. Pearson Chi Square test of Independence was used to determine the association of patient perceived helplessness with their health status and socio-demographic characteristics

Results: Majority of respondents were females (n=123, 63%). Nearly 41% respondents (n= 81) were 48 years or above. More than half of the respondents reported poor overall health status (n= 114, 58.5%) while coping strategies to minimize pain were utilized by only 39% patients. There was a significant association between perceived helplessness and overall health status of respondents ($p < 0.05$). Overall, it was noticed that perceived helplessness was positively affecting the overall health status of respondents. Overall status of health was also significantly associated with age (p value = 0.001), education level (p value= 0.001), dependents (p value = 0.001), diagnosis (p value = 0.001), weight (p value = 0.001) and coping strategies (p value = 0.02).

Conclusion: It is concluded that only a small fraction of the participants expressed having a positive overall health status, while the majority characterized their overall health as unfavorable. Additionally, a notable percentage of patients were discovered to be inadequately utilizing coping strategies to effectively mitigate the pain linked with osteoarthritis.

Keywords: Chakwal, Osteoarthritis, Overall health status, Patients, Perceived helplessness.

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LIST OF ABBREVIATIONS

AHI	Arthritis Helplessness Index
AIMS	Arthritis Impact Measurement Scale
CI	Confidence Interval
HRQOL	Health Related Quality of Life
IRB	Institutional Review Board
LH	Learned Helplessness
OA	Osteoarthritis
PHC	Primary Healthcare Center
PH	Perceived Helplessness
QOL	Quality of Life
SE	Self-Efficacy
SPSS	Statistical Package for Social Sciences

CHAPTER I: INTRODUCTION

Osteoarthritis (OA) is a chronic and progressive condition affecting the joints, wherein the gradual breakdown of cartilage between bones takes place. Consequently, individuals dealing with OA commonly encounter discomfort and inflammation in the joints, coupled with irritation of the surrounding bone tissue (CDC, 2020). It is associated with aging, with the highest prevalence in people over 60 years old, while other risk factors include being female, low levels of education, obesity, having a genetic predisposition, and joint overuse or injury (Van Dyne et al., 2022).

Osteoarthritis is a major health burden worldwide (Cauley, 2015), affecting more than 22 million women and 5.5 million men in the European Union . It affects people of both genders, but is more prevalent in women (Stanghelle et al., 2019). Osteoarthritic fractures are a major cause of more than 500,000 hospital admissions, nearly 800,000 emergency room visits, 2.5 million office visits, and nearly 180,000 nursing home admissions in the United States annually (Gold et al., 2019).

Prevalence of osteoarthritis in Pakistan is found to be around 30.7% and is mainly associated with lack of physical activity, usage of tobacco and less exposure in sunlight (Nazir et al., 2019). Osteoarthritis is not only associated with increase in medical cost of acute and rehabilitative care for the patient but also leads to many other complications such as depression, chronic pain and poor health (Alexiou et al., 2018). Persistent pain and extended periods of inactivity put major constraints on daily functioning of patients. Avoidance of activity leads to muscle strength deterioration and consequently to more

activity limitations in patients with knee and hip OA. In addition to surgical options, the most effective approach for managing OA involves a combination of medication and self-management techniques rooted in behavioral strategies (Cui et al., 2020).

A cognitive aspect that has recently been under study is the concept of perceived helplessness (PH). This term signifies an inadequate understanding of the illness, which gives rise to emotions of powerlessness, diminished self-worth, pessimism, and negativity. Consequently, this mindset leads to passivity, resignation to circumstances, and the belief that there's no control over one's situation. Perceived helplessness shares a strong connection with depression, likely due to their shared association with unfavorable experiences (Moyano et al., 2018). Conversely, another pivotal behavioral element is perceived self-efficacy (SE). This refers to the patient's perception of their capability to handle the illness, marked by a constructive outlook when dealing with tasks and striving to achieve objectives (Vergara F. et al., 2016).

Physical dysfunction is associated with a decreased sense of self-efficacy that is the conviction that one can have an impact on the events that shape one's life. Those with arthritis who exercise more tend to have higher levels of self-efficacy. Among individuals, even those who have OA, high degrees of self-efficacy are linked to health status, less pain, and greater activity (Direnzo & Finan, 2019). Moreover, anxiety and depression produce considerable impact on daily life functioning in patients with OA. It is noted that patients with anxiety had worse physical function and pain severity compared to those without mood disturbance (Rathbun et al., 2018).

The detrimental impacts of anxiety on functionality and patient perception of disease activity may be exacerbated by low self-efficacy, or the inner belief in one's ability to succeed in specific situations and tasks (Liu et al., 2017). Significantly, individuals dealing with arthritis who possess strong self-efficacy tend to express reduced instances of pain, fatigue, physical limitations, and psychological distress (Liu et al., 2017).

Self-efficacy appears closely related to coping capacity and in arthritis patients, this may protect against pain-related anxiety. A recent systematic review of the role of self-efficacy in patients with OA similarly noted an association between high self-efficacy and positive affect, physical function, and ability to participate in social roles and activities (Calderon J. et al., 2018).

1.1. Rationale:

Osteoarthritis is an important public health issue that can greatly affect the quality of life of an individual. The situation gets worse when the patient lacks self-efficacy and perceived himself helpless to cope with the disease (Nazir et al., 2019). There had been a lot of literature on patients with osteoarthritis; however, there remains a gap to assess patient's perceived helplessness and its association with overall health status in Pakistan. The present study was carried out to fill the gap in the literature by evaluating physical dysfunction, psychological distress, exercising, self-efficacy, and status of life among osteoarthritis patients in distinct Chakwal.

1.2. Objectives:

1. To identify perceived helplessness in patients with osteoarthritis in district Chakwal.
2. To assess the association between perceptions of their helplessness and their general health status in osteoarthritis patients.

CHAPTER II: LITERATURE REVIEW

Osteoarthritis (OA) stands as the most common long-standing joint ailment, persisting over time. It continues to be among the limited number of age-related chronic conditions lacking a truly efficient treatment, and no approaches have been definitively shown to slow down its advancement. Although it has the potential to impact joints of various sizes, the knee, in particular, bears the brunt of the painful manifestations. As many as one in eight individuals aged 60 and above, both men and women, exhibit signs of symptomatic knee OA. Pain serves as the primary and prevailing symptom of OA, prompting those afflicted to typically pursue medical attention (Terence & David, 2018).

Prevalence of Osteoarthritis:

With predictions of 19.0% of women and 9.5% of men globally over the age of 60 reporting its indications, the illness occurs more frequently in women than in males. In Pakistan, 3.7% of rural areas and 3.2-4.7% of urban areas in Northern Pakistan had knee OA diagnoses (Saeed et al., 2019). Knee osteoarthritis is predominantly observed in individuals aged 65 and above, with a prevalence rate of 33.6% (equivalent to 12.4 million individuals) in the United States. The prevalence is higher among women at 42.1%, compared to men at 31.2% (Amin & Salman., 2020). Among those with radiographic knee osteoarthritis, women tend to experience symptoms more frequently than men. Additionally, African Americans commonly report a higher incidence of knee and hip symptoms in comparison to their white counterparts. Factors contributing to the emergence of knee osteoarthritis can be categorized as either nonmodifiable or

modifiable. Nonmodifiable factors encompass genetic influences (mutations that could make someone more susceptible to knee OA) and congenital factors (inherited bone shape irregularities affecting the knee joint) (Michelle et al., 2017).

Factors affecting Osteoarthritis:

Individuals with osteoarthritis (OA), in particular, might face restrictions in their capacity for daily activities, functional performance, and overall function due to the presence of joint pain. Pain stands out as a primary contributor to limitations experienced by individuals with OA, resulting in difficulties such as walking, ascending stairs, completing household tasks, and maintaining an upright seated position. These physical challenges can also trigger adverse psychological effects, collectively contributing to a diminished quality of life (Zahraa S. Thabit, 2022).

Lina et al. conducted research in 2015 in China. The study contained 214 elderly patients. Findings of the study showed that there was a significantly difference between quality of life and social support network of patients with osteoarthritis and those of normal people. Quality of life (QOL) and social support in elderly patients with osteoporosis in China were poorer than in elderly patients without osteoporosis and were positively correlated (Lina Ma, 2015).

In 2017, Khaliq et al. conducted a research. It was a cross-sectional study to evaluate the association and magnitude of risk factors in progression of osteoporotic fractures in women of Karachi those who crossed the age of menopause, these risk factors include; lack of exercise, vitamin D deficiency, weight loss, advancing age, smoking and others. Data has been collected from 100 postmenopausal women. The results suggested that the

most contributing and significant risk factors for Osteoporosis among postmenopausal women were lack of exercise 89% ($p < 0.05$), vitamin D deficiency 60% ($p < 0.05$) and weight loss 58% ($p < 0.05$) (Khaliq et al., 2017).

Caitlan et al. carried out a research in 2020. The results of the study showed that more frequent sleep disturbance was associated with higher OA symptom severity directly (p -value=0.001) and indirectly, through higher pain catastrophizing (Caitlan A Tighe, 2020).

Self Efficacy and Helplessness:

Phichpraorn et al. conducted a research in 2019. The aim of the study was to examine the health status among older people with knee osteoarthritis. A cross-sectional study was conducted among 220 older people. Findings of the study showed that pain catastrophizing exhibited a direct adverse impact on both self-efficacy and overall health status. Furthermore, pain catastrophizing exerted an indirect detrimental influence on health status by affecting self-efficacy. In contrast, self-efficacy and social support were associated with positive direct effects on health status. However, pain-related fear was found to have neither a direct nor an indirect effect on health status (Phichpraorn et al., 2019).

Alyssa et al. carried out a research in 2018. The study was examined among 60 patients. Findings suggest that higher levels of self-efficacy for pain communication may help weaken the effects of ambivalence over emotional expression on pain catastrophizing. Also, negative network orientation was not significantly associated with pain catastrophizing (Alyssa N. et al., 2018).

Santoyo et al. conducted a research in 2020. The main objective of the study was to assess the relationship between depression, learned helplessness (LH), disability and disease activity among patients. The total of 177 patients were included in the study. The findings of the study showed that a significant correlation was found between higher levels of dysfunctionality and higher levels of learned helplessness (LH) (p-value = 0.001) (L. Santoyo et al., 2020).

2.1. Conceptual Framework:

Based on the previous literature, a conceptual framework of the present study was developed that highlight the different factors of the Osteoarthritis.

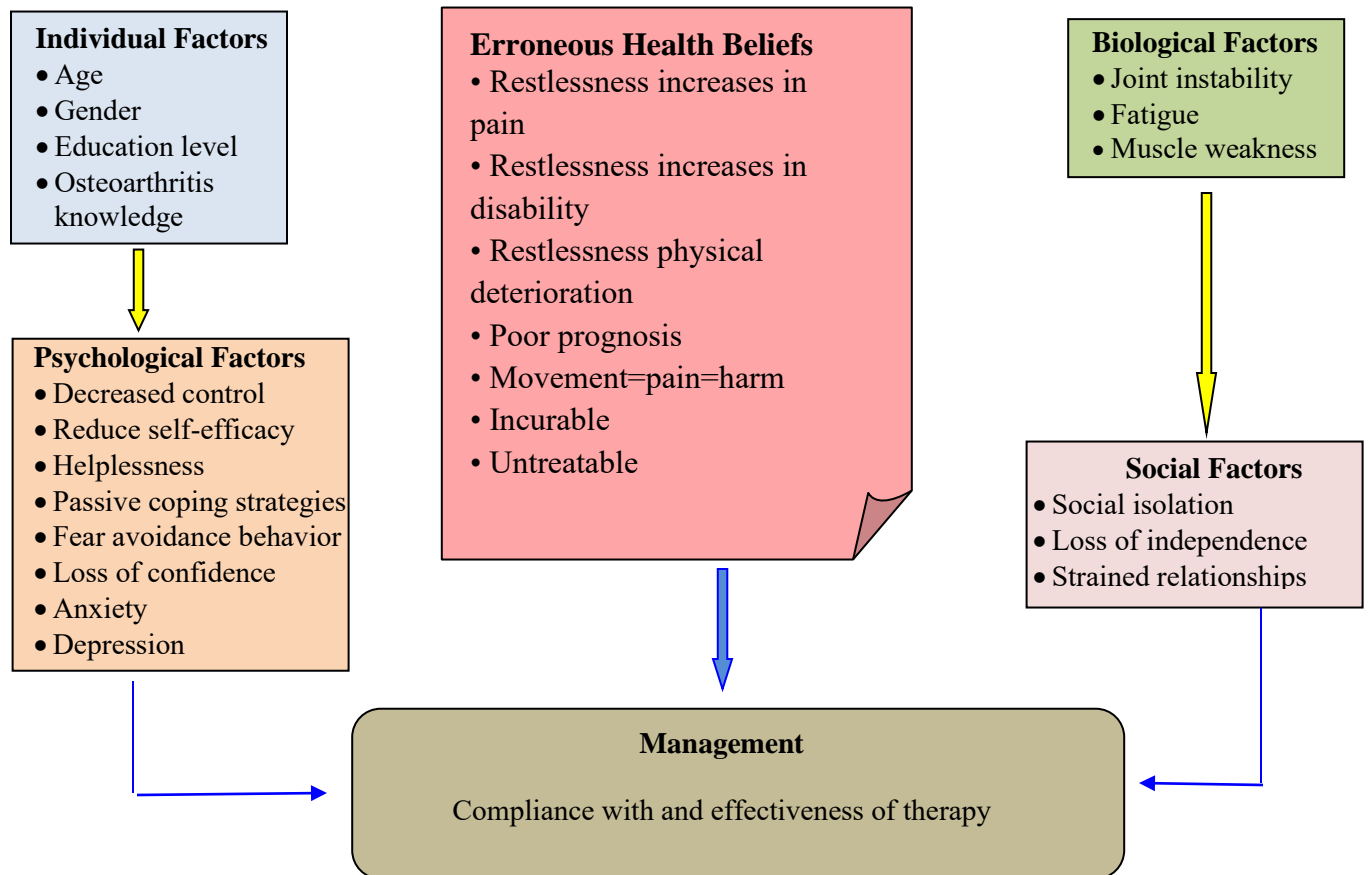


Figure 1: Patients Perceived Helplessness and its Association with Overall Health Status Among Osteoarthritic Patients

2.2. Operational Definitions:

➤ Osteoarthritis:

Osteoarthritis is a condition marked by bony expansion as well as the deterioration of cartilage and the bone that supports it within a joint. Pain and Joint stiffness are inevitably caused by the disintegration of these tissues. The knees, hips, hands, and vertebrae are the areas that are most frequently impacted. The most prevalent type of arthritis is called osteoarthritis (OA) (Sharma, 2021).

➤ Perceived helplessness:

Helplessness is the feeling that one can do little to change a bad situation that has already occurred. It is a condition of incompetence, weakness, or importance. If general helplessness happens when an individual has poor outcome expectations, and personal helplessness happens when an individual has a poor feeling of self-efficacy (Booker et al., 2019).

➤ Health status:

Not just a lack of illness or disability, health is a condition of total bodily, psychological, and interpersonal well-being. The improvement of healthy life spans and years as well as the eradication of health inequities are the main objectives of global health organizations (Daste, et al., 2021).

CHAPTER III: METHODOLOGY

3.1 Study design

A quantitative research approach using descriptive cross-sectional study design was used for the current study.

3.2. Study Duration:

Study period for the current research was six months from April 2023-September 2023.

3.3. Study Setting:

The study was carried out at a primary healthcare center (PHC) in district Chakwal.

3.4. Study Participants:

Patients of osteoarthritis visiting the PHC were included in the study.

3.4.1. Inclusion Criteria:

1. Osteoarthritis patients who had been diagnosed and experiencing pain for more than one year.
2. Patients include both males and females.
3. Patients who were 18 years of age or above were also included.

3.4.2. Exclusion Criteria:

1. Individuals with recent infections were excluded.
2. Female patients with ongoing pregnancy were excluded.

3. Those with other continuing illnesses or disease were excluded.
4. Those contemplating joint surgery and those with recent infection were also excluded.

3.5. Sample Size Calculation:

Sample size was calculated using Cochran's formula. Previous prevalence of patient perceived helplessness was taken as 85% while confidence interval (C.I) was taken as 95% and 5% margin of error. The sample size for the current study was 195.

Table 1: Sample size calculation

$n = z^2 p q / e^2$	
85% prevalence	Z=1.96 at 95% CI
e=5%	
Sample size (n)=195±5%	

3.6. Sampling Strategy:

Desired sample was collected using non-probability purposive sampling.

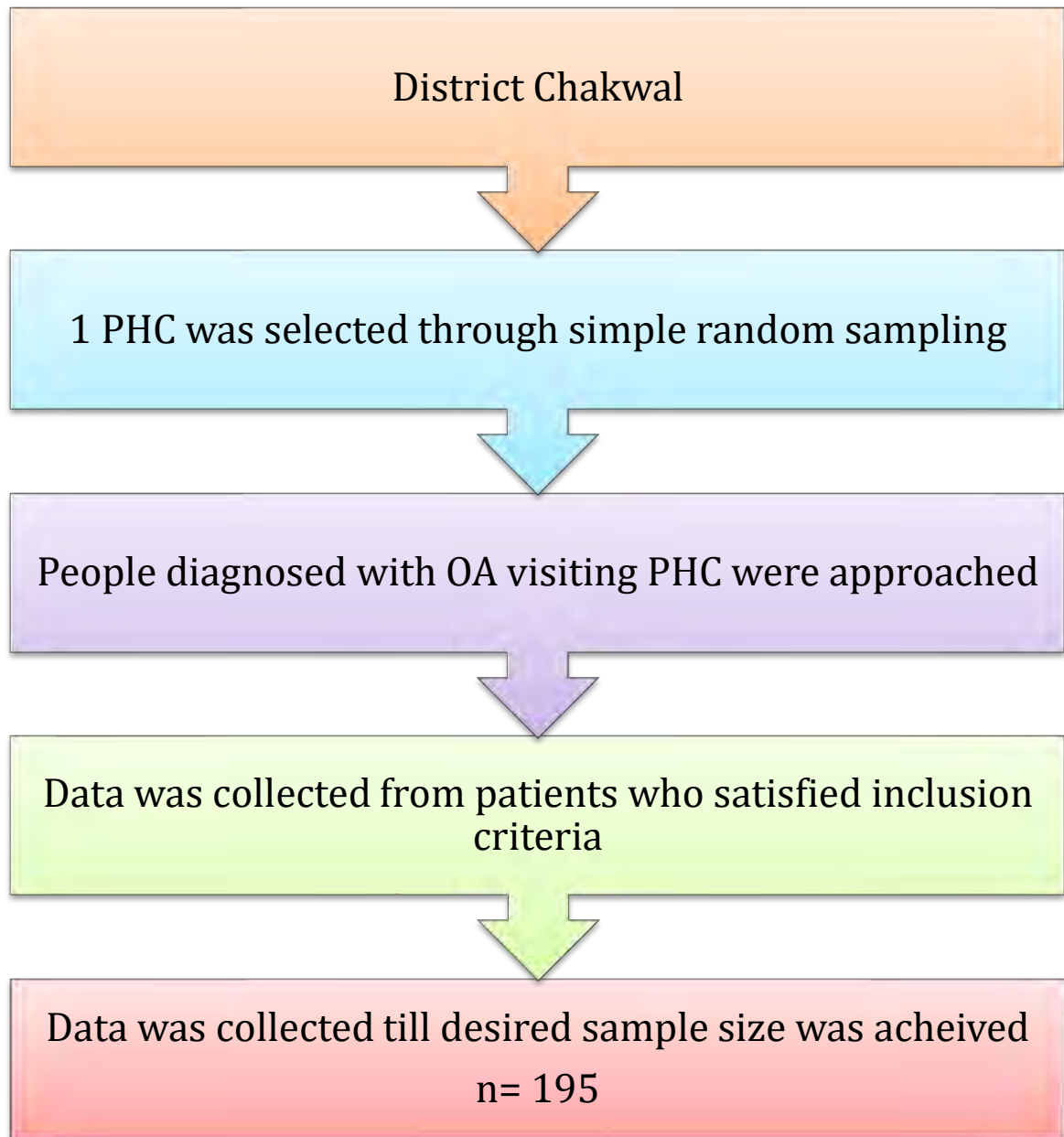


Figure 2: Non-Probability Purposive Sampling Strategy

3.7. Data Collection Tool:

3.7.1. Questionnaire Design:

Data was collected using an interview-administered questionnaire. A Performa was developed to collect data regarding sociodemographic characters of the patients along with questions from Arthritis Helplessness Index (AHI) and Arthritis Impact Measurement Scale (AIMS).

3.7.2. Content of the Questionnaire:

The questionnaire consisted of three sections:

1. **Section one** included questions related to sociodemographic characteristics of the patients diagnosed with osteoarthritis. The section contained twelve questions of closed-ended nature.
2. **Section two** included Arthritis Helplessness Index (AHI) (Stein, Wallston & Nicassio, 1998). The section included three items to determine the perceived helplessness among patients. It was a 5-point Likert scale ranging from 1= Strongly disagree to 5= Strongly agree.
3. **Section three** included Arthritis Impact Measurement Scale (AIMS) (Meenan, Gertman & Mason, 1980). The section included twenty-four items determining the impact of Arthritis during past few weeks. It was a 5-point Likert scale ranging from 1= All Days to 5= No Days.

3.7.3. Study Variables:

3.7.3.1. Outcome Variable:

Perceived helplessness among patients was taken as outcome variable in this study.

3.7.3.2. Independent Variable:

Independent variables in this study were health status of the patients and other sociodemographic characters.

3.8. Data Collection Process:

3.8.1. Pilot Testing:

Pilot testing was performed before starting the formal data collection procedure by including 10% of the actual sample size ($n = 16$). Questionnaire was tested for any future changes; no major changes were done after pilot testing. Reliability of the scale was checked through the value of Cronbach's alpha using SPSS version 26.

3.8.2. Data Collection:

All patients diagnosed with Osteoarthritis visiting the primary healthcare center were approached for data collection. Only those patients were selected who agreed to take part in the research process and fulfill the inclusion criteria. After taking the consent, the respondents were interviewed and their responses were recorded by the researcher. Data collection was completed in approximately one month.

3.9. Data Analysis Procedure:

Code book was developed and data was entered in Statistical Package for Social Sciences (SPSS) version 26. After careful data entry, data was checked for any error before proceeding to the further analysis.

3.9.1. Data Cleaning:

After careful data entry, data was checked for any missing values and any error that could possibly affect the further analysis. Double entries were eliminated before continuing the further analysis.

3.9.1. Data Transformation:

Computed responses for AMIS and AHI scale items were calculated for each patient by adding the individual responses in SPSS. Continuous variables were categorized in order to proceed the analysis.

3.9.2. Descriptive Analysis:

Descriptive statistics were generated for sociodemographic characteristics and outcome variable. Data was summarized in the form of frequencies and percentages and presented in table form, Bar chart and Pie chart.

3.9.3. Inferential Analysis:

Pearson Chi Square test of Independence was used to determine the association of patient perceived helplessness with their health status and socio-demographic characteristics. P value less than 0.05 was considered statistically significant.

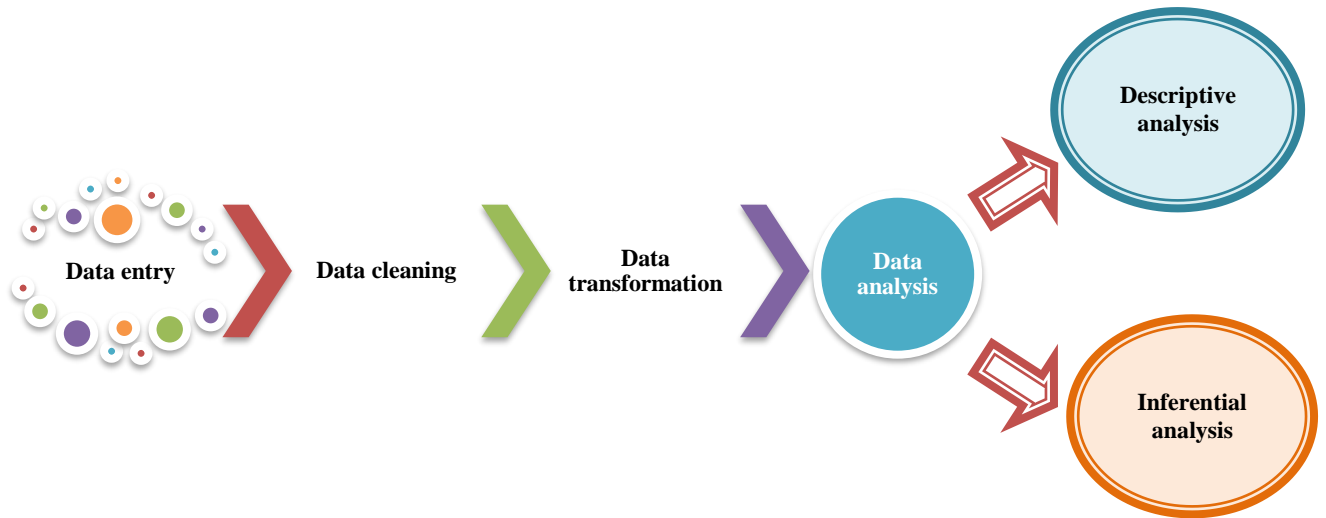


Figure 3: Data Analysis Plan

3.10. Ethical Considerations:

Before starting formal data collection, approval from Institutional Review Board (IRB) of Al-Shifa School of Public Health Rawalpindi, Pakistan has been taken. Permission letter from the Head of Department of Al-Shifa School of Public Health was obtained regarding access to the primary healthcare center in Chakwal. Permission was taken from the hospital for conducting research. Respondents were explained the purpose of the research and oral consent was taken from each participant before collecting the data. Data was collected from only those respondents who had agreed to participate in the research process voluntarily. Participants were assured for the confidentiality of their data. Data collected from the respondents was kept anonymous and was not shared with anyone. Data was entered in SPSS anonymously. After data entry, hard copies of collected were kept at a safe place.

CHAPTER IV: RESULTS

4.1. Sociodemographic characteristics:

This table shows the demographic characteristics of respondents. Among them 40.5 percent were 48 years and above of age, 35 % lie in age bracket of 42 to 47 years, 16 % in age bracket of 36 to 41 years and 6 % between 30 to 35 years. Around 92.5 % of respondents were females and 77.7 % of respondents in study were married, 8 % were single and 12.3 % were separated. About 68 % were living in joint family system. All of the respondents 195 were Asians.

About the educational level of respondents 66.5% were under matric, 11.5% had high school, 26% did bachelors and 13 % were having master's degrees. Among respondents 66.5% were unemployed and 31% were employed. The income of respondents shows that 34.5 % were earning between 26000 to 50000 PKR and 35 % had their income below 25000 PKR.

Table 2: Frequency and percentage of demographic characteristics of respondents

Variables	Frequency (n)	Percentage (%)
Gender		
• Male	69	34.5
• Female	126	63
Marital status		
• Single	16	8
• Married	155	77.5
• Separated	24	12.3
Family type		
• Nuclear family	59	29.5
• Joint family	136	68
Race		
• White	0	
• Black	0	
• Asian	195	97.5

Education level		
• Under matric	133	66.5
• High school	23	11.5
• Bachelor	26	26
• Masters	13	13
Employment status		
• Employed	62	31
• unemployed	133	66.5
Income		
• < 25000RS	70	35
• 26000-50000RS	69	34.5
• 51000-75000RS	33	16.5
• 75000 and above	23	11.5
Location		
• City	72	36
• Village	123	61.5
Dependents		
• Yes	150	75
• No	45	22.5
Treated		
• Yes	98	49
• No	97	48.5
Weight in kg		
• 35-45 kg	7	3.5
• 46-56	10	5
• 57-67	34	17
• 67 and above	144	72

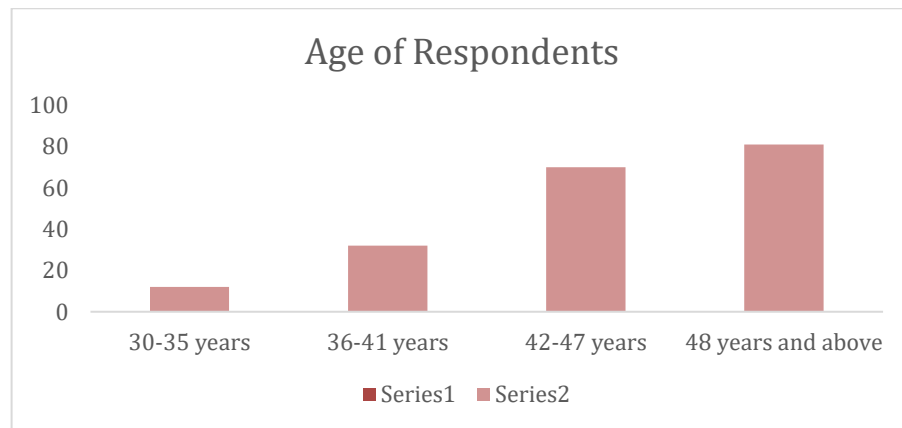


Figure 4: Age of Respondents

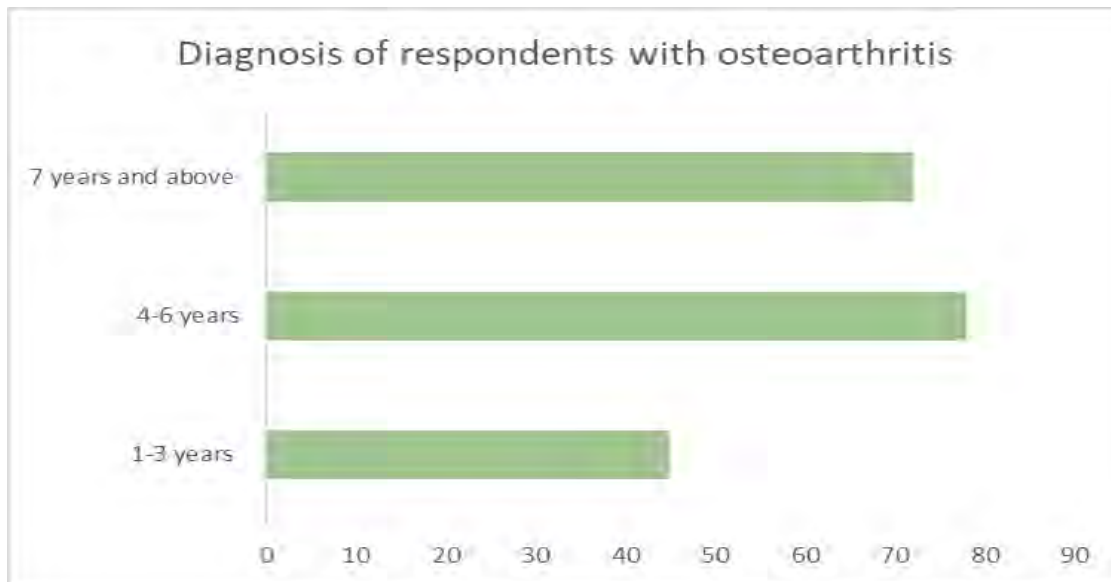


Figure 5: Diagnosis of respondents with osteoporosis

Sixty-one percent of the respondents belong to village and 75% had dependents with them either child of parents. Around 39% of respondents were diagnosed with Arthritis 4-6 years ago, 22.5 % around 1-3 years ago and 36% around 7 years ago. The results depict that 48.5% respondents are getting treatment for arthritis either medication or conservative treatment.

4.2. Frequency and percentage of perceived helplessness among osteoarthritic respondents.

The perceived helplessness was assessed with 5-point Likert scale, around 46% respondents strongly disagreed with the perception that osteoarthritis controls their life, around 26.5 % agreed, around 9% were neutral, 11 % disagreed and 5% strongly disagreed with the statement.

Around 11 % respondents strongly disagree with the perception that there is little they can do to manage osteoarthritis symptoms, 20 % disagree, 18.5% were neutral, 16 % were agreed and 32 % strongly agreed.

Thirty-three percent of respondents strongly agreed with the perception that they often feel overwhelmed by the pain and limitations caused by osteoarthritis, 32.5% agreed, 14%were neutral, 21% disagreed and 14 % strongly disagreed.

Table 3: Frequency and percentage of perceived helplessness

Variables	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
	n	%	n	%	N	%	n	%	n	%
A. I often feel that my osteoarthritis controls my life.	10	5	22	11	18	9	53	26.5	92	46
B. I believe there is little I can do to manage my osteoarthritis symptoms.	22	11	40	20	37	18.5	32	16	64	32
C. I often feel overwhelmed by the pain and limitations caused by osteoarthritis.	28	14	21	10.5	14	7	65	32.5	67	33.5

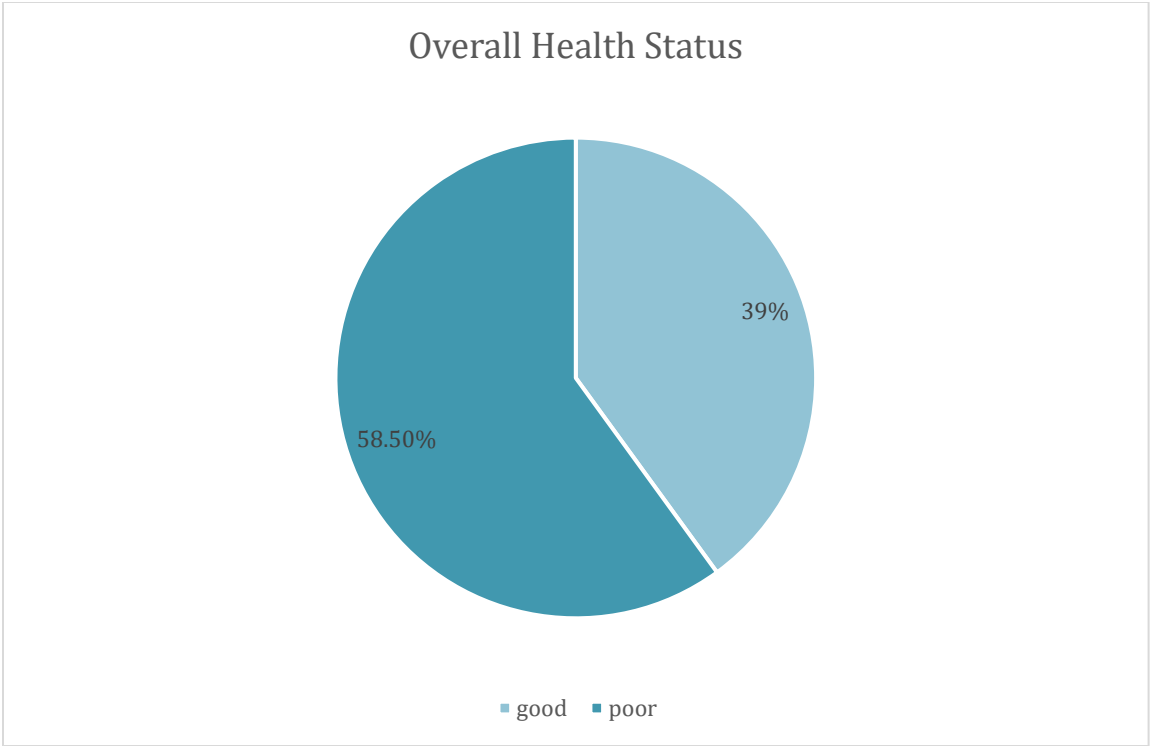


Figure 6: Overall Health Status

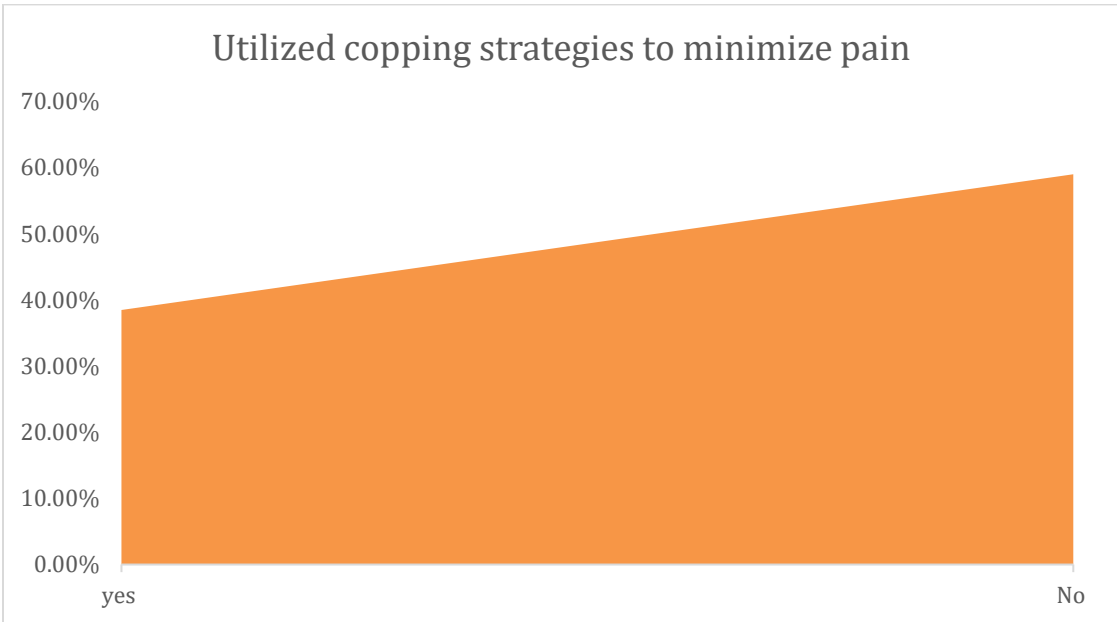


Figure 7: Utilized coping strategies to minimize pain

The results of the study depict that among respondents 39% had good overall health status and 58.5% had bad overall health status. Around 38.5% utilized coping strategies to minimize pain and 59% did not do so to minimize osteoarthritis pain.

Table 4: Frequency and percentage of AIMS2-SF

Variable	All days		Most days		Some days		Few days		No days	
	n	%	N	%	n	%	n	%	n	%
How often were you physically able to drive a car or use public transportation?	16	8	19	9.5	46	23	70	35	44	22
How often were you in a bed or chair for most of the day?	9	4.5	9	4.5	27	13.5	100	50	50	25
Did you have trouble doing vigorous activities such as running, lifting heavy objects, or participating in strenuous sports?	6	3	146	73	27	13	4	2	12	6
. Did you have trouble either walking several blocks or climbing a few flights of stairs?	8	4	22	11	75	37.5	75	37.5	15	7.5
Were you unable to walk unless assisted by another person or by a cane, crutches or walker?	21	10.5	23	16	46	23	80	40	16	8
Could you easily write with a pen or pencil?	41	20.5	59	29.5	65	32.5	17	8.5	13	6.5
Could you easily button a shirt or blouse?	46	23	77	38.5	44	22	18	9	10	5
Could you easily turn a key in a lock?	171	85.5	11	5.5	4	2	5	2.5	4	2
Could you easily comb or brush your hair?	42	21	65	32.5	70	35	9	4.5	9	4.5
Could you easily reach shelves that were above your head?	11	5.5	102	51	67	33.5	9	4.5	6	3
Did you need help to get dressed?	9	4.5	10	5	7	3.5	113	56.5	56	28
Did you need help to get out of bed?	6	3	8	4	71	35.5	79	39.5	31	15.5

How often did you have severe pain from your arthritis?	7	3.5	8	4	75	37.5	103	51.5	2	1
How often did your morning stiffness last more than one hour from the time you woke up?	6	3	9	4.5	161	80.5	13	6.5	6	3
How often did your pain make it difficult for you to sleep?	7	3.5	3	1.5	143	71.5	34	17	8	4
How often have you felt tense or high strung?	5	2.5	7	3.5	20	10	153	76.5	10	5
How often have you been bothered by nervousness or your nerves?	7	3.5	7	3.5	50	25	124	62	7	3.5
How often have you been in low or very low spirits?	6	3	98	49	37	18.5	37	18.5	16	8
. How often have you enjoyed the things you do?	29	14.5	44	22	96	48	12	6	14	7
How often did you feel like a burden to others?	7	3.5	45	22.5	45	22.5	81	40.5	17	8.5
How often did you get together with friends or relatives?	18	9	30	15	139	69.5	5	2.5	3	1.5
How often were you on the telephone with close friends or relatives?	14	7	23	11.5	33	16.5	120	60	5	2.5
How often did you go to a meeting of a church, club, team, or other groups?	4	2	6	3	30	15	147	73.5	8	4
Did you feel that your family or friends were sensitive to your personal needs?	6	3	6	3	44	22	131	65.5	8	4

This table shows the frequency and percentage of Arthritis impact measurement scale with 5-point Likert scale where 1 is all days of the past weeks, 2 is most days, 3 is some days, 4 is few days and 5 is no days.

Among respondents 35 % depicts that they were physically able to drive a car or use public transportation for few days in past weeks, 23% for some days, 8 %for all days, 9.5% for most days. Among respondents 4.5% depicts that they were in bed or chair for all days, 4.5% for most days, 13.5% for some days and 50 % for few days.

Around 3 % of respondents depicts that they were having trouble doing vigorous exercise for all days, 73% for most days, 13 % for some days, 2 % foe few days and 6% for no days. Among respondents around 4 % depicts that they had trouble either walking several blocks or climbing few stairs for all days, 11% for most days, 37.5% for some days and 7.5% for no days. Among respondents 10.5% depicts that they were unable to walk unless assisted by another person or by cane, crutch or walker for all days, 16 % for most days ,23% for some days, 40 % for few days and 8 % for no days.

Around 20% of respondents suggested that they can easily write with pen or pencil for all days, 30% for most days of the week, 32.5% for some days, 8.5% for few days and 6.5% for no days. Among respondents 23% could easily button a shirt or blouse for all days, 38.5% for most days, 22 % for some days,9 % for few days and 4.5% for no days.

Among respondents around 85.5% depicts that they could easily turn a key in a lock for all days, 11% for most days, 2% for some days,2.5% for few days and 2 % for no days.

Around 21 % of respondents depicts that they could easily brush or comb for all days, 32.5% for most days, 35% for some days and 4.5% for no days.

Among respondents 5.5 % could easily reach shelves above head for all days,51% for most days,33.5% for some days, 4.5% for few days and 3% for no days. Around 4.5%

need help to get dressed for all days, 5 % for most days,3.5% for some days. 56.5% for few days and 28% for no days.

Around 39.5% of respondents need help to get out of bed for few days, around 51.5% often had severe pain from arthritis for few days, around 80.5% often had morning stiffness for some days a week.

Among respondents around 71.5% responded that pain make difficult for them to sleep for some days a week, around 76.5% responded that they often felt tense or high strung for few days a week and 62% responded that they often get nervous by pain for few days.

Forty-nine percent of respondents depicts that they often had low spirits for most of days,96% depicts that they often enjoyed daily activities for some days a week, 40.5 % of respondents responded that they often feel like a burden to others for few days a week.

Sixty-nine percent of respondents responded that they often get together with friends or relatives for some days, 60% responded that they talk to friends or relatives for few days and 73.5% responded that they often had meeting for few days, around 65.5% of respondents responded that family and friends were sensitive to their personal needs for few days a week.

4.3. Inferential statistics

4.3.1. Association of perceived helplessness with overall health status

Chi square test of independence was applied after checking the assumptions of normality of data. The association was checked between the perceived helplessness and overall health status of osteoarthritic respondents.

The results showed significant association of perceived helplessness and overall health status of respondents with a p-value of < 0.05 . The table showed that perceived helplessness was assessed with 5-point Likert scale having 3 questions.

The patient's perception that osteoarthritis often controls their life shows chi square=62.2, df 4 p-value=0.001 which is highly significant. The perception that there is little they can do to manage osteoarthritis symptoms shows a chi square=71.8, df 4 and p-value=0.001 which is significant. The perception that they often feel overwhelmed by the pain and limitations caused by osteoarthritis shows a chi square=14.9, df 4, p-value=0.05 which is significant. So, the results depict that there is a positive association of perception of patients with osteoarthritis on overall health status meaning by osteoarthritis affects the overall health status of individuals.

Table 5: Association of perceived helplessness with overall health status among osteoarthritic respondents

Variable	Categories	Overall health status		Chi square	df	p-value
		Good (n)	Poor (n)			
Perceived helplessness	A. I often feel that my osteoarthritis controls my life	78	117	62.2	4	0.001
	B. I believe there is little I can do to manage my osteoarthritis symptoms.	78	117	71.8	4	0.001
	C. I often feel overwhelmed by the pain	78	117	14.9	4	0.005

	and limitations caused by osteoarthritis.					
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4.3.2. Association of overall health status with demographic variables

This table shows the association of overall health status with demographic variables. The Chi square test was applied to check the association after fulfilling the assumptions.

The association of overall health status with age shows the p-value 0.001 which is significant association. Similarly, educational level depicts significant association of 0.001 with health status. There is a non-significant association of health status with income, chi square=4.04(3), p-value 0.25.

The results depict non-significant association with area of residence of respondents, either they get osteoarthritis treatment and coping strategies to minimize pain and gender with p-value < 0.05.

The association of overall health with weigh of respondents in kilograms shows the significant association, chi square=47.4(3), p-value 0.001, this means that when weight increases it may increase the symptoms of osteoarthritis.

Table 6: Association of overall health status with demographic variables

Variables	Overall health status		Chi –square(df)	p-value
	Good	Poor		
Age				
• 30-35 years	12	0	22.0(3)	0.001
• 36-41 years	8	24		
• 42-47	24	46		
• 48 and	34	47		

above				
Marital status				
• Single	6	10		
• Married	64	91	0.59(2)	0.74
• separated	8	16		
Educational level				
• Under matric	57	76	51.5(3)	0.001
• High school	21	2		
• Bachelors	0	26		
• Masters	0	13		
Income				
• Less than 25000	34	36		
	22	47		
• 26000 to 50000	13	20	4.04(3)	0.25
	9	14		
• 51000 to 75000				
• 76000 and above				
Location				
• City	33	39	1.61(1)	0.2
• Village	45	78		
Dependents				
• Yes	70	80	12.0(1)	0.001
• No	80	37		
Diagnosis				
• 1-3 years	33	12		
• 4-6 years	11	67	44.1(2)	0.001
• 7 years and above	34	38		
Treated				
• Yes	45	53	2.87(1)	0.90
• No	33	64		
Coping strategies				
• Yes	23	54	5.44(1)	0.02
• No	55	63		
Gender				
• Male	31	38	1.08(1)	0.29

• Female	47	79		
Weight in kgs			47.4(3)	0.001
• 35-45kg	7	0		
• 46-56	10	0		
• 57-67	23	11		
• 67 and above	38	117		

CHAPTER V: DISCUSSION

Patients perceived helplessness and its association with overall health status among osteoarthritic patients along with their sociodemographic characteristics was assessed in the current study. Arthritis Helplessness Index (AHI) and Arthritis Impact Measurement Scale (AIMS) were used to get the desired data.

Results of the current research showed that majority of the respondents were from the age group of 48 and above. From the total respondents, 63% (n=123) of respondents were females and (n=155, 77.7 %) of respondents in study were married. Majority of the respondents have monthly income less than 25 thousands. Out of total, most of respondents were from rural areas.

The perceived helplessness was assessed with 5-point Likert scale around, 46% (n=92) respondents strongly disagreed with the perception that osteoarthritis controls their life, around, 26.5% (n=53) agreed, around.09% (n=18) were neutral, 11% (n=22) disagreed and 05% (n=10) strongly disagreed with the statement. Similarly, 11% (n=22) respondents strongly disagree with the perception that there is little they can do to manage osteoarthritis symptoms, 20% (n=40) disagree, 18.5% (n=37) were neutral, 16% (n=32) were agreed and 32% (n=64) strongly agreed. It was also noted that 33.5% (n=67) of respondents strongly agreed with the perception that they often feel overwhelmed by the pain and limitations caused by osteoarthritis, 32.5% (n=65) agreed, 07% (n=14) were neutral, 10% (n=21) disagreed and 14% (n=28) were strongly disagreed.

Frequency and percentage of arthritis impact measurement scale showed that majority of the respondents, 35% (n=70) showed that they were physically able to drive a car or use

public transportation for few days in past weeks. Likewise, 73% (n=146) of respondents showed that they were having trouble doing vigorous exercise for all days for most days. From the total, 35% (n=75) respondents revealed that they had trouble either walking several blocks or climbing few stairs for some days.

The study findings also showed that most of the participants, 39% exhibited a favorable general health condition, while 58.5% experienced an unfavorable overall health status. Approximately 38.5% employed coping mechanisms to alleviate discomfort, whereas 59% chose not to utilize such strategies for managing osteoarthritis pain. These results are somehow similar with the previous literature. A study that was conducted by Ameer et al. in Pakistan in 2022, the results summarized that in patients with osteoarthritis problem had notably lower health related quality of life (HRQoL) (Dr Aadil Ameer Ali, 2022). This could be due to the fact that pain and discomfort from OA often disrupt sleep patterns. Poor sleep quality can contribute to fatigue, decreased mood, and overall reduced quality of life. The costs associated with OA, including medical treatments, medications, and assistive devices, can create a financial burden for patients and their families.

The findings of the current study showed that there was a noticeable association between overall health status of osteoarthritic patients and age (p-value = 0.001) across all dimensions. Majority of the patients from the age group 48 and above years showed overall bad health status. These findings are somehow similar with the previous literature. A study that was conducted by Mrcelo et al. in Brazil in 2018, showed that age factor affects the health status of osteoarthritis patients. Older population was high in number

with this severe problem (Mercello et al., 2018). This could be due to the fact that over time, the cartilage becomes less capable of repairing itself, leading to pain, stiffness, and reduced joint mobility.

Similarly, the education level was positively affecting the overall health status of osteoarthritic patients (p -value = 0.001). In the current study majority of the respondents were under matrix and suffering from poor health status. These results are similar with the previous literature. Yue et al. carried out a research in China in 2020. The findings of the study showed that education levels of junior high school were significantly associated with the health of osteoarthritic patients (P -value = 0.012) (Yue et al., 2020). This could be due to the reason that individuals with higher education levels might be more likely to engage in activities that promote joint health, such as regular exercise and maintaining a healthy weight. This could potentially lead to a reduced risk of developing osteoarthritis or experiencing its symptoms.

Results also revealed that those dependence of patients were significantly associated with their overall health (p -value = 0.001). Most of the patients were depending on their other family members. There is a paucity of literature in this regard. This may be due to the reason that patients who depend on caregivers might experience increased pain and discomfort due to their limited ability to move or perform daily activities. The loss of independence can lead to frustration, depression, and a sense of helplessness. They may experience feelings of sadness, anxiety, or even depression due to the changes in their physical abilities and increased reliance on others.

In the present study, it was noticed that diagnosis of disease was positively effecting the overall health status of patients (p -value = 0.001). Majority of the patients experiencing osteoarthritic problem for more than the 7-years. These results are similar with the previous studies. Natalie et al. carried out a research in 2022. The results of the study showed that patients who were diagnosed with this disease from the last 4-6 years were experiencing unfavourable health status (Natalie et al., 2022). This could be due to the fact that can lead to decreased mobility, making it harder for individuals to walk, climb stairs, and perform other movements. This can lead to a sedentary lifestyle, which can further exacerbate the condition.

The results also indicated that weight of patients were statistically significant with their overall health (p -value = 0.001). Most of the patients who have weight 68-kg and above were experiencing bad health. These findings were not similar with the previous study. Mohsin et al. conducted a research in 2018 in Iran. Results of the study showed that BMI of osteoarthritis patients was not statistically significant with their quality of life (QOL) (p -value = 0.625) (Mohsen et al., 2018). This could be due to the reason that higher BMI is a known risk factor for developing osteoarthritis, particularly in weight-bearing joints like the knees and hips. Excess weight places increased stress on these joints, which can accelerate the degeneration of cartilage and contribute to the onset of OA. Excess weight can limit a person's ability to engage in physical activities, worsen joint pain, and hinder their overall quality of life.

Results also revealed that coping strategies were positively effecting the overall health status of osteoarthritic patients (p -value=0.02). Those patients who were not adopting

coping strategies were living with poor health status. These results are not comparable with the previous literature. Because, there is a scarcity of literature in this regard. This may be due to the fact that some patients employ active coping strategies such as exercise, physical therapy, and pain management techniques to maintain joint function and manage pain. Some individuals might avoid activities they find painful, which can lead to further physical deterioration and reduced quality of life.

In the present study it was also noticed that there was a significant association of perceived helplessness and overall health status of respondents (p -value=0.001). Poor health status of patients was observed with this factor. These findings are similar with the previous literature. A study that was conducted by Van Dyne et al. in USA in 2022, showed that self-efficacy and helplessness have positive effect on osteoarthritis patients (Van Dyne et al., 2022). This could be due to the fact that perceived helplessness can negatively affect physical functioning in osteoarthritis patients. It may lead to reduced engagement in physical activities or rehabilitation exercises, which are crucial for managing symptoms and maintaining joint function. Osteoarthritis patients who perceive themselves as helpless might be less likely to actively seek out medical advice, explore treatment options, or participate in self-management programs. This can lead to delayed interventions and potentially worsened outcomes.

5.1. Strengths:

- Researcher had used a validated tool for AMIS and AHI scale for assessment of overall health status of osteoarthritic patients.
- Both male and female were included in the study.
- The study findings have helped to fill the gap in the existing literature regarding overall health status of osteoarthritis patients in Pakistan.

5.2. Limitations:

- It was a cross-sectional study, which limits the establishment of causal relationship.
- Recall bias may be another limitation which can affect the results of the study.
- The study was conducted on a specific population with a small sample size only in one PHC of district Chakwal. Therefore, results of the current study cannot be traced to a larger context without further investigation.
- Time constraints were also considered as a limitation in this study.

5.3. Conclusion:

The study's findings indicated that the health of osteoarthritis patients was influenced positively by factors such as age, education, dependence, coping strategies, diagnosis, and BMI. In a similar vein, the perception of helplessness was notably linked to the overall health status of individuals with osteoarthritis. The results of the research illustrated that a minority of participants reported having a favorable overall health status, while a majority described their overall health status as poor. Furthermore, a significant proportion of patients were found not to be employing coping strategies effectively to alleviate the pain associated with osteoarthritis.

5.4. Recommendations:

Based on the current findings, following recommendations are put forward for the health authorities and future researchers.

- Psychological counselling should be provided to the osteoarthritic patients along with other treatments to improve their emotional function.
- Family members of the patients should also be given training to take care of their patients in a way that can enhance their physical and emotional function.
- Workshops and seminars should be held to spread awareness regarding dietary intake for osteoarthritis patients, such as increasing calcium and vitamin D intake that help to promote bone health.
- Overall health assessment tool should be incorporated in the routine assessment of the patients to assess their physical and emotional function and severity of symptoms.

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Appendix A – Questionnaire

PERCEIVED HELPLESSNESS AND ITS ASSOCIATION WITH OVERALL, HEALTH STATUS AMONG OSTEOARTHRITIC PATIENTS IN DISTRICT CHAKWAL

Part 1 Demographics

1. Age: _____

2. Gender?

- a) Male
- b) Female

3. Marital Status?

- a) Single
- b) Married
- c) Divorced
- d) Separated

4. Family Type?

- a) Nuclear
- b) Joint family

5. Race?

- a) White/Caucasian
- b) Black/African American
- c) Asian

6. Educational Level?

- a) Less than High School
- b) High School Graduate/GED
- c) Bachelor Degree
- d) Master Degree

7. Employment Status?

- a) Employed

- b) Unemployed
- c) Retired
- d) Student
- e) Homemaker
- f) Disabled

8. Household Income (annual):

- a) Less than Rs25,000
- b) Rs26,000 – Rs50,000
- c) Rs51,000 - Rs75,000
- d) Rs75,000 and above

9. Geographic Location

- a) City
- b) Village

10. Do you have any children or dependents living in your household?

- a) Yes
- b) No

11. How long have you been diagnosed with osteoarthritis?

- a) 1-3 years
- b) 4-6 years
- c) 7 years and above

12. Have you received any specific treatment or interventions for your osteoarthritis? (e.g., Physical therapy, medication, surgery)

- a. Yes
- b. No

Perceived Helplessness

Please indicate your level of agreement with the following statements regarding your feelings about your osteoarthritis. Use a scale from 1 (Strongly Disagree) to 5 (Strongly Agree):

A. I often feel that my osteoarthritis controls my life.

- 1 (Strongly Disagree)
- 2 (Disagree)
- 3 (Neutral)
- 4 (Agree)
- 5 (Strongly Agree)

B. I believe there is little I can do to manage my osteoarthritis symptoms.

- 1 (Strongly Disagree)
- 2 (Disagree)
- 3 (Neutral)
- 4 (Agree)
- 5 (Strongly Agree)

C. I often feel overwhelmed by the pain and limitations caused by osteoarthritis.

- 1 (Strongly Disagree)
- 2 (Disagree)
- 3 (Neutral)
- 4 (Agree)
- 5 (Strongly Agree)

Overall, Health Status

A. How would you rate your overall health status currently?

- 1) Excellent
- 2) Very Good
- 3) Good
- 4) Fair
- 5) Poor

B. Have you sought support or utilized coping strategies to manage the emotional and physical challenges posed by osteoarthritis? (e.g., support groups, exercise, mindfulness)

- 1) Yes
- 2) No

Arthritis Impact Measurement Scales 2 (AIMS2-SF)

During the past few weeks	All days	Most days	Some days	Few days	No days
How often were you physically able to drive a car or use public transportation?					
How often were you in a bed or chair for most of the day?					
Did you have trouble doing vigorous activities such as running, lifting heavy objects, or participating in strenuous sports?					
. Did you have trouble either walking several blocks or climbing a few flights of stairs?					
Were you unable to walk unless assisted by another person or by a cane, crutches or walker?					
Could you easily write with a pen or pencil?					
Could you easily button a shirt or blouse?					
Could you easily turn a key in a lock?					
Could you easily comb or brush your hair?					
Could you easily reach shelves that were above your head?					
Did you need help to get dressed?					
Did you need help to get out of bed?					
How often did you have severe pain from your arthritis?					
How often did your morning stiffness last more than one hour from the time you woke up?					
How often did your pain make it difficult for you					

to sleep?					
How often have you felt tense or high strung?					
How often have you been bothered by nervousness or your nerves?					
How often have you been in low or very low spirits?					
. How often have you enjoyed the things you do?					
How often did you feel like a burden to others?					
How often did you get together with friends or relatives?					
How often were you on the telephone with close friends or relatives?					
How often did you go to a meeting of a church, club, team, or other groups?					
Did you feel that your family or friends were sensitive to your personal needs?					

Appendix B – Consent Form

I am Mohib Ullah Shah, student of MSPH- Final Semester, Alshifa School of Public Health, Alshifa Eye Hospital, Rawalpindi. I am doing research on “Patients Perceived Helplessness and its Association with Overall Health Status Among Osteoarthritic Patients in District Chakwal”.

PURPOSE OF THE RESEARCH

The purpose of this study is to assess patients perceived helplessness and its association with overall health status among osteoarthritic patients in district Chakwal.

PARTICIPATION

I do not anticipate that taking this study will contain any risk or inconvenience to you. Your participation is strictly voluntary and you may withdraw your participation at any time without penalty. I request you to answer the questions as honestly as possible. It will take no longer than 15 minutes to complete a questionnaire. All information collected will be used only for research purpose and will be kept highly confidential. Your identity and your responses will not be identifiable; all data will be stored anonymously. As this is solely a student project no incentive will be provided. Once study is completed, I would be happy to share the results with you if you desire.

Thank you for agreeing to participate in this study. Your feedback is important.

Consent

I have read and understand the information sheet and agree to take part in the study.

Signature _____ **Date** _____

Appendix C – IRB Letter


AL-SHIFA SCHOOL OF PUBLIC HEALTH
PAKISTAN INSTITUTE OF OPHTHALMOLOGY
AL-SHIFA TRUST, RAWALPINDI

ALSH/IRB/13-45
21st Nov, 2013

TO WHOM IT MAY CONCERN

This is to certify that **Mohibullah Shah S/O Niamat Ullah Khan** is a student of Master of Science in Public Health (MSPH) final semester at Al-Shifa School of Public Health, PIO, Al-Shifa Trust Rawalpindi. He/she has to conduct a research project as part of curriculum & compulsory requirement for the award of degree by the Quaid-i-Azam University, Islamabad. His/her research topic, which has already been approved by the Institutional Review Board (IRB), is **“Patients perceived helplessness and its relationship with Health Status among Osteoarthritic patients in District Chakwal”**.

Please provide his/her necessary help and support in completion of the research project. Thank you.

Sincerely,


Dr. Ayesha Babar Kawish
Head
Al-Shifa School of Public Health, PIO
Al-Shifa Trust, Rawalpindi



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Appendix D - Budget

Budget item	Transport	Stationery and internet	Printing	Publishing
Pilot testing	500 Rs/-	6000 Rs/-	3000 Rs/-	-
Data collection	10,000 Rs/-	8,000 Rs/-	-	-
Thesis write-up	1,000 Rs/-	9,000 Rs/-	6,000 Rs/-	25,000 Rs/-
Total expenditure	12,500 Rs/-	23,000 Rs/-	9,000 Rs/-	25,000 Rs/-
Grand total	68,500 Rs/-			

Appendix E – Gantt Chart

Activities	April 2023	May 2023	June 2023	July 2023	August 2023	September 2023
Literature search						
Synopsis writing and IRB approval						
Pilot testing						
Data collection and entry						
Data analysis						
Write-up						
Thesis submission						