

Non-Pharmacological Methods for Relieving Joint Pain In the Asir Region of Kingdom of Saudi Arabia

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ABSTRACT

Study Design: Cross sectional

Background: According to Mayo Clinic (2021), joint pains can be defined as a discomfort, pain or inflammation that arises from any part of a joint, such as cartilage, bone, ligaments, tendons or muscles. Joint pain also most commonly refers to arthritis or arthralgia, which is inflammation or pain that comes from inside the joint itself. This pain is one of the major clinical problems, which at younger age are caused by inflammatory diseases like rheumatoid arthritis in particular, whereas older people mainly have it because of osteoarthritis (OA). OA is a serious and life-altering joint disease which not only causes pain.

Methods: This is a cross-sectional study, in which data is collected through a questionnaire comprising the demographic questions and items related to the population's knowledge about joint pain, its causes, effects on their daily lives and preventive measures. The survey was conducted in the Aseer region of Saudi Arabia. Data was collected from common public in the region. An informed consent was obtained from each of the participants. After collection of data, they were coded and entered in the SPSS ver.20 software for analyses descriptive statistics (mean standard deviation, frequencies, and %s were computed).

Results: Out of 582 respondents 493 are from Aseer, the southern-most region of the Kingdom of Saudi Arabia. More than 95% of the respondents are aged 18 years or above, and over 90% have high school or university education. Almost three quarters of the sample population are males and the rest are females. As for economic status of the population, 41.2% earn less than Saudi Riyal (SAR) 3,000 per month, whereas only 14.2% earn SAR 15,000 or above. Over 36% of the participants are students and the rest are either doctors (5%), teachers (13.9%), soldiers (15.8%) or doing other jobs (29%). About 45% of the participants are single, whereas 53.8% are married and the rest (1.2%) are widowed.

Conclusion: Although it is hard to prove the clinical efficacy of non-pharmacological methods discussed in the study, their use as complementary therapeutic approaches to heal joint pains is popular among Saudi Arabians. Although chronic joint pains are difficult to treat and such patients have comorbidities, the patients are inclined toward non-pharmacological procedures like exercises, massage, relaxation techniques, etc. Physicians are recommended to encourage patients to use these methods, particularly because the positive attitude of the physician increases the likelihood of their therapeutic advantages.

Keywords: Pharmacological, Methods, Therapeutic, Pain, Inflammation

INTRODUCTION

According to¹, Joint pains can be defined as a discomfort, pain or inflammation that arises from any part of a joint, such as cartilage, bone, ligaments, tendons or muscles. Joint pain also most commonly refers to arthritis or arthralgia, which is inflammation or pain that comes from inside the joint itself. This pain is one of the major clinical problems, which at younger age are caused by inflammatory diseases like rheumatoid arthritis in particular, whereas older people mainly have it because of osteoarthritis (OA). OA is a serious and life-altering joint disease which not only causes pain and disability, but affects the

quality of life. It also impacts work productivity and results in joint replacement, and generates severe socioeconomic costs worldwide². In general, pain from OA is considered more frequent than pain from inflammatory joint disease³.

Regarding neuronal mechanisms of joint pain, however, researchers have much more information on inflammatory joint pain than on inflammatory joint pain. This is because, it is not yet well-defined under which circumstances OA pain arises⁴. OA usually develops very slowly, and thus it is difficult to monitor when the joint turns painful.

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Another reason for this is that there is hardly any connection between radiological signs, like narrow joint space and osteophytes, and the pain⁵. Further, the OA pain's pathogenesis is not clear.

The OA pain by nature is likely to be nociceptive. OA is considered the most common joint disorder, and it is thought to be a result of aging and injury on a joint. It differs in intensity and doing exercise (e.g., weight-bearing) usually worsens it and can be relieved by good rest. At the outset, it can be episodic, but may be persistent if OA reaches advanced stage⁵. States that one quality of OA is that it is relieved at night. In contrast to OA pain, it is easier to study of neuronal mechanisms in inflammatory joint pain for two reasons: (i) the beginning of inflammation can be exactly determined, and (ii) joint inflammation usually causes pain at preliminary stages. Multiple experimental models are used to research inflammatory joint pain.

Rheumatoid arthritis (RA) is an autoimmune disease, which attacks the joints, in particular in the hands, wrists, and knees. In a joint that has RA, the lining of the joint becomes inflamed, causing damage to joint tissue, which can cause chronic pain. RA can also affect other tissues throughout the body and even harms organs like eyes, lungs and heart. Many rheumatic and musculoskeletal pain conditions are chronic in nature. Aging population is a major reason for the high prevalence of rheumatic diseases, especially in cases, such as osteoarthritis. OA is thought to affect more than 80% of people over age 50 and also occurs in younger people following an injury or repetitive stress⁶. One study suggested that the prevalence of RA, which is a chronic autoimmune disorder that leads to inflammation of the joints and surrounding tissues, estimated to be 1%-2% of adults (between 0.3% in people under age 35 and 10% in people over age 65)⁷.

Many researchers agree that the extent of tissue damage, disease variables and/or radiological findings often do not explain the degree of self-reported pain and of pain related disability. Pain may be best understood via a biopsychosocial framework which puts forward that a complex interaction of biological, social, psychological and factors determines the intensity of pain, pain-related suffering, and the extent of disability related to the pain. It is believed that factors like ability to deal with pain, catastrophic thoughts about pain, lifestyle choices, social and family factors play a big role in the pain experience. Therefore, non-pharmacological interventions should be considered as an essential part of comprehensive care for those who suffer from chronic pain.

As in most parts of the world, the joint pain is one of the most common health problems in the Aseer region in Southern Saudi Arabia. Managing joint pain properly facilitates recovery, prevents additional health complications and improves your overall quality of life. Apart from medical interventions, people all over the world use different non-pharmacological strategies like massage, yoga, relaxation technique, acupuncture, pet therapy, etc. to relieve the joint pain. In the following sections, we discuss each of the categories of non-pharmacological interventions giving greater emphasis to those that have the strongest support based on research evidence. This study is based on the study of the relationship between age, educational level, and profession with non-pharmacological methods of relieving joint pain.

METHODS

This is a cross-sectional study, in which data is collected through a questionnaire comprising the demographic questions and items related to the population's knowledge about joint pain, its causes, effects on their daily lives and preventive measures. The survey was conducted in the Aseer region of Saudi Arabia. Data was collected from common

public in the region. An informed consent was obtained from each of the participants. After collection of data, they were coded and entered in the SPSS ver.20 software for analyses descriptive statistics (mean standard deviation, frequencies, and %s were computed), to measure the significance differences chi-square test was used at 5% level of significance. Ethical approval was obtained from King Khalid University, Saudi Arabia. The study was conducted during the period between July 2021 and October 2021.

RESULTS

(Table 1) demonstrates demographic data like residence, age, educational status, gender, income, marital status and occupational status of the 582 people who participated in the survey. Out of 582 respondents 493 are from Aseer, the southern-most region of the Kingdom of Saudi Arabia. More than 95% of the respondents are aged 18 years or above, and over 90% have high school or university education. Almost three quarters of the sample population are males and the rest are females. As for economic status of the population, 41.2% earn less than Saudi Riyal (SAR) 3,000 per month, whereas only 14.2% earn SAR 15,000 or above. Over 36% of the participants are students and the rest are either doctors (5%), teachers (13.9%), soldiers (15.8%) or doing other jobs (29%). About 45% of the participants are single, whereas 53.8% are married and the rest (1.2%) are widowed.

Table 1: Demographics

Do you live in the Aseer region?		
	Frequency	Percent
Yes	493	84.7
No	89	15.3
Total	582	100.0
Age (In years)		
	Frequency	Percent
Less than 18	36	6.2
18-25	206	35.4
25-35	75	12.9
35-45	127	21.8
more than 45	138	23.7
Education level		
	Frequency	Percent
Elementary Education	11	1.9
Intermediate Education	36	6.2
High School Education	149	25.6
University Education	386	66.3
Gender		
	Frequency	Percent
Male	415	71.3
Female	167	28.7
Monthly income (In SAR)		
	Frequency	Percent
Less than 3000	240	41.2
3000-5000	49	8.4
5000-10000	102	17.5
10000-15000	108	18.6
Above 15000	83	14.3

Occupation		
	Frequency	Percent
Doctor	30	5.2
Teacher	81	13.9
Military	92	15.8
Student	210	36.1
Other	169	29.0
Social status?		
	Frequency	Percent
Single	262	45.0
Married	313	53.8
Widow	7	1.2

(Figure 1) shows that different types of pain affect daily activities of 34.9% of the sample population. One third of the respondents said that they suffer from multiple kinds of pains (Figure 2). Shoulder, knee and ankle are more common locations of joint pain (12% each). (Figure 3) demonstrates more than half of the participants (54.3%) sought medical advice to relieve their joint pain, while the rest didn't seek medical advice. Sixty five percent of the respondents said their pain is at least four months older (Figure 4). (Figure 5) shows that 45.7% participants said they were told by doctors that they don't need any medical intervention, whereas 27.8% said they were given drug treatment. Regarding non-pharmacological methods used to relieve joint pain, one quarter of the respondents said they resort to doing exercise, while 18% said they rest and relax to relieve pain (Figure 6). Other common methods used are joint massage (9%), (Figure 7) physical therapy (7%), hot bath (7%) and using medical shoes (7%). (Table 2) compares the demographics with joint pain.

Has this pain affected your daily activities? N=582

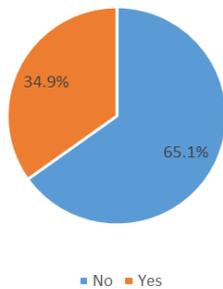


Figure 1: Pain Problems

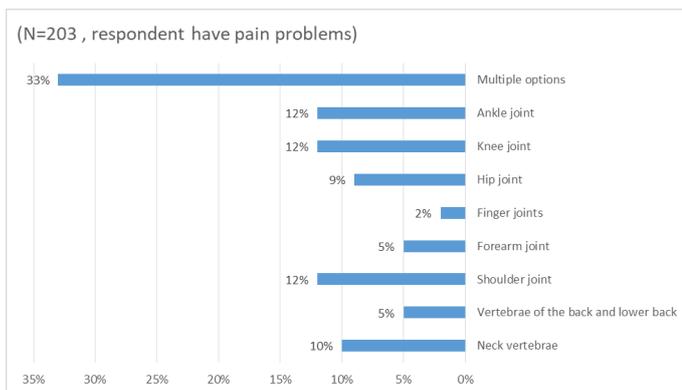


Figure 2: Types of Pain

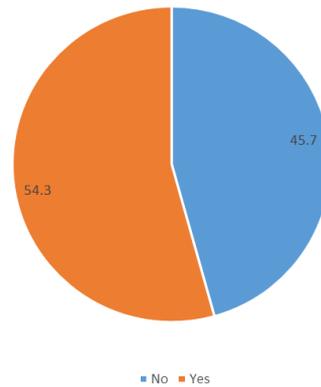


Figure 3: Have you ever sought medical advice to help relieve joint pain?

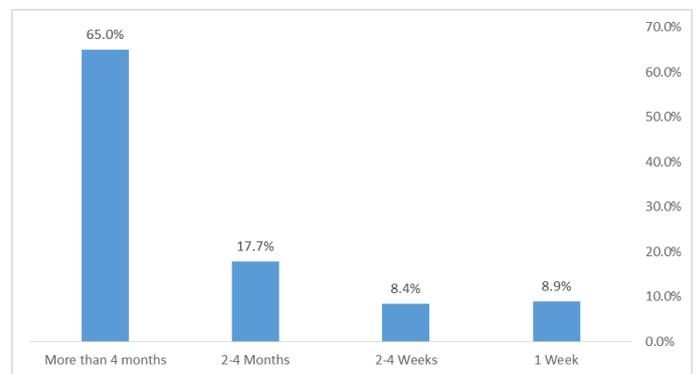


Figure 4: How long has the pain started?

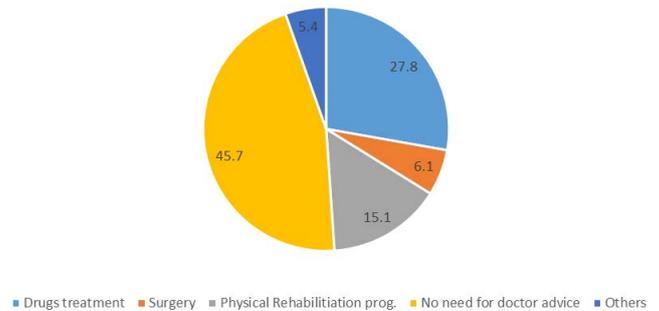


Figure 5: What is the recommendation given to you by the doctor?

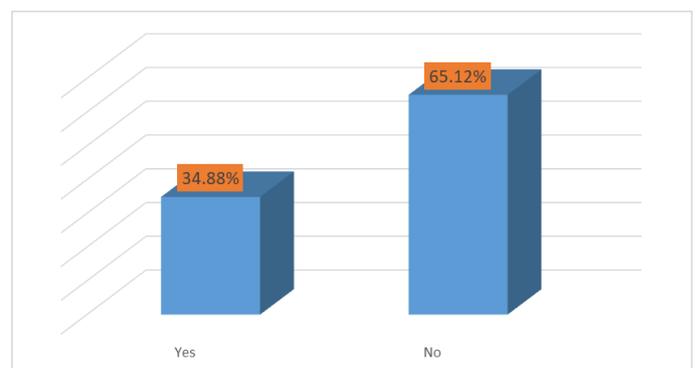


Figure 6: Do you feel joint pain?

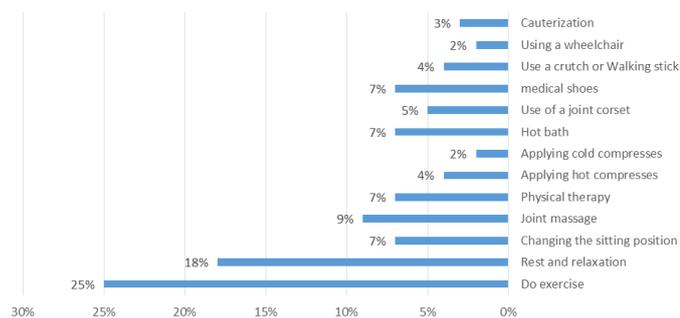


Figure 7: Which of the following methods do you usually do to Relieve joint pain?

Table 2: Comparisons of Demographics with joint pain

		Do you feel joint pain?		Total
		Yes	No	
Do you live in the Aseer region?	Yes	246	247	493
	No	47	42	89
Total		293	289	582

p=.348

		Do you feel joint pain?		Total
		Yes	No	
Age	Less than 18	27	9	36
	18-25	129	77	206
	25-35	42	33	75
	35-45	48	79	127
	more than 45	47	91	138
Total		293	289	582

p=0.00001 (Significant)

		Do you feel joint pain?		Total
		.00	1.00	
Education level?	Elementary Education	1	10	11
	Intermediate Education	18	18	36
	High School Education	74	75	149
	University Education	200	186	386
Total		293	289	582

p=0.49

		Do you feel joint pain?		Total
		Yes	No	
Gender	Male	227	188	415
	Female	66	101	167
Total		293	289	582

p=0.001 (Significant)

		Do you feel joint pain?		Total
		.00	1.00	
Monthly income	Less than 3000	139	101	240
	3000-5000	20	29	49
	5000-10000	47	55	102
	10000-15000	50	58	108
	Above 15000	37	46	83
Total		293	289	582

p=0.04 (Significant)

		Do you feel joint pain?		Total
		.00	1.00	
Occupation	Doctor	13	17	30
	Teacher	35	46	81
	Military	42	50	92
	Student	142	68	210
	Other	61	108	169
	Total	293	289	582

p=0.0001 (Significant)

		Do you feel joint pain?		Total
		.00	1.00	
Social status?	Single	164	98	262
	Married	127	186	313
	Divorced	2	5	7
Total		293	289	582

p=0.000 (Significant)

DISCUSSION

The study aimed to evaluate the effectiveness of a non-pharmacological interventions on people with joint pains in Saudi Arabia. Most of the sample population in this study are educated married males who earn a modest income. Overall, it is found that, the sample population has a positive attitude toward non-pharmacological measures and self-management to heal joint pains. This corroborates⁸ finding that participants in arthritis self-management programs have reduced joint pain and disability, increased physical activity, and better quality of life.

One reason for people’s trust on such home remedies could be because they are generally inexpensive, safe and having less side effects. Also, this can be because the majority of the respondents were well educated (high school and above). Another positive finding of the study is that joint pains don’t affect daily activities of majority of the population, despite a third of them have multiple joint pains. Moreover, the survey has found that the people in the region have a tendency to seek medical help to get relief from joint pain. Finally, doing physical exercises has emerged as one of the most popular non-pharmacological methods used by the respondents.

CONCLUSION

Although it is hard to prove the clinical efficacy of non-pharmacological methods discussed in the study, their use as complementary therapeutic approaches to heal joint pains is popular among Saudi Arabians. Although chronic joint pains are difficult to treat and such patients have comorbidities, the patients are inclined toward non-pharmacological procedures like exercises, massage, relaxation techniques, etc. Physicians are recommended to encourage patients to use these methods, particularly because the positive attitude of the physician increases the likelihood of their therapeutic advantages. The study recommends more research on non-pharmacological approaches to pain management, so patients can be provided with information that ensures them the most effective options for dealing with the pain. Finally, the research reiterates increased need for raising awareness among people in general about effectiveness and scientific practice of non-pharmacological approaches to reduce hospital visits and use of analgesics and other medications, which not only have impacts on the economy but have many side-effects.

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acquisition, analysis and interpretation of data; (2) drafting the article and revising it critically for important intellectual content; and (3) final approval of the manuscript version to be published. Yes.

Potential Conflict of Interest: None

Competing Interest: None

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REFERENCES

1. Mayo Clinic. Joint pain. 2021.
2. Lubar D, White PH, Callahan LF, et al. A National Public Health Agenda for Osteoarthritis. *Sem Arthr and Rheumat* 2010;39(5):323-6.
3. Breivik H, Beverly C, Ventafridda V, et al. Survey of chronic pain in Europe: prevalence, impact on daily life, and treatment. *Eur J Pain* 2006;10(4):287-333.
4. Schaible HG, Richter F, Ebersberger A, et al. Joint pain. *Exp Brain Res* 2009;196(1):153-62.
5. Scott DL. Osteoarthritis and rheumatoid arthritis. In: S. B. McMahon & M. Koltzenburg (Eds), Wall and Melzack's textbook of pain. Elsevier 2006;653-67.
6. Sharma L. Epidemiology of osteoarthritis. In: Moskowitz, RW, et al. *Osteoarthritis: diagnosis and medical/surgical management*. 3rd ed 2001;3-17.
7. Harris ED, Zorab R. *Rheumatoid arthritis*. WB Sanders; Philadelphia. 1997.
8. Hirsh MJ, Lozada CJ. Medical management of osteoarthritis. *J Clin Outcomes Manag* 2002;8(2):57-66.