Razi Med J. 2025;1(4):347-355
https://doi.org/10.69667/rmj.25409
Razi Medical Journal
https://razi.edu.ly/rmj/index.php/hm

Original article

Awareness, Perception, and Attitudes of Medical Professionals Toward Complementary and Alternative Medicine Devices in Rheumatism: A Survey of Tripoli Community Pharmacies

Nahla Labyad[1], Masoud Kahmasi[2], Amjad Mansuor[1]

[1]*Department of Pharmacognosy, Faculty of Pharmacy, University of Tripoli, Tripoli, Libya*
[2]*Departement of Rehabilitation and Physiotherapy, Faculty of Physical Education and Sport Sciences, University of Tripoli, Tripoli, Libya*
Corresponding email. *n.labyad@uot.edu.ly*

Abstract
Recently, a patient-led revolution has occurred in Complementary and Alternative Medicine (CAM). In terms of incidence and prevalence, Rheumatic Diseases cover a wide range of illnesses. There is still uncertainty regarding the therapeutic benefits of CAM-Copper Bracelets and other magnetic devices for Rheumatoid arthritis (RA) patients, which have not been thoroughly investigated. However, the medical professionals' (MP) beliefs in CAM (awareness, perception of use, and attitude) are also not yet well reviewed, and there is little communication or accountability among MPs. This study aimed to gain a thorough comprehension of beliefs possessed by (MP) CAM-Copper Bracelets in the context of Tripoli-Libya, Ain Zara Community Pharmacies (ComPh.); this cross-sectional study surveyed (n=72) MPs in local (ComPh.). A total of 56 participants provided the completed responses. The overall response rate was 77% using a validated self-constructed questionnaire based on the Likert Scale. Data analysis included Median, Mode score, Pearson chi-square tests, and frequency percentage distributions across various questionnaire statements. The data shows a young, predominantly male workforce with a balanced range of experience levels. Pharmacists 28 (50%) and physicians 24 (42.9%) are the primary job titles. Experience levels were evenly distributed, 19 (33.9%), with a Median of 2 years and a Mode of 2. All in all, 34 (60.7%) cited informal sources of CAM information, the highest experience 4yrs+ group was most skeptical (50%), p=0.031. Pharmacists 56% and Physicians 44% show a stronger tendency to be skeptical or express a lack of confidence in the efficacy of CAM-Copper bracelets, p=0.003; the Medical Assistance (MS) staff are less likely to express a negative 2 (9%), p=0.003 or neutral opinion 2 (13%), p=0.001. Survey data revealed a significant deviation in professional perspectives: a substantial proportion of pharmacists believe certain complementary and alternative medicine (CAM) therapies are likely effective (p = 0.003), whereas physicians demonstrated notable uncertainty, particularly regarding CAM's efficacy for arthritis symptoms and joint mobility. Nevertheless, the results of Magnetic WS and Metallic Devices showed no statistically significant relationship.
Keywords. *CAM, Copper Bracelets, Rheumatism, Awareness, Perception, Attitude.*

Received: *02/09/25*
Accepted: *01/11/25*
Published: *10/11/25*

Introduction

There are over 200 rheumatic diseases (RDs), also called connective tissue diseases, that affect the joints, tendons, ligaments, bones, and muscles. These are classified into the non-inflammatory and inflammatory disorders of the (Super-organ) tissue [1]. RDs cover a broad range of diseases, each with specific characteristics. However, according to the National Health Service (NHS), 2023, a variety of comparisons of many common RDs and their main treatments are thought to be available [2]. Rheumatism is generally thought to be an inflammatory or autoimmune disease, but its exact cause is unknown. For instance, some research indicates that a virus can cause a faulty immune response, leading to rheumatoid arthritis (RA), but there is currently no solid evidence to support this theory. However, some studies suggest that both genetic and environmental factors may play a role in these illnesses [3]. The prevalence of RA is roughly 0–5% in developed nations, and within 10–20 years of follow-up, nearly 50% of all patients with the disease lose their ability to work. While this disease primarily affects people aged 20–50, it can also affect children and the elderly [4].

According to the World Health Organization (WHO), 2019, Bracelets - (CAM) is "a broad set of healthcare practices that are not part of a country's own tradition or conventional medicine and are not fully integrated into the dominant healthcare system [5]. However, the Beers Criteria and STOPP/START [6] for Potentially Inappropriate Medications

Razi Med J. 2025;1(4):347-355
https://doi.org/10.69667/rmj.25409
Razi Medical Journal
https://razi.edu.ly/rmj/index.php/hm

(PIMs) are examples of screening tools that do not apply to CAM. Despite that the most current and accepted academic term is integrative medicine. In 2015, O'Mahony et al. offered comprehensive references for the STOPP/START and Beers Criteria tools [7]. They are fundamental tools for evaluating the PIMs, but they don't directly relate to CAM therapies like bracelets. Nonetheless, when evaluating complementary and alternative medicine, medical professionals usually consider the quality of CAM products, possible adverse effects, patient preferences, efficacy of related research or scientific data, and examine how CAM can support without endangering [6].

A self-constructed survey to assess the CAM-related criteria, however, is one of the exploratory intervention tools of CAM that are becoming increasingly necessary. Although it is difficult to get accurate estimates for CAM use, a relatively recent population-based survey found that about 28% of UK adults use CAM in some capacity within a year. People with chronic pain, however, are twice as likely to try CAM bracelets, according to the WHO (2019); it is reasonable to assume that individuals with rheumatism, particularly those who are elderly, would be included in this group [6].

Many patients with (RA) experience problems with conventional treatments over long periods of time and try to move toward CAM to get relief [8]. This seems to be consistent with the claim that nearly 60 percent of people with arthritis are using CAM, partly due to the perception, sometimes misguided, that these are safe and natural alternatives to drugs [9]. On the other hand, it could simply reflect the rise of holistic attitudes. Perhaps one of the most interesting and little-studied forms of CAM is that of magnetic therapy. Quite simply, it involves the application of magnetic materials on or very close to the skin over prolonged periods of time. However, magnetic therapy should not be confused with pulsed magnetic field therapy.

The most widely cited work on this subject is a study by Walker and Keats (1976) on the effect of copper necklaces on arthritis symptoms. The study involved 240 arthritis sufferers divided into three groups: one group wore a copper necklace, another wore an aluminium necklace, and the third group wore no device. The findings suggested that more participants rated the copper necklace as superior to the aluminium necklace, and the copper one lost weight by an average of 13 mg/month, possibly indicating copper leaching into the skin. However, the study did not find a positive correlation between the weight loss of the bracelets and their perceived efficacy [10]. The predicted connection between dermal absorption of copper and pain relief in arthritis is therefore rather weak, although research findings point to an imbalance in serum copper as a cause of inflammation in arthritis patients. However, given the widespread use of copper bracelets, it is surprising that no thorough scientific research has been done on the effectiveness of such devices [9].

Recent meta-analytical evidence reinforces the findings that topical copper-salicylate gel lacks significant clinical efficacy in osteoarthritis (OA) pain management compared to placebo. A comprehensive network meta-analysis by Zeng et al. (2018), encompassing 43 studies (36 RCTs and 7 observational studies), evaluated the comparative effectiveness and safety of various topical NSAIDs, including salicylate-based formulations. [11]. However, the generalizability of these findings to patients with rheumatoid arthritis (RA) remains uncertain [12].

The effectiveness of Bracelets related to CAM has not been extensively studied through randomized controlled trials. Patients may receive inaccurate or incomplete information, which could result in improper care. Referral patterns and rheumatologists' level of CAM knowledge (awareness) are not well documented in the UK. Furthermore, their perception of use and attitude are also not well reviewed, and there is little accountability or communication between MPs and CAM practitioners. Health care providers may accept this anecdotal information, but they stress the value of evidence-based care. Because of this, an organized departmental policy might be necessary. This study aims to gain a thorough comprehension of beliefs (awareness, perception of use, and attitude) held by the MP regarding CAM-Copper Bracelets and other devices for RD management, focusing on Ain Zara community pharmacies in Tripoli, Libya.

Methods

Subjects and Tools

A self-constructed questionnaire was distributed at the local community pharmacies (ComPh) in the south district of Tripoli, Ain Zara. It was counted as 5% of the 3089 total number of ComPh in Libya [10]. Therefore, our questionnaire was conducted involving a random sample of 154 ComPh. Our sample size was therefore based on the following considerations [13]: with a 95% confidence level and 5% margin of error, and 5% the population proportion, this means 72 sample size, so 56 were the completed responses. The response rate was 77%.

Razi Med J. 2025;1(4):347-355
https://doi.org/10.69667/rmj.25409
Razi Medical Journal
https://razi.edu.ly/rmj/index.php/hm

Responses were unsigned and confidential and never associated with any information that could identify you personally. Therefore, an in-built informed consent questionnaire was collected from the responding participants. Those who were not willing to participate were not included in this study. The questionnaire contains 4 different sections related to awareness of (CAM-Bracelets and other devices), perception of use, and Attitude among the ComPh MPs about CAM. Descriptive statistics were used to analyse demographic data in the first section. Statements of the subsequent 3 sections were assessed by using a Likert scale ranging from 1 = "very unlikely" to 5 = "very likely". All data required were collected and analysed prospectively. Descriptive and analytical statistics were utilized for selected variables. Median, Mode, and percentage were presented for numerical data that is not normally distributed. The skewness test was applied to check for normality of the collected data. Statistical significance was assigned at a p-value less than 0.05. The analysis was performed using SPSS Statistics for Windows (Version 26.0, IBM®).

Awareness of CAM-Bracelets in Rheumatism

The questionnaire respondents were presented with 3 statements about CAM-bracelets (see Table 2) and were asked to indicate their likelihood on Likert scales for each statement. Statements were based on (Knowledge of CAM is important to me in my professional role, etc.!); (There is scientific evidence supporting the use of copper bracelets!); and (This therapy has no real effect on symptoms or disease treatment!). Internal consistency of the scale was good (Cronbach's Alpha = -0.756).

Perceived uses of CAM-Bracelets in Rheumatism

Subjects have been asked about two statements: (I believe the modalities I use are effective!) and (I believe the modalities I use are harmful!). Both are concerned with the CAM-Bracelets perception in rheumatic disease. Responses were rated on a scale from 1 (very unlikely) to 5 (very likely). This scale had excellent internal consistency (Cronbach's Alpha = -0.978).

Attitudes towards CAM-Bracelets in Rheumatism

Four statements asked about attitudes regarding CAM bracelets in rheumatism. Response options of likelihood ranged from 1 (very unlikely) to 5 (very likely). These statements were derived from the Holistic CAM Questionnaire (HCAMQ) [15]. It was measured with four statements: (Do copper bracelets relieve arthritis symptoms?), (Do copper bracelets relieve stiffness, aches, and pain?), (Do copper bracelets improve joint mobility?), and (I feel confident advising patients to use this type of therapy!). Internal consistency was very good (Cronbach's $\alpha = 0.799$).

All questionnaire statements Cronbach's alpha was measured [16], the resulting value was $\alpha = 0.688$, indicating a medium level of reliability. It indicates the internal consistency of the questionnaire; however, exploratory factor analysis (EFA) was done to examine the underlying structure of the questionnaire statements. Factor loadings ranged from 0.539 to 0.871, indicating strong associations between the statements and their respective factors. The analysis revealed three factors with eigenvalues greater than 1.0, accounting for 65% of the total variance. The results support the validity of the questionnaire in measuring the planned statements. To make concise, informative, and reliable tables, all statements have been decoded to 3-point Likert statements (unlikely, undecided, and likely). This study was completed in accordance with the principles of the Declaration of Helsinki, as revised in Washington in 2013 [17,18].

Results and Discussion

Demographic features

Demographically, response features were job title, experience, gender, and sources of CAM information received by health MP to manage Rheumatics, with variances in selection from no sources to Others (Table 1). The study involved 56 participants, primarily pharmacists 28(50%) and physicians 24(42.9%), with a Median job title value of 1.5 and a Mode of 1, indicating pharmacists were the most common. Experience levels were evenly distributed, with a Median of 2 years and a Mode similarly at 2. Most participants were male 32(57.1%) and simultaneously aged 25–29 years 32(57.1%), both with a Mode of 1. The most frequently cited source of information was "Others" 34 (60.7%), with a Mode of 5 as shown in Table 1. However, the data shows a young, predominantly male workforce with a balanced range of experience levels.

Razi Med J. 2025;1(4):347-355
https://doi.org/10.69667/rmj.25409
Razi Medical Journal
https://razi.edu.ly/rmj/index.php/hm

Table 1. Demographic data of participants (n=56)

Characteristic	Labe	Demo-Variable	Frequency	Percent	Median	Mode
Job Title	1	Pharmacist	28	50%	1.5	1
	2	Physician	24	42.90%		
	3	Medical Assistance	4	7.10%		
Experiences	1	0-2yrs	18	32.1%	2	2
	2	2-4yrs	19	33.9%		
	3	4yrs+	19	33.9%		
Gender	1	Male	32	57.1%	1	1
	2	Female	24	42.90%		
Age Group	1	25-29 yr	32	57.1%	1	1
	2	30-34 yr	16	28.6%		
	3	35-39 yr	4	7.1%		
	4	40yrs+	4	7.1%		
Sources of your Information	1	No source	2	3.6%	5	5
	2	Books	4	7.1%		
	3	Media	10	17.9%		
	4	Health professionals	6	10.7%		
	5	Others	34	60.7%		

Pharmacists and physicians are the primary job titles, and there is a diverse range of information sources, with a heavy reliance on nontraditional or informal sources as well as a wide range of community professional sources [19]. Figure 1 shows diverse information sources; many rely on nontraditional or informal sources for information. A study of MS (2010) suggested that employment processes might benefit from emphasizing digital literacy and the ability to navigate various information channels [20]. Many workers and job seekers lack these skills. Training programs can be designed to enhance the use of reliable and professional sources.

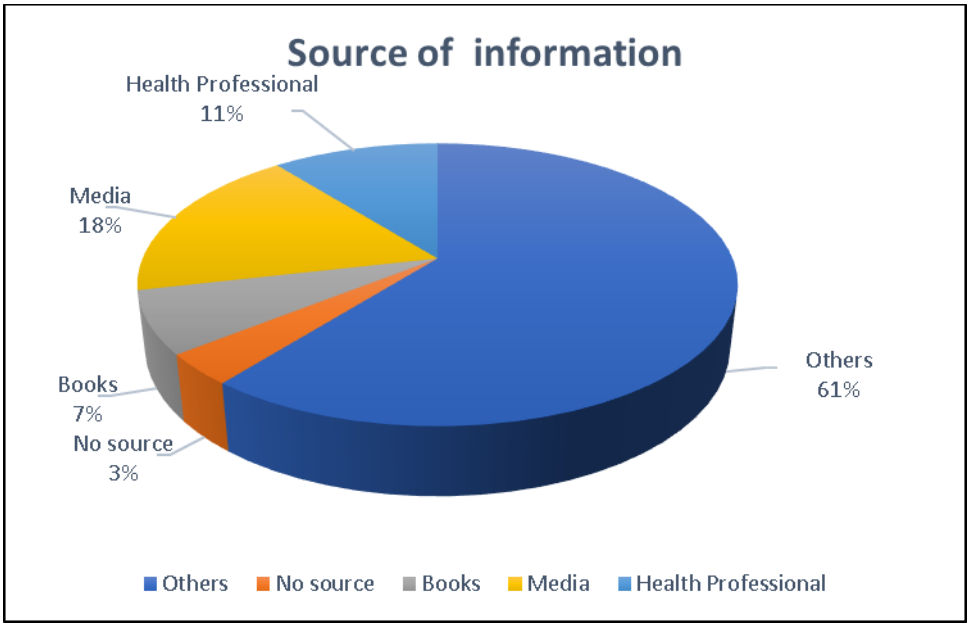

Figure 1. Source of information among MPs (n=56)

Awareness of CAM-Bracelets in Rheumatism

Table 2 presents a cross-tabulation of job title (Pharmacist, Physician, Medical Assistant) against awareness beliefs about CAM, specifically focusing on copper bracelets, along with the results of Pearson chi-square

Razi Med J. 2025;1(4):347-355
https://doi.org/10.69667/rmj.25409
Razi Medical Journal
https://razi.edu.ly/rmj/index.php/hm

Tests to determine if there's a statistically significant relationship between job title, as well as years of experience, and these beliefs.

Knowledge of CAM is important: The data show a strong agreement among pharmacists and physicians that knowledge of CAM is important. The chi-square test (p<0.05) confirms a statistically significant relationship between job title and this belief, indicating that professional role heavily influences this perception (Table 2).

Previous studies showed that pharmacists and physicians had lack of the knowledge, confidence, and training to provide proper guidance on using CAM therapies [21]. The chi-square test (p<0.05) confirms a statistically significant relationship between professional experience and this belief, indicating that years on the job influence this alert behaviour (Table 3).

Scientific evidence for copper bracelets: The responses are mixed, but interestingly, many pharmacists and physicians believe there's no scientific evidence for copper bracelets and other devices. The chi-square test (p>0.05) indicates no statistically significant relationship between job title and this belief, meaning professionals across all three roles hold similar, skeptical views about the scientific validity of copper bracelets.

Literature review concludes that the available paediatric scientific evidence is only sufficient to recommend CAM as a complementary therapy [22]. The fact that all pharmacists who believe in the efficacy of copper bracelets fall under "likely" is a small sample size anomaly and should be interpreted with caution.

Copper bracelets have no real effect: the majority of pharmacists and physicians believe copper bracelets and other devices have no real effect. The chi-square test (p>0.05) shows no statistically significant relationship between job title and this belief, further suggesting a shared skepticism about the therapeutic value of copper bracelets across different healthcare professions. Satisfaction with CM and negative attitudes towards CAM are the main reasons for non-use [23].

Table 2. Awareness Vs Job Title (n=56)

Statement	Response	Job Title					
		Pharmacist		Physician		Medical Assistance	
Knowledge of CAM is important to me in my professional role*	Unlikely	4	50%	4	50%	0	0%
	Undecided	0	0%	0	0%	2	100%
	Likely	24	52%	20	43%	2	4%
There is scientific evidence supporting the use of copper bracelets**	Unlikely	12	50%	10	42%	2	8%
	Undecided	12	43%	14	50%	2	7%
	Likely	4	100%	0	0%	0	0%
This therapy has no real effect on symptoms or disease treatment#	Unlikely	10	56%	6	33%	2	11%
	Undecided	2	17%	8	67%	2	17%
	Likely	16	62%	10	38%	0	0%

**:$\chi 2$ (4,N=56)= 27.217, p=0.001. **:$\chi 2$(4,N=56)= 4.675, p=0.322. #:$\chi 2$(4,N=56)= 9.333, p=0.053*

Table 3. Awareness Vs Experience (n=56)

Statement	Response	Experiences					
		0-2yrs		2-4yrs		4yrs+	
Knowledge of CAM is important to me in my professional role*	Unlikely	0	0%	2	25%	6	75%
	Undecided	0	0%	0	0%	2	100%
	Likely	18	39%	17	37%	11	24%
There is scientific evidence supporting the use of copper bracelets**	Unlikely	8	33%	10	42%	6	25%
	Undecided	10	36%	9	32%	9	32%
	Likely	0	0%	0	0%	4	100%
This therapy has no real effect on symptoms or disease treatment#	Unlikely	4	22%	8	44%	6	33%
	Undecided	6	50%	4	33%	2	17%
	Likely	8	31%	7	27%	11	42%

**:$\chi 2$(4,N=56)= 12.815, p=0.012. **: $\chi 2$(4,N=56)= 8.951, p=0.062.#: $\chi 2$(4,N=56)= 4.315, p=0.365*

Razi Med J. 2025;1(4):347-355
https://doi.org/10.69667/rmj.25409
Razi Medical Journal
https://razi.edu.ly/rmj/index.php/hm

Perceived Use of CAM-Bracelets in Rheumatism

I believe the modalities I use are effective: The majority of medical assistance staff believe the modalities they use are effective, while pharmacists and physicians are more divided in their perceptions (Table 4). However, the differences between job titles were not statistically significant (p>0.05). Due to small sample sizes in some categories, however, the study of Iktidar et al. (2022) suggests that non-medical students possessed an overall better knowledge [23] and a favourable attitude towards CAM compared to the medical students [24]. Moreover, there were no statistically significant differences in perceptions of effectiveness or harmfulness of modalities used across different experience levels; p>0.05 for both comparisons (Table 5).

I believe the modalities I use are harmful: The analysis showed no statistically significant differences between pharmacists, physicians, and medical assistance staff regarding their perceptions of the effectiveness or harmfulness of the modalities they use (p>0.05 for both comparisons (Table 4).

Based on the provided chi-square test results, there is no statistically significant relationship between years of experience and a person's perceptions of the modalities they use, whether those perceptions relate to effectiveness or harmfulness (Table 5). Clarity in role expectations amongst medical professionals is critical to optimizing pharmacist roles and patient outcomes [25].

Table 4. Perception Vs Job Title (n=56)

Statement	Response	Job Title					
		Pharmacist		Physician		Medical Assistance	
I believe the modalities I use are effective*	Unlikely	9	47%	8	42%	2	11%
	Undecided	4	29%	10	71%	0	0%
	Likely	15	65%	6	26%	2	9%
I believe the modalities I use are harmful**	Unlikely	6	67%	3	33%	0	0%
	Undecided	15	45%	16	48%	2	6%
	Likely	7	50%	5	36%	2	14%

**: $\chi 2(4,N=56)= 7.938$,$p=0.094$. **: $\chi 2(4,N=56)= 2.934$,$p=0.569$.*

Table 5. Perception Vs Experience (n=56)

Statement	Response	Experiences					
		0-2yrs		2-4yrs		4yrs+	
I believe the modalities I use are effective*	Unlikely	4	21%	6	32%	9	47%
	Undecided	5	36%	7	50%	2	14%
	Likely	9	39%	6	26%	8	35%
I believe the modalities I use are harmful**	Unlikely	4	44%	3	33%	2	22%
	Undecided	10	30%	12	36%	11	33%
	Likely	4	29%	4	29%	6	43%

**: $\chi 2(4,N=56)= 5.254$, $p=0.094$, **: $\chi 2(4,N=56)= 1.387$, $p=0.0569$.*

Attitudes towards CAM-Bracelets in Rheumatism

Do copper bracelets relieve arthritis symptoms? A significant majority of Pharmacists (56%) and Physicians (44%) believe it is unlikely that copper bracelets relieve arthritis symptoms. No Para-Medical staff expressed this opinion. The majority of respondents who believe it is likely that copper bracelets help with arthritis are Pharmacists (60%).

Do copper bracelets relieve stiffness, aches, and pain? Similar to arthritis, most Pharmacists (63%) and Physicians (38%) find it unlikely that copper bracelets relieve stiffness, aches, and pain. The "Undecided" category is dominated by Physicians (67%). However, the patient experience journal (2021) focused on the human experience found underneath all the rhetoric, finding opportunity and inspiration [27]. Accordingly, Table 7 shows that the 2–4 years group was most positive (54% likely), p=0.031, whereas the 4+ years group was most skeptical (50% unlikely), p=0.031.

Do copper bracelets improve joint mobility? 89% (p=0.001) of pharmacists and 11% (p=0.001) of physicians believe this is "Likely," a view that is not supported by any Medical Assistance in the sample (Table 6). Such devices are generally ineffective for physical function in osteoarthritis but have no major adverse effects and may provide hope [28]. Attitude was consistent across groups, with 2–4 years and 4+ years both showing 39% likely responses (Table 7).

Razi Med J. 2025;1(4):347-355
https://doi.org/10.69667/rmj.25409
Razi Medical Journal
https://razi.edu.ly/rmj/index.php/hm

I feel confident advising patients to use this type of therapy! A significant number of both Pharmacists, 53% (p=0.001), and marginally significant Physicians 47% (p=0.057), feel it is unlikely they would feel confident advising patients to use this therapy (Table 6). A notable 44% of pharmacists and 33% of physicians express confidence in advising patients to use this therapy, directly contradicting the lack of scientific support (Table 6). Simultaneously, Naja et al (2024) showed that CPs in the UAE hold a generally positive attitude towards CAM utilization. Such a positive attitude is coupled with good knowledge about the health indications of several CAM products [26]. Confidence was highest among the 2–4 years group (44% likely), while 0–2 years and 4+ years showed more reluctance (38% and 50% unlikely, respectively) in symptom relief, p=0.031 (Table 7).

Table 6. Attitude Vs Job Title (n=56)

Statement	Response	Job Title					
		Pharmacist		Physician		Medical Assistance	
Do copper bracelets relieve arthritis symptoms*	Unlikely	10	56%	8	44%	0	0%
	Undecided	0	0%	8	100%	0	0%
	Likely	18	60%	8	27%	4	13%
Do copper bracelets relieve stiffness, aches, and pain**	Unlikely	10	63%	6	38%	0	0%
	Undecided	2	17%	8	67%	2	17%
	Likely	16	57%	10	36%	2	7%
Do copper bracelets improve joint mobility#	Unlikely	10	45%	10	45%	2	9%
	Undecided	2	13%	12	75%	2	13%
	Likely	16	89%	2	11%	0	0%
I feel confident advising patients to use this type of therapy§	Unlikely	18	53%	16	47%	0	0%
	Undecided	2	50%	2	50%	0	0%
	Likely	8	44%	6	33%	4	22%

:$\chi2(4,N=56)= 16.119,p=0.003$.:$\chi2(4,N=56)= 8.147$, $p=0.086$ #::$\chi2(4,N=56)= 20.205$, $p=0.001$, §:$\chi2(4,N=56)= 9.183$, $p=0.057$.*

Table 7. Attitude Vs Experience (n=56)

Statement	Response	Experiences					
		0-2yrs		2-4yrs		4yrs+	
Do copper bracelets relieve arthritis symptoms*	Unlikely	4	22%	7	39%	7	39%
	Undecided	4	50%	4	50%	0	0%
	Likely	10	33%	8	27%	12	40%
Do copper bracelets relieve stiffness, aches, and pain**	Unlikely	6	38%	2	13%	8	50%
	Undecided	6	50%	2	17%	4	33%
	Likely	6	21%	15	54%	7	25%
Do copper bracelets improve joint mobility#	Unlikely	8	36%	6	27%	8	36%
	Undecided	6	38%	6	38%	4	25%
	Likely	4	22%	7	39%	7	39%
I feel confident advising patients to use this type of therapy§	Unlikely	12	35%	10	29%	12	35%
	Undecided	2	50%	1	25%	1	25%
	Likely	4	22%	8	44%	6	33%

**:$\chi2(4,N=56)= 5.735,p=0.220$. **: $\chi2(4,N=56)= 10.614$, $p=0.031$. #: $\chi2(4,N=56)= 1.839$, $p=0.765$, §:$\chi2(4,N=56)= 2.053$, $p=0.726$.*

As shown in Table 8, the Pearson chi-square test for Copper Bracelets showed a statistically significant relationship between Experience and responses regarding Copper Bracelets, but this is not a conflict of interest. It simply means that people with different levels of experience tend to have different responses regarding that product. The Pearson chi-square test for Copper Bracelets shows a statistically significant relationship (p=0.024) between a person's experience and their responses. This suggests that the distribution of responses (e.g., "Awareness of Product," "Perceived Usefulness," etc.) is not the same across the different experience groups (0-2yrs, 2-4yrs, 4 or more). In simpler terms, a person's experience level seems to be linked to how they responded to copper bracelets.

Razi Med J. 2025;1(4):347-355
https://doi.org/10.69667/rmj.25409
Razi Medical Journal
https://razi.edu.ly/rmj/index.php/hm

For magnetic w s and metallic devices, there is no statistically significant relationship, meaning that a person's years of experience does not appear to be associated with their responses. However, a study done in 2013 in Yorkshire has made clear that wearing magnetic wrist straps, or copper bracelets, lacks clinical efficacy [26].

Table 8. Crosstabulation of Experience vs Interesting Modalities (n=56)

Modalities	Response	Experiences					
		0-2yrs		2-4yrs		4yrs+	
Copper Bracelets*	Undecided	2	100%	0	0%	0	0%
	Awareness of Product	2	33%	0	0%	4	67%
	Perceived Usefulness	12	29%	19	45%	11	26%
	Attitude Towards Product	2	33%	0	0%	4	67%
Magnetic Wrist Strap**	Undecided	10	31%	12	38%	10	31%
	Awareness of Product	0	0%	0	0%	0	0%
	Perceived Usefulness	4	25%	5	31%	7	44%
	Attitude Towards Product	4	50%	2	25%	2	25%
Metallic Device#	Undecided	12	32%	13	34%	13	34%
	Awareness of product	0	0%	0	0%	0	0%
	Perceived for use	6	38%	6	38%	4	25%
	Attitude of the product	0	0%	0	0%	2	100%

*:$\chi 2(6,N=56)= 14.581, p=0.024$. **: $\chi 2(4,N=56)= 2.108$, $p=0.716$. #: $\chi 2(4,N=56)= 4.479$, $p=0.345$

Conclusion

The data suggests diverse information sources, though a clear division in opinion, particularly between pharmacists and physicians on one hand, and medical Assistance staff on the other hand. Pharmacists and physicians show a stronger tendency to be skeptical or express a lack of confidence in the efficacy of CAM bracelets, despite miscellaneous evidence behind the use of copper bracelets and other devices; meanwhile, medical assistance staff are less likely to express a negative or neutral opinion, although their sample size is very small. The significant number of pharmacists who believe it is "likely" to be effective in various categories creates a complex picture and may warrant further investigation. The high percentage of physicians who are "undecided" on the relief of arthritis symptoms and improved joint mobility suggests a degree of uncertainty or lack of conclusive information within this group.

Conflict of interest. All authors declare no conflict of interest.

References

1. Bruce DF, Gower T. Rheumatic diseases: types, causes, and diagnosis. WebMD. Accessed February 15, 2025. https://www.webmd.com/rheumatoid-arthritis/an-overview-of-rheumatic-diseases#1
2. NHS. Rheumatoid arthritis. NHS.uk. Updated October 12, 2023. Accessed March 11, 2025. https://www.nhs.uk/conditions/rheumatoid-arthritis/
3. Harris ED Jr. Rheumatoid arthritis—pathophysiology and implications for therapy. N Engl J Med. 1990;322(18):1277-1289. doi:10.1056/NEJM199005033221805
4. Shah ESCA. Rheumatoid arthritis. Basicmedical Key. Accessed March 17, 2024. https://basicmedicalkey.com/rheumatoid-arthritis-6/
5. World Health Organization. WHO Global Report on Traditional and Complementary Medicine 2019. World Health Organization; 2019. Accessed February 15, 2025. https://apps.who.int/iris/bitstream/handle/10665/312342/9789241515436-eng.pdf?ua=1
6. Fick DM, Semla TP, Steinman M, et al. American Geriatrics Society 2019 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. J Am Geriatr Soc. 2019;67(4):674-694. doi:10.1111/jgs.15767
7. O'Mahony D, O'Sullivan D, Byrne S, O'Connor MN, Ryan C, Gallagher P. STOPP/START criteria for potentially inappropriate prescribing in older people: version 2. Age Ageing. 2015;44(2):213-218. doi:10.1093/ageing/afu145
8. Erdfelder E, Faul F, Buchner A. GPOWER: a general power analysis program. Behav Res Methods Instrum Comput. 1996;28(1):1-11. doi:10.3758/BF03203630
9. Efthimiou P, Kukar M, MacKenzie CR. Complementary and alternative medicine in rheumatoid arthritis: no longer the last resort! HSS J. 2010;6(1):108-111. doi:10.1007/s11420-009-9133-8

10. Libyan Ministry of Health. Ministry of Health 2021 Annual Performance Report. Tripoli, Libya: Libyan Ministry of Health; 2021. https://seha.ly/media/legislation/2020wY9pXGL.pdf
11. C. Zeng et al., "Relative efficacy and safety of topical non-steroidal anti-inflammatory drugs for osteoarthritis: A systematic review and network meta-analysis of randomised controlled trials and observational studies," May 01, 2018, BMJ Publishing Group. doi: 10.1136/bjsports-2017-098043
12. Walker WR, Keats DM. An investigation of the therapeutic value of the 'copper bracelet'-dermal assimilation of copper in arthritic/rheumatoid conditions. Agents Actions. 1976;6(4):454-459.
13. Calculator.net. Sample size calculator. Calculator.net. Accessed September 30, 2021. https://www.calculator.net/sample-size-calculator.html?type=1&cl=90&ci=5&pp=5&ps=3089&x=Calculate
14. Hyland ME, Lewith GT, Westoby C. Developing a measure of attitudes: the holistic complementary and alternative medicine questionnaire. Complement Ther Med. 2003;11(1):33-38. doi:10.1016/S0965-2299(02)00113-9
15. Yu CH. An introduction to computing and interpreting Cronbach Coefficient Alpha in SAS. Paper presented at: Proceedings of the Twenty-Sixth Annual SAS Users Group International Conference; June 2001; Long Beach, CA. Paper 246.
16. Osiobe SA. Physicians' and pharmacists' drug information sources in Nigeria. Ther Innov Regul Sci. 1988;22(4):553-563. doi:10.1177/009286158802200409
17. Muthuswamy V. The new 2013 seventh version of the Declaration of Helsinki--more old wine in a new bottle? Indian J Med Ethics. 2014;11(1):2-4. doi:10.20529/IJME.2014.001
18. Cantín M. Declaración de Helsinki de la Asociación Médica Mundial: Principios Éticos para las Investigaciones Médicas en Seres Humanos. Revisando su Última Versión [World Medical Association Declaration of Helsinki: Ethical Principles for Medical Research Involving Human subjects. Reviewing the Latest Version]. Int J Morphol. 2014;32(1):339-342.
19. Hecker I, Loprest P. Foundational Digital Skills for Career Progress. Urban Institute. Published August 2019. Accessed February 15, 2025. https://www.urban.org/research/publication/foundational-digital-skills-career-progress
20. Veazie M, Landry CA. Current Issues Regarding Complementary and Alternative Medicine (CAM) in the United States. Princeton, NJ: Robert Wood Johnson Foundation; 2010.
21. Romero-García PA, López-Hernández JL, Sánchez-Ramos JL, et al. Complementary and alternative medicine (CAM) practices: a narrative review elucidating the impact on healthcare systems, mechanisms and paediatric applications. Healthcare (Basel). 2024;12(15):1547. doi:10.3390/healthcare12151547
22. Tangkiatkumjai M, Boardman H, Walker DM. Potential factors that influence usage of complementary and alternative medicine worldwide: a systematic review. BMC Complement Med Ther. 2020;20(1):63. doi:10.1186/s12906-020-03157-2
23. Iktidar MA, Saif-Ur-Rahman KM, Hossain MS, et al. Knowledge, attitude, perceived effectiveness and self-practice of complementary and alternative medicine: a cross-sectional comparison between medical and non-medical students of Bangladesh. BMC Complement Med Ther. 2022;22(1):241. doi:10.1186/s12906-022-03797-6
24. Kim E, Worley MM, Law AV. Pharmacist roles in the medication use process: perceptions of patients, physicians, and pharmacists. J Am Pharm Assoc (2003). 2023;63(4):1120-1130. doi:10.1016/j.japh.2023.05.013
25. Wolf JA. In divided times, a focus on human experience connects us. Patient Exp J. 2021;8(3):1-4. doi:10.35680/2372-0247.1652
26. Richmond SJ, Gunadasa S, Bland M, MacPherson H. Copper bracelets and magnetic wrist straps for rheumatoid arthritis - analgesic and anti-inflammatory effects: a randomised double-blind placebo-controlled crossover trial. PLoS One. 2013;8(9):e71529. doi:10.1371/journal.pone.0071529
27. Richmond SJ, Brown SR, Campion PD, et al. Therapeutic effects of magnetic and copper bracelets in osteoarthritis: a randomised placebo-controlled crossover trial. Complement Ther Med. 2009;17(5-6):249-256. doi:10.1016/j.ctim.2009.07.002
28. Naja F, Alameddine M, Itani L, et al. Beyond pillbox: a national cross-sectional study on the attitudes, practices, and knowledge of community pharmacists regarding complementary and alternative medicine. BMC Complement Med Ther. 2024;24(1):73. doi:10.1186/s12906-024-04391-8