



RESEARCH ARTICLE

# The Prevalence of Complementary and Alternative Medicines use among the employees of the Universities

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## ABSTRACT

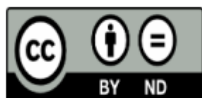
**Background:** The use of complementary and alternative medicine (CAM) has increased globally. It is essential to properly regulate them to guarantee reasonable quality control, ensure consumers' safety, and integrate them into modern medicine. This study was conducted to determine the prevalence of CAM use among the universities in Ninevah Province -Iraq, to their awareness, attitudes, and beliefs.

**Method:** A cross-sectional study was conducted between (2 October-6 December) 2022 in four leading universities (Mosul, Ninevah, Al-Hamdani, and Tal-Afar) in Ninevah Province-Iraq. Data were collected face-to-face via an interviewer-administrated structured questionnaire from a multi-stage sampling of employees. Information was gathered using a data collection form and sent to a Microsoft Office Excel® (2010) spreadsheet. Microsoft Office Excel was used to do statistical analysis and make tables. Statistical significance was determined using a chi-squared test, with a p-value of less than 0.01 representing a significant finding.

**Results:** Our results showed that n= (73.7%) of the sample used complementary and alternative medicines. However, we identified a statistically significant correlation between the female gender and herbal medicine use (p 0.001). Females were shown to have more knowledge regarding the origin of herbal remedies than males, and this difference was statistically significant (p 0.05). Furthermore, there was a statistically significant difference between the percentage of those with no medical problems and those with chronic diseases who used herbal medicines (p 0.001).

**Conclusion:** When writing prescriptions and delivering medications to patients, doctors, nurses and pharmacists should ask the patients for their use of any alternative and herbal medicines and take care to inform patients about the adverse effects of HMs evidence-based information on the body when used with a combination of conventional medicine. Patient counselling, CAM information, and education are necessary to increase patients' awareness of pharmaceutical use.

**Keywords:** prevalence, complementary and alternative medicine



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## INTRODUCTION

Complementary and alternative medicine (CAM) is a form of diagnosis, treatment, and prevention that augments traditional medicine and meets medical needs not addressed by standard treatments.'(Ernst et al., 2001). The National Institute of Health defines herbal medicines as any products derived from plants for use in health and wellness. (Tyler, 2000)Herbal medicines have been used for thousands of years and remain popular. Nowadays, more than 80% of people rely on them for health care needs, especially with the increased prevalence of obesity, chronic disorders, pain syndromes, and anxiety. People also use them to maintain good health.(Duraz & Khan, 2011; Sekhri et al., 2013; Tachjian et al., 2010)People often use (CAM) to improve their health and well-being, to relieve symptoms of chronic or terminal illnesses, or to the side effects of conventional treatments.(Humpel & Jones, 2006; Shen et al., 2002). Reasons to choose CAM include a holistic health philosophy, a transformative experience that changes a person's outlook, and a desire for more control over health. (Astin, 1998; Bondurant et al., 2005).Factors that affect people's readiness to use HP vary in different countries, regions, and income groups.(Knotek et al., 2012)Public interest in HMs has been reported in studies, but patients' attitudes and perceptions toward them have not been studied in the region. (Al-Arifi, 2013; Alghadir et al., 2022; Barnes et al., 2008; Barnes et al., 2004; Pal & Shukla, 2003; Rivera et al., 2013) This study sought to evaluate employees of universities in Nineveh Province's knowledge, attitudes, and practice regarding herbal medicines.

## METHOD

### Study Design and Setting:

A cross-sectional study was done on staff in four universities in Nineveh Province, Iraq, between 2 October and December 2022.

### Study Sample:

In this study, G-Power software v.3.1 was used to determine the sample size. A sample of 950 participants was required to detect a 10% difference between the two groups with 90% power and a 5% significance level. Multistage stratified clustered sampling was used to collect 1,000 participants from four universities in Nineveh Province: Mosul, Ninevah, Al-Hamdania, and Tal-Afar. The employee count of each university was proportional to its population. To ensure an accurate representation, we randomly chose colleges and departments for our study and personally contacted individuals to explain its purpose. Taking part in the study was completely voluntary, and participants could choose to

decline involvement. We collected data anonymously through self-administered surveys. After being informed of the guarantee of privacy and written consent, those who chose to participate were given the surveys, completed them anonymously, and returned them. No incentives were given to those who finished the survey.

### Questionnaire Development:

Our study aimed to understand employees' familiarity with complementary and alternative medicine (CAM) methods, as well as their attitudes and beliefs towards them. To do this, we created a questionnaire with four sections.

The first part asked about the demographic characteristics of our study sample, such as age, gender, and work experience. The second part focused on the participants' attitude towards CAM, with options from Disagree to Agree. The third part. Lastly, the third section included items to assess the participant's beliefs towards CAM.

By gauging respondents' familiarity and attitudes, this study provides valuable insights into understanding the usage of CAM in clinical settings.

### Statistical Analysis:

Data were analysed quantitatively using the SPSS software v.22, and results were presented as frequency and percentages.

## RESULTS

### Prevalence of the use of CAM in Universities of Nineveh Province

Table 1 shows the prevalence of CAM used in Nineveh Province, total (73.7%). The difference between females and males who used alternative medicine is close (34.7% males) and (39.0% females). From totally not used CAM (26.3%), the females (14.2%) are highest from the males who didn't use with percent (12.1%).

### Frequency and percentage of the health problems that used CAM modalities

Table 2 reveals the respondents' use of CAM for health problems. Most of them reported that they used herbal medicine for IBS (irritable bowel syndrome ) (n=130; 13.0%), obesity n=(105; 10.5%), for the common cold (n=98; 9.8%), chronic disease (n=82; 8.2%). And the interesting part is the stress and depression (n=38; 3.8%) who used CAM.

Table 1. Prevalence of the use of CAM in Universities of Nineveh Province

| The prevalence of high-education people who used CAM |       |          |              |
|--|-------|----------|--------------|
|  | Male% | Female % | total%       |
| Used CAM   | 34.7% | 39.0%    | <b>73.7%</b> |
| Not used CAM   | 14.2% | 12.1%    | <b>26.3%</b> |

Table 2: Frequency and percentage of the health problems that used CAM modalities.

| Frequency and percentage of the health problems that used CAM |       |        |  |
|---|-------|--------|--|
| Health problems   | Free. | %      |  |
| IBS   | 130   | 13.00% |  |
| Arthritis   | 69    | 6.90%  |  |
| Obesity   | 105   | 10.5%  |  |
| common cold   | 98    | 9.80%  |  |
| Chronic disease   | 82    | 8.20%  |  |
| Stress& depression  | 38    | 3.80%  |  |
| UTI   | 35    | 3.50%  |  |
| skin diseases   | 22    | 2.20%  |  |
| Others  | 158   | 5.30%  |  |

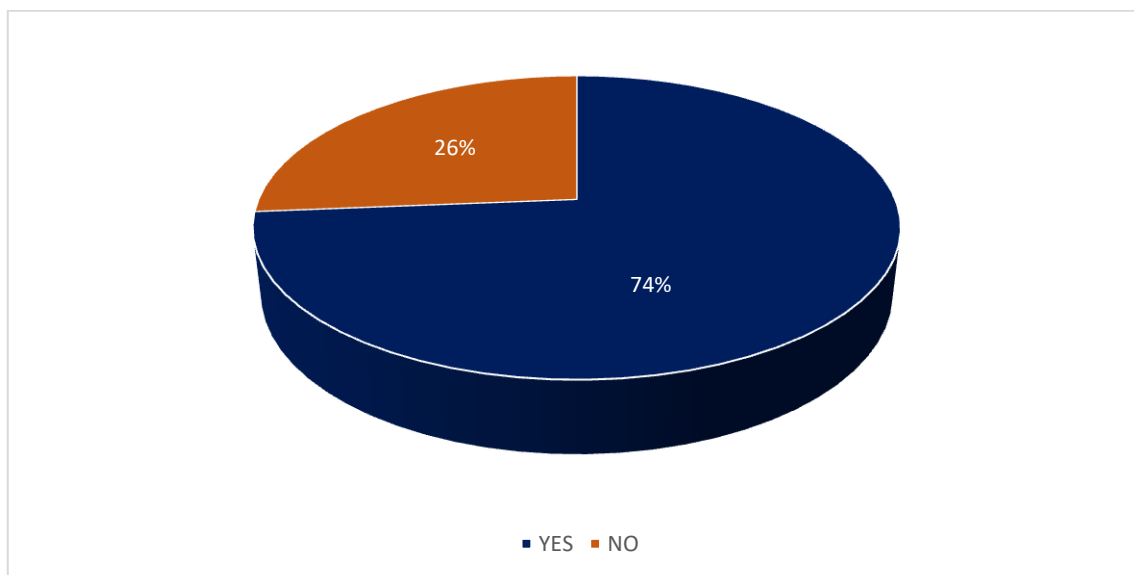


Figure 1: Prevalence of the use of CAM in Universities of Ninevah Province

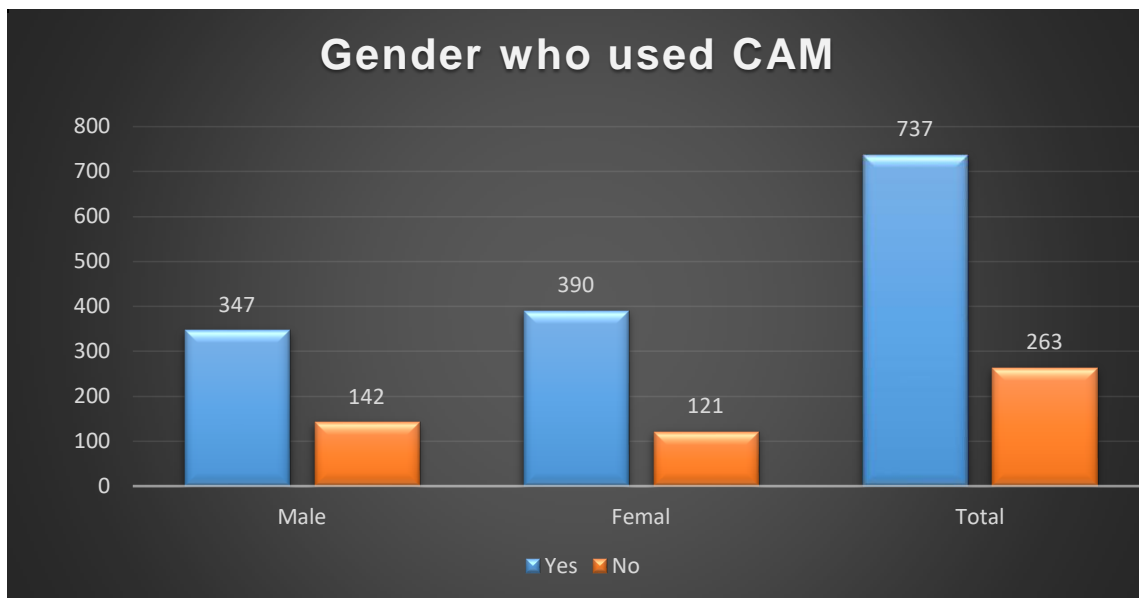


Figure 2: Distribution of CAM users by Gender

## DISCUSSION

This is the first study on the prevalence of CAM use among staff of universities in Ninevah Province, Iraq. Our research found that 74% of adults in Ninevah use herbal medicines. This is similar to findings in other countries, such as 80.2% in Jordan(Thiab et al., 2022) and 83.2% in Nigeria(Adigwe et al., 2022). Our study provides insight into the attitude and understanding of CAM. We identified factors such as gender, chronic diseases, medication usage, and overall health perception that influence the use of CAM. Social variables like beliefs and attitudes may explain why females are more likely to take herbal remedies than males. Several research studies, including ours, back up these findings.(Aziz & Tey, 2009; Gunther et al., 2004; Knotek et al., 2012; Lim et al., 2005). Women may overstate the benefits of herbs and promote their use to each other.(Awad et al., 2014). Natural medicines like herbal oils and extracts are usually applied directly to the skin, which lowers the chances of experiencing any negative effects. According to a 2007 survey, 17.7% of Americans use complementary and alternative medicine. (Barnes et al., 2008). A UK survey found that over 40% of people used herbal medications in one year.(Posadzki et al., 2013). A survey conducted in the United Arab Emirates found that 76% of people polled used herbal medications, with 38% only using one plant.(AlBraik et al., 2008). Our study's findings agree with prior studies. It is likely that disappointment with usual treatment is driving people to natural remedies.(Jones et al., 2017).The survey found that the majority (80%) of participants knew that herbal medicines are made from plants. This suggests that people know a decent amount about herbal remedies. 3.5% of another American survey believed herbal remedies could be combined with traditional

treatments.(Barnes et al., 2008). Studies demonstrate that herbal remedies and conventional treatments may have negative interactions.(Cvijovic et al., 2009). A study found that 64% of people with diabetes had used herbal remedies. 27% utilized myrrh, 20% used black seeds, 15% utilized fenugreek, and 10% used alone. 54.2% reported no adverse effects, and 64.5% saw a decrease in their blood sugar.(Kamel et al., 2017).A study conducted by the University of Hail in northern Saudi Arabia found correlations between socioeconomic status, educational level, gender and familiarity with herbal remedies. Results showed that people with higher incomes and better education levels were more likely to believe that alternative medicines could prevent all illnesses. Out of 409 participants, 318 were considered to have low salaries. As such, a larger sample size may be necessary to gain more accurate results for the general population.(Alkhamaiseh & Aljofan, 2020). Herbal medications are preferable due to fewer side effects, but overuse may lead to adverse effects. Education level is associated with greater knowledge of these items, as previous studies have found.(Alkhamaiseh & Aljofan, 2020). Education can help people learn about the risks of misusing things, including herbal medicines. Statement 9, "Herbal medicines don't need consultation with doctors", was significantly accepted by males. Females were associated with more herbal medicine use, but they still think it should be discussed with a doctor. Awareness programs should target males more. The responses to the survey were mixed. Most of the people had a positive attitude toward natural remedies over medications. However, a minority thought that herbal medicines were better. The results showed that people lacked knowledge about herbal medicine, which is consistent with other studies.(Marinac et al., 2007; Sekhri et al., 2013). 45% of participants thought herbal medications were safe, which is slightly lower than

the 61% of Kuwait's population. This might be due to the sample size.(Awad et al., 2014). Our findings, similar to those in Kuwait, Canada, and Australia, show that more than half of our respondents believe herbal medicines can help maintain health and treat diseases.(MacLennan et al., 2006; Sekhri et al., 2013). People may think that herbal treatments will have a positive effect on their health because they come from nature. Education and socioeconomic status were found to have a significant relationship with their attitude towards CAM. Those with more education were more likely to agree that CAM can be used to promote health. Low literacy is often linked to higher mortality rates since those with it may not have access to health information or be able to seek medical help.(Wolf et al., 2009). The same point 1 is connected with a rise in income. This is probably because individuals with low earnings meet their immediate material needs before looking after their long-term health. Also, low income can make the situation worse by causing problems such as restricted access to health care, inadequate education, etc.(Lazar & Davenport, 2018).Our study revealed that nearly half of those surveyed (49.9%) would use herbal treatments as their first choice if they were feeling unwell. This indicates the prevalence of natural supplements in the city of Mosul's second biggest city. Our results are similar to a previous study, which showed that more than half of the participants (54%) used herbal medicines as their first option in Northern Saudi Arabia. [20]. Herbal remedies are widely accepted and easily available, which could explain why many people use them without consulting a doctor. People on regular medications should be careful when using herbal supplements without a doctor's advice, as this could lead to drug interactions and other adverse effects.(Fugh-Berman, 2000). Public education on the safe use of herbal medications is essential, particularly when taken with conventional pharmaceuticals. Iraqi herbal medicine practitioners should be encouraged to use evidence-based practice, which is lower than expected compared to Western practitioners (Snow et al., 2017). A Canadian study suggested that herbal products should be regulated as medications and that safety and efficacy information should be shared with consumers and physicians.(Kozyrskyj, 1997). Herbal medicines have been proven to be safe and successful, but they may not be the best choice for treating severe symptoms in children without medical supervision. Research has been done to make sure herbal medications are safe for children.(Choonara, 2003; Pitetti et al., 2001). Therefore, extra care should be taken when giving herbal medicines to children; government organizations and hospitals could benefit from organizing awareness programs and talks on the subject. Just two factors, educational level and gender, showed a statistically significant ( $p < 0.05$ ) relationship to herbal medication use. These results are promising and show the need for more education on the proper use of herbal

medications. Proper labelling of herbal medicine items with full information about components, usage and possible side effects could also help reduce adverse events among the public.(Oreagba et al., 2011). Research is lacking on this subject. The field of complementary and alternative medicine is full of incompetent people. Training and course campaigns may be helpful. An ANOVA test was used to analyse the relationship between age, attitude, and belief. The results show that people with higher ages are more likely to use herbal medicines, and their knowledge and use of them increase as they get older.(de Souza Silva et al., 2014). Older people take more medicines than younger people to stay healthy and avoid illness.(Nisly et al., 2010).Polypharmacy and drug-herb interactions can have serious consequences, especially in the elderly. To help prevent these adverse events, it's essential to increase awareness and education about the proper use of herbal medicines. In Ninevah Province, the popularity of herbal medicine is especially high among women, adults, and those with low levels of education. By taking the time to understand the risks and sharing this information, we can all help ensure the safety and well-being of our elderly community.(Al Akeel et al., 2018)An Alghethmi et al. study showed that women have more belief in herbal medicines than men, and this belief increases with age. (Alqethami et al., 2020). Herbal medicines are commonly used in Iraq, Uganda, and Saudi Arabia for treating and preventing diseases, as well as aiding pregnant women.(Al-Ghamdi et al., 2017; Kennedy et al., 2016; Nyeko et al., 2016). People often think herbal medicines are safe and free from side effects, but they are made of complex components that can be harmful. Additionally, the lack of protocols and evaluation techniques makes it hard to scientifically prove their safety and efficacy. To guarantee quality, safety, and effectiveness, herbal medicines must be regulated by drug regulatory agencies in the same way as synthetic drugs(Teschke & Eickhoff, 2015).

## CONCLUSIONS

When writing prescriptions and delivering medications to patients, doctors, nurses and pharmacists should ask the patients for their use of any alternative and herbal medicines, and take care to inform patients about the adverse effects of HMs evidence-based information use and its effects on the body when used with a combination of conventional medicine. To increase patients' awareness of pharmaceutical use, patient counselling, CAM information, and education are necessary.

## Ethical Approval Statement

This research study, titled " **The Prevalence of Complementary and Alternative Medicines use among the employees of the Universities** " conducted by [Mahabat Idris Mohammed,



**Radhwan Hussein Ibrahim**], has received ethical approval from the [ Collegiate Committee For Medical Research Ethics] at [University of Mosul] under approval reference number [No.76-8/10/2022-code: CCMRE-Nur-22-15].

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#### AUTHOR'S CONTRIBUTIONS

All authors contributed equally to the conception and design of the study, data collection, and analysis, and drafted the initial manuscript. All authors critically reviewed and edited the manuscript. All authors approved the final version of the manuscript for submission.

#### DISCLOSURE STATEMENT:

The authors report no conflict of interest.

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