

## Complementary and Alternative Medicine used by Patients with Cancer: Egyptian Survey

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### Abstract

**Background:** Complementary and alternative medicine (CAM) does not consider an integral part of the conventional health care system. Many patients worldwide use CAM on their own initiative or often in combination with their conventional medical therapy. **Aim:** To assess using of Complementary and Alternative Medicine by Patients with Cancer. **Research Design:** Multi-centric, cross sectional descriptive study. **Setting:** In Arab Republic of Egypt, among 14 participated governorates. **Sample:** 1020 patients with cancer were participated. **Tool:** A questionnaire sheet it comprised of patient socio- demographic variables, medical assessment, and question about CAM. **Results:** The majority of participant's patients (81.0%) not using CAM. More than half of patients who used CAM (69.1%) using biologically based therapies: herbs, dietary supplements since diagnosis and (66.5%) consulted the herbalist. While 69.1% of the participants used CAM by mouth, three quarters (75.3%) used CAM to control or relieve pain, (66.5 %) don't remember how much CAM costed to use, most of the patients (98.5 %) did not get any side effect after using CAM, and the main source of information was the family (56.2%). **Conclusion:** Most patients with cancer are aware of the importance of adhering to conventional treatment and the main cause of using CAM was only for relieving or reducing pain. **Recommendations:** Reapply this survey on a larger scale to ensure a good representation of the Egyptian population's use of complementary and alternative medicine.

**Keywords:** CAM, Cancer & Egyptian Survey

### Introduction:

From ancient times, the Middle East has served as a cross-cultural junction for a spread of traditional schools of medicine that still imprint complementary medicine (CM) use in Arab societies. CM practices are gaining further interest in oncology specially when the patients are desperate and choose to depart the Western medicine path (Kessel et al., 2016)

Complementary medicine according to the National Center for Complementary and Integrative Health (NCCIH), is defined as: "a non-mainstream practice used along with conventional medicine", and alternative medicine as: "a non-mainstream practice employed in place of conventional medicine (NCCIH, 2018)

According to the World Health Organization (WHO), the employment of complementary and alternative medicine (CAM) is on the increase. (WHO, 2017), and undoubtedly it has gained medical, economic and sociological importance. However, little is thought about the employment of CAM in patients with cancer (Rashrash et al 2017)

Cancer is one of three leading causes of death in developing countries; related to significant disabilities and is considered as a serious public health problem.

According to World Health Organization (WHO), it's expected that could be cerates ~~are going~~ to be doubled by 2030. ( Alshaimaa, 2018)

Most patients with cancer are aware of the importance of adhering to conventional treatment. However, making decisions on treatment options may still be challenging due to the physical and emotional distress related to the diagnosis and also to the seemingly limited treatment options within the context of debilitating adverse effects from treatment and therefore the lack of considerable survival benefits in advanced cancers. (Smith, 2016)

For various reasons patients with cancer use CAM, including to alleviate cancer symptoms, enhance immunity, reduce the side effects of conventional medicine, and while as an alternative to conventional medicine (Jung et al, 2019)

Although self-health management like self-initiated CAM use or other medications is also perceived as self-care, or a side of health improvement from the patient point of view, unfavorable effects caused by concurrent use of CAM and conventional therapies is also overlooked, especially when robust research is lacking to inform health providers and patients to make sure judicious use of CAM Furthermore, the

CAM included within the clinical guidelines might not be exhaustive or of varying quality (Reeve, & Sabesan, 2019).

The ancient Egyptians had used a different number of herbs in their medicines, which was explained clearly in their papyri. This included frankincense, fennel, linseed, castor oil, aloe, Senna, henna, myrrh, thyme and many others (Mostafa & Singab, 2018).

### Significance of the study:

In Egypt, studies regarding the perceptions and attitudes of patients with cancer toward conventional and CAM therapy usage, types are scarce if any. To determine similarities and differences within the reasons for using or not using CAM amongst general and condition-specific populations, and amongst populations in each region, this study was done to assess the pattern of use, motives, and possible reasons of using CAM among a sample of Egyptian patients with cancer.

### Aim of the study:

The aim of the present study was to assess using of Complementary and Alternative Medicine by Patients with Cancer

### Research questions:

What is the prevalence of using CAM among Egyptian Patients with Cancer?

What are the factors influencing using of CAM among Egyptian Patients with Cancer?

### Subject and Methods:

#### Research design:

Multi-centric, cross sectional descriptive survey design study was utilized in this study.

#### Setting and subject:

This study was conducted in oncology units of general hospitals, day units, and radiotherapy units at 14 governorates have been participated from the 27 governorates, the number of governorates of the Arab Republic of Egypt, which the researchers enables to communicate with them and send the questionnaire and fill it in using the Arabic, native language of the country.

#### Sample size:

Questionnaires were administered at all study sites to a convenience sample of patients attending oncology consultation and/or treatment. Participation in the study was offered to patients aged 18 years to 65, at all stages of cancer. A total of 1020 patients were participated in the study.

#### Data collection tools:

##### Arabic questionnaire:

It's developed by Swisher et al., (2001) and modified by Molassiotis et al., (2005). The questionnaire composed of 27 items (One of the question was

deleted as it was not suitable to our country). It comprised of 3 parts:

#### Part (1): Patient Socio- Demographic Characteristics:

It consisted of (7) items; age, gender, marital status, education, annual income, occupation, and number of people living in the household.

#### Part (2): Medical assessment:

It included (3) items; primary diagnosis, past treatment received and currently receiving treatment

#### Part (3): Questions about CAM use:

It composed of (17) items.

1. Past or current use of Complementary and alternative medicine(CAM)
2. If patients reported no past or current use of CAM after completing the Socio-demographic and clinical section of the questionnaire, they were asked to choose an answer from a list of possible reasons for not using CAM. After that, patients were thanked for their contribution and asked to stop completing the questionnaire at that stage.
3. If patients reported past or current use of CAM, they were asked to continue. answer the following questions:
  - a. Which CAM therapy patients used before the diagnosis of cancer,
  - b. Which CAM therapy patients used Since the diagnosis of cancer
  - c. Which CAM therapies patients used currently.

'Since diagnosis' was defined as any time from the moment a diagnosis of cancer was made until the present time, and 'currently' was defined as actually using a CAM in the present time., This was done from a list of possible therapies, that are prevalent in Egypt, with space to add other therapies if appropriate. Examples of therapies listed were spiritual therapies, herbs, animal extracts, osteopathy, chiropractic, mega-vitamins, aromatherapy, acupuncture and others.
4. Types of CAM practitioners consulted before the diagnosis of cancer,
5. Types of CAM practitioners consulted since the diagnosis of cancer
6. Types of CAM practitioners consulted currently.
7. Method of use of the reported therapy (i.e. by mouth, injection or enema)
8. Frequency of use of reported therapy.
9. Reasons for using CAM therapies.
10. Perceived benefits using CAM.
11. Side-effects from using the reported CAM therapy.
12. Expenditure on CAM.
13. Satisfaction and perceived effectiveness.
14. Sources of information about CAM therapies.

**Scoring system:**

- The patient score was ranged from 0 to 17 degrees
- The higher scores indicating higher levels of satisfaction or perceived effectiveness.

**Validity and Reliability:**

**Validity:** This Arabic version of the questionnaire was examined by a group of five experts in field of medical surgical nursing and Arabic translation fields who slightly modified the questionnaire to suit it to the local terminology.

This modification included deletion of one question as not suitable in our country (e.g., Ethnicity).

**Reliability:** The final form of the tool was designed and tested for reliability by using internal consistency for the tools measured using Cronbach's alpha (tau-equivalent reliability) coefficient for tool parts ( $\alpha = 0.817$ ).

**The Preparatory Phase**

The researchers reviewed the available literatures concerning the topic of the study.

**Administrative design:**

An official permission to conduct the proposed study was obtained from the directors of all hospitals and oncology centers at the 14 governorates which had been participated in the study.

At the initial interview, the researchers introduced themselves to initiate a line of communication and explain the nature and purpose of the study.

**Ethical consideration:**

This study was approved by the ethical committee in the faculty of nursing, Assiut University, and guidelines of clinical research according to the principles of Helsinki Declaration, (1996) for medical research, confidentiality and anonymity were guaranteed. Subjects had the freedom to participate and/or withdraw from the study whenever they wanted.

**Pilot study**

It was conducted on 10 patients from each governorate, they were added to the total number of participants. The study was conducted during the period of two years from 1<sup>st</sup> January 2020, and as the pandemic of COVID- 19 started to be at the beak of its effect and was difficult to complete at these emergency circumstances of infection spread and conditions of prohibition, then it was appealed several times during the lifting of the ban until it was completed on the date of 30<sup>th</sup> September 2021. In some governorates data were collected from more than one hospital, both metastatic and non-metastatic patients with cancer were included from cancer centers, oncology units of general hospitals, day units, and radiotherapy units.

**Operational design:**

- The questionnaire was anonymous and was handed out to the patients after they received information about the study, agreed to participate and signed the consent form was done after translation of the study tool into Arabic.
- The authors used a broad and understandable definition of CAM entailing “therapies often named alternative, complementary, integrative, natural, or folk/traditional medicine.” Added to this definition was a list of CAM modalities that are prevalent in Egypt.

**The Implementation Phase**

- The final version of 27 questions comprised 7 questions regarding patients' socio- demographics and 3 questions about diagnosis and conventional treatment (past and current), and 17 questions about patients' use or attitudes toward CAM, which included 2 limited-choice questions (yes, no, other, or not relevant), 14 multiple-choice questions, and 1 question with responses on a Likert-like scale.
- Questionnaires were administered to patients attending oncology consultation and/or treatment by with the help of colleagues from the nursing staff working in each hospital or cancer center specifically trained in interviewing patients on CAM use, who were instructed to relate only to CAM used in the context of cancer diagnosis or treatment, then the responses were collected on Google Form, poured into one place to examine the results.
- Patients were given the option of filling out the questionnaire themselves or having the questions read to them with the research assistant (head nurses in the selected setting) and fill in for those who cannot read and write. Survey data were entered into a Google form then into computer database for further analysis.
- Participation in the study was offered to patients aged 18 – 65 years, at all stages of cancer. Fourteen governorates were completed the study, providing a total of 1020 patient-completed questionnaires for evaluation.

**Statistical analysis**

Data were analyzed using the Statistical Package for Social Sciences (SPSS) program version (20). Descriptive statistics were calculated with all variables to summarize the data. Differences in socio-demographic characteristics between CAM users and non-users were assessed using Chi-square test. It's considered significant when  $P$  value  $\leq 0.05$ .

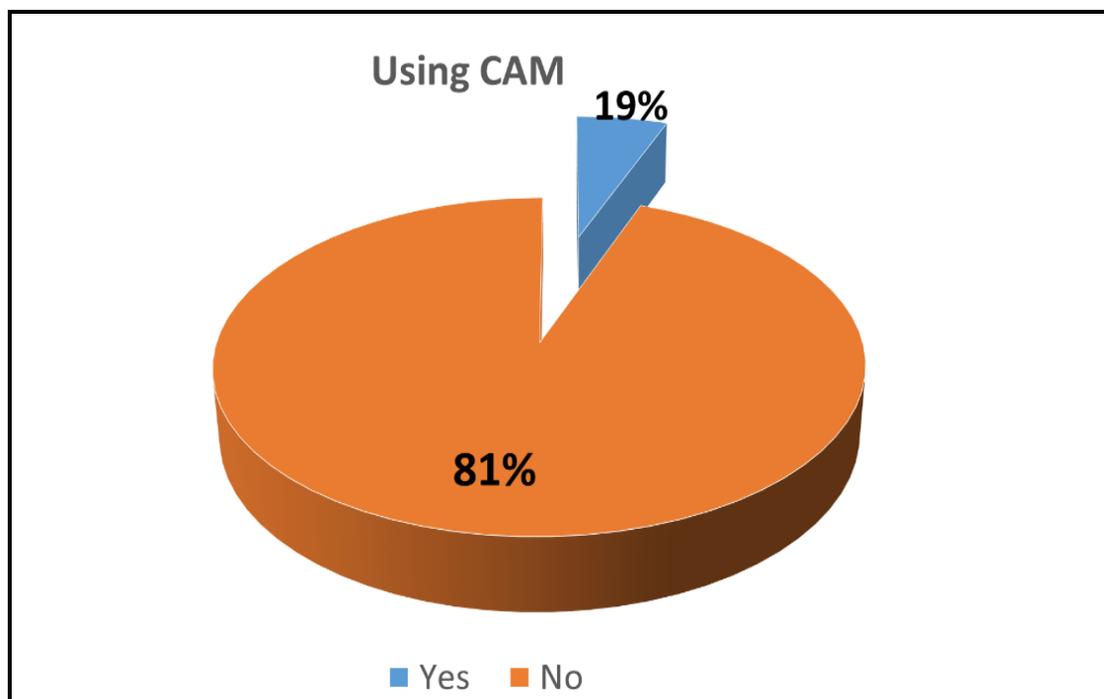
**Results:**

**Part 1: Demographic characteristics of patients:**

**Table (1): Participating governorates, number of patients per governorate (in descending order) and frequency of CAM use**

| Items        | Oncology patients     |      |                       |                            |
|--------------|-----------------------|------|-----------------------|----------------------------|
|              | Total sample (n=1020) |      | CAM use<br>194 (19.0) | CAM non-use<br>826 (81.0%) |
| Governorates | No.                   | %    | n (%)                 | n (%)                      |
| Assiut       | 133                   | 1.30 | 44 (33.1)             | 89 (66.9)                  |
| Cairo        | 100                   | 0.98 | 7 (0.7%)              | 93 (93.0%)                 |
| Qena         | 100                   | 0.98 | 31(31.0%)             | 69(69.0%)                  |
| Aswan        | 100                   | 0.98 | 32(32.0%)             | 68(68.0%)                  |
| Sohage       | 96                    | 0.94 | 13(13.5%)             | 83(86.5%)                  |
| Monofia      | 90                    | 0.88 | 4 (4.4%)              | 86 (95.6%)                 |
| Aqsur        | 84                    | 0.82 | 26(31.0%)             | 58(69.0%)                  |
| Minia        | 66                    | 0.65 | 14(21.2%)             | 52(78.8)                   |
| Shrqia       | 55                    | 0.54 | 0(0.0%)               | 55(100.0%)                 |
| Gharbya      | 44                    | 0.43 | 4(9.1%)               | 40(90.9%)                  |
| Giza         | 42                    | 0.41 | 11(26.2%)             | 31(73.7%)                  |
| Qalyubia     | 39                    | 0.38 | 1(2.6%)               | 38(97.3%)                  |
| Daqhlia      | 38                    | 0.37 | 5(13.2%)              | 33(86.8%)                  |
| Bhyra        | 33                    | 0.32 | 2(6.1%)               | 31(93.9)                   |

CAM= Complementary and Alternative Medicine



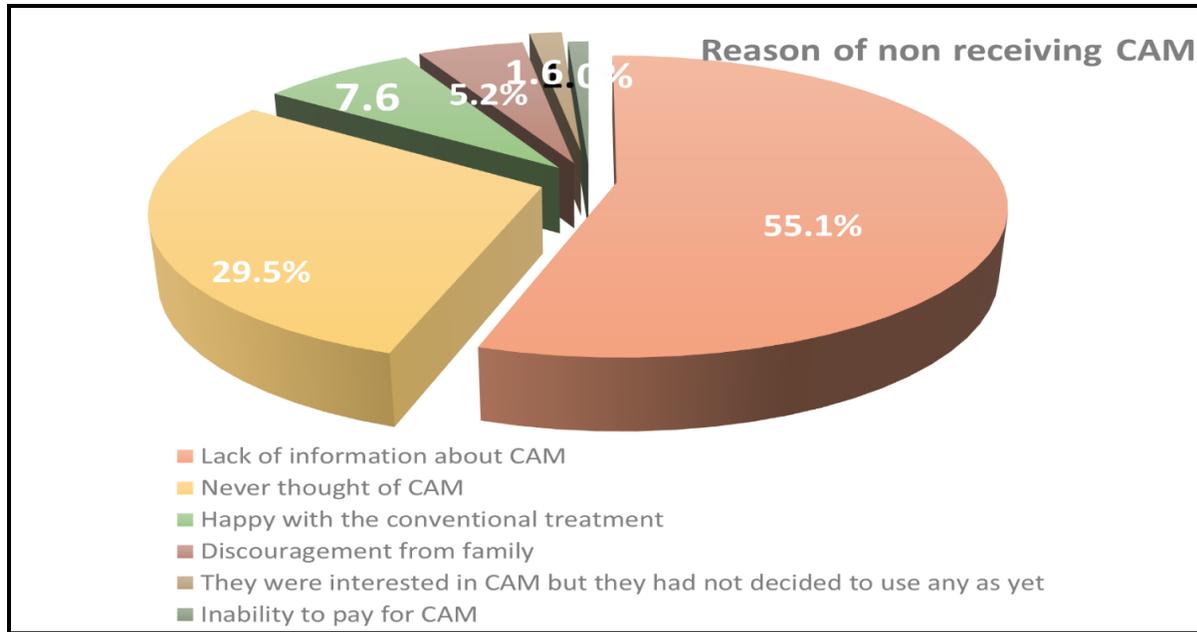
**Figure (1): Distribution of the studied patients in relation to use CAM**

Table (2): Relation between studied patients using and their demographic data

| Demographic data         | Studied patients (n=1020) |       |             |      | P value |
|--------------------------|---------------------------|-------|-------------|------|---------|
|                          | Yes (N=194)               | %     | No (N =826) | %    |         |
| <b>Gender:</b>           |                           |       |             |      | 0.0001* |
| Male                     | 131                       | 67.5% | 346         | 41.9 |         |
| Female                   | 63                        | 32.5  | 480         | 58.1 |         |
| <b>Address:</b>          |                           |       |             |      | 0.005*  |
| Urban                    | 131                       | 67.5% | 466         | 56.4 |         |
| Rural                    | 63                        | 32.5  | 360         | 43.6 |         |
| <b>Age:</b>              |                           |       |             |      | 0.0001* |
| 18- 35                   | 69                        | 35.6  | 181         | 22.1 |         |
| 36 - 50                  | 47                        | 24.2  | 192         | 23.3 |         |
| 51- 65                   | 78                        | 40.2  | 451         | 54.6 |         |
| <b>Mean ± SD</b>         | 51.00 ± 14.15             |       |             |      |         |
| <b>Marital status:</b>   |                           |       |             |      | 0.004*  |
| Single                   | 33                        | 17.0  | 85          | 10.3 |         |
| Married                  | 131                       | 67.5% | 597         | 72.3 |         |
| Divorced                 | 0                         | 0.0   | 28          | 3.4  |         |
| Widowed                  | 30                        | 15.5  | 116         | 14.0 |         |
| <b>Education Level:</b>  |                           |       |             |      | 0.0001* |
| Illiterate               | 84                        | 43.3  | 294         | 35.6 |         |
| Primary certificate      | 36                        | 18.6  | 154         | 18.5 |         |
| Secondary                | 70                        | 36.1  | 231         | 28   |         |
| Have a university degree | 1                         | 0.5   | 147         | 17.9 |         |
| Post graduate            | 3                         | 1.5   | 0           | 0.0  |         |
| <b>Job:</b>              |                           |       |             |      | 0.0001* |
| Employee                 | 14                        | 7.2   | 115         | 1.39 |         |
| Housewife                | 50                        | 25.8  | 408         | 4.94 |         |
| Literal work             | 85                        | 43.8  | 102         | 1.23 |         |
| Retired                  | 12                        | 6.2   | 11          | .13  |         |
| Don't work               | 33                        | 17.0  | 190         | 2.3  |         |
| <b>Family number</b>     |                           |       |             |      | 0.0001* |
| 1-5 Persons              | 102                       | 52.6  | 632         | 76.6 |         |
| 6-10 Persons             | 92                        | 47.4  | 187         | 22.6 |         |
| 11- 15 Persons           | 0                         | 0.0   | 4           | 0.4  |         |
| 16- 20 Persons           | 0                         | 0.0   | 4           | 0.4  |         |
| <b>Income</b>            |                           |       |             |      | 0.011   |
| Stable income            | 14                        | 7.2   | 115         | 13.9 |         |
| Income is not fixed      | 180                       | 92.8  | 711         | 86.1 |         |

*P value < 0.05 = Significant*

*CAM = complementary and alternative medicine*



CAM = complementary and alternative medicine

**Figure (2):** Distribution of the participated patients in relation to reasons for not using CAM and types of CAM used (n.=1020)

**Table (3):** Distribution of participated patients in relation to their perceptions and attitudes toward CAM using.

| Items  | Participated patients using CAM |          |
|--|---------------------------------|----------|
| <b>Method of use of the reported therapy</b> | <b>N= 194</b>                   | <b>%</b> |
| Mouth  | 134                             | 69.1     |
| Injection                                    | 29                              | 14.9     |
| Other  | 31                              | 16       |
| <b>Frequency of CAM use</b>                  | <b>N= 194</b>                   | <b>%</b> |
| Daily  | 119                             | 61.3     |
| Day by day                                   | 1                               | .5       |
| Weakly                                       | 7                               | 3.6      |
| Monthly                                      | 44                              | 22.7     |
| As needed                                    | 23                              | 11.9     |
| <b>Reasons for using CAM</b>                 | <b>N= 194</b>                   | <b>%</b> |
| To remove and relieve pain                   | 146                             | 75.3     |
| Prophetic medicine                           | 22                              | 11.3     |
| To enhance the body's immunity               | 19                              | 9.8      |
| To remove medicines side effects             | 7                               | 3.6      |
| <b>Perceived benefits from its use</b>       | <b>N= 194</b>                   | <b>%</b> |
| Pain Symptoms improved                       | 144                             | 7.42     |
| Emotional support                            | 5                               | 0.26     |
| Kills cancer cells                           | 33                              | 1.70     |
| Improvement without side effects             | 9                               | 0.46     |
| Nothing                                      | 3                               | 0.15     |
| <b>Side-effects from CAM</b>                 | <b>N= 194</b>                   | <b>%</b> |
| Yes  | 3                               | 1.5      |
| No   | 191                             | 98.5     |
| <b>Expenditure on CAM</b>                    | <b>N= 194</b>                   | <b>%</b> |
| 100-500 pounds                               | 23                              | 11.9     |

|  |                             |                            |                             |       |     |       |
|--|-----------------------------|----------------------------|-----------------------------|-------|-----|-------|
| More than 500 pounds   | 42                          | 21.6                       |                             |       |     |       |
| Don't remember   | 129                         | 66.5                       |                             |       |     |       |
| <b>Satisfaction and perceived effectiveness</b>                                  | <b>N= 194</b>               | <b>%</b>                   |                             |       |     |       |
| Minimum  | 68                          | 35.1                       |                             |       |     |       |
| Moderate   | 74                          | 38.1                       |                             |       |     |       |
| High   | 52                          | 26.8                       |                             |       |     |       |
| <b>Sources of information about CAM</b>  |                             |                            |                             |       |     |       |
| Friends  | 62                          | 3.20                       |                             |       |     |       |
| Family   | 109                         | 5.62                       |                             |       |     |       |
| Media  | 23                          | 1.19                       |                             |       |     |       |
| <b>Type of CAM used N= 194</b>   | <b>BEFORE diagnosis 194</b> | <b>SINCE diagnosis 194</b> | <b>CURREN diagnosis 194</b> |       |     |       |
| Biologically based therapies: herbs, dietary supplements                         | 7                           | 3.6%                       | 134                         | 69.1% | 127 | 65.5% |
| body-based methods: massage, chiropractic, osteopathy, drainage therapy          | 34                          | 17.5%                      | 39                          | 20.1% | 24  | 12.4% |
| Alternative medical systems: homeopathy, Chinese herbal medicine and acupuncture | 0                           | 0.0%                       | 1                           | 0.5%  | 0   | 0.0%  |
| Nothing  | 153                         | 78.9%                      | 20                          | 10.3% | 43  | 22.1% |
| <b>Total of type of CAM used</b>   | 194                         | 100%                       | 194                         | 100%  | 194 | 100%  |

CAM = complementary and alternative medicine

**Table (1):** Showed the governorates and the number of questionnaires returned from each one.

**Figure (1)** Shows that the majority of participating patients (81%) not receiving CAM.

**Table (2):** Revealed that there was significant difference between using CAM and demographic data of participating patients. Also that table presents that around half of the studied patients were women (53.2%), with mean age  $51.00 \pm 14.15$  years old, living in urban areas (58.5%), married (71.4%), illiterate (37.1%), housewife (44.9%), their family number were from 1-5 persons (71.8%) and have unfixed monthly income (84.4%).

**Figure (2):** Showed that the most reason for not using CAM among participating patients was due to lack of information about CAM (55.1%).

**Table (3):** Revealed that: from the participants who receiving CAM, more than half (69.1%) used CAM by mouth, three quarters (75.3%) used CAM to remove and relieve pain, (74.2%) reported that pain symptoms was improved as a benefit of CAM using. More than half (66.5 %) don't remember how much it cost to use CAM, and majority (98.5 %) receive CAM without side effect after using it. In addition, one thirds (38.1 %) of the patients have moderate satisfaction from using CAM, and more than half of them reported that the main source of information was the family (56.2%). however more than half of the participated patients who receiving CAM (69.1%) using biologically based therapies: herbs and dietary supplements since they were diagnosed.

### Discussion:

The use of complementary and alternative medicine (CAM) is common among patients with cancer and it should reflect the individual and societal beliefs on cancer therapy (Particia & Critiano 2020). Our study aimed To assess using of Complementary and Alternative Medicine by Patients with Cancer 14 number of Egyptian governorates.

In the present study from 1020 studied patients with oncology problems, the majority not receiving CAM, this not in the same line with Hamed et al., (2020), who founded in their study entitled "The use of complementary and alternative medicine (CAM) among cancer patients at a tertiary hospital in Malaysia" that the prevalence of CAM using among patients with cancer were more than half.

The difference within the results may be due to the shortage of information about the safety of medicinal plants within the Arab countries where CM practitioners have limited training. Consequently, there's an intense lack of pharmaceutical quality control in herbal preparation procedures.

The current study finding did not match with Hamdi et al, 2020 finding, who reported that the majority of patients participating in their survey, was used CAM.

As regarding to demographic characteristics of the patients participating in the present study revealed that around half of the studied patients were women, living in urban areas, married, illiterate, housewives, their family numbers were from 1-5 persons and have unfixed monthly income. This was agreed with Hwang et al., (2020) study title "Complementary and alternative medicine use among outpatients during the

2015 MERS outbreak in South Korea: a cross-sectional study", as who reported that the most of respondents were women, married, received undergraduate education and used CAM prior to the outbreak of their disease.

Also, **Megan et al., (2021)** founded within the study of the dietitian's role in complementary and alternative medicine use during chemotherapy found that around three quarters of the studied patients were females and greater than 55 years old.

The existing study found statistically significant relationship between CAM use and being older, lower educated, fewer members of the family, and being married, This is not a surprising finding, according to the fact that the Egyptian people, especially the elderly, are religious naturally, and consider that alternative medicine may be a type of prophetic medicine.

These findings were consistent with **Abdelmoaty et al., 2018** who reported that 'low educational level, income, and self-described as not very religious are significantly associated with higher use of CAM.

This is disagreed with **Wode et al., (2019) and Keene, (2019)**, who reported that younger age, female patients, higher education and income were patients characteristics which associated with more use of CAM.

The present study demonstrated that from the participants who receiving CAM, over half of them used CAM by mouth, or to get rid of and relieve pain, and reported that pain symptoms was improved after CAM using, but they didn't remember how much it costed to them CAM, majority also reported no side effects after using CAM was noticed. Additionally one third had moderate satisfaction from using CAM, and also the main source of information was their family. Most patients expected CAM to cure their disease.

In this respect, **Ismail et al., (2020)** mentioned that majority of the participants, had information about CAM from the internet and social media and used CAM in coping with chemotherapy-induced constipation.

While **Hamed et al., (2020)** reported that the foremost frequently used forms of CAM were vitamins. Majority of patients were guided by family and friends' suggestions towards using CAM and most of those patients expected CAM to cure their disease.

The results of the present study revealed that the foremost of participating patients using biologically based therapies: herbs, dietary supplements since diagnosis. Similar findings were reported by **laura et al 2017** in their study " Use of complementary and alternative medicine in Europe: Health-related and socio-demographic determinants " who reported that

the foremost frequently used CAM modalities in Europe are herbal medicine, homeopathy, chiropractic, acupuncture, and reflexology.

**Lucy et al., (2020)** occasioned that every woman interviewed used some sort of CAM practices, practitioners, or products, specifically concentrated on their diet, majority focused on their exercise, and used a CAM product.

These findings are inconsistent with **AlSagheir& Alyousefi (2017)**, who mentioned that the commonly employed practice was of spiritual type like prayer and reciting Quran alone or on water. Other types include herbs (8–76%), honey (14–73%) and dietary products (6–82%).Cupping (Alhijamah) was less commonly used (4–45%), and this might be associated with regulation enforced by the Ministry of Health preventing this practice for some time due to its invasive nature and therefore the need for strict aseptic procedures, which is lacking in most of the settings and malpractice associated with this sort of traditional treatment was widespread. It's worth to add that therapeutic benefits of Alhijamah (cupping) were studied considering modern medicine and prophetic medicine. It absolutely found to be superior to acupuncture and other sorts of cupping therapy in treating a large number of diseases of various etiologies and pathologies.

Also, **Chowdhury et al., (2020)** founded that the foremost common therapies utilized in this study were herbal medicine. Additionally, **Yichao et al., (2021)** within the study entitled "The Changes of Cancer Patients' Perception, Attitude and Clinical Practice in Complementary and Alternative Medicine during COVID-19: A multicenter before-after cross-sectional study" reported that the main purpose of receiving CAM therapy was to enhance immune system.

The present study founded that there was a significant difference between reasons for using CAM and perceived benefits this was within the same with **Kolathu et al., (2021)** who reported that "When feedback regarding satisfaction was enquired, the patients discussed that the TCAMs didn't cause any side-effects or disease progression".

#### **Limitations:**

This study has some limitations to be acknowledged. As, the results might not represent all the patients with cancer in Egypt, for it had been only conducted at 14 from 27 governorate of Egypt and the participated patient's number was limited. Moreover, the survey was mainly focused on the perceptions and attitudes of Egyptian's patients with cancer toward CAM, which of the oncologists still remain unclear.

**Conclusion:**

- The majority of the studied patients didn't use CAM.
- There was a statistically significant difference between studied patients using and not using CAM regarding their demographic data.
- The use of CAM is extremely prevalent among elderly, low educated and married patients.
- However, most studied patients with cancer were aware of the importance of adhering to conventional treatment.

**Recommendations:**

- Reapply this survey on a bigger scale to confirm an honest representation of the Egyptian population's use of complementary and alternative medicine.
- Reasons for using CAM among patients with cancer should be considered by the oncologists to overcome these reasons.
- Apply developed program within the study setting for health care team regarding complications of CAM for continues updating their knowledge.
- Simple educational pamphlet for patients with cancer about the hazards of unplanned CAM using.

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