

The Alternative Therapeutic in Pediatric Cancer: What We Know?

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How to cite this paper: Danaoui, K., El Baz, M. and El Houdzi, J. (2023) The Alternative Therapeutic in Pediatric Cancer: What We Know? *Open Journal of Pediatrics*, 13, 368-378.

<https://doi.org/10.4236/ojped.2023.133042>

Received: March 24, 2023

Accepted: May 12, 2023

Published: May 15, 2023

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Abstract

Scientific research has brought about enormous national advancements in cancer management. Currently, Morocco provides several therapeutic tools for cancer, among them chemotherapy, surgery and radiotherapy. In Morocco, there is not enough published data on the use of alternative medicine in pediatric oncology. Owing to the increased interest and lack of data on this practice, we conducted this study. It aims to evaluate the uptake, the types of therapies used, the factors influencing, the reasons for this choice and the cost of AM used by patients. An investigation through a questionnaire was carried out on thirty-four children following for cancer within the pediatric hematology and oncology department (PHO) of Marrakech. The survey was conducted over a period of one month and a half between July 25 and September 5, 2022. Data were collected through a questionnaire. From the medical files, we collected data regarding type of cancer, date of admission to PHO department and the treatment received. We asked about the type of AM used: herbs, honey, spiritual AM, zamzam water (water from a “sacred” source in Mecca). Using alternative therapies is a common practice in pediatric oncology with various reasons, among them, the declining socioeconomic level, the diversity, the cultural background, the psychological and the functional status of patients and sometimes the dissatisfaction with conventional medicine.

Keywords

Alternative Therapeutic, Cancer, Chronic Disease, Treatment, Morocco, Herbs Medicines, Pediatric, Chemotherapy

1. Introduction

Scientific research has brought about enormous national advancements in cancer management. Currently, Morocco provides several therapeutic tools for can-

cer, among them chemotherapy, surgery and radiotherapy. Nevertheless, alternative medicine (AM) still has a place in our daily practice of patients suffering from chronic diseases, like cancer. The prevalence of this use according to the literature ranged from 7% to 64% [1].

Eisenberg *et al* define alternative medicine as all medical interventions not commonly being taught in medical school and not being available in the usual care settings [2]. AM consists of various techniques with spiritual and/or bodily dimensions such as herbal remedies and acupuncture [3]. Depending on the country, its traditions and legislation, AM may be common, allowed or prohibited. It often reflects a personal search and the pursuit of a type of care that is sometimes outside the usual framework of reference of classical medicine.

The studies conducted over the past decade have estimated that between 36% and 84% of patients in pediatric oncology receive AM at some phase of treatment [3] [4]. Quite often the attending physician is unaware of this practice. In fact, parents of children with cancer rely on complementary and alternative medicine to alleviate symptoms, to reduce chemotherapy side effects and to cope with the emotional aspects of a life-threatening disease [5] [6].

In Morocco, there is not enough published data on the use of alternative medicine in pediatric oncology. Owing to the increased interest and lack of data on this practice, we conducted this study. It aims to evaluate the uptake, the types of therapies used, the factors influencing, the reasons for this choice and the cost of AM used by patients.

2. Patients and Methods

An investigation through a questionnaire was carried out on thirty-four children following for cancer within the pediatric hematology and oncology department (PHO) of Marrakech. The survey was conducted over a period of one month and a half between July 25 and September 5, 2022. Children who were being assessed for cancer, whose parents had agreed to answer the questionnaire, were included in this study.

Data were collected through a questionnaire. We interviewed parents of both inpatient and outpatient children. In the data sheet of all parents interviewed, we included the patient's age, their place of residence, the educational level of the parents, as well as their profession and the medical insurance they had. Participants were excluded if they denied research authorization, refused to participate, or were unable to be contacted.

From the medical files, we collected data regarding type of cancer, date of admission to PHO department and the treatment received. We asked about the type of AM used: herbs, honey, spiritual AM, zamzam water (water from a "sacred" source in Mecca) and others. We questioned the parents firstly about the moment and reason for the use of AM, the benefits gained, as well as the side effects, and secondly, whether they were satisfied with the information provided about the disease and its prognosis, and whether they had notified their child's doctor about the use of AM.

3. Results

During the period of the study, 34 questionnaires were collected from the outpatient and the inpatient units. Age of our patients ranged from 2 to 14 years, with a median age of eight years. The M/F sex ratio was 1.2.

Among the 55 parents of the patients interviewed, 34 admitted having used AM during treatment, 61% of the cases. Regarding the parents' profiles, 85% of our patients were illiterate (**Figure 1**). There were as many indigent patients (without any medical insurance).

The different types of AM used by the 34 patients are shown in **Figure 2**. The most used AM type was zamzam water with a prevalence of 65%. Herbs ranked second with 41.5%.

Among these plants, thyme (Zitraa) was the most used by parents, with a prevalence of 32.3%. Anserine (Mkhinza) was second with a prevalence of 17.6% and Rosemary (Azir) was third with a prevalence of 11.7%; with different doses of an average of one tea spoon twice a week.

Spiritual means, such as reading the Quran, was reported in 50% of cases. Spring water (zamzam) was used in 55.8% of cases; and fire points in one case (**Figure 3**).

When parents were asked why they used AM, 82% of them stated that it was to stimulate the immune system, 45% to try any possible treatment, 8% to treat cancer and less often to slow down tumor growth.

Among the reasons for resorting to alternative medicine is the lack of financial means and the cheaper cost compared to going to the hospital. Parents are influenced by their close entourage whether family, grandparents, neighbors or the videos conveyed on social networks, youtube videos.

In terms of benefits, 12 parents, or 35%, reported that the children felt "better" after the use of AM, and 65% of the cases were of no benefit from the AM.

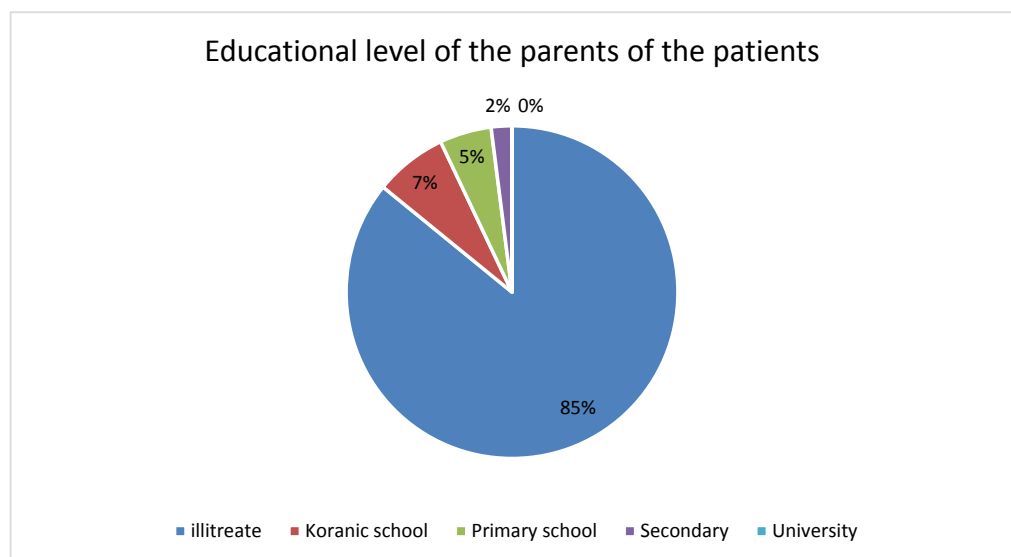


Figure 1. Educational level of patients' parents in our study.

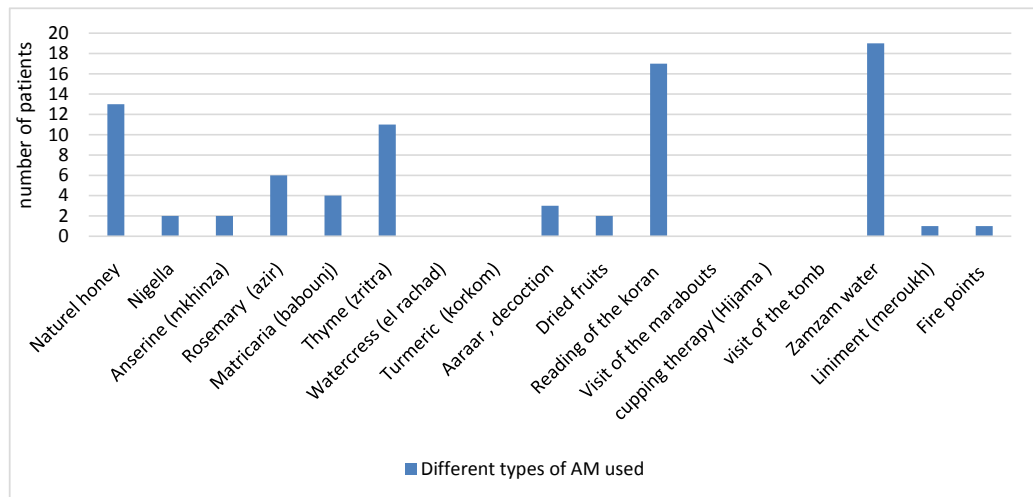


Figure 2. Different types of AM used by patients in our series.



(a)



(b)

Figure 3. (a) (b): fire points on child of 12 years old.

No side effects were reported in our series. None of the parents who acknowledged using AM had discussed it with the attending physician. As for the timing of AM use, 36% used these remedies concurrently with chemotherapy, 54% immediately after diagnosis and before any chemotherapy, 10% during disease progression, and none during remission. The cost of the therapy was cheaper and easily accessible in 85%.

4. Discussion

AM was and still has a place increasingly used as an adjunct therapy to conven-

tional treatment of pediatric cancer. There are several studies demonstrating an increase in the prevalence of its use. In our study, AM was used in 61% of cases, a percentage that is close to the 65% reported by Friedman *et al.* and the 73% reported by a team from Taiwan [7] [8]. The use of AM in pediatric oncology seems to be a widespread practice and has been reported by different teams around the world. For instance, a study conducted in Canada by Bold and Leis reported that 36% of families of children with cancer admitted using AM [9]. In Turkey, a survey of children with cancer showed that 51.6% of them had used AM [4]. As well, AM use is a common practice among children with cancer in western Mexico [10].

An investigation by Neuhouser *et al.* in Washington State indicated that 73% of pediatric oncology patients had used at least one type of AM, with 75% of the cost being covered by health insurance [6]. In another study conducted in Quebec by Spigelblatt *et al.* in 1994 only 11% of parents of children with cancer reported having used AM in addition to cancer treatment [11]. During the same year, Sawyer *et al.* published a study in which 46% of children with cancer had used AM [12]. This difference may be related to the fact that some parents do not recognize some practices as being within the realm of AM [13].

According to Samur *et al.* the type of AM used varied according to ethnicity, geographical area, socioeconomic status and type of cancer [14].

In our serie, the most used type of AM was Zamzam water, followed by spiritual methods such as Quran reading, then thyme (Zitraa) which was the most used plant in our serie, followed by Anserine (Mkhinza), and Rosemary (Azir) ranked third. The spiritual tools that were used were mainly the reading of Quran.

Despite the differences in methods used and definitions of AM among studies, the use of herbal remedies is frequently reported in pediatric cancer patients [6] [9] [15]. Molassiotis and Cubbin in Great Britain reported that polyvitamin products, massage with aromatherapy, diets and music were the most commonly used therapies in pediatric oncology [16]. Sawyer *et al.* have reported the use of hypnotherapy, relaxation techniques, diets and polyvitamins [12].

In Finland, Möttönen and Uhari conducted over two years a prospective study of children with acute leukemia and found that 40% of them received polyvitamins, micronutrients and minerals [5].

In Mexico, the use of herbal medicines was the most frequently reported, in contrast to the use of bioenergy remedies and prayer, which were rarely used [11]. In Turkey, the most commonly used modality was herbal products such as tea and herbal meals in 71% of cases [4].

In British Columbia, herbal teas, relaxation strategies/figurative language, massage, and therapeutic contact were the top additional techniques commonly used [14]. In Taiwan, Yeh *et al.* found that liquids and powders labeled with high nutritional value followed by spiritual practices were the most frequently applied AMs [8]. In the study of Neuhouser *et al.* although the use of AM was significantly associated with the degree of parental dissatisfaction with the attending

physician, no patient used AM as a substitute of conventional medical treatment. [6].

The most commonly reported reasons for using AM were to relieve symptoms of the disease and to reduce the side effects of the treatment [6] [17]. In Mexico, more than half of the parents had administered the alternative therapies to their children in order to reduce the side effects of conventional treatment or as a curative measure [9].

In the United States, Kemper and Worham found that the purpose behind the use of such therapies was to control symptoms like nausea, pain and lack of appetite [18]. In Canada, a study indicated that the main motives were to control the disease and to improve the immune system [18].

The authors also noted that the underlying reason parents stated for using AM depended on how the question was asked [19]. More than half of the parents we asked about the benefits of AM stated that their child would have felt “better”, but this remains completely subjective. In Mexico, a high level of satisfaction was noted with 26% of parents considering the use of AM to be helpful and 53% very helpful [9]. Fernandez *et al.* reported that half of the interviewed parents considered these practices to be beneficial and 20% very beneficial [15]. Finally, Kelly reported that these therapies were rated as very effective by 50% of surveyed parents [20]. All of these judgments remain completely subjective and the parental decision to use AM should be based on studies of effectiveness and safety.

A few clinical studies have documented the effectiveness of these therapies. For example, the results of studies testing the efficacy of treatments such as acupuncture or ginger for nausea and vomiting, hypnosis and figurative language for pain and anxiety. In oncology, the research on alternative therapies has been mainly conducted in adults [3]. Ginger is used in the treatment of nausea and vomiting. St. John’s Wort has been shown to be effective in the treatment of depression and anxiety. Echinacea is used as an immunostimulant [1]. In the late 1980s, German researchers initiated a series of preliminary clinical trials to determine whether a preparation containing extracts of Echinacea, Thuja and wild indigo (Esberitox[®]) could minimize the adverse effects of radiation therapy, particularly the prevention of leukopenia caused by radiation or chemotherapy. The results were not strongly conclusive [21].

Unfortunately, most studies indicated that most parents do not mention the use of AM to the attending physician [4] [9] [22] [23] [24] [25]. This low percentage also observed in our serie may suggest a communication’s gap between the physician and the parents.

According to a review of the literature published by Claire Bosacki *et al.* in April 2019, on the “Pubmed” database, the evidence level of the effectiveness of mind-body therapy groups is much higher than that of other alternative and complementary medicines based on well conducted trials. Regarding other alternative and complementary medicines, when they existed, the trials were often affected by methodological limitations that could have biased the results, especially with small numbers and a lack of characterization of associated conven-

tional treatments. Therefore, it seems essential to evaluate the contribution of alternative and complementary medicine in cancer patients in studies with a solid methodology, carried out in oncology healthcare support departments. Furthermore, negative trials have often set alternative and complementary medicines against conventional medicines, whereas those that have tested their combination have mostly shown a benefit. In its March 20, 2018 note, the Ministry of Health recalled the differences between conventional medicine and unconventional care practices [26]: Conventional medicine is taught in medical schools to obtain the diploma and title of physician on a national level. Treatments have obtained scientific validation either through clinical trials or because these treatments have a strong professional consensus. Non-conventional health care practices are not based on scientific or clinical studies showing their action modalities, their effects, their effectiveness or their harmlessness [26].

Besides, when they are used for treating a serious illness such as cancer, or as an urgent alternative to established conventional treatments, they can ruin the chances of improvement or recovery of patient. Though it is true that alternative and complementary medicine can lead to sectarian aberrations, to the point of requiring the intervention of the Interministerial Mission of Vigilance and Combat against Sectarian Aberrations (MIVILUDES), it is undoubtedly unfair to cut ourselves off from their possible complementary contribution, particularly in the management of post-treatment resistant symptoms, or as part of psychological support [26].

The growing need is undoubtedly multifactorial, but it is interesting to note that the question of the patient's well-being has only been measured through life quality questionnaires in oncology for a few years, whereas it is at the heart of many alternative and complementary medicines [24] [25].

It is possible that the effectiveness of some of these therapies is purely secondary to the placebo effect, which still yields an overall therapeutic effect on the patient after disregarding the specific effect. Why should we deprive these patients of such a benefit? It is probably in this perspective of additionality that we should consider some alternative and complementary medicines [25].

Perhaps we should no longer seek to prove a specific effect, but rather a global therapeutic effect that is not deleterious to patients. The concept of integrative medicine developed in the United States by the National Center for Complementary and Integrative Health [26] is undoubtedly an interesting approach that France could draw inspiration from. It is defined by a holistic approach to the management of the patient, coordinating conventional and complementary practices.

Although AM strategies are widely used in pediatric oncology, they may pose medical, legal and ethical problems to the healthcare professional. With the use of AM instead of traditional medicine, treatments with proven efficacy may be delayed, and the risk of mortality increases with the abandonment of conventional treatment [27]. Ethical concerns include the cost, effectiveness, and availability of AM [27].

Studies on the use of AM in children with cancer reveal different results; in a Canadian study, the rate of parents who reported using AM for their children was 11%. The combined use of chiropractic, homeopathy, naturopathy, and acupuncture was reported as 84%. The findings show that AM is an aspect of children's health care that can no longer be ignored [28]. In a study conducted in Florida, the use of AM in children with cancer was reported to be at 45%. The most commonly used types of AM are prayer, exercise, and massage [29]. It has been reported that 18% of children admitted to the hospital due to acute illnesses in New Zealand received AM treatment before their treatment in the hospital. It has been determined that the treatment varies according to ethnic groups. Homeopathy, naturopathy, chiropractic, aromatherapy, massage, and herbal medicine are the most commonly used types of AM [30]. The prevalence rate of AM use in cancer patients in Japan is 44.6%. Mushrooms and medicinal plants were stated to be among the most common products [31]. The most common AM methods used in the United States of America (USA) have been reported as vitamins/ minerals and prayer [32]. In addition, as reported by Sanchez *et al.*, it was determined that one out of every nine children in the USA used AM [33].

A study by Bauer-Wu stated that AM research with pediatric cancer patients is in its infancy. It has been stated that most of the research in this area focuses on mindbody interventions such as hypnosis and music therapy, which have positive effects on psychological and physical symptoms in children undergoing cancer treatment. There has been criticism that very little work has been done on the use of AM treatments in pediatric cancer patients. It has been stated that more research needs to be done on the effects and interactions of these therapies, as parents tend to use AM [34].

5. Conclusion

Using alternative therapies is a common practice in pediatric oncology with various reasons. More research is needed to define the cultural and regional influences on the use of AM in pediatric oncology and to prospectively evaluate its outcomes in patients. More education and open communication are needed to improve the quality of health care and ensure understanding of the use of AM in children with cancer. Healthcare professionals, especially those working in pediatric oncology, have a responsibility to be knowledgeable about AM. Healthcare professionals should approach patients and their parents without prejudice, and collect information from parents about various AM methods.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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