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Complementary and alternative medicine in multiple sclerosis: a questionnaire-based study

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ABSTRACT

Aim of the study. To assess the prevalence and characteristics of complementary and alternative medicine (CAM) use among multiple sclerosis (MS) patients in Poland.

Clinical rationale for the study. Multiple sclerosis (MS) is a chronic, progressive and disabling neurological disease with significant impact on quality of life. Although the efficacy and safety of complementary and alternative medicine (CAM) has not been scientifically confirmed, many patients use CAM as a complement or an alternative to conventional therapy.

Material and methods. Data was collected via a self-designed survey consisting of 33 questions. The questionnaire was distributed among MS patients hospitalised during 2016 in the MS Unit at the Department of Neurology, Medical University of Warsaw, Poland. The study group consisted of 75 patients (47 females, 28 males, mean age 44.6 ± 12.5 years) with clinically defined MS.

Results. According to the questionnaire, 48 patients (64%) had used CAM at least once. Most of the patients declared that CAM had a possible (58%) or a marked (43.7%) positive effect. 61.4% of CAM users reported reduced fatigue and 33.3% improved mood. There were significant correlations between CAM use and lower social and professional status ($p < 0.04$), disease progression ($p < 0.03$), and lack of efficacy of disease-modifying therapies ($p < 0.04$). There were no significant correlations between CAM usage and sex, habitation, education, marital or professional status. The most frequently used CAMs were vitamins (48%), and polyunsaturated fatty acids (36%); psychophysical methods (44%) included manual therapies (24%) and relaxation techniques (17.3%) as well as herbal medicine (29.3%). Physicians were considered to be the most reliable authority in both conventional treatment (97.3%) and CAM (67%). Complementary and alternative medicine users significantly more often discussed this issue with their doctors (56%) compared to patients who did not use alternative medicine ($p < 0.05$). However, 54% of patients did not inform their physician about CAM use. Responders said that physicians did not initiate discussion about it (55.9%), but 44% of patients would like to have the possibility of talking to a doctor about CAM.

Conclusions and clinical implications. Although CAM efficacy and safety is not confirmed, one should keep in mind that most MS patients use alternative methods, especially those individuals with a more severe phenotype. Physicians are mostly perceived as reliable authorities and therefore they should discuss this issue with patients in order to eliminate drug interactions and to improve compliance.

Key words: multiple sclerosis, complementary and alternative medicine, disease-modifying therapy, efficacy, safety

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Introduction

Multiple sclerosis (MS) is an inflammatory, demyelinating disease leading to brain lesions and atrophy. Although nowadays there are a number of disease-modifying therapies (DMT), there are still forms of the disease in which treatment is ineffective [1]. Moreover, a significant number of patients still suffer from impairing symptoms or experience treatment-related side effects and, therefore, seek alternative therapies. Complementary and alternative medicine (CAM)is defined as a group of diverse medical and non-medical and healthcare practices and products that are not generally considered part of conventional medicine [2]. Although they are becoming more popular both in the general population as well as among patients, their use still remains controversial both regarding safety and efficacy [3].

According to previous studies, 57.1–81.9% of MS patients had ever used any CAM modality during their life [2, 4–7]. When it comes to the rationale behind the use of CAM, it was usually the desire to use holistic healthcare and a lack of satisfaction with conventional therapies [4]. The most frequently used modalities of CAM are: ingested herbs, manual therapies, massage, and acupuncture [8]. However, these results depend to a great extent on the cultural background of participants. For example, while a study conducted in Germany [5] demonstrated that the most frequently selected methods were vitamin supplements, yoga/thai chi/qi gong, relaxation techniques and meditation, in a large study on a US population [4], the most commonly used CAMs were ingested herbs, manual therapies, massage, and acupuncture. MS patients with a history of CAM use are mainly female, have a longer disease duration, and are characterised by a greater degree of disease severity [4, 5, 8].

The purpose of our study was to analyse the prevalence and characteristics of CAM use in a Polish population of patients with MS.

Material and methods

Our data was obtained from a questionnaire distributed among MS patients hospitalised during 2016 in the MS Unit at the Department of Neurology, Medical University of Warsaw, Poland. Written informed consent was collected from all participants and the Medical University of Warsaw Bioethical Institutional Review Board approved the study protocol. The study group consisted of 75 patients (47 females, 28 males, mean age 44.6 ± 12.5 years, median 42 years, range 21–81) with clinically defined MS.

The exclusion criteria were: age less than 18 or a primary diagnosis of another neurological disorder. The enrolled patients underwent neurological examinations. Answers to a comprehensive questionnaire were collected in person by the interviewers. The responses to the questionnaire were transcribed onto a computer by the interviewers.

The data was collected via a self-designed survey consisting of 33 questions divided into three groups: demographic data, characteristics of conventional treatment, and information on complementary and alternative medicine. Along with the demographic questions, the following information was collected: neurological status, the course and type of MS, type of MS treatment, current and past use of CAM, the source of information about CAM, CAM safety and efficacy, the reason why CAM had never been used (if applicable), duration and frequency of CAM usage, the place where CAM is acquired, the type of CAM that is/was applied, the reason why they were used in the first place, the general costs of this therapy, overall opinion about CAM, and whether or not they had discussed their decision about CAM with their physician.

Statistical analysis was performed using STATISTICA versions 12 and 13 and R [9]. We used descriptive statistics to present demographic, clinical data and information on the CAM. Continuous data was displayed as mean ± standard deviation and median. Chi-squared and Spearman correlation tests were used to determine associations. For all statistical analyses, significance (α) was set to $p < 0.05$.

Results

Altogether, 75 patients with clinically confirmed MS were enrolled in our study. 47 (62.7%) of them were female, mean age 44.6 years. Further demographic and clinical characteristics of participants are set out in Table 1. Patients mainly defined the course of their disease as relapsing and remitting (n = 47, 62.7%), progressive (n = 39, 52%), or benign (n = 36, 48%). The most frequently used DMT were mitoxantrone (n = 22, 29.3%), interferon beta (n = 20, 26.3%), natalizumab (n = 10, 13.3%), and glatiramer acetate (n = 9, 12.0%).

Table 1. Demographic characteristics of patients included in study

Variable	Total	Female	Male
No. of patients	75	47	28
Mean age [years]	44.6 (± 12.5)	43.1 (± 12.9)	47.5 (± 11.5)
Median age [years]	42	41	45
Mean age at diagnosis [years]	31.3 (± 11.2)	30.4 (± 10.6)	33.0 (± 12.3)
Median age at diagnosis [years]	28	27	30
Mean disease duration [years]	12.0 (± 14.4)	11.7 (± 10.7)	12.4 (± 19.3)
Median disease duration [years]	11	11	11

According to the questionnaire, 48 patients (64%) had used CAM at least once. The main rationale behind CAM use was the statement that CAMs are safe, and could be helpful in symptom reduction (n = 28, 37.3%); similarly, 21 (28%) individuals considered CAM beneficial for their health, 20 (26.7%) had found information about CAM efficacy, and 19 (25.3%) used CAM because it was recommended by a friend or family member.

The most frequently used CAM were vitamins (48%) and polyunsaturated fatty acids (36%); psychophysical methods (44%) included manual therapies (24%) and relaxation techniques (17.3%) as well as herbal medicine (29.3%) (Figs. 1, 2). Physicians were considered the most reliable authority regarding both conventional treatment (97.3%) and CAM (67%). Most of the patients declared that CAM had a possible (58%) or a marked (43.7%) positive effect. The most frequently reported positive effects were reduced fatigue (n = 46, 61.4%) and improved mood (n = 25, 33.3%). Importantly, 27 individuals (56.3%) reported improvement of their quality of life (Fig. 3). As for MS symptoms, the most commonly reported positive effects were a reduction of relapse rate (n = 10, 20.8%), general improvement of neurological status (n = 10, 20.8%), decrease of relapse severity (n = 9, 18.8%), and modification of disease progression (n = 7, 14.6%). Importantly, CAM was also well-tolerated: the vast majority of patients reported that this treatment was either well tolerated (n = 34, 45.3%) or very well tolerated (n = 20, 26.7%). CAMs were mainly used for a short period of time (less than six months) (n = 17, 22.7%) or between six months and three years (n = 13, 17.3%). Frequency was diverse — the majority of patients either used CAMs only

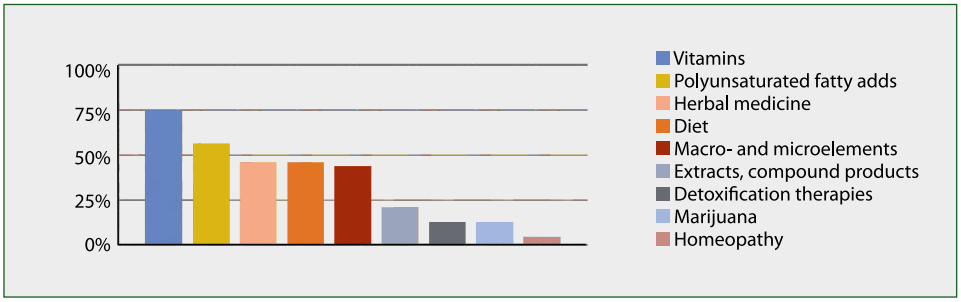

Figure 1. The most frequently used complementary and alternative medicines (CAM) belonging to nutrition category

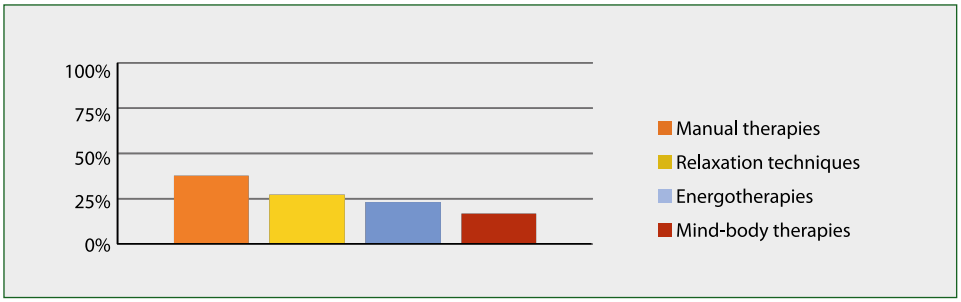

Figure 2. The most frequently used complementary and alternative medicines (CAM) belonging to psychophysical interventions category

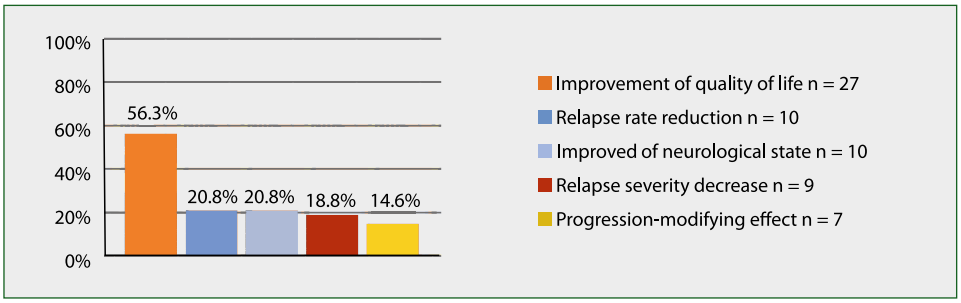

Figure 3. Influence of complementary and alternative medicines (CAM) on quality of life

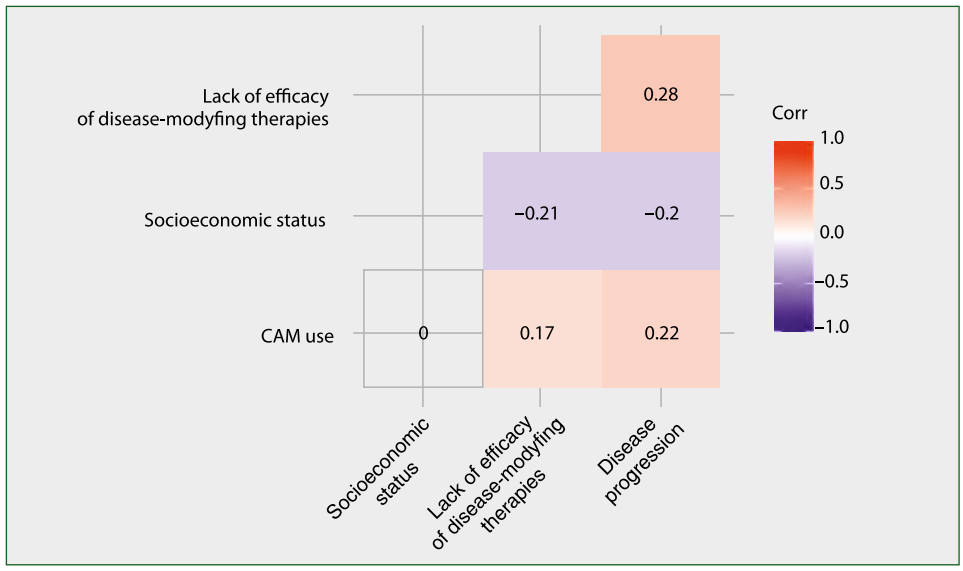

Figure 4. Correlation matrix between use of complementary and alternative medicine (CAM) and factors demonstrated to be significantly associated in univariate analysis

several times during their disease (n = 17, 22.7%) or used them everyday (n = 15, 20.0%). CAMs were mainly bought in a pharmacy (n = 25, 33.3%) or a herbalist shop (n = 19, 25.3%). The majority of patients spent < 50 PLN per month on CAM (n = 18, 24.0%) or 50–150 PLN per month (n = 10, 13.3%).

There were significant correlations between CAM use and lower social and professional status ($p < 0.04$), disease progression ($p < 0.03$), and lack of efficacy of disease-modifying therapies ($p < 0.04$) in univariate analysis; but in multivariate analysis, only disease progression and lack of efficacy of disease-modifying therapies remained significant. There were no significant correlations between CAM usage and sex, habitation, education, marital or professional status. CAM users significantly more often discussed this issue with their doctors (56%) compared to the patients who did not use alternative medicine ($p < 0.05$). However, 54% of patients did not inform their physicians about CAM use. Responders said that physicians did not initiate a discussion about it (55.9%), but 44% of patients would like to have the chance to talk to their doctor about CAM.

Among patients with no history of CAM use (n = 28, 37.3%), the main reasons why the patients had never opted for this treatment was that it had never been considered before (n = 15, 20%) and satisfaction with conventional therapy (n = 13, 17.3%).

Discussion

We analysed results from one of the first studies considering the use of CAM in Polish patients with MS. This study was conducted a few years ago, but we can still see that despite the emergence of more and more DMTs, CAM is still very popular among patients. The majority of patients have used CAM at least once and have mostly reported a positive effect of such treatment, the most frequent being reduced fatigue and improved mood, which, in turn, led to improved quality of life. Importantly, the use of CAM was related to lower social and professional status, disease progression, and lack of efficacy of DMT.

Previous studies have demonstrated that CAMs are frequently used by MS patients [2, 4–7, 10–14]. The prevalence of CAM shown in our study (64%) is similar to that in previous reports according to which it ranges between 27% and 83% [10–12, 14]. Such differences could be due to different study designs, heterogenous methodology, and diverse sample sizes of patients included in the studies. Of great importance are also cultural disparities that strongly influence social acceptance and attitudes towards CAM, but also have an influence on the type of CAM used in different parts of the world. For example, a recently published study from Saudi Arabia [15] has demonstrated that the most commonly used modalities are prayer or reciting the Koran, while in other regions of the world, such as Europe, more popular are vitamins, massage or yoga [5, 10, 16]. According to our analysis, the most frequently used methods were vitamins (48%), and psychophysical methods such as massage or relaxation techniques (44%), which is similar to other European countries [5, 17].

Our study should be compared to a previous report evaluating CAM use in patients with MS in Poland [16]. Similarly to our study, those authors used a questionnaire developed for the purposes of their study. The patients were recruited in three centres in Poland: Warsaw, Gdańsk and Piła. The first part of the questionnaire was aimed at investigating the sociodemographic data and information about the course

of the disease. In the second part, patients were asked about sources of information about CAM, the types of CAM they used, costs, expectations, opinions, and CAM efficacy. Altogether, the authors included 210 patients in their study with a mean age very similar indeed to our sample (44.26 years). However, they included patients with a mean disease duration of 8.76 years (SD 8.5), while in our study mean disease duration was much longer (31.3 years). In the study by Fryze et al. [16], the most frequent CAM treatments were herbal medicine, followed by vitamins (49%), and massage (34%). Contrary to our findings and those of other studies, there were no significant demographic differences between users and non-users [18, 19]. In particular, neither disease duration nor disability had any significant impact on the decision to use CAM. These differences could be related to the increased popularity of CAM in Poland and worldwide. In line with our report, CAM was mainly recommended by friends and family, and only sometimes by physicians. When it comes to efficacy, more than half of patients considered CAM to be relatively efficacious.

The characteristics of CAM users demonstrated in our study partially align with previous reports. Firstly, we have shown that CAM use was correlated with lower social and professional status. Patients with greater disease progression and experiencing lack of efficacy of disease-modifying therapy were more inclined to opt for CAM. This trend has been also shown in other studies [19]. However, one study from Germany [20] has demonstrated the opposite: CAMs were more commonly used by patients in earlier stages of the disease with EDSS 3.5–4.0 level of disability.

Although CAMs are still considered as alternative therapy, they are widely mentioned in clinical practice guidelines [21]. In a recently published systematic review comprising multiple sclerosis clinical practice guidelines, the authors concluded that at the moment there is not enough evidence to recommend regular use of such therapies. The guidelines of the American Academy of Neurology [22], aimed at developing evidence-based recommendations for CAM in MS, concluded that the CAM with the highest level of recommendation is cannabis-based medicine (level B recommendation). Other interventions that were considered in the guidelines were fish oil, which is not considered effective for relapses, disability, fatigue, MRI lesions or improved quality of life; ginkgo biloba, on the other hand, was considered ineffective for cognition, but possibly effective for fatigue (level B); reflexology was considered as possibly effective for paresthesias (level C); finally, Cari Loder regimen and bee sting therapy were rated as not effective (level C). The authors concluded that clinicians should exercise caution regarding standard *vs.* nonstandard therapies in MS. Despite all these uncertainties, CAM could be considered to be an important part of the coping strategy for patients with MS [19]. Rommer et al. [19] conducted a cross-sectional study in which they compared a profile of CAM users to non-users among patients with MS. CAM users had longer disease duration and a higher degree of disability, and also demonstrated different coping mechanisms. CAM users were more inclined to brood over their disease, seek information about MS, or look to make sense of their disease via spirituality than non-users. Although CAM users had a higher risk of depression, the use of CAM significantly improved their well-being. Another study from Germany demonstrated that CAM could serve as an important coping strategy [20].

The majority of previous reports used individually created scales, although there were also some efforts to use a validated instrument. To give an example, in one study from Iran [18] the International Complementary and Alternative Medicine Questionnaire (I-CAM-Q) was used. This scale was developed in 2009 [23] by a group of international experts at the National Research Centre in Complementary and Alternative Medicine (NAFKAM) of the University of Tromsø, Norway, with the aim of developing a universal tool that could be applied to evaluate CAM use in a variety of disorders. The questionnaire contains four different sections regarding diverse aspects of CAM, such as healthcare providers, complementary treatments received from physicians, the use of herbal medicine and dietary supplements, and self-help practices. There were also questions regarding frequency of use, purpose, and satisfaction. Subsequently, this questionnaire has been translated into several languages [24–30], but not Polish.

Our study has certain limitations. First and foremost, there could be a significant recall and participant bias. Since no standarised and validated questionnaires about CAM in MS exist, we created our own tool, which could be considered another limitation. Consequently, some important aspects considered in other studies were not included, for example the effect of CAM on psychological health and disease-coping strategies as well as the aspect of spirituality. Similarly, at the moment of enrollment (2016), many DMT included non-selective immunosuppression, such as mitoxantrone which is related to a high rate of adverse events. As a result, many patients opted for CAM due to decreased tolerability of DMT. It is probable that treatment with a new, safer, DMT would change the results significantly. Therefore, a new questionnaire should be developed, in which a variety of DMTs should be included. Finally, our study sample was small, and these findings should be replicated in a larger group of patients.

It can therefore be concluded that CAMs are popular among MS patients, but the existing evidence is still too weak to recommend this kind of treatment.

Future endeavours should be focused on the development of international studies including a larger sample size of patients from diverse cultural backgrounds. Simultaneously, the efficacy and safety of CAM should be tested in the setting of randomised controlled studies. As previously mentioned, it is also vital to develop structured and validated tools that could be used for the assessment of CAM use in different settings. Finally, it is of utmost importance to evaluate the trajectories in CAM use in a longitudinal manner. The recent study by

Silberman et al. [31] evaluated trends in CAM use among MS patients in Oregon and Washington, USA, over a period of 17 years. As expected, there was an increasing trend for CAM, especially when it comes to supplements, exercise and mind-body therapies. Importantly, participants were also nine times more likely to speak to their neurologists about CAM.

Therefore, there is already some preliminary data showing that the use of CAM is becoming more and more popular, and that doctors should actively inquire about the use of CAM during their visit. They should discuss this issue with patients in order to eliminate drug interactions and improve compliance. The use of CAM may be confirmed by the incomplete effectiveness of symptomatic treatment. This is of the utmost importance, since c.10% of MS patients in Poland stop disease-modyfing therapies (DMT) [32]. As demonstrated by the recent study by Stratos et al. [33], the most frequent causes of DMT non-compliance were: personal preference to not embark on a medication (46.2%), the wish to use a conservative approach (22.5%); and the use of complementary medical approaches (18.8%). Therefore, it is vital to discuss openly with the patient all doubts regarding both conventional and alternative therapies.

The main conlusion from this study is the great importance of communication with the patient. Accurate information on preparations taken by the patient is very important in the proper conduct of treatment. Accordingly, it is possible to avoid drug interactions or side effects, and thereby improve therapy effectiveness and quality of life. Another field for future research is related to the influence of the COVID-19 pandemic on the use of CAM in MS [31]. Finally, in comparison to 2016, when this study was conducted, there are now many more possibilities of DMT and, therefore, the findings of our study would probably be different today. Any fresh endeavours should therefore focus on analysis of the mutual interactions between DMT and alternative therapies in patients with MS.

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