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Do Individuals with Vertigo or Dizziness Complaints Have a Tendency to Use Complementary and Alternative Medicine Approaches? A Case-Control Study

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Keywords
Vertigo · Dizziness · Complementary and alternative medicine · Complementary and alternative medicine approaches

Abstract
Introduction: Dizziness and vertigo are prevalent reasons for medical consultation, stemming from various benign and pathological conditions. Although traditional treatments are available, complementary and alternative medicine (CAM) approaches are increasingly sought by patients for almost all diseases. This study aimed to investigate the use of CAM approaches in individuals with and without vertigo/dizziness and to compare the results. ***Methods:*** The study enrolled 208 participants, 104 of them had complaints of vertigo/dizziness (patient group) and the remaining were without such symptoms (control group). Participants were queried about used CAM approaches, and study participants underwent vestibular assessment. ***Results:*** It was revealed that there was a significant higher prevalence of herbal supplement usage among individuals with vertigo/dizziness complaints compared to without vertigo/dizziness. However, no significant differences were found in the usage of other CAM approaches between the groups. Among CAM users in the patient group, the majority did not aim to alleviate vertigo/dizziness symptoms. ***Conclusions:*** This study contributes to understanding CAM utilization patterns among vertigo/dizziness patients and underscores the importance of further research to explore the efficacy and safety of CAM approaches in managing these symptoms. Future studies should take into account socioeconomic and sociocultural factors affecting the use of CAM approaches and should aim to evaluate the effectiveness of specific CAM approaches in the treatment of vertigo/dizziness.

Haben Personen mit Beschwerden über Schwindel oder Vertigo eine Tendenz zur Nutzung komplementärer und alternativer Medizin? Eine Fall-Kontroll-Studie

Schlüsselwörter
Vertigo · Schwindel · Komplementär- und Alternativmedizin · KAM-Ansätze

Zusammenfassung
Einleitung: Schwindel und Vertigo sind häufige Gründe für eine medizinische Konsultation und können sowohl auf benigne als auch auf pathologische Ursachen zurückzuführen sein. Obwohl traditionelle Behandlungsmethoden verfügbar

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sind, greifen Patientinnen und Patienten zunehmend auf komplementäre und alternative Medizin (KAM) zurück, um verschiedenste Erkrankungen zu behandeln. Ziel dieser Studie war es, die Nutzung von KAM-Ansätzen bei Personen mit und ohne Schwindel/Vertigo zu untersuchen und die Ergebnisse zu vergleichen. ***Methoden:*** In diese Fall-Kontroll-Studie wurden insgesamt 208 Teilnehmende eingeschlossen, davon 104 mit Schwindel-oder Vertigo-Beschwerden (Patientengruppe) und 104 ohne entsprechende Symptome (Kontrollgruppe). Die Teilnehmenden wurden hinsichtlich der Anwendung von KAM-Ansätzen befragt und einer vestibulären Untersuchung unterzogen. ***Ergebnisse:*** Es zeigte sich eine signifikant höhere Prävalenz der Anwendung von pflanzlichen Nahrungsergänzungsmitteln bei Personen mit Schwindel/Vertigo im Vergleich zur Kontrollgruppe. Hinsichtlich der Nutzung anderer KAM-Methoden konnten keine signifikanten Unterschiede zwischen den Gruppen festgestellt werden. Innerhalb der Patientengruppe verwendete die Mehrheit der KAM-Anwender diese Ansätze nicht mit dem Ziel, Schwindel-oder Vertigo-Symptome zu lindern. ***Schlussfolgerungen:*** Diese Studie liefert wichtige Erkenntnisse über die Nutzungsmuster von KAM bei Patientinnen und Patienten mit Schwindel/Vertigo und unterstreicht die Notwendigkeit weiterer Forschung zur Wirksamkeit und Sicherheit von KAM-Ansätzen in der Behandlung dieser Symptome. Zukünftige Studien sollten sozioökonomische und soziokulturelle Faktoren berücksichtigen, die die Nutzung von KAM beeinflussen, und die Effektivität spezifischer KAM-Methoden bei der Behandlung von Schwindel und Vertigo evaluieren.

Les personnes présentant des plaintes de vertige ou d'étourdissements ont-elles tendance à recourir à la médecine complémentaire et alternative ? Étude cas-témoins

Mots-clés
Vertige · Étourdissements · Médecine complémentaire et alternative · Approches MCA

Résumé
Introduction: Les étourdissements et le vertige constituent des motifs fréquents de consultation médicale, résultant de diverses affections bénignes ou pathologiques. Bien que des traitements conventionnels soient disponibles, les patients se tournent de plus en plus vers la médecine complémentaire et alternative (MCA) pour la prise en charge de nombreuses maladies. Cette étude visait à examiner l'utilisation des approches MCA chez les individus avec ou sans plaintes de vertige ou d'étourdissements, et à comparer les résultats obtenus. ***Méthodes:*** Au total, 208 participants ont été inclus dans cette étude cas-témoins: 104 présentaient des plaintes de vertige ou d'étourdissements (groupe patient) et 104 ne présentaient pas de tels symptômes (groupe témoin). Les participants ont été interrogés sur leur recours aux approches MCA et ont bénéficié d'une évaluation vestibulaire. ***Résultats:*** Il a été observé une prévalence significativement plus élevée de l'utilisation de compléments alimentaires à base de plantes chez les personnes présentant des plaintes de vertige ou d'étourdissements, comparativement au groupe témoin. En revanche, aucune différence significative n'a été relevée concernant l'utilisation des autres approches MCA entre les groupes. Parmi les utilisateurs de MCA du groupe patient, la majorité n'avait pas pour objectif de soulager les symptômes de vertige ou d'étourdissements. ***Conclusions:*** Cette étude apporte un éclairage sur les modes d'utilisation de la MCA chez les patients souffrant de vertige ou d'étourdissements et souligne l'importance de poursuivre les recherches afin d'évaluer l'efficacité et la sécurité des approches MCA dans la prise en charge de ces symptômes. Les études futures devront prendre en compte les facteurs socio-économiques et socioculturels influençant le recours à la MCA et viser à évaluer l'efficacité de méthodes spécifiques dans le traitement du vertige et des étourdissements.

Introduction

Dizziness and vertigo are common and significant reasons for individuals to seek medical care. While some types of dizziness are caused by life-threatening conditions, the majority stem from benign issues [1–3]. True vertigo is the sensation of movement of the person or the environment. It is described as the illusion of movement, which can be horizontal, vertical, or oblique. Dizziness is considered to be light-headedness, disorientation, or loss of balance [4]. Patients' symptoms can vary and may be associated with different types of pathologies such as Meniere's disease, vestibular neuritis, non-vestibular dizziness, vestibular hypofunction, and benign paroxysmal positional vertigo (BPPV) [1]. The experience of true vertigo is the sensation that either the individual or their surroundings are spinning. Vertigo most commonly occurs in conditions such as BPPV, vestibular neuritis, Meniere's disease, and vertebrobasilar insufficiency. In contrast, patients with conditions such as ototoxicity, peripheral neuropathy, or cerebellar degeneration experience a feeling of imbalance that they refer to as dizziness [5]. For all types of pathologies, it is

necessary to evaluate the patient using objective testing methods after taking a detailed case history [3]. Based on the evaluation results, the approach to the patient may vary. Patients' complaints do not always align with the objective test results. Symptoms may persist even outside of attack phases and can impede the patient's daily life [6]. In the treatment of dizziness symptoms, various therapeutic approaches can be utilized depending on the type and characteristics of the pathology (e.g., repositioning maneuvers, vestibular suppressants, and surgical approach) [7].

Nowadays, in addition to traditional treatment methods, patients also often opt for complementary and alternative medicine (CAM) approaches for various health issues. The term CAM encompasses health-related treatments and disciplines that are not considered part of conventional medical care. Its usage continues to increase, primarily due to rising patient demand and the growing number and variety of available practitioners, making it a significant sector within the healthcare industry [8]. CAM practices include acupuncture and herbal medicine from traditional Chinese medicine, homeopathy, naturopathy, herbal medicine, ayurvedic medicine, mind-body medicine, massage, and certain types of chiropractic and osteopathic manipulation [9]. It is noted that certain patients may be motivated to use of CAM approaches in addition to traditional medical care [9, 10].

Studies have shown that CAM approaches for vertigo sufferers include herbal remedies, mind-body therapies, homeopathy, and Tai-Chi [9, 11]. There are fewer research works evaluating the efficacy of CAM techniques, despite the fact that the use of CAM approaches is becoming more common. Healthcare providers should also be consulted before using CAM approaches because of possible negative effects and potential unsafe combinations with other medications [9]. According to research works [9, 12], physicians should to inquire about their patients' use of CAM approaches such as nutritional supplements, herbal therapies, and other alternative medicine practices. During the clinical assessments of patients reporting dizziness, it is commonly believed that this information is frequently neglected or omitted from inquiry.

Studies examining the utilization of CAM approaches among patients presenting to Ear, Nose and Throat (ENT) clinics can be found in the literature. However, the lack of research investigating the use of CAM approaches among individuals seeking medical care specifically for dizziness complaints represents a significant gap in the literature. The aim of this study was to investigate whether the frequency of utilization CAM approaches among patients presenting with complaints of vertigo/dizziness varies compared to those without vertigo/dizziness. Additionally, patients with vertigo/dizziness who have used CAM approaches are subjectively queried about whether they have benefited from CAM, based on their own statements.

Methods

Study Design and Settings

The study was carried out in 2024 January to May at Bezmialem Vakıf University Audiology Clinic. Approval for the study was obtained by the Non-Interventional Ethics Committee of Bezmialem Vakıf University on October 25, 2023 (Decision no: 2023/20). Voluntary consent form approval was obtained from the individuals participating in the study, carried out by the ethical principles specified in the Declaration of Helsinki.

Participants

A total of 208 individuals participated in this case-control study; 104 patients suffering from vertigo/dizziness were allocated to the patient group and 104 individuals without vertigo/dizziness to the control group. Individuals with vertigo or dizziness are referred to as the patient group within the study, whereas those without such complaints are termed the control group. Participants' ages were from 18 to 60 years (min–max, respectively). The patient group consisted of individuals who presented to the audiology clinic with complaints of vertigo or dizziness. Participants in the control group were recruited from relatives of patients attending to the clinic, the researchers' social circles and coworkers and did not have a history of vertigo or dizziness. Education level, sociocultural background, socioeconomic situation, and any systemic, neurological, or other medical issues were not taken into account while recruiting.

Questionnaire Design

The questionnaire used in this study was developed by the researchers based on previous studies [10, 13, 14]. The questionnaire included regarding the participants' current adherence to specific diets, usage of dietary supplements (such as herbal supplements, vitamin and mineral supplements, animal-based supplements, and supplements utilized for athletic performance), and the frequency of their usage of these products. Additionally, participants in both groups were queried about their utilization of other CAM methods such as acupuncture, yoga, and bioenergy. The questionnaire created by the researchers is presented in supplementary file 1 (for all online suppl. material, see https://doi.org/10.1159/000548835). Furthermore, individuals in the group reporting vertigo/dizziness complaints were asked specific questions regarding the characteristics of their vertigo/dizziness, and assessments related to vertigo/dizziness (videonystagmography,

caloric testing, video head impulse test, etc.) were conducted [7]. Classification was conducted based on the underlying pathological mechanism according to the Barany Society guidelines [15].

Statistical Analysis

The required minimum number of participants for the study was calculated to be 176 individuals. This figure was based on a 10% sampling error and a 95% confidence interval, assuming a population size of 1,000 [16]. Numerical variables were expressed as means with (standard deviation) SDs (mean ± SD) as well as with minimum and maximum values. Categorical variables were presented as number and percentages. Descriptive statistics of the parameters were made in the Statistical Package for the Social Sciences 22.0 program. Chi-squared or Fisher's exact tests were employed to assess the relationship between categorical variables within the groups. Statistical significance was set at $p < 0.05$.

Results

The study included a total of 208 participants, with 104 individuals in the patient group and 104 in the control group. There was no statistically significant age difference between the groups ($p = 0.064$). Age distribution of the participants is presented in Table 1. The results are given as mean ± standard deviation.

Patient group's 104 participants were diagnosed with various vestibular disorders, as summarized in Figure 1. The most prevalent diagnosis among the participants was posterior semicircular canal (SCC) BPPV (22.12%), followed by Meniere's disease (12.50%). Also, central signs (7.69%) were seen at examination. Disorders such as SCC dehiscence, lateral SCC BPPV, anterior SCC BPPV, and unilateral weakness were less frequent, each constituting less than 5% of the total diagnoses. Of the participants, 48.08% did not show any sign of peripheral vestibular disorders.

Table 2 shows the analysis of nutritional supplement usage across different age groups. A higher proportion of individuals aged between 18 and 43 years (55.3%) reported supplement usage compared to those aged 44–60 years (44.7%). Conversely, a slightly larger percentage of individuals in the 44 to 60 age group reported not using supplements (41.9%) compared to the 18–43 age group (58.1%). However, statistical analysis indicates that these differences are not statistically significant ($\chi^2 = 0.161$, $p = 0.688$).

Table 3 shows the gender distribution of nutritional supplement usage such as herbals, vitamin/minerals, animal-derived, athletic performance-enhancing supplements. A total of 57.1% ($n = 76$) of females compared to 36% ($n = 27$) of males have been using nutritional supplements. A larger proportion of males 48 (64%) reported not using nutritional supplements compared to females, where 57 (42.9%) reported non-usage. This gender disparity was found to be statistically significant ($\chi^2 = 8.576$, $p = 0.003$).

In the patient group, 51.9% ($n = 54$) and in the control group, and 47.1% ($n = 49$) of individuals stated that they used nutritional supplements. There was no statistically significant difference in the usage of nutritional supplements ($\chi^2 = 0.481$, $p = 0.488$) in both groups. Table 4 presents the distribution of nutritional supplement usage among participants in the patient and control groups, along with the associated p values for each comparison. There were no significant differences in vitamins/minerals ($\chi^2 = 0.188$, $p = 0.655$), animal-derived supplements ($\chi^2 = 3.819$, $p = 0.051$), athletic performance-enhancing supplements ($\chi^2 = 0.0$, $p = 1.0$), and mind-body therapies ($\chi^2 = 1.402$, $p = 0.236$) between the groups. However, the usage of herbal supplements showed a significant difference between the groups ($\chi^2 = 4.686$, $p = 0.019$), with a higher prevalence among the control group.

Table 5 displays the distribution of nutritional supplement usage frequency among participants in the patient and control groups. Most common usage frequency (55.6% and 32.7%) was once a day in patient and of control groups, respectively. There was an association between the nutritional supplement usage frequencies and the groups ($p < 0.001$).

Table 6 shows the analysis of the nutritional supplement usage within the patient group. A total of 66.7% ($n = 36$) of participants had been using nutritional supplements before the vertigo spells ($\chi^2 = 6$, $p = 0.20$). Only two (3.7%) participants ($\chi^2 = 46.296$, $p < 0.001$) were using nutritional supplement in order to decrease their vertigo symptoms.

Discussion

In our study, the CAM usage status of individuals with and without complaints of vertigo/dizziness was compared. Only the usage rate of herbal supplements was found to be significantly higher in the patient group compared to the control group. Furthermore, it was shown that among dietary supplements, vitamin and mineral supplements were most favored in both groups. Mind-body therapy methods were observed to be the second least used method after athletic performance-enhancing supplements. People's limited access to mind-body therapy services and athletic performance-enhancing supplements are thought to be the cause.

In our study, the rate of CAM usage among all participants was found to be higher in females, a result that is consistent with the findings of Shakeel et al. [12]

Table 1. Age distribution of the participants

Age	Patient group, *N* = 104	Control group, *N* = 104	Total, *N* = 208	*p* value
Mean±SD	42.82±11.35	39.94±10.93	41.38±11.20	0.064
Min	18	26	18	
Max	60	60	60	

SD, standard deviation; min, minimum; max, maximum.

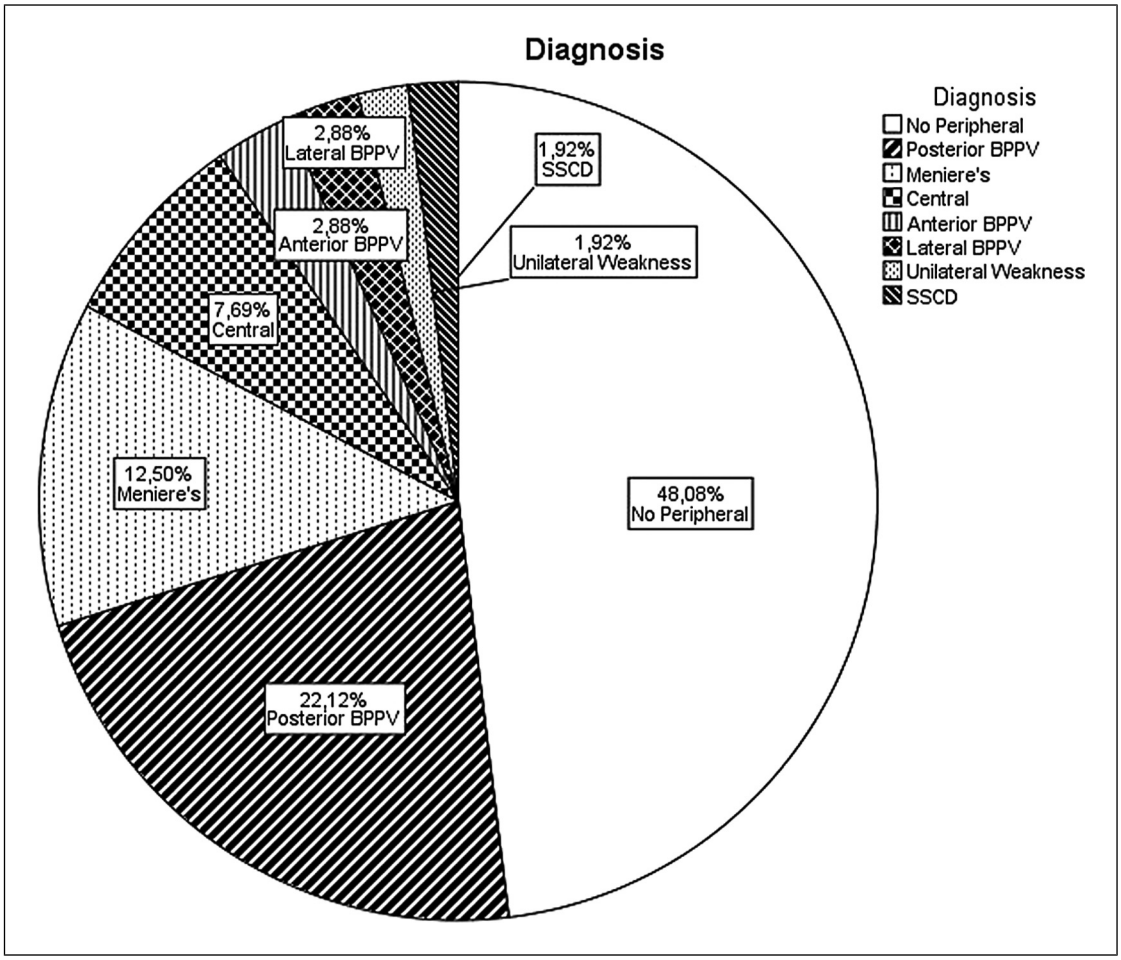

Fig. 1. Distribution of diagnosis obtained from study participants.

Table 2. Comparison of nutritional supplements usage by age

Nutritional supplement usage	Patient group		Control group		Total	*p* value
	age 18–43 years, *n* (%)	age 44–60 years *n* (%)	age 18–43 years, *n* (%)	age 44–60 years, *n* (%)		
Yes	22 (40.7)	32 (59.3)	35 (71.4)	14 (28.6)	103	0.688
No	27 (54.0)	23 (46.0)	34 (61.8)	21 (38.2)	105	

Table 3. Comparison of nutritional supplements usage by gender

Gender	Supplement usage		χ^2	*p* value
	yes, *n*	no, *n*		
Female				
Patient	44	27	8.576	0.003*
Control	32	30		
Male				
Patient	10	23		
Control	17	25		

*$p < 0.05$.

Table 4. Comparison of CAM usage between both groups

	Patient group, *n* (%)	Control group, *n* (%)	Total, *n* (%)	χ^2	*p* value
Herbal supplements					
Yes	22 (21.20)	36 (34.60)	58 (27.90)	4.69	0.044*
No	82 (7.80)	68 (65.40)	150 (72.10)		
Vitamins/minerals					
Yes	36 (34.60)	39 (37.50)	75 (36.10)	0.19	0.655
No	68 (65.40)	65 (62.50)	133 (63.90)		
Animal derived supplements					
Yes	14 (13.50)	25 (24.0)	39 (18.80)	3.82	0.051
No	90 (86.50)	79 (76.0)	169 (81.30)		
Athletic performance-enhancing supplements					
Yes	3 (2.90)	3 (2.90)	6 (2.90)	0	1
No	101 (97.1)	101 (97.10)	202 (97.10)		
Mind-body therapies					
Yes	18 (17.30)	12 (11.50)	30 (14.40)	1.4	0.236
No	86 (82.70)	92 (88.50)	178 (85.60)		

CAM, complementary and alternative medicine; *$p < 0.05$.

Table 5. Nutritional supplement usage frequency between patient and control groups

Frequency	Patient, *n* (%)	Control, *n* (%)	Total, *n* (%)	*p* value
OD	30 (55.60)	16 (32.70)	46 (44.70)	
TDS	8 (14.80)	6 (12.20)	14 (13.60)	
1–2 weeks	2 (3.70)	7 (14.30)	9 (8.70)	
3–4 weeks	3 (5.60)	13 (26.50)	16 (15.50)	<0.001
5–6 weeks	10 (18.50)	2 (4.10)	12 (11.70)	
1 fortnight	0 (0.00)	4 (8.20)	4 (3.90)	
1 month	1 (1.90)	1 (2.00)	2 (1.90)	

OD, once a day; TDS, 3 times a day. [a]Fisher's exact test.

Table 6. Time and purpose of starting nutritional supplements for individuals in the patient group

Patient group	*n* (%)	χ^2	*p* value
Before/after vertigo			
Before	36 (66.70)	6	0.02
After	18 (33.30)		
Aimed to decrease the vertigo symptoms			
Yes	2 (3.70)	46.296	<0.001
No	52 (96.30)		

which was conducted on individuals presenting to an ENT clinic. CAM is often used by patients as a supplemental treatment or for conditions that traditional medical approaches are unable to sufficiently address. Additionally, it has been reported that the majority of CAM users consist of individuals who are dissatisfied with traditional medicine [9, 10]. In our study, 66.7% of participants in the patient group reported using CAM before the onset of vertigo/dizziness symptoms. Additionally, 33.30% stated that they turned to CAM after the symptoms started, with only 3.70% indicating that their purpose for using CAM was to alleviate vertigo symptoms. Furthermore, all participants in the patient group reported that CAM had no effect on their vertigo symptoms. In the study by Shakeel et al. 54% of patients presenting to the ENT clinic reported that CAM was an effective method for their illnesses/symptoms. Only a small percentage (3.7%) of patients in our study who used CAM sought to relieve symptoms of vertigo or dizziness. This may indicate that people think CAM has no effect on vertigo or, if it does, they may not associate CAM with any possible benefit.

Shakeel et al. [12] reported that there was no significant difference in the frequency of CAM usage among individuals aged between 41 and 60 who presented to the ENT clinic compared to other age groups. Similarly, in our study, no significant difference was found between the two groups compared, consisting of individuals aged 18–43 years and 44–60 years, thus supporting this information.

CAM approaches, which are increasingly being used, have not only potential side effects but also potential adverse effects. These adverse effects can range from nausea and vomiting to severe allergic reactions, bleeding, liver failure, and even death. Furthermore, there is a risk of interactions between herbal products and conventional medications. Patients need to be made aware of the potential risks of CAM use [17–19].

We recognize that using patients, relatives, or coworkers can introduce selection bias especially since we did not restrict on education, socioeconomic background, or comorbidities. We sought to reduce these

risks by recruiting cases consecutively, standardizing all test procedures across groups, and broadening the control group to increase real-world diversity. Taken together, these steps reduce the risk of systematic selection effects and support the credibility of the observed group differences. This sampling approach mirrors related work that included social circles of researchers, hospital staff, and patient relatives improving external comparability [20–23].

Studies in ENT field have demonstrated the benefits of CAM, but many herbal items are known to be hazardous, and these should be taken only under medical supervision or avoided completely. According to a report, people's financial status, educational attainment, and cultural background may all have an impact on CAM usage [10]. However, these aspects were not investigated in our study and considered among the limitations of our research.

Conclusion

As a result of our study, it was observed that individuals with vertigo/dizziness complaints had a higher prevalence of herbal supplement usage compared to those without vertigo/dizziness. Additionally, it was observed that the majority of CAM users did not aim to alleviate vertigo/dizziness symptoms. To our knowledge, this is the first study to investigate the CAM usage among individuals with complaints of vertigo/dizziness. In future studies, determining the educational, socioeconomic, and sociocultural levels of individuals and subsequently investigating the aim for CAM approaches among individuals experiencing vertigo/dizziness will contribute to the literature. Also future studies conducted with a larger sample of individuals who use CAM to relieve vertigo/dizziness symptoms, investigating which methods individuals apply and whether they benefit from these methods will shed light on the literature.

Statement of Ethics

The projects were conducted by the Helsinki Declaration and approved by the Ethics Committee of Bezmialem Vakıf University on October 25, 2023 (Decision no: 2023/20). Informed consent was obtained from all individuals who volunteered to participate in the study.

Conflict of Interest Statement

The authors declare that they have no competing interests.

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Author Contributions

Ö.G.T.: project administration, conceptualization, methodology, investigation, data curation, formal analysis, and writing – original draft. E.E.Y.: conceptualization, methodology, investigation, data curation, formal analysis, and writing – original draft. B.Ö. and E.İ.A.: investigation, data curation, and formal analysis. A.G.B.: conceptualization, methodology, formal analysis, visualization, validation, and writing – review and editing.

Data Availability Statement

The authors are willing to share the data associated with this research upon request.

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