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In the Turkish News: Coronavirus and “Alternative & complementary” medicine methods

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ARTICLE INFO

Keywords:
 COVID-19
 Newspaper
 News
 Coronavirus
 Complementary and alternative medicine

ABSTRACT

Background and Object: The object of this study is to analyze the complementary and alternative treatments for the prevention of COVID-19/Coronavirus in the Turkish news.

Material and Method: The sample of this descriptive study consisted of 160 news articles published between 11 March and 11 April 2020 on the websites of the three highest-circulating newspapers throughout the nation. A quantitative media context analysis method, consisting of 14 questions and 2 sections was employed to evaluate news on the newspapers. The data was analyzed using SPSS 21.0 statistical package program using numbers and percentages.

Results: Forty percent of the news analyzed within the scope of the study were obtained from the newspaper's own news, reporter or columnist, 56.9 % were informative, 6.3 % were advisory and critical against the CAT methods. 95 % of the news included preventive or protective methods against COVID-19. 77.5 % of the complementary and alternative medicine methods mentioned in the news were biologically-based, 20.6 % were mind-body practices. It was determined that 85.0 % of the benefits, harm and side effects of the methods mentioned in the news were announced, but their impact on COVID-19 is not clarified (78.1 %), and there was insufficient information provided about the method and dosage of the method. It was seen that all news contained information on protection against COVID-19 or prevention of COVID19.

Conclusion: It was concluded that the sources and methods and the number of news items changed from one newspaper to another, the news lacked a scientific basis, and as a result, it might lead to misinterpretations among the public. There were different opinions among the experts in the proposed or criticized complementary and alternative medicine methods. It was observed that there was an increase in the number of news items related to using complementary and alternative medicine methods for the treatment of COVID19, a clear and easily understandable language was used in the news, but the content and sources of the news were insufficient in conveying the correct and scientific information. It was reported by previous literature potential interactions between herbal remedies/dietary supplements and prescribed drugs, complications of medical conditions and some adverse effects cause of CAM usage

1. Introduction

The novel coronavirus outbreak (COVID-19 or 2019-nCoV), which has emerged in Wuhan, China has rapidly spread around the World, has significantly affected the World economy and the life of societies.¹ The novel coronavirus called COVID-19 was detected in China in late 2019 for the first time. Coronavirus is described as a large family of viruses. It is known that the virus has types which lead various diseases from the common cold to Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARSCoV).² COVID-19 outbreak,

which started to appear since December 2019, has affected the World. The first case in Turkey was detected on 11 March 2020.³ The disease transmits from person to person and spreads to the other parts of Asia besides China, as well as other continents such as Europe and America, the number of patients has exceeded 2.5 million, and the number of deaths has reached tens of thousands according to the data of the World Health Organization (WHO) in May 2020.⁴ Incidence of COVID-19 cases in Turkey was reported to be 51.58 (at 100.000).³

In the developed countries, the trend towards using non-medical practices, both in terms of protecting the health and the solution of

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<https://doi.org/10.1016/j.ctim.2020.102545>

Received 30 May 2020; Received in revised form 14 August 2020; Accepted 17 August 2020

Available online 19 August 2020

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health-related problems, has increased in recent years.⁵ Complementary and alternative medicine (CAM) is a very comprehensive area which includes all health practices, methods as well as values and beliefs outside the main stream present health system.⁶ It is defined as a “variety of health care systems, practices and products”.⁷ It is categorized under five main groups by CAM (National Center for Complementary and Integrative Health) (NCCIH). The groups are as follows: (a) **Whole medical systems/Alternative medical systems** (Ayurvedic Medicine, Homeopathy, Traditional Chinese Medicine), (b) **Mind-body therapies**; treatment methods based on mind-body therapies (meditation, praying, dance, art, music), (c) **Biologically-based therapies** (botanicals, animal-derived extracts, vitamins, minerals, fatty acids, amino acids, proteins and probiotics, whole diets and functional foods), (d) **Manipulative and body-based methods** (osteopathic manipulation, chiropractic, massage and reflexology), (e) **Energy Therapies** or energy-oriented treatments (Qi gong, healing touch, therapeutic touch).⁸

Factors affecting the health, strategies and actions for improving the health vary. This is why the issue of improving health covers many sectors that are in cooperation with health. Media plays a vital role in bringing the society’s behavioral patterns, values and ways of thinking to the attention of individuals and perhaps internalizing what is read.^{9–11}

Ever since the day media took on the role of providing information about the health to the masses, it has been seen as an important health communication platform. As a result of the technological developments, newspapers maintained the role of being one of the most important external information sources for obtaining information about the health during the 21st century even where the mass media have been diversified and lost their former power due to the digital journalism.¹² It is apparent that as a means of transferring information, newspapers have the potential to change the attitudes, behaviors and perceptions of the masses. Due to the greatly influential power of print media, the content, extent, ethical side of the what is printed, who prepared the content, whether the news presented is actual news and which health branch it is related to have become more important issues.¹³ From this point of view, media is an extremely useful tool when used correctly for health, which is one of the priorities of the society. Media is also a very effective factor in complementing health education and an important factor in eliminating health inequalities.¹⁴ The treatment and vaccination methods to prevent COVID-19 which is the biggest health problem of today, haven’t yet been developed, and so recommendations and advice about CAM methods (nutrition, yoga, Ayurveda etc.) have become more prevalent in news.¹⁵

The object of this study is to analyze CAM methods for the prevention of COVID19/Coronavirus published in Turkish newspapers.

Research questions:

- 1 What are the general features of newspaper news about COVID-19 and CAM??
- 2 What are the CAM methods regarding COVID-19 in the newspaper news?
- 3 Who recommends CAM methods for COVID-19 in the newspaper news?
- 4 At what level of protection (prevention, treatment, and rehabilitation) are CAM methods related to COVID-19 in the newspaper news?

2. Material and methods

2.1. Type of research

This research is descriptive. The research method used when reviewing the news was a ‘quantitative content analysis’. The content analysis is a set of methodological tools and techniques applied to analyze various discourses. These tools and techniques that differ more or less from each other are a ‘reading method’ based on a controlled

interpretation effort and inference (of a text¹⁶). A quantitative content analysis is based on determining how often message items are seen at a numerical or percentage rate. The content analysis consists of the stages of defining the research problem, sampling and storage and finally analyzing and interpreting the data.¹⁷

2.2. Population and sample of the study

The population of the study consisted of news related to COVID-19 and complementary and alternative treatment methods published digitally in Turkey. The news in the health category of three newspapers with the highest circulation among national newspapers, which individuals can access online for free, was examined to determine the sample of the research. Each newspapers’ archives dated 11 March – 11 April 2020 was accessed online. 175 news articles were reached by using the following keywords in Turkish, “COVID-19”. The population of the study consisted of news related to COVID-19 and complementary and alternative treatment methods published digitally in Turkey. The news in the health category of three newspapers with the highest circulation among national newspapers, which individuals can access online for free, was examined to determine the sample of the research. Each newspapers’ archives dated 11 March – 11 April 2020 was accessed online. 175 news articles were reached by using the following keywords in Turkish, “COVID-19”^{18,19}, and three national newspapers with the highest circulation in the week of 06–12 April 2020, respectively were coded as A, B and C. For the research, the inclusion criteria used included the news published between 11 March and 11 April 2020, and the presence of news text and the relevance of COVID-19 and CAT were taken into consideration. The absence of explanatory text in the newspaper article and the presence of only promotional and advertising content were determined as the exclusion criteria in the research. 162 news that met the criteria was included in the study. However, two news items were excluded because they contain an advertising content. 160 newspaper articles were included in the sample of the study. News included in the sample was examined under four main categories; context, subject, complementary and alternative treatment methods and the specialist who is making a recommendation.

2.3. Media content analysis process

The content analysis may be defined as the whole of methodological tools and techniques applied to a wide variety of discourses. These tools and techniques may be described as a controlled interpretation effort and generally a deductive ‘reading’ tool. The reading in question teaches the reader something new, based on the analysis of the discourse samples, the limit of which was determined. It is a method that does not involve reading directly, it provides a methodical, systematic, objective and quantitative analysis of the contents of various texts in order to classify and interpret its basic elements.¹⁶ This is why this method is chosen in coronavirus disease, where there are many unknown aspects and a lack of experiments and extensive researches.

Firstly, within the scope of the basic steps of media content analysis, how the news on the newspapers’ websites were categorized was discussed by the researches, and a review plan was created. According to the plan, the words corona, immunity, herbal, alternative method, meditation, yoga, traditional medicine, massage” along with the keyword COVID-19 were searched in the search engines on the newspapers’ webpages (e.g., COVID-19 and immunity, COVID-19 and yoga, etc.). All the news obtained from the searches with the keywords was recorded. The total number of news obtained at this stage is 1175. In the second stage, all recorded news was read in detail by two researches in terms of content, its relation with COVID19, the source of the news, the CAM method proposed or criticized, and every single one of the news was categorized within the scope of the classification of CAM methods.⁸ In this step, 160 categorized news items that were suitable for inclusion were analyzed. In the third stage, 160 news items were analyzed in more

detail in terms of content, subject, the recommendation of an expert, how CAM method affect COVID-19 and how they were used. The data obtained were examined using the content analysis.⁵⁵ The data was analyzed by a field specialist in order to establish the reliability of the study. The reliability coefficient was determined by the formula developed by Miles and Huberman (1994) (reliability = agreement/(agreement + disagreement*100)).⁵⁴ The reliability coefficient of the study was found to be 92 %. The frequency of the recurring themes was calculated.

News including COVID-19 and alternative treatment methods, published in all three newspapers in the period searched was examined in four different categories within the scope of the applied quantitative content analysis.

- 1 Distribution of news by content
- 2 Distribution of news by subject
- 3 Distribution of news by area of expertise
- 4 Distribution of news by CAM method

2.4. Data collection process

Three newspapers that had the highest circulation numbers during the week of 6–12 April 2020 were chosen among the national newspapers published in Turkey, according to purposeful sampling method. To be able to make an analysis in the specified time and to reach the newsgroup that is thought to have the greatest impact in terms of its circulation, instead of analyzing a huge data stack, three newspapers were selected to show the general situation of the newspapers in the country. Finally, the news related to COVID-19 and coronavirus published online in these three national newspapers between 11 March and 11 April 2020 was examined. All the news published between the dates specified constituted the population of the study. By going to the web addresses of these newspapers, the keywords 'corona, immunity, herbal, alternative method, meditation, yoga, traditional medicine, massage' were written on the search engine along with the keyword "COVID-19". The news, which is thought to be directly related to COVID-19 and includes other keywords, is included in the sample.

According to the search conducted on the newspapers' websites between 11 March and 11 April 2020, 341 news items were found in newspaper A containing the related keywords, 58 of which were sampled; 449 news items were found in newspaper B, 22 of which were sampled, and 390 news items were found in newspaper C, 80 of which were sampled. At the end of the searching process, a total of 160 news items that were within the scope of sampling were identified.

A form consisting of two parts was used to evaluate the newspaper news included in the sample using the quantitative content analysis method. In the first part of the form, there were five questions including the title and text characteristics of the news, and in the second part, there were nine questions that enabled the news and the content of the news to be examined in terms of COVID-19 (A.1 – News Review Form).

2.5. Analysis of data

All the news was examined individually in the quantitative content analysis process, and a review plan was created. Within the scope of the plan, the main categories and sub-categories of news that contained keywords were determined and recorded in the News Review Form with 9 questions (A.1). Based on the determined categories, all the news was coded by three researchers, and a frequency analysis was performed in terms of presence or absence of criteria such as news content, subject, expert suggestion, and disclosure of the effect of CAM method on COVID-19.

2.6. Limitations of the research

The most prominent limitations of the study were that only three newspapers with wide circulation were included in the study, whereas

the television-radio channels, local newspapers were not included. Another limitation was caused by the lack of a standard method defined for the content analysis of health news in the press. The results of this study should be evaluated by considering these limitations

2.7. Creating and defining analysis categories

Four categories were created for the analysis of the news; *the content of the news, the subject of the news, the area of expertise of the professional in the news, the CAM method recommended in the news*. Researches worked together in the process of creating categories. Details about the categories are given below:

- **Distribution of news by content:** In this category, the related news were categorized under four sub-categories; *informative news, advising news, criticizing and warning news, magazinish and encouraging news*, and the news contents related to COVID-19 were tried to be evaluated through these categories. The news that was supported by scientific data, including examples from scientific articles and quotes from scientific books were categorized as 'informative' news. The news containing comments without any scientific basis, without a direct reference to a scientific research result and pieces of advice that may or not may not be taken in case of COVID-19 was categorized as 'advising' news. In addition, the news that criticized CAM method, that conveyed views by giving place to opposite views was categorized as 'warning and criticizing' news and news and interviews that were made to entertain and comfort the society and included exaggerated expressions were categorized as 'magazinish and encouraging' news.

Examples of these news categorised:

- Informative new: Explanations of an associate professor: "... Against COVID-19, announced by the World Health Organization as a pandemic, ozone therapy was used as both a disinfectant and as a supportive treatment. In China, where the virus appeared, ozone therapy was used to control the outbreak. In addition to the treatment they received, the medical ozone gas was given through the blood. The aim here is to increase the patient's body resistance and speed up the recovery time. It is also used as a preservative because it strengthens the immune system. Ozone is known to be safe when used by professionals ... "
- Advising new: Explanations of a professor of gastroenterology: "... Although scientifically not fully proven, it is recommended that potassium and zinc are not deficient in the body. For this reason, it is beneficial to consume potassium-containing foods such as bananas, dried apricots, white beans, beets, lentils, spinach and yogurt containing potassium. There is no proven information about mineral and vitamin supplements other than potassium and zinc.... "
- Warning and criticising new: A dietician's comments: "... Fear of coronavirus affected vitamin and food supplement consumption. However, Nutrition and Diet Expert K. Y. said that everyone has a unique immune resistance, saying that food supplements and vitamins that are consumed unconsciously and beautifully may harm the body rather than protecting them from infection. K. K. Ali says "do not take and use vitamin D, iron, B12, vitamin E and zinc supplements on your own without an expert advice." Unconsciously used food supplements may lead to liver toxicity and damage the kidney cells."
- Magazinish and encouraging new: Statements by an internal medicine specialist that are not specific to COVID-19, but to strengthen the immune system: "... It is stated that strengthening immunity is one of the most important factors to be taken against the rapidly spreading coronavirus epidemic worldwide. Expressing that we may strengthen our immune system by taking simple precautions in our

daily lives and changing our diet, Internal Diseases Specialist E.K. explained what should be done to have a strong immune system...“

- **Distribution of news by subject:** In this category, the related news were divided into three sub-categories in terms of protection/prevention, early diagnosis and treatment of COVID-19, the news that convey the effect of said CAM method on COVID-19 was included within the scope of the study,
- **Distribution of news by source:** In this category, the related news were examined under five different sub-categories; *doctor, dietician, phytotherapist, media itself (news, interview, column)* and other (*physiotherapist, psychologist, yoga instructor, etc.*) The profession of the person, who suggested, criticized, gave information about the CAM method and explained its effect on COVID-19 in the news was determined and coded.
- **Distribution of news by CAM method:** In this category, the related news were examined under five different sub-categories; *biologically based practices, mind-body practices, traditional medicine practices, manipulative practices and energy medicine practices*, and the most commonly used CAM methods and whether these methods were supported with scientific data were examined.

3. Results

In this section, the analysis of the data compiled from the news of CAM methods used or recommended in the case of COVID-19 is shown. The distribution of the news examined within the scope of the study according to their descriptive characteristics is shown in [Table 1](#).

It was determined that half of the news analyzed in the study was in newspaper C; 40 % were obtained from the newspaper's own news,

Table 1
Descriptive Statistics of the News Reviewed.

	Features of The News	N	%
Newspaper	Newspaper A	58	36.3
	Newspaper B	22	13.7
	Newspaper C	80	50.0
	Doctor	46	28.7
	Dietitian	31	19.4
	Phytotherapist	5	3.1
Source of News	The media itself, correspondent, columnist	64	40.0
	Other (Physiotherapist, psychologist, yoga instructor)	14	8.8
	Informative	91	56.9
News Content	Recommended	42	26.2
	Stimulating and critical	10	6.3
	Magazinish and incentive	17	10.6
	Prevention / protection	152	95.0
Subject of the News	Early diagnosis / treatment	2	1.3
	Rehabilitation	6	3.7
	Biologically based	124	77.5
CAM Methods Included in the News	Mind body practices	33	20.6
	Traditional medicine	1	0.6
	Manipulation	2	1.3
	Energy medicine	0	0
	Literature based information	17	10.6
	Types of News	News	99
Corner post	10	6.3	
Interview	25	15.6	
Article series	9	5.6	
Title and Text Matching	Harmonic	121	75.6
	Incompatible	39	24.4
	Clear and understandable	121	75.6
Feature of News Text	Have used medical terminology	12	7.5
	Insufficient content	23	14.4
	Other	4	2.5
	TOTAL	160	100

reporter or columnist; 28.7 % was sourced by a doctor. It was observed that the news that was obtained from the dietitians was 19.4 %, and the rate of news from phytotherapists was 3.1 %. It was determined after examining the contents of 160 news items related to COVID-19, that 26.2 % of the news were informative, while 6.3 % of them were warning and critical of CAM methods.

When the news examined were analyzed in terms of subjects, it was seen that the vast majority of them contained preventive or protective methods against COVID-19, only 1.3 % contained therapeutic CAM methods against COVID-19. 77.5 % of recommended or criticized CAM methods in the news were biologically-based practices (herbal products, food), (vitamins, minerals and probiotics, teas, etc.), and 20.6 % were mind-body practices (yoga, meditation, breathing exercises, imagery, etc.). It was seen that there was also very few news suggesting traditional medicine and manipulation models.

When the textual characteristics of the news analyzed within the scope of the study were examined, it was seen that 61.9 % had the characteristics of news, 15.6 % were interviews, and 10.6 % were news based on scientific information. While 75.6 % of the news have matching headlines and texts, 24 % of the news lacked a matching headline and text. When the characteristics of news texts were examined, it was seen that the content was clear and understandable in 75.6 %, insufficient in 14.4 %, and medical terminology was used in 7.5 %.

The distribution of expressions showing the effect of CAM methods in terms of COVID-19 is shown in [Table 2](#).

In this study, where analysis of the news related to CAM methods used or recommended within the scope of COVID-19 was made, it was seen that the benefits, harm and side effects of the method mentioned in the news texts were mostly explained (85.0 %), the effect of the method on COVID-19 was not sufficiently explained (78.1 %), and the CAM method did not contain enough information about the usage and dosage in the case of COVID-19 (69.4 %), and its interaction with other drugs was not thoroughly explained (95 %).

In addition, in the vast majority of the news (96.9 %), there weren't any scientific articles included, whereas in 83.7 % the method was criticized and recommended by a professional (doctor, dietitian, yoga instructor, phytotherapist, psychologist, etc.) for use, or recommended not to be used ([Table 2](#)).

The distribution of the news contents according to newspapers is shown in [Table 3](#), the distribution of the subjects of the news is shown in [Table 4](#), and the distribution according to the profession of the expert consulted in the news is shown in [Table 5](#).

When the news analyzed was examined according to the distribution on newspapers it was seen that all the news on newspaper A (36.3 % of total news) had informative content, the majority of the news in newspapers B and C (5.6 % and 20.6 %, respectively) were found to be suggestive. It is thought that the reason for the high number of informative or suggestive news is due to the fact that it is a newly recognized virus

Table 2
Features of the CAM Methods in the News.

Properties of CAM Methods		N	%
Are the benefits, harms and side effects of the method explained?	Yes	136	85.0
	No	24	15.0
Is the effect on COVID-19 sufficiently explained?	Yes	35	21.9
	No	125	78.1
In the case of COVID-19, is the way of use and dosage described?	Yes	49	30.6
	No	111	69.4
Is the relationship or interaction of the method with drugs described?	Yes	8	5.0
	No	152	95.0
Has a scientific article about the method been added?	Yes	5	3.1
	No	155	96.9
Is the method recommended by a person in the field?	Yes	134	83.7
	No	26	16.3
TOTAL		160	100

Table 3
Distribution of the News Content According to Newspapers.

		News Content				TOTAL
		Informative	Recommended	Stimulating and critical	Magazinish and incentive	
Newspaper A	Count	58	0	0	0	58
	% of Total	36.3 %				36.3 %
Newspaper B	Count	5	9	5	3	22
	% of Total	3.1 %	5.6 %	3.1 %	1.9 %	13.7 %
Newspaper C	Count	28	33	5	14	80
	% of Total	17.5 %	20.6 %	3.1 %	8.8 %	50.0 %
TOTAL	Count	91	42	10	17	160
	% of Total	56.9 %	26.2 %	6.3 %	10.6 %	100.0 %

Table 4
Distribution of the Subject of the News According to Newspapers.

		The Subject of News			TOTAL
		Prevention / protection	Early diagnosis / treatment	Rehabilitation	
Newspaper A	Count	58	0	0	58
	% of Total	36.3 %	0.0 %	0.0 %	36.3 %
Newspaper B	Count	19	2	1	22
	% of Total	11.8 %	1.3 %	0.6 %	13.7 %
Newspaper C	Count	75	0	5	80
	% of Total	46.9 %	0.0 %	3.1 %	50.0 %
TOTAL	Count	152	2	6	160
	% of Total	95.0 %	1.3 %	3.7 %	100.0 %

Table 5
Distribution of the Source of News According to Newspapers.

		The Source of News					TOTAL
		Doctor	Dietitian	Other	The media itself, (Physiotherapist, Phyto-correspondent, psychologist, yoga therapist columnist instructor)		
Newspaper A	Count	27	15	2	4	10	58
	% of Total	16.9 %	9.4 %	1.3 %	2.5 %	6.3 %	36.3 %
Newspaper B	Count	11	4	1	5	1	22
	% of Total	6.9 %	2.5 %	0.6 %	3.1 %	0.6 %	13.8 %
Newspaper C	Count	8	12	2	55	3	80
	% of Total	5.0 %	7.5 %	1.3 %	34.4 %	1.9 %	50.0 %
TOTAL	Count	46	31	5	64	14	160
	% of Total	28.7 %	19.4 %	3.1 %	40.0 %	8.8 %	100.0 %

and that some inferences were made in the context of the data obtained from the case studies in the scientific literature and the news is made within this scope.

When the distribution of news analyzed was examined according to the subject, it was seen that all news in newspaper A contain information about protection against COVID-19 or prevention of COVID-19, similarly the majority of news in newspapers B and C was about protection or prevention (36.3 %, 11.8 % and 46.9 %, respectively, in total news).

When the distribution of news analyzed was examined according to

the source of the study it was seen that the doctors were the source of most news in newspapers A and B (16.9 % and 6.9 % of total news, respectively); whereas the news in the newspaper C consisted of the articles and interviews compiled by the newspaper itself (34.4 % of the total news) without giving place to the opinion of an expert. This situation may be due to the fact that there was more news containing suggestions in newspaper C.

The distribution of the analyzed news according to CAM methods was analyzed on a newspaper basis, and the findings are shown in Table 6.

When the news analyzed was examined in terms of its distribution according to CAM methods, it was seen that the majority of the news in all newspapers included biologically-based practices (30.6 %, 11.9 % and 35.0 % of total news respectively), followed by mind-body practices. It was observed that in biologically-based practices, the herbal products or mixtures, herbal teas, supplements (vitamins, minerals, beta-glucans, black carrots, etc.) were often preferred. Yoga, meditation, breathing exercises, progressive muscle exercises and music therapy were mostly preferred in mind-body practices. It is thought that the fact that there were more biologically-based practices was due to the fact that the number of the experimental studies conducted on CAM methods was not sufficient and that they were easier to access and apply with hearsay information.

4. Discussion

Although diseases caused by the other members of the COVID family have also been recently diagnosed, COVID-19 has just found a place in the medical literature. COVID-19, which is an infectious disease that affects the whole world and spreads rapidly, is also the center of attention of national and international media channels. Due to the lack of sufficient scientific data, the level of accuracy and applicability of the information included in the news remains a mystery.

In this research, which is planned by assuming that the quality of news related to COVID19 outbreak in newspapers or mass media will affect the society's viewpoint towards the prevention of the disease positively or negatively, the number, quality and content of news related to COVID-19 and CAM published on daily newspapers were examined.

Some results in our study were remarkable and thought-provoking. It is noteworthy that in the majority of the news texts the person who prepared the news or whether the information given in the news was told by a healthcare professional was not mentioned, the texts were composed by the articles written by the newspaper itself and do not have a scientific basis. In the information given about COVID-19, although a simple, clear and comprehensible language is used instead of a medical terminology,⁴⁶ it is thought that it may cause misinterpretation among the public due to its lack of scientific foundation. Critics contend that therapies that rely on the placebo effect to define success are very dangerous. Scientifically, the unsupported health practices may lead individuals to forgo effective treatments for serious, possibly life-threatening illness.⁵⁰

As the other result, although the source of information explaining in the news is mostly a doctor, it is seen that the information consists of

Table 6
Distribution of the CAM Methods According to Newspapers.

		CAM Methods Regarding to COVID-19				
		Biologically based practices	Mind body practices	Traditional medicine	Manipulative Applications	TOTAL
Newspaper A	Count	49	8	0	1	58
	% of Total	30.6 %	5.0 %	0.0 %	0.6 %	36.3 %
Newspaper B	Count	19	2	1	0	22
	% of Total	11.9 %	1.3 %	0.6 %	0.0 %	13.8 %
Newspaper C	Count	56	23	0	1	80
	% of Total	35.0 %	14.4 %	0.0 %	0.6 %	50.0 %
TOTAL	Count	124	33	1	2	160
	% of Total	77.5 %	20.7 %	0.6 %	1.2 %	100.0 %

very general expressions and the level of inference or experience sharing for the symptoms or problems experienced in the cases. From this point of view, it is striking that there are different opinions among experts in the CAM methods proposed or criticized. It is also thought that this is due to the fact that the scientific studies are very few in number and they do not have a scientific basis. However, whatever the reason, this approach should still be seen as an ethical issue in the healthcare delivery. In the name of magazinish visibility, the treatment recommendations with insufficient evidence are unacceptable ethical blindness.

It was determined that the most news was obtained from the newspaper's own news. Similarly, in the study of Polat, the highest rate of news, the source of which was physicians, was found to be.²⁰ A study conducted by Walsh et al. revealed that 69 % of the cancer patients received CAM treatment option on the internet from people other than healthcare professionals.²² In the studies carried out by the World Health Organization, it was stated that the public is affected by the mass media about complementary medicine practices.²³ When the sources of access to CAM applications are examined, 38.5 % of the patients in Özdemir's study,²³ 36.1 % of the patients in the study of Dişiz and Yılmaz,²⁴ 28.3 % of the patients in the study of Korkmaz et al.,²⁵ 43.1 % of the patients in the study of Karaman et al.²⁶ and 40.1 % of the patients in Kim's study²⁷ reported that the sources of access to CAM applications were TV programs, news programs and newspapers. It is important to use the right source to reach information about complementary and alternative treatment methods.²⁸ The introduction and marketing of these methods with written and visual communication tools contribute to the widespread use of them. Whether the information about the CAM methods published in written or visual media is provided by the experts in the field and whether the publications contain scientific and realistic information should be questioned.²⁹ Suspicious information sources that may cause individuals to make wrong decisions about their health and affect their health negatively should be identified, and appropriate measures should be taken.³⁰ It is noteworthy that in the majority of the news texts the person who prepared the news or whether the information given in the news was told by a healthcare professional was not mentioned, the texts were composed by the articles written by the newspaper itself and do not have a scientific basis. People should be free to choose whatever method of healthcare they want, but stipulate that people must be informed as to the safety and efficacy of whatever method they choose. People who choose alternative medicine may think they are choosing a safe, effective medicine, while they may only be getting quack remedies.⁵⁰

We observed that more than half of the news was informative in the content of the news related to COVID-19. It was reported by previous literature that the potential interactions between herbal remedies/dietary supplements and prescribed drugs, complications of medical conditions and some adverse effects cause CAM usage⁵⁶⁻⁵⁸

In the study of Polat, it was found that 69.6 % of the articles in the newspapers other than advertisements suggested CAM methods to the readers.²⁰ In the study of Lavorgna, in which Lavorgna examined news about CAM in the media with a criminal point of view, Lavorgna analyzed 256 news items and found that 104 of these news included statements that supported CAM. In the same study, it was stated that 88

news items contained negative statements about CAM.³¹ The study conducted by Dunne et al. stated that 81.3 % of the news included positive statements.³² The most important point in the content of the news to be of recommendation, suggestion, and encouragement or in support of CAM is to give messages that create confusion for readers by comparing the message given for CAM use with conventional medical treatment methods and practices and challenging with non-evidence based information.^{31, 33} The presentation of CAM practices should not create a negative perception towards the medical profession / scientific methods, which have serious repercussions on people's health. This is why it is important to establish policies regarding the inspection of the news. The use of dietary supplements or herbal products should be based on a clear understanding of the benefits, risks, and interactions with the other drugs.^{28,34-36} The study revealed that the vast majority of the news topics included preventive or protective methods against COVID-19, only 1.3 % contained therapeutic CAM methods against COVID-19.

Similarly, in Kim's study, 33.1 % of the participants stated that they used CAM methods to maintain their physical and psychological well-being and 11.1 % used CAM methods to treat a disease.²⁷ However, it has been reported that the reasons for using CAM in the literature were mostly for treating a disease. Cancer patients use CAM methods to directly fight cancer, alleviate the symptoms of cancer / conventional therapy, patients with hypertension use CAM methods to correct blood pressure, patients with chronic kidney failure use that method to treat the disease, patients with diabetes to manage diabetes or general health.^{27,37,38} It is thought that variables such as COVID-19 being a new virus and a disease, the importance of the relationship between the immune system with the disease in the pandemic was emphasized to be effective in the difference in the result. The study revealed that 77.5 % of the CAM methods recommended or criticized in the news were biologically-based practices (herbal products, food, vitamin-minerals and probiotics, teas, etc.), and 20.6 % were mind-body practices (yoga, meditation, breathing exercises, imagery). The results of the study were compatible with many studies in the literature.^{26,28,39-42}

It was observed that the majority of newspaper reports were related to prevention and protection against COVID-19, mostly biologically-based applications and information about nutrition and herbal products were included in the biologically-based practices which were among the prevention measures against the disease. In addition, information on mind-body practices (yoga, meditation, etc.) is also included due to the increasing anxiety and worry among the public owing to the easily spreading and rapidly transmitting nature of the disease. Similarly, a newspaper in India reported that yoga is effective in overcoming fear of coronavirus.⁴³

In line with our study, in the study of Polat, it was found that 32 % of the texts had the characteristics of news, 87 % of them were texts that match with the title.²⁰ In the study of Chen, where Chen examined the websites, Chen revealed that 75.4 % of CAM news was for providing information.⁴⁴ In the study of Kava et al. where they rated the quality of dietary supplement safety information presented in magazines popular with older readers, they reported that the amount and quality of safety information varied greatly and most articles only provided partial information. Of the 254 articles they reviewed for their work, only 16 %

were evaluated as "excellent", 52 % as "good" and 32 % as "bad".⁴⁵

In the information given about COVID-19, although a simple, clear and comprehensible language was used instead of a medical terminology,⁴⁶ it is thought that it may lead to misinterpretations among the public due to the lack of a scientific basis. Although the source of information providing information in the news is usually a doctor, it is seen that the information appears to be at the level of inference or experience sharing based on the symptoms or problems experienced in the cases, in addition, the information consists of very general expressions. From this point of view, it is striking that there were differences of opinion among experts in the recommended or criticized CAM methods. It is thought that this was because the scientific studies were very few in number and they did not have a scientific basis.

In this study where news analyses were carried out regarding the CAM methods used or recommended within the scope of COVID-19, it was found that the benefits, harm and side effects of the method mentioned in the news were mostly explained, the effect of the method on COVID-19 is not adequately explained, there isn't enough information on the usage and dosage of CAM method in case of COVID-19 and its interaction with other drugs has not been largely disclosed. In the literature review, there were a limited number of publications on the use of CAM methods in COVID-19. In one of the publications, the study of Ang et al. on the treatment of COVID-19 in a pediatric group, herbal formulas and plant composition provided by the most recent guidelines were summarized and analyzed, and 13 herbal formulas were suggested from seven data sources⁴⁷. In their articles compiling the principles of acupuncture and cataplastm practices in COVID-19, Liu et al. explained the principles of using the method in medical observation, treatment and recovery stages and stated that the practice had a positive effect.⁴⁸

In addition, it was observed that in the vast majority of the news, there weren't any scientific articles included, whereas in 83.7 % of them the method was criticized and recommended by a professional (doctor, dietitian, yoga trainer, phytotherapist, psychologist, etc.) for use, or recommended not to be used. Similarly, Bonevski et al. reported that it did not contain an evidence of the effect on the disease, 79 % did not contain a scientific article, and 29 % did not mention the harm it caused.⁴⁹ The literature draws attention to serious consequences resulting from the side effects of herbal products. In 1997, an estimated 15 million adults took prescription medications concurrently with herbal remedies or high-dose vitamins, bringing into play the possibility of negative interactions in the United States.⁵¹ Following the intake of a weight-loss herbal product containing the Aristolochia fangchi plant, Chinese herbal nephropathy developed and it was stated that this plant is not only nephrotoxic but also leads to end-stage kidney disease in 43 patients and is potentially carcinogenic.⁵² A similar example required dialysis or kidney transplant as a result of interstitial kidney fibrosis, which occurred after at least 70 people in Belgium used a herbal preparation to loss weight.⁵³ More research should be undertaken to prove the effectiveness of complimentary therapies before they may be incorporated in formal medical practice. Sufficient evidence is required for biological or clinical plausibility in order to justify the investment of time and energy in exploring the merits of CAM. After all, human life is precious and no chances can be taken to comprise the health of any individual.⁵⁰

5. Conclusion

In one month (11.04.2020) after the first detection of a COVID-19 case in Turkey on 11.03.2020, a total of 1175 news articles were reached in the archive search of the three newspapers with the highest triage. The number of the news that meets the criteria of the study was found to be 160. In thirty-two days, a total of 36.718 articles per day related to COVID-19 and CAM were published in three newspapers searched. In the literature review, it was found that this result has the highest rate compared to the studies that conducted news reviews about CAM.^{20, 21}

As a result of this analysis study examining the use of CAM methods in the case of COVID-19, it was seen that there was a serious increase in the number of news related to the application of CAM methods in COVID-19 in a short time, a clear language that may be easily understood by the public is used in the news but the content and sources of the news were insufficient in conveying the correct and scientific information to the society.

It is known that newspapers play a vital role in conveying important information about health to society and influencing individuals' attitudes and behaviors. The effect that most or all CAM therapies have no plausible or evidenced effects in terms of preventing or treating covid-19, and that to the extent that commentators –particularly doctors– are suggesting otherwise, as reported or promulgated by the newspapers, this is dangerous and ethically most regrettable.

There is a need for news aimed at transferring information about medical approaches and the interaction of CAM methods, it is thought that the information to be conveyed should have a scientific basis. Transferring information by experts specialized in this field, protecting the society from incomplete or incorrect information are as vital as protecting the society from the disease. It is also recommended to conduct descriptive, experimental and randomized controlled studies on this disease which has entered our lives so recently and to investigate the effects of CAM methods.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of Competing Interest

None of the authors declare any conflict of interest with regards to this research.

Acknowledgements and Funding

No financial support was provided for this report.

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