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Research Article

Survey on Aromatherapy Among Healthcare Professionals in Morocco

Asmae Alaoui Belghiti[1,*], Mohamed Yafout[2], Soukaina Bennis[3], Amal Ait Haj Said[4]

ABSTRACT

Background: Herbal remedies and more particularly essential oils are increasingly used throughout the world. In Morocco, the practice of aromatherapy is becoming more and more important, but the knowledge, attitudes, and expectations of healthcare professionals towards essential oils have never been studied. **Aim:** To assess the attitudes, knowledge, and expectations towards essential oils and aromatherapy of Moroccan healthcare professionals. **Methods:** We conducted a survey among 205 Moroccan healthcare professionals from different categories using an anonymous electronic questionnaire. **Results:** The participants to our survey have a good general knowledge and 47.8% of the them have already prescribed or advised essential oils. However, only 10.2% of them considered essential oils as widely available. Moreover, only 3.9% of the respondents judged their theoretical knowledge of essential oils and aromatherapy as perfect, 36.6% considered the lack of information in this field as the limiting factor in prescribing and advising essential oils, and 88.3% were in favor of integrating aromatherapy into their basic training course. The prescription or advice of essential oils are statistically correlated with age, profession, factors mentioned as limiting the prescription and advice of essential oils, and the theoretical knowledge. **Conclusion:** Empowering healthcare professionals' capacities could help them overcome their fears and enable them to offer aromatherapy advice to their patients with confidence. This could also help to expand the use of essential oils in Moroccan healthcare facilities.

Key words: Survey, Aromatherapy, Essential oils, Healthcare professionals, Morocco.

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BACKGROUND

Since the beginning of time, plants have been an important source of medicines, aromatics, and culinary ingredients.[1,2] The World Health Organization states that more than 80% of the world's people, especially in developing countries, use traditional medicine for their primary healthcare. Traditionally used herbal medicines contain a wide range of molecules that have been used to treat different types of diseases.[3,4]

The use of these plants for medicinal purposes involves, among other things, the extraction of their essential oils. These have always been considered to be very valuable products, with a wide range of biological activities, from the antioxidant capacity to the inhibition of tumor proliferation. Their efficacy has been proven over time, first empirically and then scientifically. As studies, experiences, and testimonies accumulated, common principles emerged.[5-7]

The European Pharmacopoeia defines essential oils as "odoriferous products, generally of complex composition, obtained from a botanically defined plant raw material, either by steam distillation, dry distillation or by a suitable mechanical process without heating".[8]

Aromatherapy can be defined as the use of chemotyped essential oils and aromatic plant essences by oral, buccal, respiratory, olfactory, atmospheric, cutaneous, rectal, vaginal, optical, and nasal routes of administration in order to provide preventive or curative care of a wide range of diverse diseases in humans, animals, and plants, both in terms of the destruction of infectious pathogens and the management of a large number of symptomatic disorders characteristic of the disease.[9]

The National Association for Holistic Aromatherapy (NAHA) describes it as "the art and science of using aromatic essences naturally extracted from plants to balance, harmonize, and promote health in body and mind. It seeks to unify physiological, psychological and spiritual processes to enhance an individual's innate healing process".[10]

In Morocco, although it is not currently part of their basic training, aromatherapy is a discipline that is becoming increasingly important among healthcare professionals. However, their knowledge and practices in this field are very varied and have never been evaluated.

Thus, the aim of our study was to conduct a survey among Moroccan healthcare professionals in order to assess their attitudes, knowledge, and expectations towards essential oils and aromatherapy.

MATERIALS AND METHODS

Data collection

This survey was conducted over 4 months from March to June 2021. We used an anonymous electronic questionnaire in the French language comprising 19 questions organized into 5 sections:

Section 1: Socio-demographic data of the participants (4 questions);

Section 2: General knowledge of healthcare professionals regarding essential oils and aromatherapy (7 questions);

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Section 3: Prescription and advice of essential oils by healthcare professionals (3 questions);

Section 4: The availability of essential oils in Morocco (3 questions);

Section 5: Integration of aromatherapy in the basic training of healthcare professionals (2 questions).

The questionnaire was developed by the authors and was tested on 5 healthcare professionals. The objectives of the study were well explained to the participants at the beginning of the questionnaire.

The questionnaire file in "Google Forms" format was sent to participants through professional social networks and the link was also published in an electronic magazine (Doc news) dedicated to healthcare professionals. The answers were automatically collected in an Excel file.

Data processing

The collected data were entered and processed on SPSS 21. The Pearson Chi-square test was used to study statistical correlations considering a p-value less than 0.05 as statistically significant.

RESULTS

Socio-demographic data of participants

The total number of participants in this survey is 205 participants. Among these participants, 75.1% are female (n=154) and 24.9% are male (n=51). Forty percent are between 25 and 35 years old (n=82), 30.7% between 35 and 45 years old (n=63), 20.5% between 45 and 55 years old (n=42), and 8.8% over 55 years old (n=18). Regarding the number of years of experience, among the 129 participants who answered this question, 51 (39.5%) have less than 10 years of experience, 57 (44.2%) have between 10 and 20 years of experience and 21 (16.3%) have more than 20 years of experience. On the other hand, 54.1% are pharmacists (n=111), and 35.6% are physicians (n=73). The rest of the participants belong to various professions.

General knowledge of healthcare professionals about essential oils and aromatherapy

Regarding the participants' knowledge of essential oils and aromatherapy, 81.5% of the participants claim to know about aromatherapy, and 94.1% claim to know about essential oils. Likewise, 92.7% of the participants affirmed that essential oils have therapeutic virtues, and 70.7% distinguished essential oils from fixed vegetable oils. On the other hand, 87.3% of the participants considered that essential oils have a certain degree of toxicity (from 1 to 5 on a scale of 0 to 5 of toxicity), and 12.7% considered that they are harmless (Table 1).

Table 1: General knowledge of healthcare professionals regarding essential oils and aromatherapy.

Question	n (%)
Do you know what does « essential oil » mean?	
Yes	193 (94.1%)
No	12 (5.9%)
Do you know what does « aromatherapy » mean?	
Yes	167 (81.5%)
No	38 (18.5%)
Did you know that essential oils have therapeutic virtues?	
Yes	190 (92.7%)
No	15 (7.3%)
Do you know the difference between essential oil and fixed vegetable oil?	
Yes	145 (70.7%)
No	60 (29.3%)
Essential oils have the following pharmacological properties:	
Anti-infectious	7 (3.4%)
Insect repellent and insecticide	6 (2.9%)
Anti-inflammatory	15 (7.3%)
Antihistaminic	1 (0.5%)
Immunoregulative	1 (0.5%)
Calming, hypnotic et anxiolytic	19 (9.3%)
Endocrinoregulative	2 (1%)
Vasculotropic et hemotropic	1 (0.5%)
Digestive	7 (3.4%)
Thermoregulatory	1 (0.5%)
None of these answers	5 (2.4%)
All these answers	140 (68.3%)
The routes of administration of essential oils are:	
Local route	61 (29.8%)
Olfactive route	26 (12.6 %)
Oral route	2 (1%)
All these answers	116 (56.6%)
According to you, the degree of toxicity of essential oils is:	
0 (inoffensive)	26 (12.7%)
1	31 (15.1%)
2	58 (28.3%)
3	45 (22%)
4	21 (10.2%)
5 (Very toxic)	24 (11.7%)

Prescription and advice of essential oils by healthcare professionals

Among the healthcare professionals who participated in our survey, 47.8% have already prescribed or advised essential oils. Among the essential oils that were most frequently cited, lavender came first (22.9%), followed by eucalyptus (10.7%), tea tree (6.8%), and peppermint (4.9%). Regarding the opinion of participants on the factors that hinder the prescription and advice of essential oils, 36.6% cited the lack of information and 23.9% mentioned the preference for drugs, which are already integrated into the basic training of healthcare professionals (Table 2).

Availability of essential oils in Morocco

Among the participants, 55.1% stated that essential oils are moderately available, 31.2% see that essential oils are rarely available and 10.2% affirmed that they are widely available.

The majority of participants (88.3% and 74.6% respectively) stated that essential oils should be more available in pharmacies and hospitals as a therapeutic or alternative treatment (Table 2).

Integration of Aromatherapy in the basic training of healthcare professionals in Morocco

Among the participants in our survey, 69.8% judged their theoretical knowledge of aromatherapy and essential oils to be average, 3.9% judged their knowledge to be perfect while 26.3% claimed to have no knowledge in this field. On the other hand, almost all participants (88.3%) were in favor of integrating aromatherapy into the training curriculum of healthcare professionals (Table 3).

DISCUSSION

Essential oils are increasingly used in clinical settings as adjuncts to manage many symptoms as well as for general wellness.[11-13] Currently, medical aromatherapy is used as a therapeutic or alternative remedy in several hospitals. According to an article published in February 2021, *Rosa damascena* aromatherapy was shown to reduce anxiety and increases sleep quality in cardiac care unit inpatients.[14]

Numerous other studies demonstrate the likely benefits of aromatherapy on humans, including effects on stress, depression, surgical pain, and sleep.[15-17]

Table 2: Prescription and advice of essential oils (EO) by healthcare professionals and availability of essential oils (EO) in Morocco.

Question	n (%)
Have you ever prescribed or advised EO?	
No	107 (52.2%)
Yes	98 (47.8%)
What are the EO that you usually prescribe or advise?	
Lavender	47 (22.9%)
Eucalyptus	22 (10.7%)
Tea tree	14 (6.8%)
Peppermint	10 (4.9%)
Roman chamomile	2 (1%)
Camphor	1 (0.5%)
Cinnamon	1 (0.5%)
Lemon	7 (3.4%)
Lemongrass	3 (1.4%)
Tarragon	2 (1%)
Eucalyptus radiated	1 (0.5%)
Gaultheria	1 (0.5%)
Geranium	1 (0.5%)
Cloves	4 (2%)
Ravintsara	6 (2.9%)
Rosemary	5 (2.4%)
Thyme	3 (1.5%)
Ylang ylang	2 (1%)
No response	73 (35.6%)
What are the factors that limit the prescription or advice of EO	
Lack of information on essential oils and aromatherapy	75 (36.6%)
Preference for drugs, which are already integrated into the basic training of healthcare professionals	49 (23.9%)
Other factors	81 (39.5%)
How do you see the availability of essential oils?	
Widely available	21 (10.2%)
Moderately available	113 (55.1%)
Rarely available	64 (31.2%)
Not available	7 (3.5%)
Do you think that EO should be more available in pharmacies for therapeutic purposes?	
Yes	181 (88.3%)
No	24 (11.7%)
Do you think that EO should be more available in hospitals for therapeutic purposes?	
Yes	153(74.6%)
No	52 (25.4%)

Table 3: Integration of aromatherapy in the basic training of healthcare professionals.

Question	n (%)
How do you evaluate your level of theoretical knowledge in aromatherapy and essential oils?	
No knowledge	54 (26.3%)
Average knowledge	143 (69.8%)
Perfect knowledge	8 (3.9%)
Do you think it would be useful to integrate aromatherapy into the training curriculum for healthcare professionals?	
Yes	181 (88.3%)
No	24 (11.7%)

Table 4: Association between the prescription / advice of essential oils (EO) and other characteristics of the participants.

Characteristic	Prescription or advice of EO n=98 (47.8%)	No prescription or advice of EO n=107 (52.2%)	p-value
Gender:			
Male	28 (55%)	23 (45%)	0.24
Female	70 (45%)	84 (55%)	
Age (Years):			
25-35	31 (38%)	51 (62%)	
35-45	30 (48%)	33 (52%)	0.048*
45-55	26 (62%)	16 (38%)	
Over 55	11 (61%)	7 (39%)	
Profession			
Pharmacist	67 (60%)	44 (40%)	
Physician	23 (32%)	50 (68%)	< 0.01*
Others	8 (38%)	13 (62%)	
Number of years of experience (only 129 respondents to this question)			
Less than 10	20 (39%)	31 (61%)	
Between 10 and 20	30 (53%)	27 (47%)	0.088
Over 20	14 (67%)	7 (33%)	
Opinion on factors limiting the prescription or advice of essential oils			
Lack of information on essential oils and aromatherapy	30 (40%)	45 (60%)	
Preference for drugs which are already integrated in the basic training of healthcare professionals	18 (37%)	31 (63%)	< 0.01*
Other factors	50 (62%)	31 (38%)	
Self-evaluation of theoretical knowledge in aromatherapy and essential oils			
Perfect knowledge	8 (100%)	0 (0%)	
Average knowledge	84 (59%)	59 (41%)	< 0.01*
No knowledge	6 (11%)	48 (89%)	

In our study, the majority of participating healthcare professionals were familiar with essential oils and aromatherapy were able to differentiate between essential oils and fixed plant oils and were aware that essential oils have therapeutic properties but also have toxic potential. This demonstrates that the majority of respondents have general knowledge about essential oils.

Half of the participants in this survey (47.8%) claimed to have prescribed or advised essential oils in the past. This characteristic is correlated with the age and profession of the participants. It is also correlated with the factors mentioned by the participants as limiting the prescription and advice of essential oils (Table 4). Furthermore, the essential oils that are the most prescribed or advised by the participants (Lavender, Eucalyptus, Tea Tree, and Peppermint) are those that are commonly used in aromatherapy worldwide.[18]

Participants in our study mostly rated the availability of essential oils as moderate to rare and were all in favor of introducing them into pharmacies and hospitals for therapeutic purposes. A recent study showed that after the introduction of an aromatherapy program in a pediatric hospital ward, 89% of the nurses who administered the essential oils to their patients rated the benefit of aromatherapy as 4 or more on a scale of 0 to 10.[19] This demonstrates the undeniable benefit that the introduction of aromatherapy could bring to healthcare facilities in Morocco.

Among the 205 participants in our study, only 8 (3.9%) claimed to have perfect theoretical knowledge of essential oils and aromatherapy. This level of knowledge was positively correlated with the participants'

prescribing and counseling of essential oils (Table 4). These results further confirm those of an American survey of 106 healthcare professionals, which showed that only 22% of the participants felt able to advise essential oils to their patients.[20] In another study conducted in Turkey among 495 medical students, only 7.1% of the students reported having sufficient knowledge about aromatherapy.[21]

Almost all respondents (88.3%) supported the idea of integrating aromatherapy into the training curriculum of healthcare professionals. This is consistent with the aforementioned US study in which 75.5% of respondents stated that there is a need for increased training of clinicians in the use of essential oils.[20]

LIMITATIONS OF THE STUDY

The limitations of the present study are the low representativeness of professional categories other than physicians and pharmacists and the imbalance between men and women among the respondents.

CONCLUSION

Our study shows that Moroccan healthcare professionals are initiated to aromatherapy and that the advice and prescription of essential oils is a fairly common practice among them. The introduction of theoretical training cycles or the introduction of aromatherapy in the basic training courses of healthcare professionals could allow them to advise or prescribe essential oils with confidence based on scientific evidence. Moreover, the use of essential oils as a means of treatment in healthcare facilities could allow to widen the therapeutic arsenal and to highlight the richness of the vegetation and the biodiversity of Morocco which is a great producer of aromatic plants.

What is already known on this topic?

Essential oils have many known virtues and aromatherapy is gaining an increasing interest among healthcare professionals.

What this study adds?

The lack of training and theoretical knowledge among healthcare professional is the main factor limiting the prescription and use of essential oils.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

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AUTHORS CONTRIBUTION

AAB designed the questionnaire and conducted the survey, MY conducted the survey and wrote the manuscript, SB supervised the survey, and AAHS supervised the whole research. All authors approved the final manuscript.

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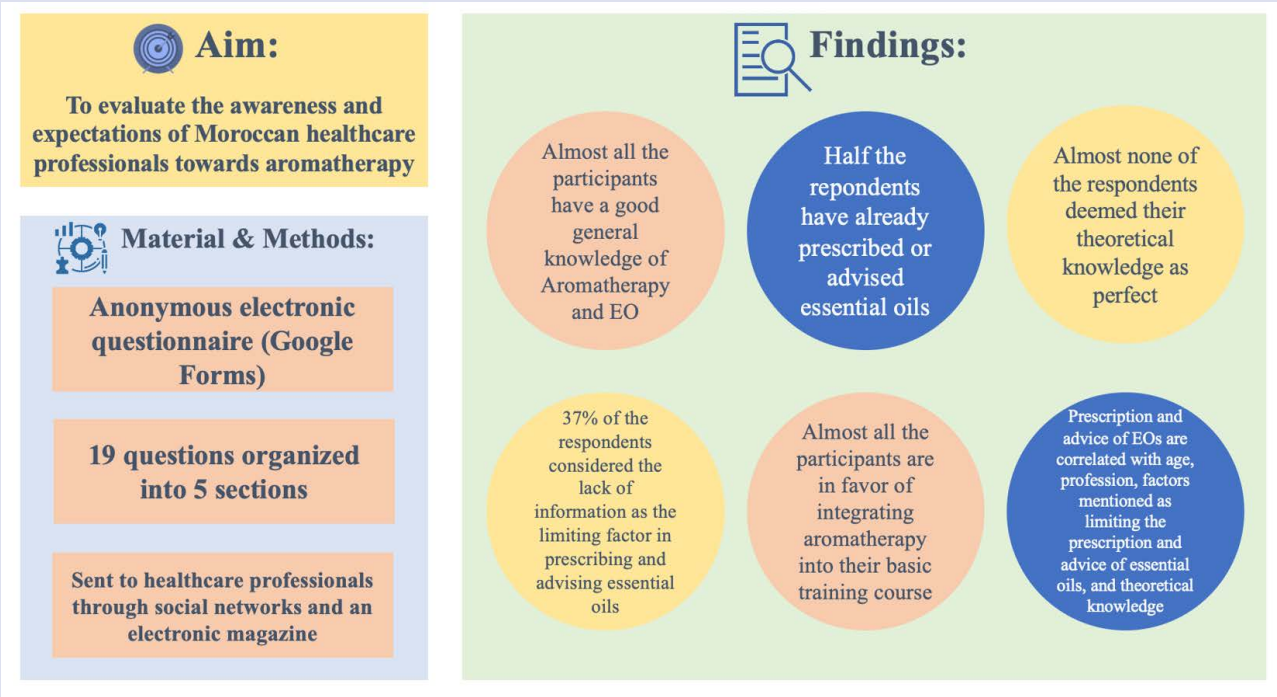
GRAPHICAL ABSTRACT



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