



Research Article

Study on Aromatherapy its Therapeutic Applications and Perception of People Towards its Use in Kashmir: A Sample Survey

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Abstract. This paper delves into the holistic practice of aromatherapy, which harnesses the therapeutic potential of aromatic compounds in essential oils derived from medicinal plants to support physical, emotional, and mental health. The study conducted in Kashmir valley traces the historical

roots of aromatherapy, emphasizing its revered role in ancient civilizations, where aromatic substances were utilized for their healing properties. In this paper, a descriptive research design was used and a sample of 400 respondents (200 men and 200 women) was chosen for our study using probability technique (simple random sampling). The instrument for data collection adopted for our study was a self-designed validated questionnaire consisting of closed-ended questions. The data collected from our study was analyzed by applying descriptive as well as inferential statistical tools using the statistical package for social sciences (SPSS 21.0). The results of our study revealed that people in majority showed positive attitude towards the use of Aromatherapy. The study showed that majority of male respondents under this study revealed that the main sources of awareness towards aromatherapy were friends (40.5%), followed by family (20.5%), followed by health care professional (16.5%), followed by internet (13.5%), followed by religious scholars (9.0%). Further, main sources of awareness towards aromatherapy among female respondents were friends (31.5%), followed by family (29.5%), followed by health care professional (27.5%), followed by internet (11.5%), followed by religious scholars (7.0%). Majority of male respondents' understudy were of the opinion that aromatherapy improves mood (31.0%), helps in better sleep (19.5%), helps in relaxation (18.5%), helps in pain relief (17.5%) and supports immune system (13.5%). Whereas, majority of female respondents were of the opinion that aromatherapy improves mood (38.0%), helps in relaxation (21.0%), helps in pain relief (17.5%), helps in better sleep (17.0%) and supports immune system (11.0%). The study also highlighted the potential benefits of Aromatherapy and potential issues regarding use of aromatherapy. It was concluded that majority of respondents understudy encourage public to use aromatherapy because of its physical and mental health benefits, as well as, its cost-effectiveness and low-risk procedure for man-aging stress, anxiety, and improving quality of sleep. Finally, researchers suggest that one must consult an expert before using aromatherapy.

Keywords: Aromatherapy, medicinal plants, essential oils, holistic healing, Kashmir

INTRODUCTION

Aromatherapy, a holistic healing practice that utilizes essential oils derived from plants, has been increasingly recognized for its therapeutic benefits in promoting physical, emotional, and mental well-being. The use of essential oils, which are highly concentrated plant extracts, has been shown to have a profound impact on both physical and emotional health, with benefits ranging from reduced stress and anxiety to improved sleep quality and pain management (Buckle, 2015; Lee et al., 2012). The origin of Aromatherapy use of aromatic essential oils, can be traced back to ancient Babylon (circa 2000–1000 BC), where aromatic plants and spices were traded along early routes in South and Central Asia [Rimmel, 1867; Balasubramanian, 2017; Chew, 2018]. It was reported that ancient Egyptians pioneered the use of aromatic oils for medical, cosmetic, and religious purposes, as evidenced by inscriptions in temples, such as, Deir el-Bahari, Philae, and Edfu [Creasman & Yamamoto, 2019]. Egyptians developed advanced methods for extracting essential oils, such as chamomile, which were used in therapeutic treatments and mummification, reflecting their knowledge of preservation and medicinal qualities [Agnihotri et al., 2024]. Aromatics in China were mainly used in incense, an early form of aromatherapy, to cleanse spaces and promote health, integrated into traditional medicine and spiritual practices [Damian & Damian, 1995]. In India, Ayurveda extensively operate aromatherapy using substances like saffron, milk plasters etc [e.g., Hedao & Chandurkar, 2019; McHugh and Carrion, 2012]. Further,

it has been reported that Romans use aromatic oils in daily life e.g., bathing, to promote relaxation and enhance sensory experiences, highlighting their appreciation for luxury and well-being [Fagan, 2002; Diniz do Nascimento L et al., 2020]. Greek scholars e.g., Hippocrates and Dioscorides documented the medicinal uses of aromatic plants. It was found that Arab merchants especially Qureshi tribe were instrumental in spreading perfumes throughout the Middle East as reported in literature [e.g., Jung D. Bilqīs, 2011; King, 2007; Abu-Chacra, 2013; Zohar & Lev, 2013]. The Muslim scholars, such as, Jabir Ibn Hayya (Geber), Al-Kindi (Alkindus), Avicenna (Ibn Sina), Abū al-Qassim al-Zahrawī (Albucasis) provided innovations in extraction techniques [e.g., Manzoor, 2024; Basr, 2017; Kaadan & Khatib, 2018].

Essential oils are volatile plant extracts composed mainly of terpenes, terpenoids, alcohols, phenols, aldehydes, ketones, and esters, obtained via steam distillation or mechanical pressing. They act through olfactory and respiratory pathways: olfactory stimulation engages limbic and hypothalamic circuits, while alveolar absorption allows systemic distribution, blood–brain barrier penetration, and neurotransmitter modulation. Topical application permits skin absorption, with penetration depth dependent on chemical composition. These mechanisms support their potential in treating mood disorders, respiratory diseases, and other neurological or systemic conditions.

The essential oils provide numerous benefits for physical health, such as, respiratory health [e.g., Horváth, 2015], Digestive health [e.g., Cheema, Singh, 2021], Immune system support [e.g., Grazul et al., 2023], Antibacterial properties [e.g., Ebani et al., 2018], Antiviral activity [e.g., Reichling et al., 2022], Antifungal properties [e.g., We et al., 2017], Cytotoxic and anticancer properties [e.g., Farahani et al., 2019; Najjar et al., 2020; Arabatzis et al., 2017, Pouyamanesh et al., 2024; Karki, 2011; Khan et al., 2020].

Aromatherapy uses essential oils to improve health and well-being. Below we mention some common essential oils used in aromatherapy, their benefits, and how to use them:

Essential Oils for Relaxation and Stress Relief

Lavender Oil: Helps with stress, pain, and sleep. Use in a diffuser, bath, or mixed with a carrier oil for skin application.

Bergamot Oil: Reduces anxiety, lifts mood, and lowers blood pressure. Use in a diffuser or with a carrier oil on skin (use bergaptene-free for topical application).

Cedarwood Oil: Helps with sleep and anxiety. Use in aromatherapy or with a carrier oil on skin.

Lemon Oil: Inhaling its uplifting scent reduces stress and anxiety, which in turn enhances mental well-being.

Chamomile Oil: Aromatherapy with chamomile oil can improve mood and relieve anxiety and depression. Inhaling chamomile's soothing scent is a quick and safe way to promote relaxation and calm the mind.

Clary Sage Oil: Clary sage is a fragrant herb rich in essential oils, renowned for its beneficial properties. Commonly utilized in aromatherapy, it helps alleviate stress and anxiety, while also supporting women's menstrual health.

Marjoram Oil: Stress and anxiety contribute to health issues like depression and insomnia. Marjoram essential oil has calming effects, soothing the nervous system and promoting happiness. Historically, it has been used for stress relief through topical application or inhalation.

Essential Oils for Pain Relief and Inflammation

Peppermint Oil: Eases headaches, fights fatigue, and reduces gut spasms. Use in a diffuser or with a carrier oil on skin.

Eucalyptus Oil: Relieves pain and opens nasal passages for easier breathing. Use in a diffuser or with a carrier oil on skin (avoid ingestion and use cautiously around children and pets).

Birch Oil: Alleviates joint pain and inflammation. Use with a carrier oil on skin.

With its roots in ancient civilizations, aromatherapy has evolved into a popular complementary therapy, with a growing body of research supporting its efficacy in various healthcare settings (Tisserand, 2014). This paper explored the current state of research on aromatherapy, its potential benefits and limitations, and its applications in promoting health and well-being.

Tea tree oil: Also called melaleuca, this essential oil was used by Australia's aboriginal people for wound healing. Today, it's commonly used for acne, athlete's foot and insect bites.

Clove Oil: Clove oil, valued for its analgesic and anti-inflammatory properties, has been traditionally used in aromatherapy to relieve headaches, joint pain, and toothaches, as well as serving as an oral antiseptic.

Ginger Oil: Ginger's anti-inflammatory activity is chiefly due to gingerols, with both its secondary metabolites and essential oils, including gingerols, showing joint-protective effects in experimental arthritis models.

Rosemary Oil: Essential oils from rosemary plant exhibits notable anti-inflammatory activity, largely due to presence of cineole, α -pinene, camphor, limonene and myrcene.

MATERIAL AND METHODS

In this paper, well-designed pre tested questionnaire based on literature available on topic under study, was employed to collect the information from the sample of 400 people selected randomly via online/offline mode from Kashmir valley using stratified random sampling technique. The respondents under study were explained, the main purpose of this study to get their consent. The questionnaire was designed to access the perception among people towards usage of aromatherapy in Kashmir valley. The sample size was computed using (Cochran, 1977)

$$n = \frac{Z_{\alpha}^2 P(1 - P)}{d^2}$$

We chose $p=0.5$, $Z_{\alpha}=1.96$ and $d=0.05$ in our study. That gives the sample size $n \sim 384$ and we decided to chose $n = 400$. The data collected was tabulated, analyzed

and interpreted statistically. The statistical software SPSS (version 20) was used for analysis purpose.

Research Hypothesis

Hypothesis (H₀): There will be no significant difference between male and female respondents in perception towards use of Aromatherapy in Kashmir valley. To test the hypothesis, we use chi square test (with usual notations) given as

$$X^2 = \sum_{i=1}^n \frac{(o_i - e_i)^2}{e_i}$$

where $X^2 \sim \chi_1^2$, o_i and e_i are observed and expected frequencies. We reject H₀ if p-value is less than specified level of significance.

Data Interpretation:

The results obtained from our study were interpreted in the context of the research objective, and conclusions were drawn regarding the perception of people understudy towards aromatherapy in Kashmir valley of J&K region.

RESULTS AND DISCUSSION

The data presented in Table 1, revealed that among 400 respondents (50% male and 50% female), majority of the respondents (66.75%) educated up to 10+2 level, 87.75% respondents were from nuclear families, 86.75 respondents were from middle class families, 59.25% respondents were from rural areas.

Table 1: General information of the respondents under study

Variable	Category	Frequency	Percentage (%)
Educational Status	Up to 10+2	267	66.75
	Graduation & above	102	25.50
	Illiterate	31	7.75
Family Type	Joint	49	12.25
	Nuclear	351	87.75
Family Income Status	Higher class	07	1.75
	Middle class	347	86.75
	Lower class	46	11.50
Residence	Urban	237	59.25
	Rural	143	35.75

The data presented in Table 1, revealed that in response to statement 1., i.e., Have you heard about aromatherapy? majority of respondents responded yes (male=89.0%, female=93.0 %). In response to statement 2., i.e., Have you ever used aromatherapy? majority of respondents responded yes (male=69.5%, female =79.5%). In

response to statement 3., i.e., Do you think aromatherapy is effective in reducing stress and anxiety? majority of respondents responded yes (male= 86.5%, female =90.5%). In response to statement 4., i.e., Do you believe aromatherapy can improve your mood? majority of respondents say no (male=56.5%, female =52.5%). In response to statement 5., i.e., Would you recommend aromatherapy to others? majority of respondents responded yes (male=53.5 %, female = 59.5%). In response to statement 6., i.e., How important is it for you to use natural and organic products, including essential oils? majority of male responded it is not much important in the present world as we have alternative medicines whereas majority of female respondents responded its important because of its cost effectiveness and low risk of side effects (male=59.0 %, female =56.0%). In response to statement 7., i.e., Would you consider using aromatherapy in the future? majority of respondents responded yes (male=64.0%, female=71.0%). Statistically, nonsignificant difference was observed in statements 1,3,4,5 and 7 ($P>0.05$) whereas significant difference was observed in the opinion of male and female respondents understudy in statement 2 ($P<0.05$) and in statement 6 ($P<0.01$). The discussion with respondents revealed that there was a significant difference in the perception of using aromatherapy between males and females which is in partial agreement with the available data on Aromatherapy. Researchers do not support that there is any significant difference in therapeutic effects, like stress reduction or mood enhancement between male and females. There's limited research indicating a significant difference in the perception of using aromatherapy between males and females based on available data, involving the use of essential oils for therapeutic benefits, doesn't seem to have gender-specific perception differences widely documented in scientific literature. The main factors Influencing Perception of Aromatherapy are Individual Preferences, Therapeutic Effects, cultural background, and individual experiences with usage of scents.

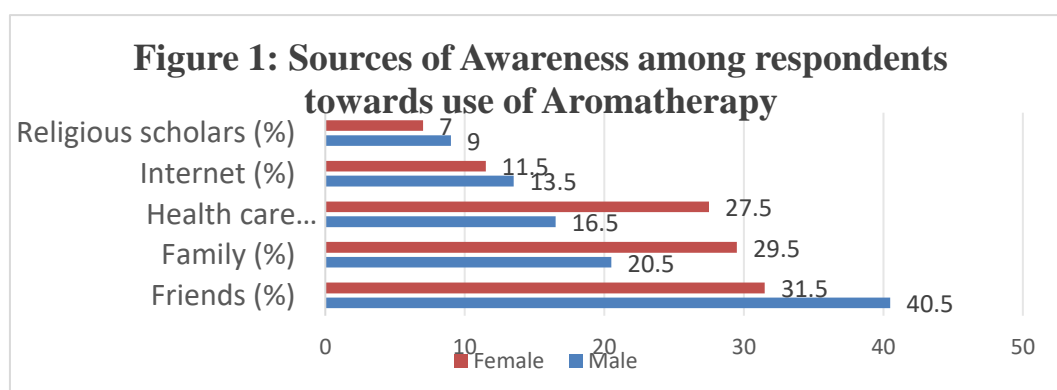
Table 2. Perception of respondents towards Aromatherapy in Kashmir valley

S.No.	Statement	Gender	Yes (%)	No (%)	Chi-square	P-value
1	Have you heard about aromatherapy?	Male	178 (89.0)	22 (11.0)	1.9536	>0.05
		Female	186 (93.0)	14 (7.0)		
2.	Have you ever used aromatherapy?	Male	139 (69.5)	61 (30.5)	5.2639	<0.05
		Female	159 (79.5)	41 (20.5)		
3.	Do you think aromatherapy is effective in reducing stress and anxiety?	Male	173 (86.5)	27 (13.5)	1.5721	>0.05
		Female	181 (90.5)	19 (9.5)		

4.	Do you believe aromatherapy can improve your mood?	Male	87 (43.5)	113 (56.5)	0.6452	>0.05
		Female	95 (47.5)	105 (52.5)		
5.	Would you recommend aromatherapy to others?	Male	107 (53.5)	93 (46.5)	1.4648	>0.05
		Female	119 (59.5)	81 (40.5)		
6.	How important is it for you to use natural and organic products, including essential oils?	Male	82 (41.0)	118 (59.0)	9.0081	<0.01
		Female	112 (56.0)	88 (44.0)		
7.	Would you consider using aromatherapy in the future?	Male	128 (64.0)	72 (36.0)	2.2336	>0.0
		Female	142 (71.0)	58 (29.0)		

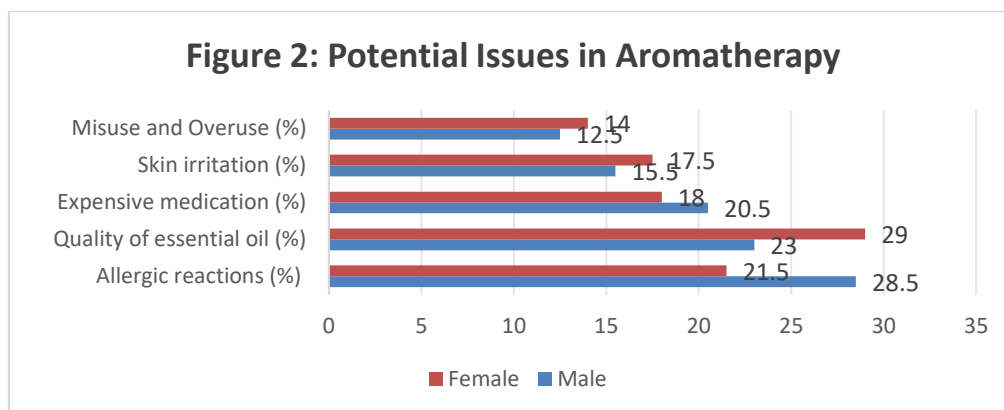
Note: $P < 0.01$ = significant at 1% l.o.s, $P < 0.05$ = significant at 5% l.o.s and $P > 0.05$ = non-significant

The data presented in Figure 1, showed that majority of male respondents' understudy revealed that the main sources of awareness towards aromatherapy among male respondents were friends (40.5%), followed by family (20.5%), followed by health care professional (16.5%), followed by internet (13.5%), followed by religious scholars (9.0%). Further, main sources of awareness towards aromatherapy among female respondents were friends (31.5%), followed by family (29.5%), followed by health care professional (27.5%), followed by internet (11.5%), followed by religious scholars (7.0%). The discussion with respondents revealed that people understudy showed good interest towards traditional medicines as they believe they have less side effects as compared to modern medicines.



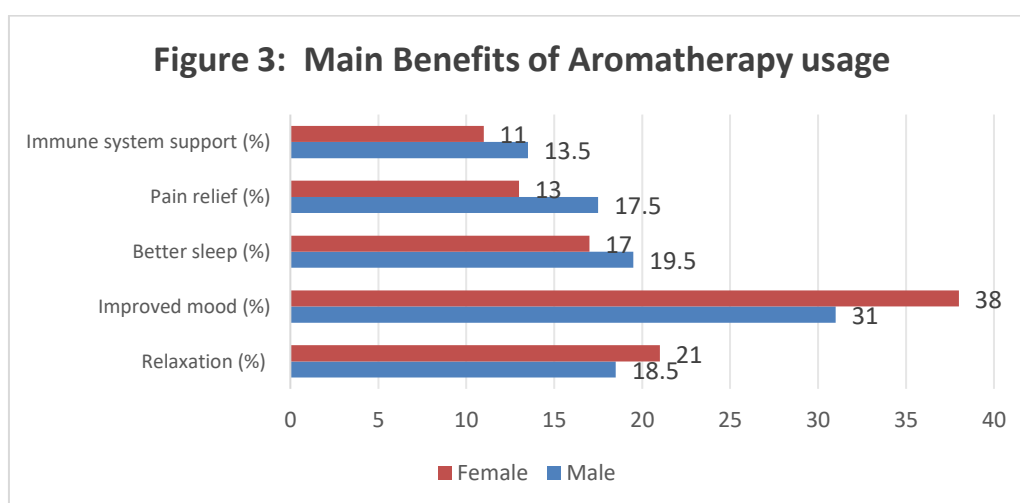
The data presented in Figure 2, revealed that majority of male respondents were of the opinion that potential issues regarding use of aromatherapy are Allergic reactions (28.5%), followed by Quality of essential oil (23.0%), followed by Expensive medication in some cases (%), followed by Skin irritation (15.5%), followed by Misuse

and overuse (12.5%). Further, female respondents were of the opinion that potential issues regarding use of aromatherapy are Quality of essential oil (29.0%), followed by Allergic reactions (21.5%), followed by Expensive medication (18.0%), followed by Skin irritation (17.5%), followed by Misuse and overuse (14.0%).



The data presented in Figure 3, revealed that majority of male respondents understudy was of the opinion that aromatherapy improves mood (31.0%), helps in better sleep (19.5%), helps in relaxation (18.5%), helps in pain relief (17.5%) and supports immune system (13.5%). Further, it was found that majority of female respondents understudy where of the opinion that aromatherapy improves mood (38.0%), helps in relaxation (21.0%), helps in pain relief (17.5%), helps in better sleep (17.0%) and supports immune system (11.0%). The benefits of aromatherapy include Stress relief and relaxation. It improves sleep as certain scents can aid in achieving deeper, more restful sleep. Essential oils can boost mood and alleviate feelings of anxiety. Aromatherapy may help manage pain and discomfort from various conditions. It can also support the immune system and overall health.

These benefits highlight the holistic approach of aromatherapy in promoting well-being. One must keep in mind that there is not enough research to determine the effectiveness of Aromatherapy in human health. One must consult experts before using it, as essential oils have benefits and risks.



The interaction with Kashmir's 400 years old traditional shop owner dealing with rose water in Srinagar Kashmir during field survey revealed that once the owner of this shop was involved in producing traditional medicines as people were using traditional medicines only. The use of traditional medicines decreased with the modern medicine. Mr Ejaz Ahmad the owner of shop revealed that at present people use rose water in religious functions, marriage functions and for health purpose. He said that he will continue this traditional business which is encouraging. He gifted researchers bottle of rose water, prepared during their presence.



Aromatherapy mix science with spirituality, as since centuries people were using essential oils for spiritual growth. The essential oils help us relax, calm our minds, and boost our intuition. This means that scents can affect our emotions and spirituality, helping us connect with our inner selves. We observe in religious functions people use scents to create peaceful atmosphere.



Table 3: Promotion of use of Aromatherapy among people of Kashmir

Gender	Mean ±S.E.	Mann-Whitney U	P-value
Male	3.100±0.989	18323	>0.05
Female	3.275±0.979		

Not at all=1, Somewhat unlikely=2, Neutral=3, Somewhat likely=4, Very likely=5

The presented in Table 3, revealed that the Mean \pm S.E. for male respondents was 3.100 ± 0.989 whereas Mean \pm S.E. for female respondents was 3.275 ± 0.979 . Statistically, non-significant difference was observed between male and female respondents ($P>0.05$). It was concluded that respondents under study in majority encourage others to use aromatherapy because of its health benefits and minimum side effects.

CONCLUSION

Aromatherapy represent the integration of ancient wisdom with modern scientific advancements to foster holistic health and wellness. This practice, rooted in the rituals and medicinal uses of aromatic substances. Today, aromatherapy is widely recognized as a comprehensive practice within complementary, alternative, and traditional medicine. Aromatherapy encompasses a diverse range of techniques, including perfume therapy, functional fragrances, and scent therapy. The recent trends highlight not only the sensory pleasure derived from fragrances but also their significant therapeutic effects. The natural oils are emerging as promising alternatives to harmful chemicals used in pesticides, preservatives, and cleaning agents. The study revealed that people in majority showed positive attitude towards the use of Aromatherapy in Kashmir valley. The main sources of awareness among people towards Aromatherapy were friends, health care professional, internet and religious scholars. Majority of male respondents' understudy where of the opinion that aromatherapy improves mood, helps in better sleep, helps in relaxation, helps in pain relief and supports immune system. The study also highlighted the potential benefits of Aromatherapy and potential issues regarding use of aromatherapy. It was concluded respondents understudy in majority encourage public to use aromatherapy because of its physical and mental health benefits as well as its cost-effectiveness and low-risk procedure for man-aging stress, anxiety, and improving quality of sleep. Finally, researchers suggested that there is a scope for further research on this topic and one must consult an expert before using aromatherapy. The future of aromatherapy is promising, marked by technological advancements, expanded therapeutic applications, and greater integration with modern medicine.

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