Implementation of Aromatherapy in Physical Rehab Settings as a Complementary Treatment

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Learning Outcomes

By the end of the session, participants will:

❖ Understand foundational concepts of aromatherapy.

❖ Gain awareness of aromatherapy research articles relevant to physical rehabilitation concerns.

❖ Learn three ways to implement aromatherapy in physical rehabilitation settings.
Essential oils are highly concentrated products made from plant material (leaves, bark, resin, flowers, seeds, roots), typically from plants that have a noticeable scent.

- Subtle, volatile liquids
- If steam distilled → oil & hydrosol/hydrolat
- Known by common name, important to know Latin name

Chemical constituents

- Essential oils are composed of chemical constituents (components)
- Travel into our airway and cross over into our bloodstream while also traveling to the brain.
- This allows them to reach all systems/organs in the body
Inhalation → Limbic system

(Buck & Axel, 1991)
A little peek into the chemistry…

❖ Chemical constituents (hundreds)
  ➢ Linalool, limonene, thymol, linalyl acetate, camphor, 1,8 cineole, santalol, etc.
  ➢ Each chemical constituent falls into a particular family group…

❖ Family groups
  ➢ Knowing the family group(s) present in an essential oil allows you to know shelf life and general properties of the oil. Shelf life of some oils is 1-3 years, others 2-3, and still others up to 6-8.

❖ Chemotypes
  ➢ Based on conditions (rain, sun, temperature) the same plant can produce different chemotypes from one season to the next. A field of Thyme harvested one year could produce Thyme ct. thymol, another year could produce Thyme ct. linalool.

❖ Gas Chromatography/Mass Spectrometry (GC/MS)
  ➢ A GC/MS is completed on an essential oil to see precisely which constituents are in that particular batch, and at what amounts
  ➢ For you to know what is in the oils you are purchasing, you want to purchase from a company that openly provides the batch specific GC/MS report of their oils
So what does all this mean to me?

- Oils can oxidize
  - Safety issue
    - Skin or mucosal irritation, skin sensitization
  - Storage
    - Air, Temperature, Light
- Phototoxicity
  - Some oils are phototoxic
Putting Aromatherapy to Work

Complementary to RT
RT Scope of Practice

"...practice [that] includes all patient/client services of assessments, planning, design, implementation, evaluation and documentation of specific therapeutic interventions, management, consultation, research, and education, for either individuals or groups that require specific therapeutic recreation or recreation therapy intervention" (NCTRC, 2004).
From Aromahead Institute:

“As aromatherapists, we can fill an incredibly supportive role in helping people move through the challenges they face in their journey through life. In my opinion, there are no blanket solutions for anything. Instead we need to understand all nuances of the situation the individual is facing including the physical, mental, emotional and spiritual aspects. While this can be a lot more work than just saying “oh you have a headache, use this lavender”, when one takes the time to consider all aspects of an individual, as well as their life situation and lifestyle, the synergy and protocol created are unique for that person, allowing incredible possibilities to unfold for them.

I also believe it is very important to remember that essential oils are NOT substitutes for pharmaceutical drugs, nor should we be trying to recommend or use them in this. We should also always remember that when it comes to a disease or a condition, as aromatherapists we NEVER treat the disease or condition. What we do is consider the whole person, what are their concerns, what are their challenges, what is their lifestyle, what are their physical needs, what are their psychological needs. Once we have this information we can come up with a unique synergy for that individual, as well as a plan of action for how that synergy is to be applied.”
The APIE Process

❖ Assessment
  ➢ History
  ➢ Preferences
    ■ Citrus, earthy, exotic, floral,
      fresh, herbaceous, minty, spicy,
      sweet, warm, woodsy
  ➢ Baseline

❖ Planning
  ➢ Client centered
  ➢ Evidence based
  ➢ Outcome
  ➢ Primary or Secondary

❖ Implementation
  ➢ Orient
  ➢ Educate
  ➢ Monitor

❖ Evaluation
  ➢ Formative & Summative

❖ Don’t forget to communicate!
  ➢ The team
Implementation: Methods of delivery

Inhalation: The quickest/most efficient method!

- **Diffusers**
  - Essential oils are broken into minute particles and delivered as mist through an ultrasonic ventilator.
  - Use 1-5 drops of essential oil.

- **Get crafty**
  - Put a couple drops on a cotton ball, then integrate it into a flower to pin to someone’s shirt, or put it in their pillow.

- **Inhalers/aromasticks**
  - Remember Vicks’?
  - 10-15 drops of oil on the cotton wick
  - Lasts about 3 months (depending on conditions)

Topical application

- **Dilutions**
  - 5-6 drops in 1 oz of carrier is 1% (daily use)
  - 10-12 in 1 oz of carrier is 2%
  - 15-18 in 1 oz of carrier is 3% (acute)

Carriers

- Most carrier oils are simply used for lubrication and dilution of the oil, but some have therapeutic properties of their own. Examples:
  - Jojoba wax is highly penetrating, most similar to our skin’s natural sebum. Great for massage, very moisturizing. Anti-inflammatory properties, antioxidant.
  - Coconut oil is great for dry itchy skin, does not clog pores. Resistant to rancidity. Very moisturizing and serves as a protective layer.
Essential Oils Generally Regarded as Safe

Lavender (*Lavandula angustifolia*) **Ester, Monoterpenol, Monoterpene.** *Anti-microbial, analgesic, anti-bacterial, CNS sedative, deodorant, skin healing, antidepressant.*

Orange (*Citrus sinensis*) **Monoterpene, Aldehyde.** *Deodorant, analgesic, antibacterial, digestive aid, antidepressant.* Room freshener spray.

Roman Chamomile (*Chamaemelum nobile*) **Ester, Monoterpenol, Monoterpene.** *Analgesic, CNS sedative, digestive aid.*

German Chamomile (*Matricaria recutita*) **Sesquiterpene, Oxide, Sesquiterpenol.** *Anti-inflammatory, cooling, analgesic, calming to CNS, skin-healing.*

Cedarwood (*Juniperus virginiana*) **Sesquiterpene, Sesquiterpenol, Oxide.** *Calming, decongestant/expectorant/mucolytic.*

This list may seem limiting, however, many things can be accomplished with these five essential oils. Until you have undergone training to learn more it is best to stay with these.
Physical Rehab Relevant Aromatherapy Outcomes in the Literature

A brief review
Outcomes to be discussed:

- Improved Sleep
- Decreased Pain
  - Acute pediatrics
  - Adult inpatients
  - Adult acute
  - Chronic & fatigue
- Improved Quality of Life
Improved Sleep

❖ Hajibagheri, Babaii, and Adib-Hajbaghery (2014) aimed to analyze the effects of *Rosa damascene* on the quality of sleep among patients hospitalized in the CCU
  ➢ Three drops were applied to a paper towel and attached to participant’s pillow for 8 hours
  ➢ Results showed improved sleep quality, duration of sleep, reduced sleep latency and sleep disturbances.

❖ Afshar, Moghadam, Taghizadeh, Bekhradi, Montazeri and Mokharti (2015) researched the effects of aromatherapy on the quality of sleep in postpartum women
  ➢ Inhalation of Lavender oil (on cotton ball placed next to pillow)
  ➢ Results showed an effect on some aspects of sleep quality, including latency and duration.
Marofi, Sirousfard, Moeini, and Ghandi (2015) evaluated the effects of Rosa damascena Mill on postoperative pain in children. Inhalation aromatherapy was used. Results of the study showed a significant decrease in the pain intensity score after the intervention.

Bikmoradi, Khaleghveerdi, Seddighi, Moradkhani, Soltanian and Cheraghi (2017) measured the effects of inhalation aromatherapy of Lavender essential oil on pain experienced by pre-school aged children. Inhalation aromatherapy through an absorbable sticky patch on their shirt collar 30 min before injection and intravenous catheter insertion was used. Results of the study showed reduced severity of pain after procedure.
Decreased Pain: Adult Inpatients

- Kim Ren, Fielding, Abhishek, Kasumi, Waida, Lebovits, and Bekker (2007) evaluated the effectiveness of Lavender in reducing opioid requirements after laparoscopic adjustable gastric binding procedure
  - Lavender oil applied to oxygen face mask
  - Results showed lavender group required significantly less morphine postoperatively
- Dimitriou, Mavridou, Manataki, and Damigos (2017) analyzed the results of all randomized controlled trials relating to aromatherapy and postoperative pain
  - Results of the study showed that five out of the nine studies support aromatherapy as an effective complementary therapy for surgical patients that can reduce postoperative pain
- Johnson, Riviard, Griffin, Kolste, Joswiak, Kinney and Dusek (2016) studied the effectiveness of essential oil on pain, nausea, and anxiety with patients in acute hospital settings
  - Ginger, lavender, mandarin, and sweet marjoram used either with inhalation, topically or both
  - Results of the study showed pain, nausea and anxiety were reduced when essential oils were administered adjunctive to usual care
Decreased Pain: Adult Acute

- Nasiri, Mahmodi and Nobakht (2016) studied the effects of Lavender essential oil and its effects on pain experienced by individuals with knee osteoarthritis
  - Aromatherapy massage
  - Results of the study showed pain severity after intervention decreased significantly

- Ming-Chiu, Yu-Fei, Chih-Ching, and Shyi-Kuen (2014) researched the effects of essential oils on neck pain
  - Marjoram, black pepper, lavender and peppermint were mixed with a cream and applied to neck and upper trapezius muscles
  - Results of the study showed alleviated neck pain and improved neck range of motion

- Niazi, Hashempur, Taghizadeh, Heydari, and Shariat (2017) studied the effects of Rosa damascena Mill on migraine headache
  - Topically applied rose oil
  - Results of the study showed those with hot migraine headache had a significantly better response to rose compared to those with cold migraine headache
Decreased Pain: Chronic & Fatigue

Tang and Mimi Tse (2014) studied the effectiveness of aromatherapy program for older adults with chronic pain, depression, anxiety and stress

- Self-administered home based aromatherapy with spray bottle consisting of lavender and bergamot essential oils, and lavender hydrolat.
- Results of the study showed program was effective in reducing pain, depression, anxiety, and stress levels

Metin and Ozdemir (2016) studied the effects of aromatherapy massage on pain and fatigue in patients with rheumatoid arthritis

- Aromatherapy massage with lavender, juniper, ylang ylang, and rosemary applied to both knees prior to massage
- Results showed significant reduction in pain scores
Improved Quality of Life

- Gok Metin, Arikan Donmez, Izgu, Ozdemir, and Arslan (2017) studied the effects of aromatherapy massage on neuropathic pain severity and QoL in patients with painful diabetic neuropathy
  - Variety of essential oils including lavender
  - Aromatherapy massage applied topically to feet, hands and wrists
  - Significant reduction in pain score and increased QoL scores
Sample Interventions

How to implement aromatherapy
Smells like...

- Introduction to aromatherapy
- Discuss different types of scents
- Scent memories
  - Are there certain scents that always take them to a specific time or place?
- Have scent samples
  - Plant material in small containers, or 1-2 drops of oil on a cotton ball in a small container
- Talk about ways they can incorporate the scents that promote positive emotions into their day to day lives
Inhalation Approaches

- Placing drops on a cotton ball
- Placing drops on a paper towel
- Placing drops on an alcoholic sticky patch and attach to shirt collar
- Oxygen face mask
- Diffuser
Physical Outcomes From Aromatherapy Massage

- Decreased pain, reduced fatigue (Metin & Ozdemir, 2016)
- Essential oil massage blend
  - Example:
    - 5% dilution consisting of:
      - Lavender (*Lavandula angustifolia*), Juniper berry (*Juniperus communis*), Ylang ylang (*Cananga odorata*), and Rosemary (*Rosmarinus officinalis*) in the ratio 3:3:2:2
    - Carrier oil (e.g., Jojoba oil, fractionated coconut oil) or unscented lotion (facility approved)
      - If 1 ounce of carrier, then to achieve a 5% dilution you can add 25-28 drops total. If you follow the recommended ratio, you would then add 7 drops each of Lavender & Juniper berry, and 5 drops each of Ylang ylang & Rosemary.
      - Be sure to mix thoroughly.
Knee Massage

- Place client in a supine position
- Apply essential oil blend topically to the knee
  - Divide knee area into four quadrants, adding five drops of the essential oil blend (if liquid) to each quadrant using both hands. If lotion, dime size amount per quadrant.
- Start by massaging the muscles around the knee joint
- Using forearms, apply a slow broad pressure across the top of the quad being sure not to press on the knee cap
- Use your palms to massage the sides of the knee
- Stack your hands to massage the inside of the knee, making big circles as you massage


(Metin & Ozdemir 2016)
Any questions?

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Online Resources

❖ National Association for Holistic Aromatherapy
  ➢ www.naha.org
  ➢ NAHA is the leading professional and education based aromatherapy organization in the United States with a strong international community as well. Their mission: Building Strength Through Community and Education.
  ➢ There are NAHA approved schools, in person or online

❖ Aromatherapy Registration Council (ARC)
  ➢ www.aromatherapycouncil.org

❖ Tisserand Institute
  ➢ https://tisserandinstitute.org/
  ➢ Courses, Articles, Diagrams, Adverse Reaction Database

❖ Aromahead Institute
  ➢ https://www.aromahead.com/
  ➢ Blog, Trainings, Courses, Certification
“Print” Resources

❖ Books:
  ➢ Aromatherapy for Health Professionals - Price & Price (4th edition)
  ➢ Clinical Aromatherapy: Essential Oils in Healthcare – Jane Buckle, PhD, RN

❖ Journals:
  ➢ International Journal of Clinical Aromatherapy
  ➢ Complementary Therapies in Clinical Practice
Takeaways

▪ Know what you're buying
  ▪ Bottle has common & Latin names, as well as date of production
  ▪ Batch specific GC/MS per bottle available from seller
  ▪ MSDS available from seller

▪ Store it properly
  ▪ Cool (45°-65°F), dark space
  ▪ Airtight, dark glass bottles
  ▪ Keep record of batch dates in a log book and note when they are due to “expire”

▪ Be able to explain what you are doing to colleagues and clients
  ▪ Essential oils are potent and can be quite effective when used appropriately & safely
# Inhalation, Diffusion and Topical Application

## Inhalation
- Inhalation direct from bottle
- Personal inhaler (aroma-stick)
- Steam inhalation
- Nebulizer with breathing mask (mostly used in hospitals & clinics)

Inhalation is most used for respiratory issues and is carried out for limited periods of time, such as 1-10 minutes, several times daily.

## Diffusion
- Aroma jewelry, essential oils attached to clothing etc.
- Any type of diffuser, nebulizer (without breathing mask) or candle burner

Diffusion is most used for mood management, but can also be used as an adjunct for respiratory issues. It is best used intermittently (30-60 minutes on, then the same time period off).

## Inhalation and/or Diffusion Work Best in:
- Upper respiratory tract problems such as cold, flu, sinusitis
- Problems with memory, focus, concentration
- Psychological issues such as anxiety, depression, SAD, mood swings

## Topical
- Application of diluted essential oil to the skin in any type of base.
- Diluted essential oils are usually applied close to the problem area

Topical application works best in:
- Cosmeceutical applications such as oily skin, dandruff
- Skin diseases such as acne, eczema, fungal infections
- Wound healing, insect bites and stings
- Menstrual pain, muscle pain, nerve pain, joint pain

## Combination
A combination of inhalation AND topical application may be useful in:
- Lower respiratory tract problems such as asthma, bronchitis
- Severe, and/or chronic, pain


Thanks!

Don’t forget your survey :)}