

Sciences Lorestan University of Medical

A Thesis

Presented for the

Degree of Master of Sciences

In Critical Care Nursing

Title:

The effect of aromatherapy with Myrtle essential oil on anxiety and hemodynamic status of patients with acute coronary syndrome in cardiac care unit: A randomized clinical trial

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Background: Acute coronary syndrome (ACS) is one of the leading causes of mortality worldwide. Anxiety is among the most common psychological problems in patients with ACS and may lead to hemodynamic instability and adverse clinical outcomes. This study aimed to determine the effect of aromatherapy with myrtle essential oil on anxiety and hemodynamic status in patients with acute coronary syndrome.

Methods: This double-blind randomized controlled trial was conducted in 2026 on 104 patients with acute coronary syndrome admitted to Shahid Ayatollah Madani Hospital in Khorramabad, Iran. Patients were allocated to the intervention group (n = 52) or the placebo group (n = 52) using stratified block randomization based on the mortality risk score for patients with acute coronary syndrome. In the intervention and placebo groups, aromatherapy was administered using one drop of 100% myrtle essential oil or a placebo, respectively, for 10 minutes, twice daily for three consecutive days (six sessions). Anxiety was assessed using the Depression, Anxiety, and Stress Scale-21 (DASS-21), and hemodynamic parameters were measured at four time points using a central monitoring system. Data were analyzed using SPSS version 25. The Chi-square test, independent-samples t-test, repeated-measures analysis of variance (ANOVA), and post hoc tests were used for statistical analysis.

Results: There were no significant differences between the intervention and placebo groups in terms of demographic and clinical characteristics at baseline. The mean changes in anxiety scores over time differed significantly between the two groups ($P < 0.001$). In addition, the mean changes in heart rate and respiratory rate over time were statistically significant ($P < 0.001$). The mean heart rate was significantly lower in the intervention group than in the placebo group only at 5 and 20 minutes after the intervention ($P = 0.03$). Likewise, the mean respiratory rate was significantly lower in the intervention group than in the placebo group only at 5 minutes after the intervention ($P = 0.03$). No significant difference was observed in the mean changes in mean arterial pressure over time. In contrast, arterial oxygen saturation was significantly higher in the intervention group than in the placebo group at 5 minutes, 20 minutes, and 4 hours after the intervention ($P < 0.001$).

Conclusion: Aromatherapy with myrtle essential oil may serve as a safe, inexpensive, non-invasive complementary intervention for reducing anxiety and improving some hemodynamic parameters in patients with acute coronary syndrome admitted to the coronary care unit.

Keywords: Anxiety; Acute Coronary Syndrome; Aromatherapy; Hemodynamic Status; Myrtle Essential Oil.