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Revitalizing your sleep: the impact of daytime physical activity and balneotherapy during a spa stay

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Background: In modern society, achieving high-quality sleep is increasingly challenging. We conducted a study to explore the potential benefits of daytime physical activity and balneotherapy, including mud application and thermal-water bathing, on sleep quality.

Methods: To assess daytime physical activity and sleep parameters, we actigraphically monitored 127 healthy participants (34.6% male, average age 64.61 ± 0.89 years) during a one-week stay at a spa resort, where they received mud application and thermal-water bathings.

Results: Participants were divided into three groups based on the timing of mud application. Those receiving mud application before 8:30 a.m. tended to have shorter sleep durations compared to those with later application, especially if it occurred before 7:45 a.m. However, mud application did not significantly affect sleep quality. Three-way ANCOVA revealed a significant effect of daytime physical activity on delta Sleep Efficiency, but *post-hoc* tests were insignificant. Furthermore, analyzing the duration of daily thermal-water bathings, individuals bathing for over 75 min per day experienced a noteworthy improvement in sleep quality, particularly in terms of delta Sleep Efficiency (2.15 ± 0.9% vs. −0.34 ± 0.31%, $p = 0.007$).

Conclusion: Our findings suggest that extended thermal-water bathing may enhance objective aspects of sleep quality. Since balneotherapy is mainly prescribed for individuals with musculoskeletal pathologies or psychological disorders, these findings may encourage doctors to recommend bathing in thermal water also to healthy subjects. Future researchers need to investigate the role of daytime physical activity in depth.

KEYWORDS

mud application, thermal treatments, thermal water, active lifestyle, body temperature, exercise