MANUAL MASSAGE IN THE TREATMENT OF BURN SCARS IN THE PEDIATRIC POPULATION: A Scoping Review with Focus Group Opinion

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Background
Massage of burn scars has historically been one of the most commonly used interventions in rehabilitation. However, the term "massage" is often poorly defined in literature and encompasses a heterogeneous set of manual techniques, sometimes including approaches that differ significantly in their objectives and methods of application. In recent years, a greater understanding of the pathophysiological mechanisms of wound healing has led to a critical reappraisal of the use of massage during the different evolutionary phases of burn scars.

Objectives
The aim of this study is to analyze the role of massage in the physiotherapy treatment of burn scars, clarifying its definition, indications, and contraindications during the different phases of healing, focusing on the pediatric population.

Methods
A narrative review of the scientific literature was conducted. Subsequently, the results of this analysis were discussed through 2 focus groups with 13 physiotherapists experienced in the treatment of burn scars; these experts came from many different regions of Italy.

Results
The review shows that massage, understood as manual/mechanical mobilization techniques such as skin rolling, kneading, and friction/light stroking, is integrated within other specific physiotherapy tools for the treatment of pediatric burn scars. The focus group experts highlight that massage is not indicated during the blistering or active hypertrophy phases, as frictional forces can increase blister formation and further stimulate vascularization and collagen deposition. In these phases, other treatments like put under tension are more effective. Massage is selectively indicated in the presence of skin adhesions or during the stabilized scar phase, not earlier than two years after wound closure. In the pediatric setting, the application of massage is often difficult and potentially counterproductive, making alternative strategies and a play-based therapeutic approach preferable.
The results emphasize the need to move beyond the routine use of massage as a standard treatment for burn scars in children. Adequate information reduces the risk of inappropriate interventions and improves treatment adherence. A fact sheet for professionals based on these findings is currently being prepared and will be published online.

Conclusions
Burn scar massage in children should be considered a therapeutic tool to be used selectively rather than systematically. The choice of physiotherapy tools should be based on the evolutionary stage of the scar, tissue characteristics, and the child's tolerance, favoring alternative approaches during active phases and including careful child and family education.

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