Can oxytocin help against loneliness? Findings from a randomized controlled trial

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Loneliness is not a disease. And yet it is a significant health problem. Depression, heart disease or dementia—people who are permanently lonely have a higher risk of becoming ill.

The team led by Dr. Jana Lieberz from the University Hospital Bonn (UKB), who also conducts research at the University of Bonn, and Prof. Dr. Dirk Scheele (Ruhr University Bochum) have investigated how loneliness can be specifically combated. In a controlled study, in which the universities of Oldenburg, Bochum, Freiburg and Haifa (Israel) were also involved, 78 women and men who felt lonely were given the so-called "cuddle hormone" oxytocin as a nasal spray.

The paper is published in the journal *Psychotherapy and Psychosomatics*.

Everyone is probably familiar with loneliness, a negative feeling that arises when one's own social relationships are perceived as insufficient in terms of quantity or quality. However, if it persists, it can be associated with many mental and physical illnesses. Despite this, there has been a lack of effective interventions to reduce chronic loneliness in those affected.

Senior authors Dr. Lieberz and Prof. Dr. Scheele, together with first author Ruben Berger (UKB), have now investigated whether the bonding hormone oxytocin could help to increase the effectiveness of group therapy against loneliness in a recent study.

In the proof-of-concept study, participants underwent five weekly group therapy sessions, which were supplemented by the administration of oxytocin in the form of a nasal spray. A control group received a placebo preparation.

Participants' perception of their own feelings of loneliness was assessed at the beginning of the study, after all sessions had been completed and again at two follow-up points (three weeks and three months). In addition, acute feelings of loneliness, stress levels, quality of life and the therapeutic relationship were assessed at each session.

The senior author of the study, Dr. Lieberz, summarizes, "The psychological intervention was associated with a reduced perception of stress and an improvement in general loneliness in all treatment groups, which was still visible at the follow-up examination after three months."

Oxytocin did not have a significant effect on generally perceived loneliness, quality of life or perceived stress. However, compared to placebo, the participants who had received oxytocin reported a reduced acute feeling of loneliness after the sessions. In addition, oxytocin administration improved positive bonding between group members.

"This is a very important observation that we made—oxytocin was able to strengthen the positive relationship with the other group members and reduce acute feelings of loneliness right from the start. It could therefore be helpful to support patients with this at the start of psychotherapy. This is because we know that patients can initially feel worse than before starting therapy as soon as problems are named. The observed effects of administering oxytocin can in turn help those affected to stay on the ball and continue," explains Dr. Lieberz.

The psychologist emphasizes that oxytocin should not be seen as a panacea—and that therapy is by no means always necessary to reduce loneliness. Although no long-term effects of oxytocin administration were observed in the study, the results of the study suggest that oxytocin can be used to achieve positive effects during interventions.

Further studies are now required to determine optimal intervention designs so that the observed acute effects of oxytocin can be translated into long-term benefits.

More information: Ruben Berger et al, Oxytocin-Augmented

Modular-Based Group Intervention for Loneliness: A Proof-Of-Concept Randomized Controlled Trial, *Psychotherapy and Psychosomatics* (2024). DOI: 10.1159/000538752