## **BBC** NEWS Loneliness 'makes you cold'

Loneliness and coldness are often associated in everyday language, but psychologists have found that social isolation does make people feel cold. The University of Toronto team found people feeling excluded said a room was colder than those feeling included. And people who felt left out also chose comforting hot soup, rather than an apple or soft drink. A UK psychologist said the findings could help people feeling isolated, particularly in the winter months.

## 'Unpopular'

In the first study, 65 students were divided into two groups. One group recalled a personal experience in which they had been socially excluded and felt isolated or lonely, such as being rejected from a club. The other group recalled an experience in which they had been accepted. The researchers then asked everyone to estimate the room's temperature.

The estimates varied from about 54F(12C) to 104F(40C) - with those who had thought about an isolating experience giving lower estimates of the temperature. In the second experiment, the researchers asked 52 students to play a computer-simulated ball game. It was designed so that some of the volunteers had the ball tossed to them many times, but others were left out.

Afterwards, all the volunteers were asked to rate the desirability of hot coffee, crackers, soft-drinks, an apple, or hot soup. The "unpopular" participants were much more likely than the others to want either hot soup or hot coffee. The researchers suggest their preference for warm food and drinks resulted from physically feeling cold as a result of being excluded.

## 'Coping mechanism'

Dr Chen-Bo Zhong, who led the research, which is published in the journal Psychological Science, said: "We found that the experience of social exclusion literally feels cold. "This may be why people use temperature-related metaphors to describe social inclusion and exclusion." The team suggests the findings could be used to treat people's feelings of sadness or loneliness.

Writing in the journal, published by the American Association of Psychological Science, they say: "An interesting direction for research would be to determine whether experiencing the warmth of an object could reduce the negative experience of social exclusion. "Such an implication has been used metaphorically in the self-help literature, but our research suggests that eating warm soup may be a literal coping mechanism for social exclusion."

They also suggest that raising the temperature could help someone who is feeling low - in the same way that people with seasonal affective disorder (SAD) are helped with light therapy. They added: "Research on this disorder has predominantly focused on the connection between reduced daylight and increased likelihood of winter depression, although some evidence supports the idea that reduced temperature also contributes to an increase in depressive experience.

"Our research suggests one reason why that may be. Perhaps cold temperatures in the winter serve as a catalyst to the psychological experience of social exclusion."

Dr Lesley Prince, a lecturer in psychology at Birmingham University, said: "This is very interesting, and shows there are physiological correlates to emotions."

He added: "I particularly like the idea that if people are feeling despondent or lonely, you could help them feel better by putting the temperature up."

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