

A mental health chatbot for youth

The first trial of Scalable Technology for Adolescents and Youth to Reduce Stress (STARS), a non-AI mental health chatbot paired with brief telephone support from a trained helper developed by the World Health Organisation (WHO), provides compelling early evidence that the intervention benefits young people in low-resource and crisis settings experiencing anxiety and depression.

Engaging chatbot reduces symptoms of depression and anxiety

Chatbots can increase availability of mental health provision in low-resource and humanitarian settings, especially for common mental health conditions. The mixed methods feasibility and randomised controlled trials (RCTs) showed that STARS is a highly engaging intervention that successfully reduces symptoms of anxiety and depression and improves overall wellbeing after 3 months. Findings suggest STARS can be successfully implemented in low-resource and humanitarian settings, especially those with limited mental health provision, with a potential to explore integration of STARS into 'stepped care' packages. STARS is currently being evaluated among youth in Lithuania and will be released by WHO if both trials show positive results.



Study participant using the STARS chatbot. Credit: Rand Habashneh

Background

Youth in low- and middle-income countries experience high rates of mental health conditions yet lack access to adequate care; scalable, low-cost interventions are needed. STARS is a self-help chatbot, based on decision-tree logic. Unlike many chatbots it does not use AI. It helps youth learn self-help techniques including behavioural activation, problem solving and stress management. Support is provided through five weekly 15-minute phone calls by trained and supervised, non-specialist helpers to encourage uptake and use.

How the research was conducted

After development and cultural adaptation of STARS in collaboration with youth, a small feasibility trial was conducted, then a full RCT involving 344 young people aged 18-21 years (including Syrian refugees). The trial compared STARS with a control group receiving basic information about stress. Impacts on mental health outcomes were measured after 3 months. Interviews with key stakeholders were conducted to inform further development and implementation.

Key findings

- STARS was shown to be adaptable for youth living in Jordan and could be feasibly implemented in this setting.
- Youth enrolled in the STARS chatbot had significantly fewer symptoms of anxiety, depression, general distress, personally identified problems and functional impairment 3 months after finishing the intervention. They also reported better wellbeing and a greater sense of agency.
- Importantly, similar results were observed even for those with more severe symptom levels.
- The STARS intervention was engaging: chatbot use was high, with youth completing on average 7 out of 10 chatbot lessons and responding to an average of 4 out of 5 helper support calls.
- Qualitative interviews suggested that STARS could be feasibly delivered and was safe for young people, with no evidence of any adverse effects during the trial.

Implications for humanitarian practitioners and policymakers

This trial indicates that STARS, a self-help chatbot with weekly support calls, is a promising intervention for youth experiencing psychological distress, including in low-resource and humanitarian settings. This non-AI, decision-tree chatbot appears safe, with no reported adverse events, and- when supported by trained non-specialist helpers- was feasible and effective in reducing distress among youth in Jordan, including Syrian refugees, suggesting potential for wider use.

As with all psychological interventions, cultural adaptation and safeguards (e.g. referral for those at imminent risk of suicide or facing protection concerns) are essential when delivering STARS in diverse crisis-affected populations. It could form part of a stepped-care approach within broader mental health services, offering more intensive support to those who do not benefit, although results suggest it may also help those with more severe distress.

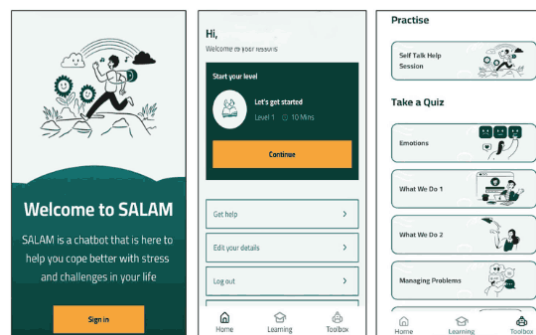
These findings warrant further research to inform implementation and scale-up, particularly where access to mental health support is limited. WHO is conducting a trial in Lithuania; if findings remain positive, the intervention may be released. Policymakers and practitioners could consider integrating STARS with trained human support in humanitarian health systems.

Recommendations for future research

A cluster RCT was originally planned with 15–18-year-olds, but COVID-19 required a methodological change. It would be valuable to conduct the trial with younger adolescents. A second STARS trial is now underway in Lithuania. Future research could examine improving user engagement through generative AI while maintaining effectiveness and safeguards, and assess the impact of reduced helper support (e.g. fewer calls). Implementation research will be important for understanding outcomes beyond the trial.

About the study team

This study was a partnership between WHO, The Institute for Family Health, Jordan; The University of Jordan; and the University of New-South-Wales. The United Nations High Commissioner for Refugees (UNHCR) and United Nations Children's Fund (UNICEF) provided support and advice. The Principal Investigator was Professor Richard Bryant (UNSW).



A landing screen in the chatbot interface. Credit: WHO

Keywords

Chatbot; Depression; Anxiety; Guided self-help; Refugees; E-mental health

Articles and further reading

The study page on the Elrha website: Elrha Projects - Effectiveness of a self-help chatbot for conflict-affected youth

- Study protocol for the RCT in Jordan: <https://doi.org/10.2196/54585>
- Feasibility study in Jordan: <https://doi.org/10.2196/63515>
- Development of the STARS chatbot: <https://doi.org/10.3389/fdgth.2025.1528580>
- Final RCT in Jordan: <https://doi.org/10.1038/s41746-025-02142-8>



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<http://www.elrha.org/programme/research-for-health-in-humanitarian-crises/>