Economic evaluations of individual, service, and training interventions for self-harm and suicide prevention: a systematic review

Fanyi Su

NIHR Greater Manchester PSRC

Authors: Fanyi Su, Leah Quinlivan, Jodie Westhead, Navneet Kapur, Roger T. Webb, Jane Graney, Faraz Mughal, Alireza Mahboub-Ahari, Rachel A Elliott

Background: Self-harm, defined as intentional self-poisoning or self-injury regardless of intent, affects over 15 million people worldwide annually. More than 700,000 die by suicide each year, contributing to over 32 million years of life lost globally. In the UK, self-harm leads to over 200,000 emergency presentations annually, with significant direct hospital costs and indirect societal costs. Individuals at risk often engage with healthcare services, offering opportunities for intervention. Various strategies—including cognitive behavioural therapy, integrated services, and staff training—have shown potential, though evidence quality varies. The most recent economic review in 2016 found mixed study quality, highlighting the need for updated evidence.

Objectives: Self-harm and suicide are public health priorities that necessitate effective and economically sustainable preventive strategies. Individual-level, service-level, and staff-training interventions have demonstrated effectiveness. We report a systematic review of economic evaluations of these interventions within healthcare settings.

Methods: A comprehensive search was conducted in databases (Medline, Embase, Econlit, CINAHL, Web of Science and PsycINFO) for full economic evaluations of service-level, individual-level and staff-training interventions targeting self-harm and suicide prevention in healthcare settings (January 2003 - November 2023). Methodological and reporting quality were assessed using standard tools.

Results: In total, 27 studies evaluating 27 individual-level, one staff-training, one service-level and four mixed interventions met the inclusion criteria. Over time, methods have moved from purely trial-based analyses (n=11) to include model-based analyses (n=16), of which 11 were Markov models. Both general and high-risk populations were examined. Outcomes ranged from cost per self-harm episode averted, cost per suicide averted to cost per extra quality-adjusted life-year (QALY). Sixteen studies included only healthcare sector costs. Study heterogeneity precluded meaningful direct comparison between studies. The results indicate a broad range (USD12,321-USD327,138 per QALY) of cost-effectiveness across different interventions. Study quality was generally good, with some limitations in model validity.

Conclusion: Most of the interventions studied demonstrated significant potential for cost savings and improved health outcomes. Variation in methods used underscores the need for standardized approaches in costing and outcome measurement. As the use of modelling expands in this area, further work is needed to develop more consensus in how to measure and model longer-term outcomes

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Fanyi Su[1], Leah Quinlivan[1], Jodie Westhead[1], Navneet Kapur[1], Roger T. Webb[1], Jane Graney[1], Faraz Mughal[2], Alireza Mahboub-Ahari[1], Rachel A Elliott[1]

[1] University of Manchester
[2] Keele University

Background

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- In the UK, self-harm leads to over 200,000 emergency presentations annually, with significant direct hospital costs and indirect societal costs.
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- The most recent economic review in 2016 found mixed study quality, highlighting the need for updated evidence.
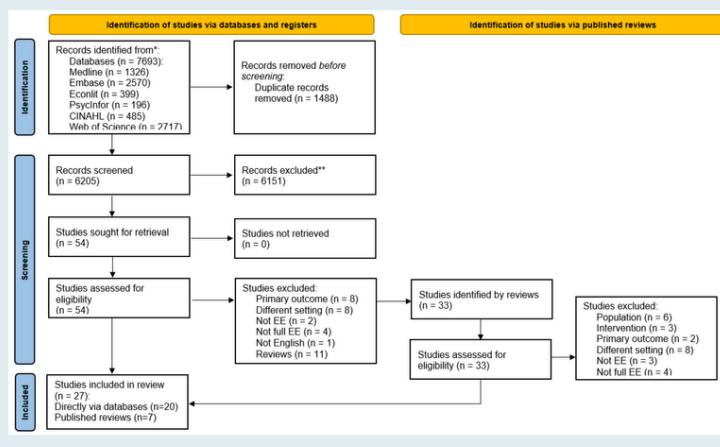
Objectives

- Self-harm and suicide are public health priorities that necessitate effective and economically sustainable preventive strategies.
- Individual-level, service-level, and staff-training interventions have demonstrated effectiveness.
- We conducted a systematic review of economic evaluations of these interventions within healthcare settings.
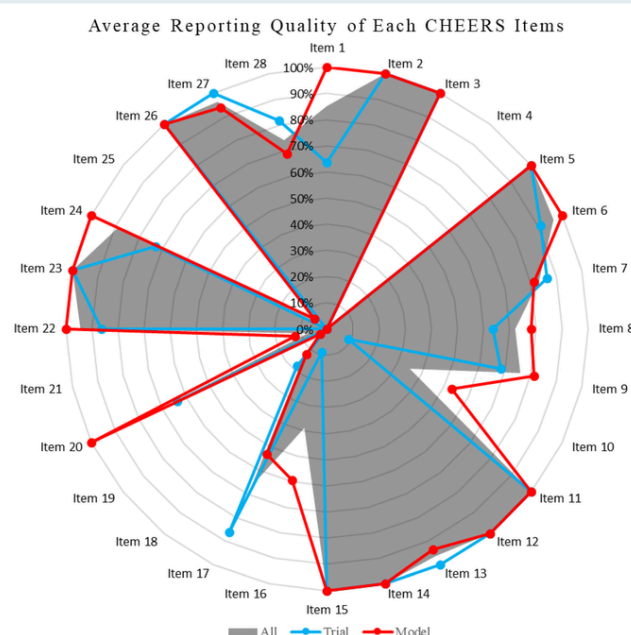
Methods

- A comprehensive search was conducted in databases (Medline, Embase, Econlit, CINAHL, Web of Science and PsycINFO) for full economic evaluations of service-level, individual-level and staff-training interventions targeting self-harm and suicide prevention in healthcare settings.
- Study time frame: January 2003 - November 2023
- Methodological and reporting quality were assessed using standard tools.

Results

- In total, 27 studies evaluating 27 individual-level, one staff-training, one service-level and four mixed interventions met the inclusion criteria.
- Over time, methods have moved from purely trial-based analyses (n=11) to include model-based analyses (n=16), of which 11 were Markov models.
- Outcomes ranged from cost per self-harm episode averted, cost per suicide averted to cost per extra quality-adjusted life-year (QALY).
- Sixteen studies included only healthcare sector costs.
- Study heterogeneity precluded meaningful direct comparison between studies.
- The results indicate a broad range (USD12,321-USD327,138 per QALY) of cost-effectiveness across different interventions.
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Results

Average Reporting Quality of Each CHEERS Items

All — Trial — Model

Conclusion

- Most of the interventions studied demonstrated significant potential for cost savings and improved health outcomes.
- Variation in methods used underscores the need for standardized approaches in costing and outcome measurement.
- As the use of modelling expands in this area, further work is needed to develop more consensus in how to measure and model longer-term outcomes.

Next steps

- Adapt evidence from the review with stakeholder input and construct economic models to make the analysis relevant to the NHS.
- Address evidence gaps by constructing new economic models using published evidence and stakeholder input and summarise evidence for policymakers, commissioners and patients.
- Generate recommendations for implementation of interventions where the evidence is sufficiently robust, and recommendations for specific topic. requiring further research where there are still unmet needs

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