



COST EFFECTIVENES OF SCREENING FOR DEPRESSION IN GENERAL POPULATION IN INDIA

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Recommendations

- The government of India should consider integration of two-step screening strategy for depression, using PHQ-2 followed by PHQ-9 within India's government primary healthcare system.
- It would be beneficial to expand the screening programme to population cohort aged 20 years and above from health and economic standpoint.
- The government should consider investment in primary healthcare infrastructure, training, and resources for management of mild cases of depression within primary care settings and implement measures to increase utilization of public health services to improve efficiency.

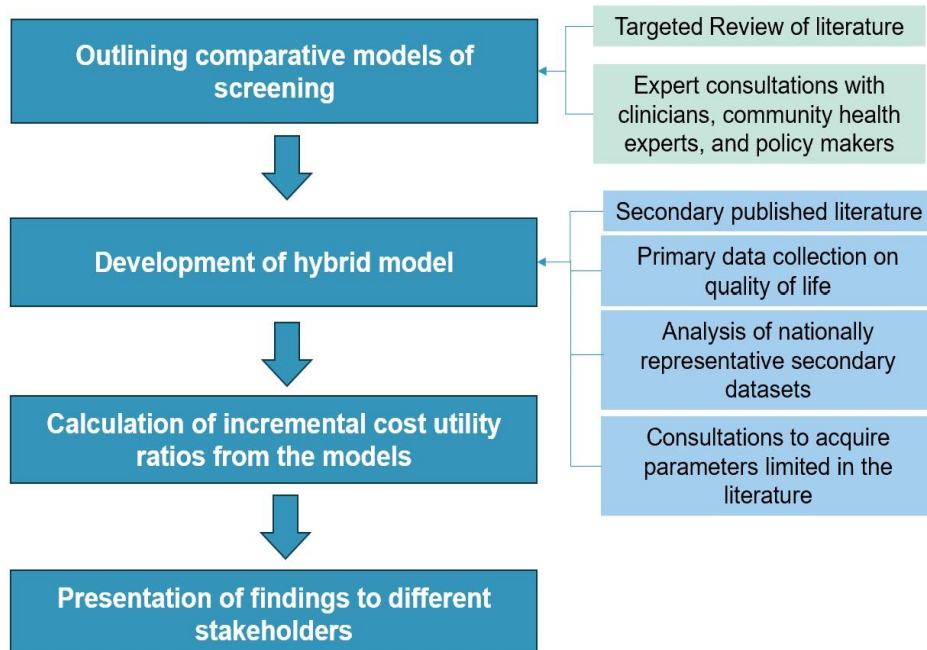
Key Findings

- Screening the population aged 30 years and above is projected to result in a reduction of 2.4%, 5%, and 15% in the annual prevalence, incidence of depressive episodes, and depression related deaths respectively.
- Compared to usual care, screening in the cohort aged 30 years and above resulted in an increase of 0.006 life years and 0.027 QALYs per person, with an incremental direct cost of ₹1,452 per person, and indirect cost saving of ₹1,884 per person.
- The screening interventions demonstrated a positive net monetary benefit of ₹3,232 per person in the target population aged 30 years and above, and ₹6,989 per person in the target population aged 20 years and above.
- If 60% of patients with depression who seek treatment utilize public health facilities, the screening intervention becomes cost-saving from an abridged societal perspective.
- Screening would also become cost-saving if all patients with sub-threshold depression and at least 75% of patients with mild major depressive disorders, utilize the government primary healthcare facilities.

Background

- The Government of India envisions integrating population-based depression screening within the framework of comprehensive primary healthcare.
- However, there can be several ways of implementation. The existing evidence on the cost-effectiveness of depression screening strategies largely stems from high-income countries, limiting its relevance to India.
- The research assesses the health impact and cost-utility of implementing an annual population-based depression screening for different age groups (≥ 30 years and ≥ 20 years) compared to the current practice of diagnosis and management of symptomatic patients.

Methodological steps



Population-Intervention-Comparator-Outcome

Population	Population $\geq 30/ \geq 20$ years of age
Intervention	Two step screening using Patient Health Questionnaire-2 (PHQ-2) followed by Patient Health Questionnaire-9 (PHQ-9)
Comparator	No systematic screening (Usual care)
Outcome	Incremental cost per QALY gained

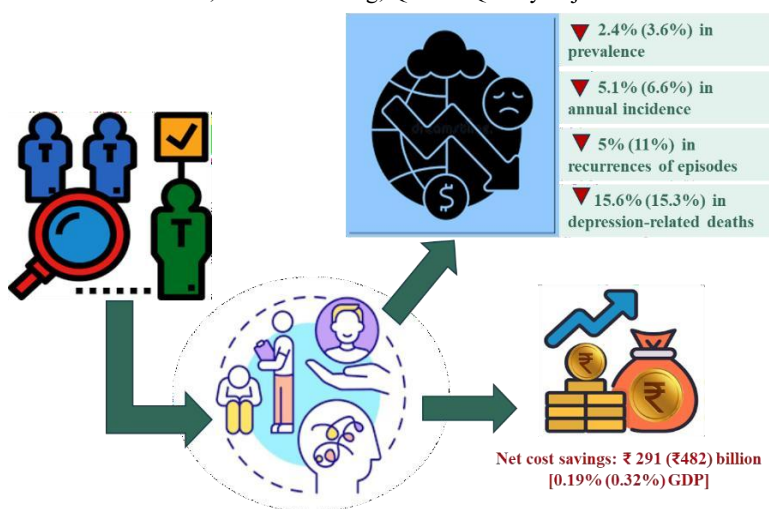
Model Characteristics

Time horizon	Lifetime
Perspective	Abridged Societal/ Societal
Annual Discount Rate	3%
Threshold	₹171,498 (One-time GDP per capita)

Results

30 years & above population						
Strategies	Life years per person	QALY per person	Direct Cost per person (₹)	Indirect Cost per person (₹)	Incremental cost/ QALY gained (Abridged societal)	Incremental cost/ QALY gained (Societal)
Usual care	24.003	22.983	17,489	24,246		
Screening	24.009	23.011	18,942	22,362	48,746 (CE)	-25,329 (CS)
20 years & above population						
Usual care	26.363	25.358	17,835	25,350		
Screening	26.369	25.388	19,206	23,317	43,995 (CE)	-27,058 (CS)

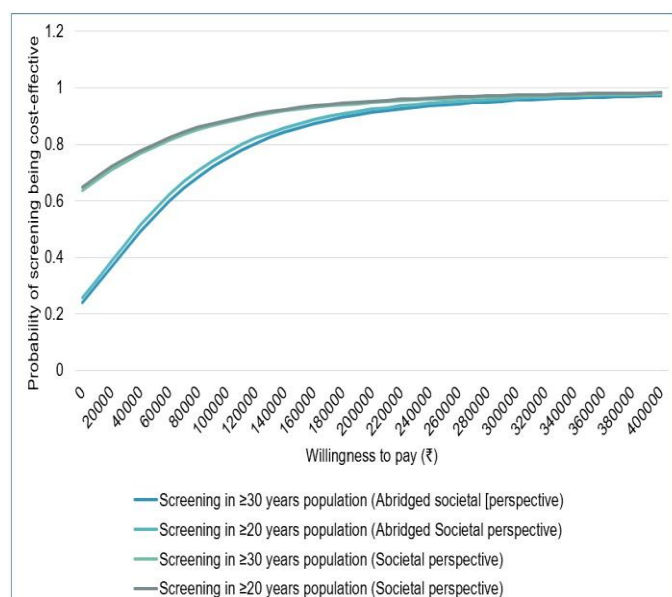
CE: Cost effective; CS: Cost-saving; QALY: Quality-adjusted Life Year



Reductions attributable to systematic screening intervention. Number outside bracket present the values if screening is conducted in 30+ population. Numbers in bracket present values if screening is extended to 20+ population. Comparison: Usual Care

Utilization of public sector for treatment among the ≥30 years screened population	ICUR (Abridged Societal perspective)	Interpretation
43% (Current)	74,989	Cost-effective
50%	43,764	Cost-effective
60%	-828	Cost-saving
70%	-45,405	Cost-saving
80%	-89,964	Cost-saving

ICUR: Incremental cost-utility ratio



Probability of being cost-effective	Abridged societal Perspective	Societal Perspective
Screening in 30+ Population	89%	94%
Screening in 20+ Population	90%	94%

Annual depression screening strategies have high probability of being cost-effective in comparison to usual care based on one-time per capita GDP threshold

Conclusion

- Population based depression screening using PHQ-2 and PHQ-9 in ≥30 years as well as ≥20 years old population are cost-effective strategies, compared to usual care, with substantial economic benefits.
- Population based depression screening in ≥20 years old population is anticipated to result in higher health and economic gains, compared to screening in ≥30 years aged population cohort.
- The economic value of the screening program is contingent on effective service delivery: benefits are maximized when individuals with sub-threshold depression and mild major depressive disorder receive treatment at primary health facilities. The return on investment from the screening intervention rises with increase in utilization of public health facilities for treatment.