Does Undiagnosed Depression In Stroke Patients Affect The Total Healthcare Expenditures and Health-Related Quality of Life: An Analysis Using Medical Expenditure Panel Survey Data, 2016-2018

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BACKGROUND

- Depression is the most common and severe psychiatric complication of stroke.
- It is associated with increased mortality rate, increased cognitive impairment, and increased disability, slowing the stroke patients' rehabilitation and recovery process. [1]
- Depression often goes undiagnosed in stroke patients. The odds of depression going undiagnosed are three times higher in stroke patients compared to non-stroke patients. [2]
- Undiagnosed depression can cause greater complication rates, extended periods of healthcare, and an increased risk of death in stroke patients, leading to poor quality of life and increased healthcare costs. [3]

OBJECTIVE

To assess the impact of undiagnosed depression on health-related quality of life (HRQOL) and total healthcare expenditures in stroke patients.

METHODS

Study design	Cross-sectional study
Data source	Household component (full-year consolidated and medical conditions file) of Medical Expenditure Panel Survey (MEPS) for the year 2016-2018
Study participants	Stroke patients aged 18 years and above were, classified based on their depression status using the ICD-10 CM codes of depression ("F32") and PHQ-2 ≥3 into three groups: (i)Diagnosed depression (ii)Undiagnosed depression (with PHQ-2≥3 and without ICD-10 diagnosis code of depression) (iii)No depression.
Measures	• Outcome variables : HRQoL (PCS and MCS scores obtained from SF-12v2/VR-12) and Total healthcare expenditures. • Other independent variables: selected using Andersen behavioural model.
Statistical Analysis	• Linear regression was used to examine the impact of depression status on the HRQoL. • A generalized linear model with gamma distribution and log link function was used to analyze the healthcare expenditures. • The group with "no depression" was used as a reference for the analyses.

RESULTS

MEPS 2016-18 (N=68,868)
- Patients with missing responses for PHQ-2 and SF-12v2/VR-12 were excluded.

MEPS 2016-18 (N=59,503)
- Patients who were not diagnosed with stroke are excluded.

MEPS 2016-18 (N=2,584)
- Stroke patients were categorised into groups based on their depression status.

1) **Diagnosed depression:** N=496
2) **Undiagnosed depression:** N=332
3) **No depression:** N=1,756

Table 1 : Adjusted parameter estimates for stroke patients with varying depression status from linear regression on PCS and MCS data.

DEPRESSION STATUS	PCS	p-value	MCS	p-value
Diagnosed depression	-3.51	<0.0001	-9.90	<0.0001
Undiagnosed depression	-5.27	<0.0001	-14.38	<0.0001
No depression	Reference	-	Reference	-

Table 2 : Incremental total medical expenditures by depression status among stroke patients , adjusted for relevant co-variates (2018-dollar value)

DEPRESSION STATUS	INCREMENTAL COST ($)	(95% CI)	p-value
Diagnosed depression	4576	(123 ; 9032)	0.044
Undiagnosed depression	4409	(-984 ; 9802)	0.109
No depression	Reference	-	-

CONCLUSION

- Undiagnosed depression in stroke patients is associated with lower HRQoL and higher healthcare costs.

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FUNDING DISCLOSURE

- This project was not funded

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Prepared for ISPOR Europe, 2021
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