Review shows that social and economic factors continue to shape stroke care and long-term outcomes globally.

#inequalities #SES #review

Key message:

People with lower socioeconomic status (SES) — which can mean having less money, lower levels of education, lower-paying jobs, or living in lower SES areas — are more likely to have a stroke, receive worse care, and face more serious long-term effects like disability or death. These issues are found across many countries and are often worse for women, ethnic minority groups, and migrants. To tackle this, health services and other sectors like housing, transport, and the environment need to work together.

Key findings at glance

People with lower SES:

- are more likely to have a stroke
- often get slower or lower-quality care during and after a stroke
- have a higher chance of long-term disability
- are more likely to die after a stroke

These problems:

- happen in many countries, even where healthcare is free
- are often worse for women, ethnic minority groups, and migrants
- are made worse by other challenges like air pollution, poor housing, and lack of transport
- can last for years: some studies followed people for up to 17 years after a stroke.

What we did

We looked at 68 studies published since 2015 that explored how stroke is linked to people's social and economic circumstances (like income, education, and where they live)

We gathered data on:

- how many people had strokes
- whether they could get to hospital quickly and the quality of care they received
- whether they had another stroke later on (stroke recurrence)
- how much disability they had after stroke
- how many people died after stroke

Some studies followed people for over 11 years to understand the long-term effects.

We also looked at how sex and ethnicity interact with socioeconomic status; for example, how stroke outcomes are affected when someone is both from a minority ethnic group and has a low income.

What we found

Stroke Risk

People with lower income, less education, or living in deprived areas are more likely to have a stroke, especially ischaemic stroke. This is often because:

- They are more likely to have uncontrolled health conditions like high blood pressure, diabetes, and obesity.
- Air pollution, heat, and noise can also raise stroke risk. In low- and middle-income countries, people with lower socioeconomic status who are exposed to a certain level of air pollution have higher stroke risk than people with higher socioeconomic status who are exposed to the same level of air pollution.
- Stroke risk also varies by sex and ethnicity. In the UK, this is partly because low socioeconomic status women have higher cardiovascular risk factors than low socioeconomic status men.

Stroke Care

Not everyone gets the same quality of care after a stroke:

- Access to hospital care (acute care) when someone has a stroke is unequal around the world.
- Even where healthcare is publicly funded, higher-income patients can have better access to specialist stroke care.
- Lower-income patients can be slower to arrive at hospital after stroke symptoms begin. This means they can be less likely to get specialist treatment which depends on patients getting to hospital quickly.
- Non-White ethnic groups, who also tend to have lower socioeconomic status, can also be less likely to get specialist treatment.

Stroke Outcomes

What happens after a stroke depends a lot on social and economic factors:

- People with lower SES are more likely to become disabled and to die sooner after a stroke.
- These inequalities can last for years. Some studies followed people for up to 17 years and still found worse outcomes for people from lower SES backgrounds.
- Women, ethnic minorities, and migrants often experience even worse outcomes, due to overlapping health and social disadvantages.

Recommendations for healthcare planning and delivery professionals

- Focus prevention efforts on deprived groups: People with lower income or education have higher rates of stroke risk factors like high blood pressure and diabetes. Prevention and screening should be tailored to reach these communities.

- Make stroke care more equal: Ensure that everyone, no matter their background, can quickly access specialist stroke units and treatments. This includes improving awareness, transport access, and service availability in poorer areas.
- Improve long-term support: Stroke survivors from disadvantaged groups are more likely to experience long-term disability. Healthcare systems should ensure equal access to rehabilitation and social care.
- Track and monitor inequalities: Collect and use data by income, education, ethnicity, and gender to monitor stroke risk, care quality, and outcomes. Use this to guide policy and improve services.
- Tackle wider social factors: Work with other sectors, like housing, environment, and transport, to reduce pollution, improve living conditions, and support healthier lives in deprived communities.

What was known before this review?

We have previously looked at studies published up to 2015. There was evidence that lower socioeconomic status is linked to higher stroke risk, worse care and worse outcomes. There was not much high-quality evidence about *how* socioeconomic status affects stroke risk, care and outcomes in different populations, especially in low- and middle-income countries.

What knowledge does this review add?

Studies published later than 2015 show that the differences between groups (inequalities) in stroke risk, care and outcomes are persistent around the world.

This review includes longer-term stroke outcomes than previous reviews, with follow-up periods of up to 17 years.

This review explores the role of environmental factors such as air pollution, noise and temperature, which were not covered in previous reviews.

Matters for further research

More information is needed from lower- and middle-income countries:

- better measurement of socioeconomic status within populations
- stroke recurrence levels (when someone has one or more other strokes after their first stroke)
- more detailed and long-term follow up after stroke

Also, we need to better understand:

- How the climate emergency and environmental factors affects socioeconomic status and stroke risk factors, so that the people most at risk can be supported
- How the influence of socioeconomic status on stroke risk, care and outcomes may be different in diverse communities (for example, people living with other health conditions).

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