Income as a Stronger Predictor Than Education for Frequent Mental Distress in U.S. Adults: Evidence of Gender Disparities by Shubh Ghorpade

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Abstract

This work looked into how pay, schooling, gender and emotional well-being connect, drawing on extensive American data. Results showed money ties more closely to mental condition compared to years spent studying. People earning less had much greater emotional strain, even when they hold advanced degrees. Meanwhile, varying levels of learning make little difference among those at the bottom income level, pointing toward a minimum barrier beyond which education matters less. Females had more mental health days reported than males even in the same income brackets. Looking closer, people earning less reported far more days of mental distress than others with greater earnings. Money troubles are often tied directly to emotional strain - clear patterns emerge when comparing different income levels. Though not surprising, the gap remains striking across every data point examined. Stability in finances tends to bring steadier moods, evidence suggests. Lower pay is linked strongly to inner turmoil, while higher incomes usually mean fewer struggles inside. What you earned shaped how you feel, more than many admit.

1. Introduction

Mental health is a critical part of overall well-being, yet it remains widely misunderstood and often under-addressed. Mental disorders affect approximately 1.1 billion people worldwide—about one in seven individuals—and include conditions such as anxiety, depression, and other psychological disorders. These conditions can disrupt daily life and lead to long-term challenges if left untreated. Despite this growing burden, access to effective care remains limited, and many health systems remain under-resourced. For example, only about 29% of individuals with psychosis and roughly one third of those with depression receive formal mental health care (World Health Organization, Fact Sheets, 30 September 2025).

In addition to biological factors, research increasingly highlights the role of social determinants of health (SDOH), particularly economic stability and education, in shaping mental health outcomes. These factors influence access to healthcare, housing, and everyday living conditions, as well as the ability to maintain stable relationships and participate in meaningful activities. While treatment approaches such as therapy and medication are important, they often do not address the underlying socioeconomic conditions that contribute to mental health challenges. (Social Determinants of Mental Health. WHO, 2014; Marmot, Michael Bloomsbury, 2015).

Previous studies (Lorant et al. 2003; Sareen et al. 2011) have consistently shown that individuals with lower socioeconomic status are at greater risk of mental health disorders. Lower socioeconomic status has been linked to increased rates of depression (Lorant et al. 2003), while lower household income is associated with a higher likelihood of mood and anxiety disorders (Sareen et al. 2011). However, most existing research examines income (Sareen et al. 2011) and education (Kondirolli et al. 2022) separately rather than directly comparing their relative influence. In addition, large datasets such as the CDC's Behavioral Risk Factor Surveillance System (BRFSS) are often used to study physical health conditions, with mental health receiving less focused attention. Few studies explore how income and education differ in their predictive strength or how these factors interact under conditions of financial hardship (McLaughlin, 2012).

This study builds on these gaps by analyzing a large U.S. dataset (Teboul,Kaggle) to compare how income and education relate to mental health outcomes. It also examines whether the benefits of education persist at very low income levels and explores differences in mental health patterns between males and females within the same income groups. Based on existing research, income is expected to show a stronger association with mental health outcomes than education, particularly among individuals in lower income brackets. Differences may also exist between males and females within similar economic conditions.

2. Background, Definitions, and Analytical Framework

In this study, the following concepts, definitions and analytics frameworks are used. It is important to understand the background to unfold this paper further.

2.1 Definition of Mental Health and Measurement

Mental health is a state of emotional, psychological, and social well-being that influences how individuals think, feel, and behave. Far beyond just lacking disorders, it includes handling pressure, connecting with others, moving smoothly through everyday tasks (World Health Organization, Fact Sheets 2025).

With this broad survey dataset (Teboul,Kaggle), mental health (MentHlth) is recorded using the self-reported indicators instead of medical diagnoses. In the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS), mental health is

captured through the variable *MentHlth*, “how many days during the past 30 days was your mental health not good?” including sadness, stress, depression, anxiety and emotional problems. The score (0-30) offers a working dataset to analyze the pattern of psychological distress. (Teboul,Kaggle, CDC BRFSS, 2016).

2.2 Frequent Mental Distress (FMD)

To distinguish between the occasional stress from the chronic stress, it is important to understand how many days in a month a person had poor mental health. This study uses the Frequent Mental Distress (FMD) to understand chronic mental health. FMD is defined as experiencing 14 or more days of poor mental health within a 30-day period which is a defined parameter and widely used in public health research (Centers for Disease Control and Prevention).This approach allows to assess mental health both as a continuous measure and as a meaningful indicator of higher-risk individuals. (Centers for Disease Control and Prevention, 2024).

2.3 Relative Risk (RR)

When you have categorial group data, Relative Risk (RR) compares how likely one group is to experience an outcome compared to another group (Szklo and Nieto). In this study, we measure the outcome of mental health days based on the various income level brackets. For example, *how many times more likely are low-income individuals to experience severe mental distress compared to high-income individuals?*

The following formula is used in this paper to calculate RR.

RR = Lowest income tier FMD prevalence / Higher income tier FMD prevalence

2.4 Pearson correlation

Pearson correlation (r) is used to identify the correlation between two variables. The coefficient ranges between –1 to +1. The negative values indicate an inverse relationship and positive values indicate a direct relationship (Schober et al. 2018). In this study, Pearson correlation is used to identify the correlation between income and mental health. The Microsoft Excel formula CORREL is used to calculate the Pearson correlation.

2.5 Group mean comparison

In statistics, Mean-based comparisons are commonly used to summarize and compare group-level differences (Schober et al. 2018). In this study, group mean comparison is used to find out differences in average mental health outcomes across income categories. For example: *How does the average mental health outcome differ between income and education groups?*. The

Microsoft excel functions AVERAGEIF and AVERAGEIFS are used to calculate the group mean to analyze the relationship between Income versus Mental health, and average mental health for females/males.

3. Methods

The primary objective of this study was to identify the association between income, education, sex and mental health and how the variables income level, education standard, and sex related to mental health days. This study also assessed a potential threshold effect to determine whether the protective benefits of education persist at very low income levels. Additionally, study examined the impact of mental health between females and males while on the same income levels.

3.1 Data Source

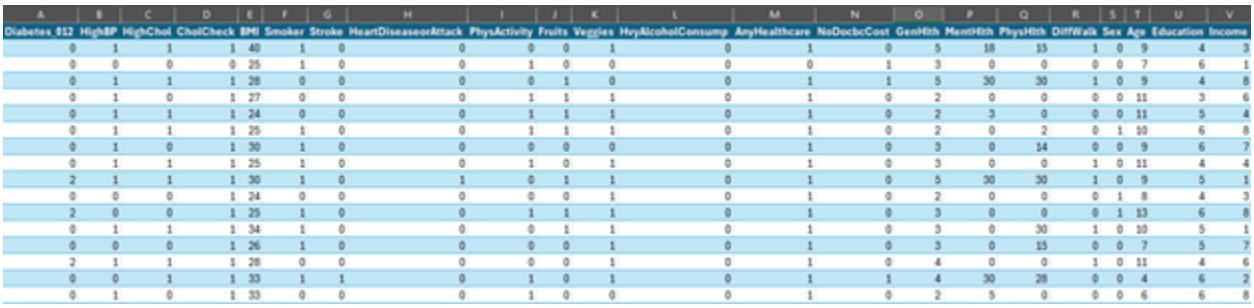
This study used the dataset from 2015 Behavioral Risk Factor Surveillance System (BRFSS) - a nationally representative health survey conducted by the Centers for Disease Control and Prevention (Centers for Disease Control and Prevention). The analysis conducted in this study is based on the Diabetes Health Indicators Dataset, a cleaned subset of BRFSS data compiled by Teboul and made publicly available for research use (Teboul Kaggle). This cleaned dataset offered responses of 253,680 U.S. adults, which is key for this analysis.

This extensive dataset was exported into Microsoft Excel format with 22 columns including health conditions, lifestyle behaviors, access to healthcare, and demographic characteristics. However, here are the columns leveraged in the study.

Field Name	Description
MentHlth	Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good? scale 1-30 days
Sex	0 = female, 1 = male

Education	Education level scale 1-6 1 = Never attended school or only kindergarten 2 = Grades 1 through 8 (Elementary) 3 = Grades 9 through 11 (Some high school) 4 = Grade 12 or GED (High school graduate) 5 = College 1 year to 3 years (Some college or technical school) 6 = College 4 years or more (College graduate)
Income	Income scale 1-8 1 = Less than $10,000; 2 = $10,000 to less than $15,000 3 = $15,000 to less than $20,000; 4 = $20,000 to less than $25,000 5 = $25,000 to less than $35,000; 6 = $35,000 to less than $50,000 7 = $50,000 to less than $75,000; 8 = $75,000 or more

Table 1: Health Indicators Dataset fields



A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
Diabetes_012	HighBP	HighChol	CholCheck	BMI	Smoker	Stroke	HeartDiseaseorAttack	PhysActivity	Fruits	Veggies	HvyAlcoholConsump	AnyHealthcare	NoDocbcCost	GenHlth	MentHlth	PhysHlth	DiffWalk	Sex	Age	Education	Income
0	1	1	1	40	1	0	0	0	0	1	0	1	0	5	18	15	1	0	9	4	3
0	0	0	0	25	1	0	0	1	0	0	0	0	1	3	0	0	0	0	7	6	1
0	1	1	1	28	0	0	0	0	1	0	0	1	1	5	30	30	1	0	9	4	8
0	1	0	1	27	0	0	0	1	1	1	0	1	0	2	0	0	0	0	11	3	6
0	1	1	1	24	0	0	0	1	1	1	0	1	0	2	3	0	0	0	11	5	4
0	1	1	1	25	1	0	0	1	1	1	0	1	0	2	0	2	0	1	10	6	8
0	1	0	1	30	1	0	0	0	0	0	0	1	0	3	0	14	0	0	9	6	7
0	1	1	1	25	1	0	0	1	0	1	0	1	0	3	0	0	1	0	11	4	4
2	1	1	1	30	1	0	1	0	1	1	0	1	0	5	30	30	1	0	9	5	1
0	0	0	1	24	0	0	0	0	0	1	0	1	0	2	0	0	0	1	8	4	3
2	0	0	1	25	1	0	0	1	1	1	0	1	0	3	0	0	0	1	13	6	8
0	1	1	1	34	1	0	0	0	1	1	0	1	0	3	0	30	1	0	10	5	1
0	0	0	1	26	1	0	0	0	0	1	0	1	0	3	0	15	0	0	7	5	7
2	1	1	1	28	0	0	0	0	0	1	0	1	0	4	0	0	1	0	11	4	6
0	0	1	1	33	1	1	0	1	0	1	0	1	1	4	30	28	0	0	4	6	2
0	1	0	1	33	0	0	0	1	0	0	0	1	0	2	5	0	0	0	6	6	8

Fig 1: Sample Health Indicators Dataset Structure

3.2 Socioeconomic Variables: Income, Education, and Sex

This study focuses on two key socioeconomic variables: income and education.

Income is the primary predictor and an ordinal variable ranging from the lowest category (less than $10,000 annually) to the highest category ($75,000 or more). Income is very important

because it directly affects access to resources such as healthcare, housing, and food security, while also shaping levels of financial stress.

Education is a secondary predictor and is measured on a six-level scale, from no formal schooling to college graduation. In many studies, education is used as a proxy for long-term socioeconomic status and is associated with factors such as health literacy and cognitive resources (Cutler and Lleras-Muney; Berkman et al. 2006). However, unlike income, education does not directly provide access to material resources. This distinction is central to understanding how these two factors may differ in their relationship with mental health outcomes.

Sex is included as a stratification variable (male and female categories as defined in the dataset), recorded as male or female in the dataset (Centers for Disease Control and Prevention). Rather than treating sex only as a control variable, this study examines whether the relationship between income and mental health differs across these groups. This allows for the identification of patterns that may not be visible when analyzing the population as a whole.

3.3 Statistical Approach

This study used statistical techniques to analyze the relationship of these variables (Income, Education, Sex, FMD, and Mental Health days). The Pearson correlation coefficient was used to identify the correlation between variables. For example, *what is the correlation between the Mental Health days and level of Education variables?*

Additionally, group mean comparison was used to analyze the differences in the mental health outcome based on income brackets. For example, *how do mental health days affect based on a certain income level?*. While correlation provides the association, mean comparisons provide understanding of how many additional days of poor mental health are experienced by different groups.

To further deep dive, this study also used Relative Risk (RR) to compare the likelihood of Frequent Mental Distress between income groups. Relative Risk is widely used in public health because it expresses differences in terms of risk, making results easier to interpret in practical terms (Szklo and Nieto).

Finally, this study examined more than one dependent variable (Income level and Education) to determine whether the benefits of education persist at very low income levels. A threshold analysis is used to test whether the benefits of education persist at very low income, while the analysis by sex explores whether males and females experience different mental health patterns within the same income groups.

3.4 Rationale for Method Selection

This study included the dataset which has over 250K+ respondents and contains a mix of ordinal (Income, Education) and continuous variables (Centers for Disease Control and Prevention). This clean data allowed this study to perform more accurate results with greater confidence using correlation analysis, mean comparison, and relative risk to effectively examine relationships between variables.

To determine the correlation between various variables, the Pearson correlation (r) method was used. In the Pearson analysis, mental health (*MentHlth*) is a continuous variable, while income and education are the ordinal variables. The primary objective of this analysis is to compare the strong relationship between income and education versus mental health.

In addition to correlation, group mean comparisons are used to better understand differences across income levels. This approach is more suitable for the study as it provides a more intuitive interpretation of disparities by showing how the average number of poor mental health days varies between groups. The main difference between correlation and mean is that the correlation depicts the association while mean highlights the differences among those variables,

For deeper analysis, Frequent Mental Distress (FMD) is used in the study to assess more severe mental health outcomes. Later, Relative Risk (RR) is calculated to compare the likelihood of FMD between the lowest and highest income groups.

Finally, to examine and correlate more than one variable, study focuses to understand how the relationship between income and mental health differs by sex. Mean mental health days for males and females are calculated within each income group to identify subgroup patterns.

This study could be done using more complex models - such as Machine Learning Models, multiple regression, logistic regression, and multivariate analyses - however, the scope of this hypothesis is well achieved through finding the meaningful insights into the relationship between income, education, sex and mental health.

4. Results

This study had some clear findings and patterns. The first is, individuals in lower income groups experienced substantially more poor mental health days (four times more) compared to those in higher income groups. Income showed a stronger association with mental health than education.

Second, in the lower income group, the education difference and its impact on mental health is minimal, which means higher education is not sufficient to improve mental health.

Third, the analysis done on Frequent Mental Distress (FMD) indicated that individuals in the lowest income group are approximately 5.5 times more likely to experience severe mental distress than those in the highest income group.

And finally, Mental health days compared against sex (females and males) in the same income group, revealed that females report consistently higher levels of poor mental health than males.

4.1 Income and Mental Health: The Income Gap

A strong inverse relationship was observed between income and poor mental health days. Individuals in the lowest income category (<$10,000 annually) reported an average of 8.01 poor mental health days per month, compared to 1.93 days in the highest income category (≥$75,000). Adults in the lowest income tier thus experienced more than four times as many days of mental distress per month as those in the highest tier (more than four times as many). Section 4.5 of this study discusses "Sex" specific analysis and results.

Income Category	Annual Income Range	Mean Poor Mental Health Days
1 (lowest)	< $10,000	**8.01**
2	$10,000–$14,999	**6.76**
3	$15,000–$19,999	**5.25**
4	$20,000–$24,999	**4.45**
5	$25,000–$34,999	**3.45**
6	$35,000–$49,999	**2.80**
7	$50,000–$74,999	**2.54**
8 (highest)	≥ $75,000	**1.93**

Table 2: Poor mental days and income brackets

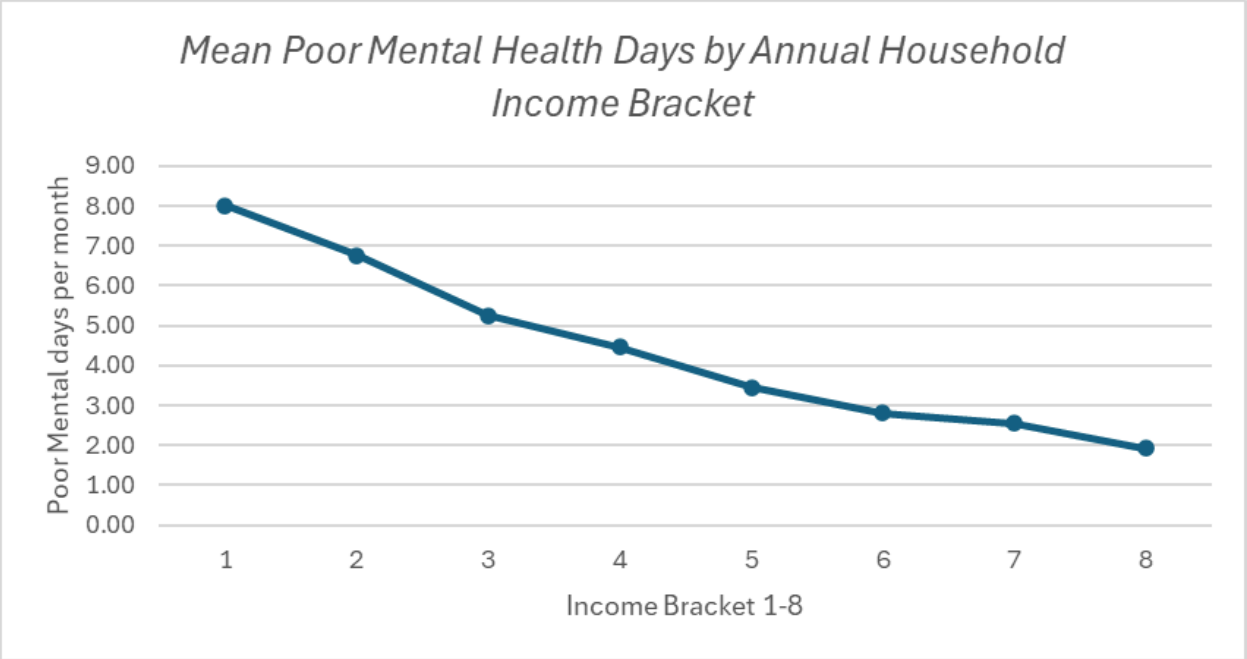


Fig 2: Mean Poor Mental Health Days by Annual Household Income Bracket

As illustrated in Figure 2 above, the most dramatic improvements in mental health occurred between Income Brackets 1 and 4. The mean poor mental health days dropped from 8.01 to 4.45, a reduction of 3.56 days (nearly 50%). Mental health days' improvement rate is slow in the higher income tiers (Brackets 5–8) which indicates that psychological distress continues to decrease as household income increases.

Pearson Correlation

The Pearson correlation (using Microsoft Excel's CORREL function) between income (1–8) and the number of poor mental health days was calculated. Pearson correlation output is $r = -0.21$. The output of Pearson correlation (r) showed that the higher income levels are associated with fewer days of psychological distress.

P	S	T	U	V	W	Z
MentHlth	Sex	Age	Education	Income		=CORREL(V:V, P:P)
18	0	9	4	3		-0.21

Fig 3: Pearson Correlation between Income and poor mental health days

4.2 Education and Mental Health

The Pearson correlation, using Microsoft Excel, was computed ($r = -0.10$) to determine the correlation between education and poor mental health. This computed correlation showed

that better education leads to lesser mental health days. However, the correlation between education and mental health is less than half of the correlation found in income and mental health correlation ($r = –0.21$). This difference in correlation ($r = –0.10$ versus $r = –0.21$) suggests that the financial stability improves mental health days better over the education attainment alone.

P	S	T	U	V	W	Z	AA
MentHlth	Sex	Age	Education	Income		=CORREL(V:V, P:P)	=CORREL(U:U, P:P)
18	0	9	4	3		-0.21	-0.10
0	0	7	6	1		**Income Vs mental health**	**Education Vs mental health**

Fig 4: Pearson Correlation between Income and Education versus Poor mental health days

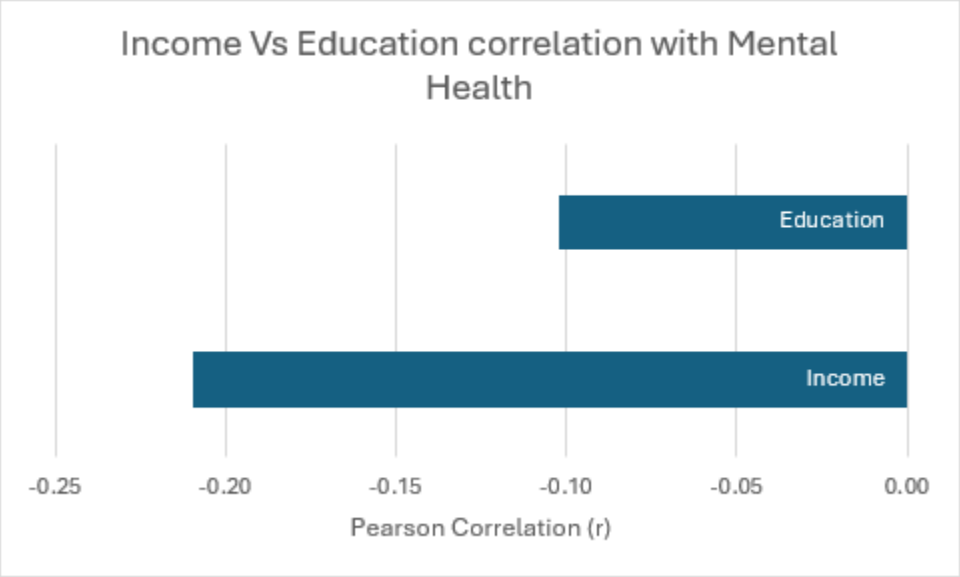


Fig 5: Income versus Education correlation with Mental Health

This suggests that while education may contribute to improved mental health outcomes, its effect is less pronounced than that of income when considered independently.

4.3 Threshold Effect: Income and Education Interaction

To examine if education provides any mental health benefits under financial constraints, this study analyzed mental health outcomes across education levels (1-6) with the lower income groups (1-3).

Education Group (Income Category 1 Only)	Description	Mean "Not Good" Mental Health Days
Low Education	No HS diploma to some college (Cat. 1–3)	**7.80**
High Education	College graduate or higher (Cat. 6)	**7.68**

Table 3: Mental Health Days in the Lowest Income Bracket by Education Level. Precise Excel values: Low Education = 7.8015; High Education = 7.6825.

P	S	T	U	V	AJ	AK
MentHlth	Sex	Age	Education	Income	Income (low) + Education	Vs Mental Health
18	0	9	4	3	=AVERAGEIFS(P:P, V:V, 1, U:U, "<=3")	=AVERAGEIFS(P:P, V:V, 1, U:U, 6)
0	0	7	6	1	7.80	7.68

Fig 6: Microsoft Excel screen shot of Mental Health Days in the Lowest Income Bracket by Education Level calculation

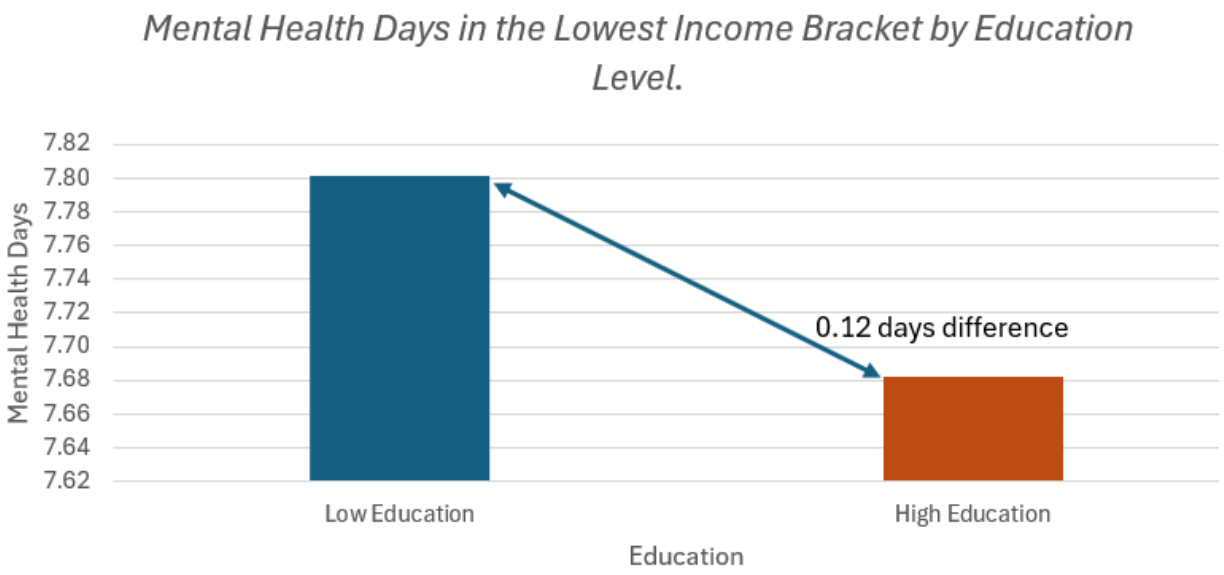


Fig 7: Mental Health Days in the Lowest Income Bracket by Education Level.

The results reveal minimal differences between those education groups (group 1-3 versus 6). People with lower education levels (group 1-3) reported an average of 7.80 poor mental health days, while those with higher education (group 6) reported 7.68 days. The difference is merely 0.12 days per month.

This minor difference suggests that in the lower income group, the benefits of higher education don't help to reduce mental days.

4.4 Frequent Mental Distress (FMD)

In addition to average comparisons, this study also conducted a risk assessment for Frequent Mental Distress (FMD), defined as reporting ≥14 days of poor mental health per month.

- Lowest income tier (Category 1): FMD prevalence = 27.54% (n = 2,702)
- Highest income tier (Category 8): FMD prevalence = 5.00% (n = 4,518)

Relative Risk (RR) = 27.54% ÷ 5.00% = 5.51

To get Lowest income tier (Category 1) FMD prevalence (n = 2,702) and Highest income tier (Category 8) FMD prevalence (n = 4,518), Excel sheet is filtered based on the following conditions:

- Condition: Counted every row where the value in the MentHlth column (Column P) was >=14
- Filter by Income: where the Income column (Column V) was equal to 1 or 8.

This analysis shows that the individuals in the lowest socioeconomic bracket are therefore about five and a half times more likely to experience chronic psychological distress than those in the wealthiest cohort. This underscores the substantial risk of the severe burden of mental health challenges among the financially poorest segment of the U.S. population.

4.5 Income + Sex versus Mental Health

This section discusses the impact of income (within the same income group) and sex together on mental health.

The mean mental health days are computed for female and male sex groups. The income groups for these sex are the same. In section 4.1 Income and Mental Health: The Income Gap, this study observed that high income group people have improved mental health outcomes for both sexes. However, the gap between males and females increases at higher income levels. For example, the difference between females and males is approximately 0.59 days in the lowest income group and increases to about 0.90 days in the highest income group.

To compute the mean mental health days for various income groups for females and males, Microsoft Excel's AVERAGEIFS function is used.

Income Group	Avg MentHlth (Female)	Avg MentHlth (Male)	Difference

1	8.20	7.61	0.59
2	6.99	6.29	0.70
3	5.47	4.84	0.63
4	4.67	4.07	0.60
5	3.82	2.89	0.93
6	3.12	2.39	0.73
7	3.00	2.02	0.98
8	2.38	1.49	0.90

Table 3: Mean poor health mental days for female versus male in the same income group

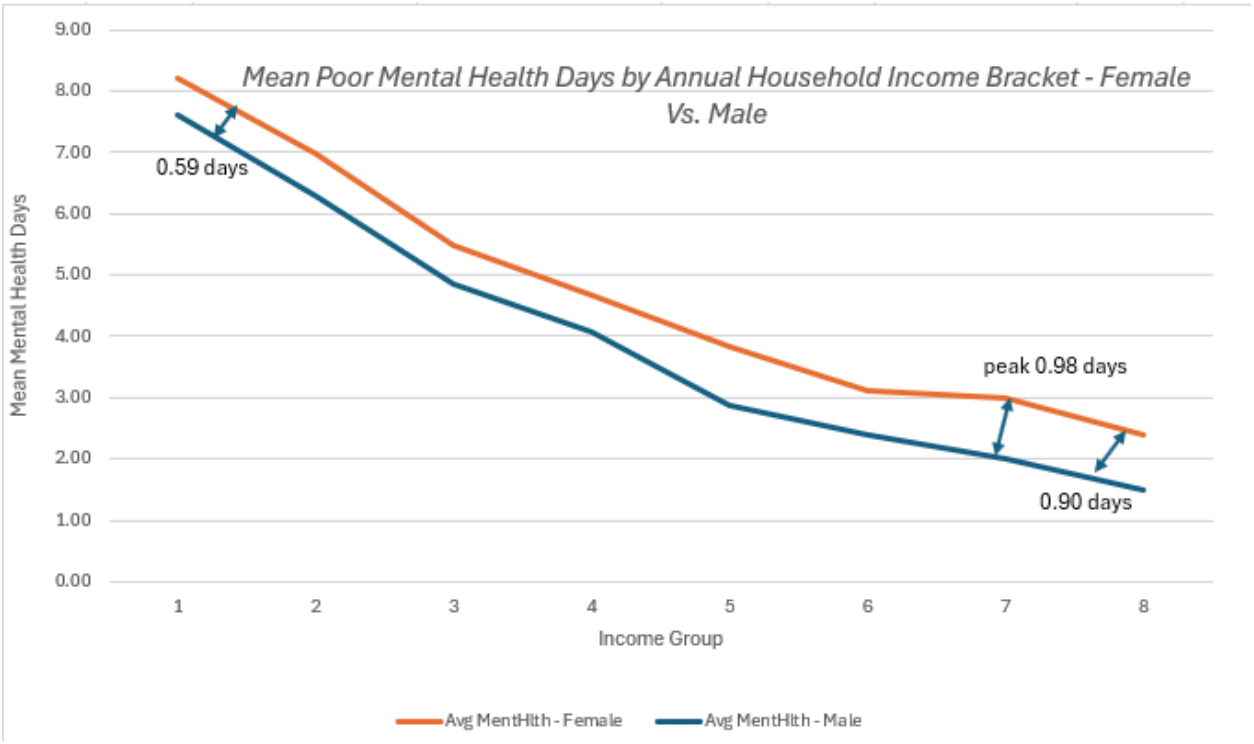


Fig 8: Mental Health Days for Female versus Male (Same income bracket)

The table and line chart shows that the gap between females and males widens as people get wealthier. In the lowest income group, the difference is only 0.59 days. In the highest income group, the difference grows to 0.90 days (and peaks at 0.98 in Category 7).

In this counter-intuitive finding, it is evident that while higher income improves mental health for everyone, men appear to benefit *more* from increased wealth than women do.

5. Discussion

5.1 Income as the Dominant Predictor

This study found the stronger impact of income on improved mental health than education. The difference of $r = –0.11$ ($r = –0.21$ for income versus $r = –0.10$ for education) suggests that financial stability plays a more direct role in shaping psychological well-being. Income provides access to essential resources such as healthcare, food, and housing, all of which play a critical role in shaping mental health outcomes (World Health Organization 2025; Marmot 2015).

The findings are consistent with prior research demonstrating strong links between socioeconomic status and mental health. Lower socioeconomic status has been associated with higher risk of depression (Lorant et al. 2003). The lower household income has been linked to increased likelihood of mood and anxiety disorders (Sareen et al. 2011).

This study extends these findings by directly comparing income and education within the same population, showing that income has a stronger relative association with mental health outcomes.

5.2 The Threshold Effect

Higher education does not seem to play any role in reducing mental health days for the low-income group. While education negatively correlates with bad mental health among the whole sample set ($r = –0.10$), it does not matter for comparisons made relative to the lower income categories (group 1-3). In the low-income category, the disparity is only 0.12 mental health days for individuals belonging to the lowest and highest education categories.

The results obtained from this study indicate a threshold phenomenon: until individuals achieve the necessary financial stability, the positive effects of education on mental health (e.g., better health literacy and coping skills) are neutralized by the adverse effects of poverty on mental well-being. Such an explanation is supported by previous studies, which highlighted the critical importance of financial stressors in determining mental health (Zimmerman and Katon 2005).

These findings suggest that the mere focus on educational improvements may prove ineffective in reducing mental health disparities.

5.3 Magnitude of Mental Health Disparities

The Pearson correlation (r = -0.21) indicates that there is a moderately strong inverse association between income and the number of days associated with poor mental health status, but the Relative Risk (RR = 5.51) emphasizes the huge impact that poverty has on the mental health status of the respondents.

As shown above, respondents in the low-income category (group 1-3) are about five times more likely to report frequent mental distress than those in the high-income category (group 6).

This result, obtained using a large data set (N = 253,680), consistently demonstrates the inequality in mental health outcomes across different income categories within the American population.

5.4 Gender Differences in Mental Health Outcomes (Hypothesis Confirmation)

With this study, it is evident that there are systematic differences in mental health outcomes among males and females even when grouped into similar income brackets. For instance, females show more incidences of poor mental health outcomes regardless of their income group, but the difference becomes more significant as incomes rise.

It could mean that something other than income plays a role in the different mental health outcomes among genders. Although this research does not explore the contributing factors that are influenced by several things such as social roles, caregiving responsibilities, exposure to stress and trauma, and differences in help-seeking behavior.

5.5 How do we fix it? Policy and Real-World Solutions

The findings of this study suggest that improving mental health outcomes requires shifting focus beyond awareness and education toward addressing underlying economic conditions. While clinical interventions such as therapy and medication are effective in treating mental health conditions—showing substantial improvements in symptoms across multiple studies (Cuijpers et al.; Rush et al.; Hofmann et al. 2014)—these approaches alone may not be sufficient, particularly for individuals in lower income groups. Prior research indicates that individuals with lower socioeconomic status are less likely to access care, experience poorer treatment outcomes, and are more likely to face persistent mental health challenges (Alegría et al. 2014).

A key implication of this study is that financial stability functions as a foundational factor in mental well-being. Individuals in the lowest income bracket reported more than four times the number of poor mental health days compared to those in the highest income group. This suggests that before clinical interventions can be fully effective, basic economic stressors—such as financial insecurity, unstable housing, and limited access to healthcare—must be addressed.

These findings highlight the importance of broader structural approaches to mental health. Economic support mechanisms, including income assistance, tax credits, minimum wage policies, and affordable housing initiatives, may play an important role in reducing chronic stress and improving mental health outcomes. By alleviating daily financial pressures, such interventions can create conditions that support psychological well-being.

Access to affordable mental healthcare remains another critical factor. Although therapy and counseling services are available, financial barriers often limit access for lower income populations. Expanding insurance coverage, reducing out-of-pocket costs, and increasing the availability of community-based mental health services may help reduce these disparities. Schools and local communities may also contribute by offering accessible mental health support programs.

The results also reinforce that education alone is insufficient to address mental health disparities, particularly at very low income levels. Even among individuals with higher levels of education, mental health outcomes remain largely unchanged within the lowest income group. This suggests that policies focused solely on improving educational attainment may have limited impact unless they are accompanied by efforts to address economic inequality.

In addition, consistent differences are observed between males and females across income levels, with females reporting higher levels of mental distress. This gap becomes more pronounced at higher income levels, suggesting that factors beyond income—such as social roles, caregiving responsibilities, and structural pressures—may influence mental health outcomes. These findings indicate that mental health interventions may benefit from considering gender-specific factors.

Finally, early intervention and prevention strategies remain important, particularly in educational settings. Schools can support mental health by promoting emotional resilience, stress management, and awareness. However, these efforts are likely to be most effective when combined with support systems that address broader socioeconomic challenges faced by students.

Overall, this study suggests that improving mental health outcomes requires a more comprehensive approach that addresses both clinical and socioeconomic factors. Reducing financial stress may be one of the most effective ways to improve mental well-being at a population level.

6. Limitations

This study has several important limitations:

1. Cross-sectional design: The dataset used is from the single year (2015) so it shows correlation but not necessarily "why" (the cause). It is not possible to determine if low income causes mental health or if those people already had pre-existing mental health conditions; or if mental health conditions caused low income.
2. Self-report bias: Most mental health indicators here rely on answers people gave about themselves - this can skew results because memory isn't always accurate, and some might shape replies to seem more acceptable. Depending on income level, reactions to questions about emotional struggles could shift, partly due to uneven access to information about mental well-being. How openly someone talks about inner challenges often ties back to whether they've seen such topics normalized. People in lower-income brackets may downplay symptoms where others highlight them, shaped less by experience than by environment.
3. Bivariate analytical approach: Correlation between variables forms the core here. Instead of complex models, initial tests leaned on Pearson's method alongside average differences across groups. Since earnings tie closely to schooling - while both also link to factors like age, ethnicity, or job situation - simple pairings cannot separate individual influences clearly. When several elements such as income, learning level, and years lived enter one equation at once, results show clearer weight per factor through adjusted measures. Such modeling offers a solid next step worth exploring later.
4. Potential confounders. One overlooked factor involves race or ethnic background, left unaccounted for here. Marital standing also remains outside the model's scope. The employment situation could shift outcomes - yet it was not factored in. Housing stability, another key influence, appears absent from adjustments. Physical well-being markers were similarly omitted. These gaps matter because money-related stress might distort how income links to mental state. Earlier work by Zimmerman and Katon (2005) showed that job circumstances can reshape conclusions about earnings and depressive symptoms.
5. Ordinal income categories: Eight ranked brackets captured household earnings instead of exact figures, possibly hiding curved patterns in how variables connect. Using levels like these tends to blur fine details that a more precise scale might reveal.
6. Data vintage: Though collected in 2015, the dataset might miss shifts brought by later crises. Economic conditions transformed sharply after the pandemic emerged. Inflation followed, reshaping how money ties to well-being. That earlier snapshot likely fails to capture current links between earnings and psychological state. Changes since then could redefine patterns once thought stable.
7. Sex: Sex is recorded only as male or female and does not include non-binary, agender, bigender, and genderfluid categories.

Also, since the dataset from Kaggle, there may be some unknown limitations in how the data was prepared.

7. Conclusion of Findings

This research revealed income links more closely to mental well-being than schooling does across a broad cross-section of Americans. Notably lower earnings tie directly to more frequent struggles with emotional health ($r = –0.21$); people at the bottom financially reported far greater psychological strain than those earning most. On the other hand, educational attainment connected less strongly ($r = –0.10$), indicating it offers narrower shielding power alone. While both matter, money appears to weigh heavier on daily mental states.

One clear result stands out: schooling offers little shield when incomes fall to their lowest. When money worries hit hardest, mental well-being gaps between educated and less-educated individuals shrink sharply. Below a certain point, struggling to afford basics erases educational advantages. Economic strain takes over, drowning out other influences on health at that level.

Among people with the least income, frequent mental distress shows up far more often - over five times greater than in those earning the most. Notably, the pattern holds when comparing genders: women consistently describe worse mental well-being, regardless of earnings level. Differences in serious psychological struggles become clear when examining economic and gender lines together.

Pivoting toward financial security reveals its strong influence on psychological well-being. Though schooling and therapy matter, progress often stalls if income inequality persists. Without tackling root economic causes, gaps tend to widen despite good intentions. Change gains traction where policies ease money-related pressure while expanding basic needs like shelter and medical care.

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Data Source: This study utilizes data from the Centers for Disease Control and Prevention (CDC) 2015 Behavioral Risk Factor Surveillance System (BRFSS). All data analysis, including Pearson correlation calculations, Group Mean analysis, Relative Risk (RR), tabular and charts analysis, was performed independently by the author using Microsoft Excel.

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