

Relationship of Financial Wellness and Overall Health: A Study Among MoneyWellth Users

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Reviewed By: Dr. David Ashley, MD, MBA

Edited by: Samuel Lee

Introduction

MoneyWellth believes that an individual’s physical, mental, and financial wellness are interconnected. We set out to investigate these connections with a cohort of MoneyWellth users. These participants took both overall health and financial health assessments. These participants were able to use MoneyWellth to learn more about how to save, budget, and navigate important life events with their finances in mind.

We predicted that individuals who reported greater financial stability (here measured by their self-reported amount of savings) would also score higher in many categories of their health assessment. Particularly, we predicted that greater financial stability would be associated with better mental health outcomes.

Data used

1,011 individuals responded and were categorized into 3 groups based on their level of savings. -1 indicates <\$500 saved, 0 indicates between 1 and 6 months’ savings, and 1 indicates 6+ months of savings.

Methods

Next, these groups were compared based on their amount of credit card debt. The numbers for credit card debt are as follows: 0 – no debt, 1 – less than \$1000, 2 – between \$1000 and \$5000, 3 – between \$5000 and \$10,000, and 4 – above \$10,000.

stability	Freq.	Percent
-1	163	19.06
0	475	55.56
1	217	25.38
Total	855	100.00

As shown in the data previous, **individuals with very little savings are much more likely to carry high amounts of credit card debt.** This tracks closely with common assumptions about financially unstable people. However, we foremost wanted to know if this debt and lack of savings were connected to participants’ health outcomes.

ccdebt	stability			Total
	-1	0	1	
0	46 28.22	183 38.53	146 67.28	375 43.86
1	18 11.04	105 22.11	39 17.97	162 18.95
2	44 26.99	84 17.68	26 11.98	154 18.01
3	26 15.95	57 12.00	5 2.30	88 10.29
4	29 17.79	46 9.68	1 0.46	76 8.89
Total	163 100.00	475 100.00	217 100.00	855 100.00

Next, we analyzed the average scores of individuals in each savings category. To understand the health scores generated by the Lenux Health Assessment better, you can think of them like school grades. A score between 90-100 corresponds to an A- to an A+, 80-89 falls into the B range, 70-79 represents C's, and 65-69 equates to D's. Anything below 65 is considered a "failing grade," indicating the need for various health interventions.

The table below presents the average score and standard deviation for individuals in various savings categories. When we compare the highest and lowest savings groups, we observe a 6-point difference in average mental health scores. This difference is akin to moving from a B- to a B+ grade. Similarly, nutrition scores exhibit a similar difference, while physical activity scores show a substantial difference equivalent to a full letter grade and a half between those with the least savings and those with the most. As a result, we decided to delve deeper into mental health scores, aiming to determine whether debt or savings had a stronger correlation with mental health.

Category	<\$500	1-6 months savings	6+ months savings	Total average
Mental health	81 (7.1)	85 (7.3)	87 (6.5)	85 (7.3)
Nutrition	64 (14)	70 (13)	71 (13)	69 (14)
Physical Activity	66 (26)	77 (22)	82 (18)	76 (23)
Overall	68 (11)	76 (10)	79 (8)	75 (10)

We wanted to know if there was a statistically significant difference in the average scores between savings groups. To investigate this, we ran 4 regressions controlling for other variables that could be correlated with savings, particularly debt and individual fixed effects like age, gender, and race. The numbers in the table below show the average difference in mental health score between the lowest savings group and the other two groups. Even with all controls in place, there is still a half letter grade difference in the average score between those with the least savings and those with the most. These results indicate that between individuals of similar backgrounds and levels of debt, those with more savings tend to have higher mental health scores on average. While this model had a small R2 value, indicating that there are many other factors that influence the mental health of participants, this significant difference in average scores justifies MoneyWellth's savings-first approach to financial wellness.

Average Difference in Mental Health Score Compared to those with <\$500 in Savings

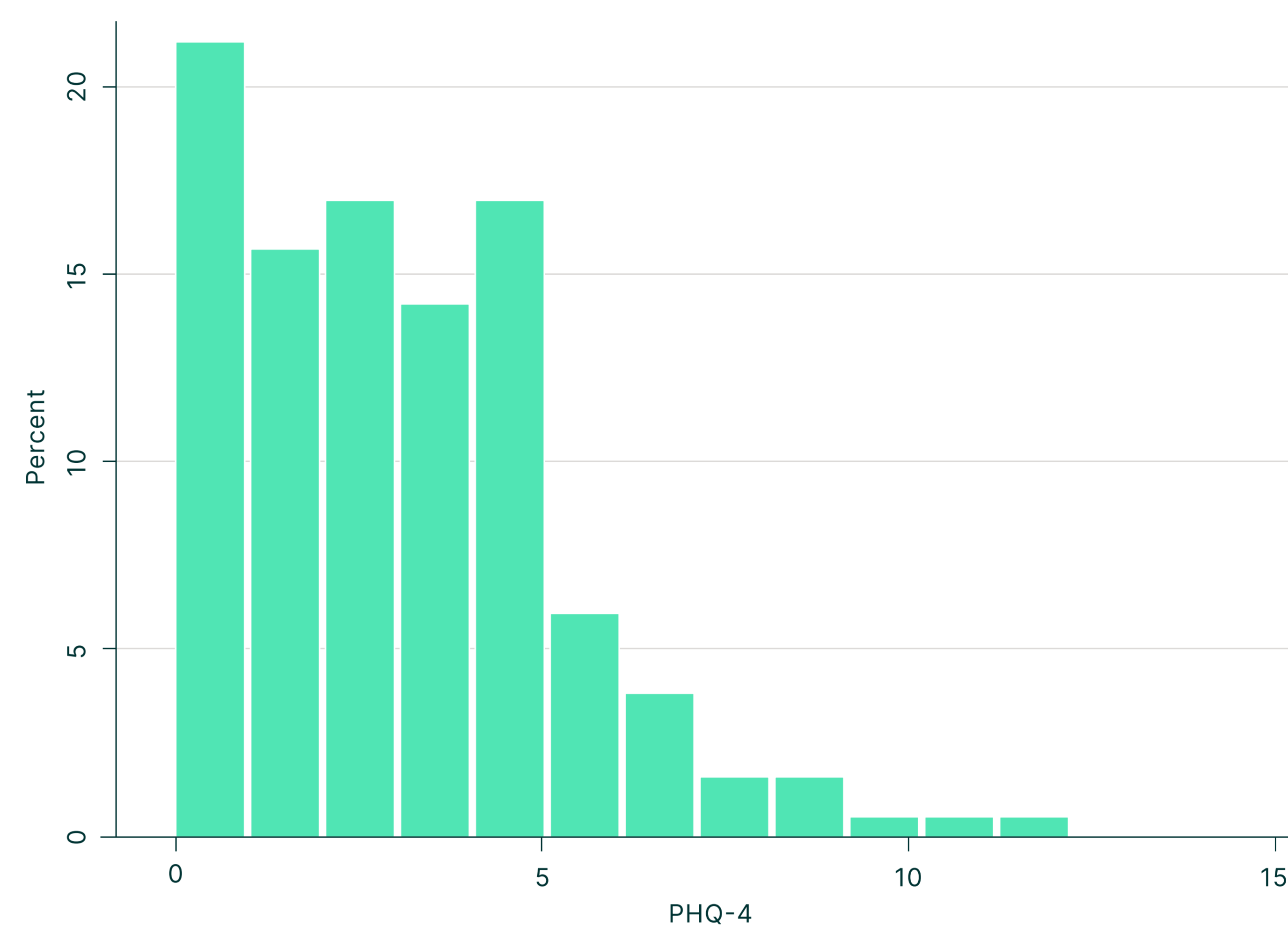
	Model 1	Model 2	Model 3	Model 4
1-6 Months Savings	4.050*** (0.644)	3.748*** (0.652)	3.709*** (0.652)	3.341*** (0.666)
6+ Months Savings	6.238*** (0.734)	5.412*** (0.795)	5.466*** (0.795)	4.853*** (0.823)
CC Debt		X	X	X
Student Loans		X	X	X
Car Debt			X	X
Ind. Fixed Effects				X
N	851	851	851	816
R ²	0.079	0.089	0.091	0.126

Stress and the PHQ-4

As part of the health assessment, participants are given the PHQ-4, a series of 4 questions that screens their risk for anxiety and depression. Responses are rated from 0-12, with higher numbers indicating higher risk.

The mean score for the entire data set is a 2.5 with a median score of 2. The mean score for groups based on their level of savings were as follows:

<\$500	3.3 (mild risk)
1-6 months savings	2.5 (normal risk)
6+ months savings	2.0 (normal risk)



We wanted to know if participants in the three different savings categories had significantly different average PHQ-4 scores. We ran a similar regression to the one we did with mental health scores and the results are shown below. The numbers in the first two rows indicate the difference in score between those with less than \$500 in savings and the labeled category in that row. We see nearly a full point difference between those with the least savings and those with the most. In terms of the PHQ-4, this is the difference between an average in the normal risk category and one in the mild risk category.

Difference in PHQ4 Scores by Level of Savings (compared to <\$500 savings)

	Model 1	Model 2	Model 3	Model 4
1-6 Months Savings	-0.774*** (0.196)	-0.746*** (0.199)	-0.689*** (0.199)	-0.607** (0.201)
6+ Months Savings	-1.288*** (0.224)	-1.219*** (0.238)	-1.064*** (0.243)	-0.909*** (0.248)
CC Debt		X	X	X
Student Loans			X	X
Car Debt			X	X
Ind. Fixed Effects				X
N	851	851	851	816
R ²	0.038	0.038	0.049	0.096

Lastly, participants were asked about the level of stress they've felt in the past month, as well as how well they've been coping with it. The answers to both questions were based on a Likert scale ranging from 1-7, with 7 being high stress and poor coping. Average scores and standard deviations are shown for each group in the table below.

Amount Savings	Stress in the past month	Stress – ability to cope
<\$500	4.5 (1.3)	3.0 (1.4)
1-6 months' income	3.9 (1.4)	2.6 (1.3)
6+ months' income	3.2 (1.5)	2.2 (1.2)

Participants were also asked about the percentage of their total stress that was due to their finances. They could respond in 25% increments from 0-100%.

We see that **an increase in savings is associated with a decrease in the percentage of stress due to finances**. We also see in the figures above that the average stress of individuals is lower when savings are higher.

`tab stability, sum(financialstress)`

stability	Summary of financialstress		
	Mean	Std. dev.	Freq.
-1	53.26087	22.557294	161
0	31.26327	23.419094	471
1	13.59447	17.98872	217
Total	30.918728	25.574378	849

We ran a final regression using similar predictors and controls to those previously described, but with stress as the outcome. We had similar results, showing nearly a full point difference in stress between those with the least and those with the most savings, even when controlling for debts and individual fixed effects.

Difference in Self-Reported Stress by Amount of Savings (compared to <\$500 savings)

	Model 1	Model 2	Model 3	Model 4
1-6 Months Savings	-0.628*** (0.130)	-0.605*** (0.131)	-0.562*** (0.131)	-0.515*** (0.132)
6+ Months Savings	-1.263*** (0.148)	-1.207*** (0.157)	-1.107*** (0.160)	-0.959*** (0.163)
CC Debt		X	X	X
Student Loans			X	X
Car Debt			X	X
Ind. Fixed Effects				X
N	851	851	851	816
R ²	0.080	0.081	0.094	0.149

We see significant differences in stress, and PHQ-4 scores for individuals with higher amounts of money saved compared to those with <\$500 saved. These differences remain even when controlling for the amount of debt a person has, as well as individual fixed effects like age, gender, and race. The R2 value is low in each of these models, indicating a wide range in responses and other factors influencing these scores, but the significant differences in average scores makes the amount of savings influencing an individual's mental health worth exploring further.

Results

Based on our analysis, we have identified several significant correlations in this study:

1. Individuals with higher levels of savings tend to exhibit higher mental health, nutrition, and physical activity scores.
2. On average, individuals with 6+ months of savings score 16 points higher in physical activity compared to those with less than \$500 in savings. Additionally, merely saving for one month leads to an average 11-point increase in physical activity.
3. On average, individuals with 1-6 months of savings score 6 points higher in nutrition compared to those with less than \$500 in savings.
4. On average, individuals with 1-6 months of savings score 4 points higher in mental health compared to those with less than \$500 in savings. Additionally, those with 6+ months in savings see an increase of 6 points higher than those without \$500 in savings.
5. An increase in savings corresponds to a decrease in the percentage of stress related to finances, with a nearly one-point difference in stress levels between individuals with the least and those with the most savings.
6. Individuals with minimal savings are more likely to carry substantial credit card debt, aligning with common assumptions about financial instability.

Given these findings, there is a clear need for interventions that prioritize savings building for financially unstable participants. Further monitoring and analysis of their overall health and well-being should be pursued to ensure comprehensive support.

