
COVID-19 Induced Economic Stress: The Effect on Marital Functioning and Methods of Alleviating Financial Stress

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Part 1: Personal Section

Starting from a young age, I had seen people in my life suffer as a result of domestic violence as well as seen and experienced firsthand the stress associated with financial instability. In 2020, the first case COVID-19 was reported in America, thus sparking the news to be flooded with stories of the toll this pandemic was taking on our well-being and the economy. Due to my understanding of the connection between relationship and economic instability from personal experiences, I became concerned about how the economic crisis brought on by the COVID-19 pandemic could affect marital relationships.

I began reading many journal articles and articles written by mental health professionals during the pandemic, eventually leading me to conduct my own study. Subsequently, I met with Dr. Nancy Frye, chairperson of psychology at Long Island University C.W. Post, to discuss my questions and potential research topics. Soon after, under her guidance, I was able to begin my research from my home due to COVID-19 restrictions. She offered suggestions and advice to improve my methodology, create effective questionnaires, and find participants.

Additionally, Dr. Frye taught me how to use Jamovi to conduct correlation tests, regression analysis, ANOVA, and internal reliability tests. I was then able to statistically analyze the data I had collected by conducting these tests.

Through conducting this research, I was able to see the important real world applications of both science and mathematics. By combining psychology and statistics, I was able to suggest a relationship between individuals' feelings and their relationship behavior. Then, using that finding, I was able to propose ways of increasing the efficacy of counseling for those experiencing financial stress as well as other forms of stress. These findings can be used in

working to decrease divorce and domestic violence rates as well as in addressing the current mental health crisis.

My advice for other high school students interested in working on a project involving mathematics and science is to strive to solve the problems most important to you. In research, you never want to force an interest or choose a topic based on what others tell you to do. Your intrinsic motivation and passion for your topic are critical in conducting meaningful research that can truly help to make advancements in your field and in the world. Additionally, it is imperative to have a strong support system. Dr. Frye, my family, my peers, and my research teacher, Mrs. Barbi Frank, provided me with unconditional support and incredible guidance that helped me stay motivated even when things did not go as planned. Lastly, you must trust the process. There will be hours spent sifting through raw data sets, seemingly inexplicable conclusions, unsupported hypotheses, several drafts of your paper written, participants who drop out of the study, waiting to hear from an IRB, and things that you simply do not know. This is all part of the process. These obstacles may be challenging and stressful, but you will overcome each one with time, so keep trying and working to complete your study.

Part 2: Research Section

Abstract

The COVID-19 pandemic caused a major economic crisis to occur, thus leaving people stressed about their finances. Prior studies have examined the relationships between economics and marital abuse. The objective of part one of this study is to evaluate the relationship between economics and marital functioning. One hundred participants completed questionnaires about their marital functioning and finances. Findings indicate that subjective financial hardships were a better predictor of marital functioning than objective hardship. It is also suggested that marital

satisfaction will only decline with the presence of psychological aggression. Considering the previous finding, part two aimed to find an effective form of therapy for alleviating subjective financial hardship. Sixty-two participants were divided between three groups. They were each asked to provide information about their finances and stress levels before going through one of three interventions for a week. After the intervention, participants completed a follow-up questionnaire on their stress levels. Participants who underwent an intervention encouraging them to think at an abstract level about their overall values experienced a decrease in stress levels, whereas an intervention that encouraged them to create a budget showed an increase and the control group did not change. Overall, it is apparent from part one of the study that alleviating one's feelings of subjective financial stress is imperative in improving participant's relationships and livelihood. Part two of the study suggests that the global level of intervention is effective in mitigating financial stress. Considering these findings, it is crucial that current methods of therapy are improved to better treat patients.

Part One Introduction

For many individuals, being in debt and living paycheck to paycheck or based on future paychecks is their reality (Cecchetti et al., 2011). In 2020, the total credit card debt in the United States was \$756 billion ("Credit Card Debt", 2020). Additionally, household debt totaled \$14.6 trillion at the end of 2020 (Cox, 2021).

Historically, financial hardship has been exacerbated by extenuating circumstances like disease. An example of this is the SARS epidemic in 2002-2004 (Beutels et al., 2009). A similar economic crisis occurred in 2020 as a result of the COVID-19 pandemic. Unique non-economic circumstances result in economic crises by prohibiting travel, closing business, increasing

unemployment, etc. (Borio, 2020). For example, during the pandemic, unemployment rates hit an estimated 16% (“Frequently asked questions”, 2020). Also in 2020, there were 764,282 bankruptcy filings in the United States and 473,349 more in the first four months of 2021 (“New Bankruptcy Filings”, 2021). These factors may lead to economic stress (Elder & Caspi, 1988).

These financial burdens lead to the issue of food and housing insecurity plaguing the United States (Coleman-Jensen & Steffen, 2017). The inability to afford one's most basic needs, like food and shelter, can have serious and prolonged mental and physical health implications (Schure et al., 2016). In the past, increased financial hardship has been shown to lead to a decline in one's mental health (Liem & Liem, 1978). Considering this, the spike in generalized anxiety, stress, and depression during the pandemic is partially due to financial hardship (Bäuerle et al., 2020).

In addition to declining mental and physical health, it has been noted that economic stress is associated with marital violence (Ponzetti et al., 1982). Previous research has found a relationship between objective financial hardship and an increase in psychological and sexual abuse (Arenas-Arroyo, 2021). More specifically, new research has been continually emerging on violence towards women and children during the COVID-19 economic crisis (Peterman et al., 2020), but these studies have had conflicting results (Mohler et al., 2020; Gerell et al, 2020; Silverio-Murillo et al., 2020).

There is a lack of conclusive findings and research on subjective financial hardship during the COVID-19 pandemic, but research prior to the COVID-19 pandemic had analyzed the relationship between financial hardship and increased hostility, depression, alcoholism, and lower self-esteem (Davis & Mantler, 2004). The aforementioned factors can all contribute to

marital aggression (White & Widom, 2003; Ronald, 2002; Fuller et al., 2003; D'zurilla et al., 2005).

The goal of part one of the current study was to investigate financial hardship in the era of COVID-19, along with the implications on marital relationships. It was hypothesized that an increase in subjective financial hardship during the COVID-19 pandemic would lead to an increase in physical and psychological aggression.

Part One Methodology

The Effect of Economic Stress During the COVID-19 Pandemic on Severity of Marital Problems and Coping Mechanisms

Participants

One hundred participants were recruited using Amazon's Mechanical Turk and given \$0.50 for completing the questionnaire. They reside in 31 different states, mostly New York, California, Texas, and Florida. The age range of participants was from 23-years-old to 71-years-old ($M=37.7, SD=11.1$). The age range of participant's partners was from 19-years-old to 73-years-old ($M=37.7, SD=12.1$). The gender distribution of participants was 45 females, 58 males, and one who specified the other. The gender distribution of their partner was 53 females and 47 males.

Finances

In order to evaluate objective financial hardship, participants were asked to provide their 2019 and 2020 household incomes. Additionally, they recorded the number of members in their

household and whether they were living on a single income during the pandemic. These answers were used to calculate the percentage of living wage participant's households made in 2019 and 2020. The percentage of living wage served as the objective financial hardship measure.

Participants also provided additional information about whether or not they were unemployed, furloughed, experienced decreased hours, received a reduced salary, and if they were a frontline worker during COVID-19 pandemic. They gave the same information about their spouses.

For subjective financial hardship, Shek's measure of economic stress was used to assess participants' feelings about their finances over the past year (Shek, 2005). The measure's internal reliability was high (Cronbach's Alpha=0.83). The financial hardship value obtained from this measure served as the subjective financial hardship measure.

Marital Functioning: Aggression, Satisfaction, and Conflicts

Participants' marital functioning was measured using three different scales. The Couple Satisfaction Index (Funk & Rogge, 2007) was used to measure relationship satisfaction by inquiring about general comfort, satisfaction, and warmth in their relationship. The internal reliability was high (Cronbach's Alpha=0.87). All questions were answered on a scale from zero to five, zero being not at all true and five being completely true. The scale was scored so that higher scores indicated higher levels of satisfaction.

The Marital Problem Inventory (Geiss, 1981) was used to evaluate the severity of relationship problems (affecting at least 25% of marriages) in participants' marriages. The measure has high internal reliability (Cronbach's Alpha=0.97). The severity of each problem was rated on a scale of one to nine, one being not a problem at all and nine being a very serious problem.

Lastly, the Conflict Tactics Scale (Straus, 1996) was used to measure the frequency of physical and psychological aggression in the participants' marital relationships. Each aggressive action was rated on a scale from zero to five, zero being never occurring and five occurring more than once per month. The internal reliability was high (Psychological Aggression Cronbach's Alpha=0.89; Physical aggression Cronbach's alpha= 0.98).

Part One Preliminary Analysis

Finances were measured in a number of different ways. Therefore, before starting primary analyses, the relationship between the financial measures was evaluated. Firstly, subjective financial hardship across different subsets of participants were compared, who were experiencing varying levels of objective financial hardship. Higher levels of subjective financial hardship were associated with greater objective financial hardship, $F(2, 49.2) = 10.85, p < .05$. The objective financial hardship was higher for those who believed their finances deteriorated ($M=1.61, SD=0.65$) than those who thought their finances improved ($M=0.86, SD=0.87$) and those who thought there was no change ($M=0.83, SD=0.76$).

Part One Results

Satisfaction, aggression, and relationship conflicts experienced by participants were examined in terms of demographic variables. As can be seen in Table 1, age was the only demographic variable that was related to physical aggression, psychological aggression, and relationship problems. Older participants and partners were less likely to engage in physical aggression ($r=-0.28, p<0.05$) and psychological aggression ($r=-0.32, p<0.05$). Older participants and partners were also less likely to have severe relationship problems ($r=-0.21, p<0.05$).

Table 2 shows that financial hardship, which is the measure of subjective financial hardship, is a better predictor of one's relationship functioning than percentage of living wage, which is the measure of objective financial hardship. Objective financial hardship (percentage of living wage) has no significant relationship with relationship problems ($r=-0.01, p=0.94$; $r=-0.03, p=0.80$), physical aggression ($r=0.6, p=0.53$; $r=0.05, p=0.63$), or psychological aggression ($r=0.04, p=0.69$; $r=0.8, p=0.87$). On the contrary, subjective financial hardship (financial hardship) had a significant relationship with relationship problems ($r=0.51, p<0.05$), physical aggression ($r=0.55, p<0.05$), or psychological aggression ($r=-0.51, p<0.05$).

As can be seen in Table 2, those who experienced more physical aggression also experienced more psychological aggression ($r=0.84, p<0.05$). Despite this, psychological and physical aggression do not have the same impact on relationship satisfaction. When there is a higher frequency of psychological aggression, participants experience less relationship satisfaction ($r=-0.24, p<0.05$). Conversely, more frequent physical aggression does not lend itself to lower relationship satisfaction ($r=-0.11, p=0.29$).

Part Two Introduction

From part one, it is clear that stress due to one's subjective finances is a predictor of aggressive relationship behaviors. Part two aims to address this stress using two types of interventions. The Construal Level theory aids in evaluating how far removed a person feels from an event mentally and if the way they are thinking about an event is more abstract (global level) or concrete (local level) (Trope & Liberman, 2010). The interventions were classified based on these levels.

Intuitively, people would aim to combat financial stress by budgeting (Rausch et al., 2013). It is possible for budgeting to aid in mitigating financial stress because it allows a person to visualize the money they have at their disposal and plan to decrease their spendings when necessary (Kaarbøe et al., 2013). It also may give people a better sense of control over their finances (Bernardi, 2021). This is a local to address the problem (Lieberman et al., 2007).

Conversely, financial stress can be addressed by focusing on how people can maintain their values even while experiencing financial hardship. Expressing gratitude and appreciating the most important values in one's life may lend itself to more happiness and better well-being (Watkins et al., 2003). This method addresses economic stress in a global way (Lieberman & Trope, 2021).

Part two of the study compares these two forms of intervention to evaluate the effectiveness in alleviating subjective financial hardship. In some circumstances, budgeting has led to an increase in stress levels (Clemens, 2012). With this knowledge, it is inferred that the global level intervention method will be more effective in reducing subjective financial hardship.

Part Two Methodology

Evaluation of the Efficacy of Financial Therapies

Participants

Sixty-two participants were recruited using snowball sampling. They resided in 26 different cities in 11 states. Once recruited, participants were randomly assigned to one of three groups. There were six female participants and 14 male participants in Group One, 14 females and eight males in Group Two, and 11 females and nine males in the control group. In all of the

groups, the participants were predominantly white. There were 15 non-white participants. The participants in Group One ranged from 18-years-old to 58-years-old ($M=32.8$, $SD=10.3$), Group Two ranged from 19-years-old to 67-years-old ($M=37.2$, $SD=12.5$), and the control group ranged from 20-years-old to 52-years-old ($M=37.6$, $SD=10.0$).

Finances

To assess objective financial hardship, participants were asked to provide their 2020 household incomes, how many people were financially supported in their household during the COVID-19 pandemic, and how many jobs are worked by the members in their household combined. They were also asked about how much an average paycheck is for them and how frequently they are paid.

For subjective financial hardship, Shek's measure of economic stress was used to assess participants' feelings about their finances over the past year. Additionally, participants were asked about how frequently they were stressed about their finances in the past week.

Intervention One: Local Level of Construal

Intervention One was centered around budgeting. Participants were asked to collect all of their financial documents, including receipts, debit card statements from the past week. Using these documents, participants categorized their spendings and recorded their expenditures from the past week. Using this information, they found places where they could cut back on expenses and created a budget for the following week. After a week, they were asked to reassess the frequency of their financial stress.

Intervention Two: Global Level of Construal

Intervention Two was centered around personal reflection on one's values. Participants were asked about how frequently they experience financial stress monthly. After that, they had to list important values they hold and evaluate the extent to which finances fit into these values. Then, they were asked to reflect upon how their values are upheld in their day to day life and how they can be continually upheld while experiencing financial hardship. Using their reflection, they spent the next week focusing on upholding their values with minimal consideration of their financial status. After a week, they were asked to reassess the frequency of their financial stress.

Control

The control groups only provided demographic information, objective financial information, and how often stressed they were about finances. At the follow-up, they were asked about the frequency of their financial stress. This served as a point of comparison to use in order to see if participants' stress levels changed as a result of the intervention.

Procedure

Participants were randomly assigned to one of the three conditions. They followed the intervention for one week, and then they were given a follow-up survey, consisting of the finance questions, at the end of the week.

Part Two Results

The frequency with which people experienced economic stress over the span of one week was measured prior to and after the completion of the intervention. After completing intervention

one, participants experience more frequent financial stress, $t(19.0)=-1.76, p<0.05$. As for intervention two, participants had less frequent financial stress at the completion of the program $t(21.0)=2.58, p<0.05$. The control group had no change in financial stress levels $t(19.0)=-1.00, p<0.05$. After the one week intervention, the mean for how frequently participants experienced financial stress increased from 1.93 to 2.38 for intervention group one (Table 3). The frequency decreased from 1.75 to 1.09 after the one week for intervention group two (Table 3). The frequency showed minimal change (1.52 to 1.63) for the control group (Table 3). A higher mean indicated more frequent financial stress throughout the week.

In order to examine if the change in frequency of financial stress from prior to the intervention to after the intervention was different by group, Mixed 2x3 ANOVAs were conducted. There was one repeated measures variable (time) meaning everyone was measured twice. There was also one between subjects variable (condition) which means everyone one was only placed in one group. The interaction was significant, $F(2, 59)= 6.81, p<0.05$.

Conclusion

Generally, money is a driving force that much of peoples' lives revolve around. Changes in one's finances impact many areas of their lives, especially their relationships. Declines in finances are a good predictor of relationship behavior. More specifically, one's subjective finances (how they feel about their finances) is a better predictor of their behavior than their objective financial hardship. It is natural for people to be overcome by stress and emotion, thus impulsively reacting in relationships.

It can be seen from part one that it is imperative to mitigate one's feeling of subjective financial hardship to better their livelihood and relationships. Part two suggests that the global

level intervention was more effective in alleviating financial stress; therefore, reforming current mechanisms of financial therapy by moving away from concretely budgeting may benefit patients.

Table 1: Correlations Between Age, Aggression, and Frequency of Relationship Problems

		Your age	Age of partner	Physical Aggression	Psychological Aggression	Relationship problems
Your age	Pearson's r	—				
	p-value	—				
Age of partner	Pearson's r	0.922	—			
	p-value	<.001	—			
Physical Aggression	Pearson's r	-0.280	-0.329	—		
	p-value	0.005	<.001	—		
Psychological Aggression	Pearson's r	-0.319	-0.331	0.841	—	
	p-value	0.001	<.001	<.001	—	
Relationship problems	Pearson's r	-0.208	-0.198	0.854	0.866	—
	p-value	0.046	0.061	<.001	<.001	—

Table 2: Correlations Between Finances and Marital Functioning

		Financial Hardship	Percent of living wage in 2019	Percent of living wage in 2020	Relationship Satisfaction	Physical Aggression	Psychological Aggression	Relationship problems
Financial Hardship	Pearson's r	—						
	p-value	—						
Percent of living wage in 2019	Pearson's r	-0.005	—					
	p-value	0.963	—					
Percent of living wage in 2020	Pearson's r	-0.039	0.993	—				
	p-value	0.700	<.001	—				
Relationship Satisfaction	Pearson's r	-0.077	0.032	0.052	—			
	p-value	0.448	0.754	0.612	—			
Physical Aggression	Pearson's r	0.553	0.063	0.049	-0.109	—		
	p-value	<.001	0.533	0.629	0.287	—		
Psychological Aggression	Pearson's r	0.509	0.041	0.017	-0.238	0.841	—	
	p-value	<.001	0.688	0.865	0.018	<.001	—	
Relationship problems	Pearson's r	0.511	-0.009	-0.028	-0.275	0.854	0.866	—
	p-value	<.001	0.935	0.795	0.008	<.001	<.001	—

Table 3: Means and Standard Deviations for Frequency of Financial Stress

	Time One	Time Two
Intervention One	1.93 (1.62)	2.38 (1.88)
Intervention Two	1.75 (1.31)	1.09 (1.21)
Control	1.52 (1.20)	1.63 (1.28)

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