Does It Work?: Examining the Utility of the Stress Process Model for Explaining Variations in Mental Health among African American Young Adults*

Taylor W. Hargrove
Vanderbilt University

Introduction

For the past few decades, sociologists have utilized and evaluated the stress process model in efforts to explain the social distribution of mental health and uncover relevant social experiences and circumstances that account for such observed distributions. This model posits that stressors and coping resources arise out of one's social context and combine in ways that determine mental health risk (Pearlin 1989). Empirical research on the stress process model has consistently found higher levels of stress exposure to predict higher levels of psychological distress or depressive symptoms (Avison et al. 2007; Taylor and Turner 2002; Williams et al. 1997) and, when considered along with coping resources, to account for a substantial portion of observed variation in mental health across SES, race, and marital status (Turner and Lloyd 1999; Turner and Avison 2003).

Though the stress process model has become a prominent theoretical framework for understanding social variations in mental health (Taylor and Turner 2002; Thoits 2010), the vast majority of available evidence supporting the model has come from cross-sectional studies of white populations. Indeed, a careful review of the literature revealed virtually no studies that have examined the explanatory ability and utility of the stress process model within an African American sample. Thus, a crucial question remains of whether and to what extent this dominant sociological model for understanding social contingencies in mental health can be usefully applied to African Americans and can be utilized to predict mental health risk over time. The present paper addresses this crucial question. Specifically, it considers the degree and adequacy with which stress process elements, both individually and collectively, explain differences in mental health outcomes among African Americans and over time. Knowing the utility of this model for understanding mental health among African Americans will not only contribute to the stress theory literature, but it will also help us further understand the significant impacts on the emotional well-being of individuals during a critical stage of the life course.

Data and Methods

Sample

The study analyzed in this paper builds on the South Florida Youth Development Study, a three-wave investigation based in the Miami-Dade public school system (Vega and Gil 1998). All of the county's 48 public middle schools, 25 public high schools, and alternative schools participated. Data were originally obtained from students in grades 6 and 7 in 1990, and collected annually until 1993, when participants were in grades 8 and 9. The analyses to be presented here are based on data obtained in the follow-up interviews conducted between 1998 and 2000 and between 2000 and 2002. The young adults were queried about their relationships with their families, boyfriends/girlfriends, and friends, substance use, important and stressful events in their lives, various types of stressors, experiences of discrimination, sources of strength and support, mental health, and culture/ethnicity. The information was collected using computer assisted personal interviews, with each interview lasting about two hours. Interviews were conducted with each participant two years apart. Those interviewed were compared with the random sample drawn from the original study. This analysis revealed no statistically significant differences on an array of early adolescent behaviors and family characteristics that likely affect mental health and substance abuse risks. One may therefore argue that this sample is representative of the population from which it was drawn.

In this paper, only African Americans were considered. This resulted in 434 participants in wave 1 and 291 participants in wave 2. When the two waves were merged, a final sample size

of 283 resulted. Lost cases were highly similar on almost all study variables except for eventful stress, friend support, and depressive symptoms. Those who did not participate in the second wave of data collection tended to report more eventful stressors, less friend support, and higher levels of depressive symptomatology. No statistically significant differences were found among the remainder of the stress process elements, including gender, socioeconomic status of origin, household type, lifetime exposure to major and potentially traumatic events, chronic stressors, discrimination stress, family support, and personal resources. Additionally parent interviews are only considered when creating the measure for participants' socioeconomic background.

Dependent Variable

The outcome of interest is depressive symptomatology. This outcome is measured using the twenty items of the Center for Epidemiologic Studies Depression Scale (CES-D). The CES-D asks how often the participant experiences certain depressive symptoms, such as feeling sad or tired. Response categories include "not at all" (1), "occasionally" (2), "frequently" (3), and "almost all the time" (4). Response categories are scored in a 0,0,1,2 fashion (as opposed to 0,1,2,3) so that relevant, longer lasting symptoms are predicted instead of the symptoms that only occur occasionally. Such coding has been employed in prior studies (e.g., Taylor and Turner 2002). CES-D in both waves is coded in this manner.

Independent Variables

Elements of the stress process model include sociodemographic characteristics, stress exposure, social support, and personal resources. Sociodemographic characteristics in this study include age (continuous measure), gender (0=female, 1=male), socioeconomic status of origin (standardized composite measure of parents' occupation, income, and education), and household type (0=two parent household, 1=non-two parent household). Stress exposure is a standardized measure comprised of five dimensions of stress: recent eventful stressors, lifetime exposure to major and potentially traumatic events, chronic stressors, major discrimination, and day-to-day discrimination. Social support is assessed by the combination of the amount of perceived positive support from the participants' family and friends. Lastly, personal resources are measured by self-esteem (the extent to which we approve of ourselves), sense of mastery (or personal control), perception of mattering (the extent to which we think we matter to others), and emotional reliance (the extent to which we depend on others for our emotional well-being). All of these latter resources are measured by summing across their respective scales.

Analytic Strategy

The statistical analyses consist of three steps. First, OLS regressions are utilized to conduct a cross-sectional analysis of respondents in wave 1 (N=434) in efforts to examine the significant impacts of the stress process elements on depressive symptomatology. Second, a two-wave panel analysis is employed to examine how the stress process elements affect depressive symptoms over the two waves. For this analysis, a merged dataset is used, which includes only those who participated in both waves of data collection (N=283). Lastly, path analyses are conducted to explore the indirect and potentially causal relationships among the model elements both cross-sectionally and over the two waves. For the longitudinal path analysis, the merged dataset is again employed. The implications of sample attrition are also addressed. Listwise deletion occurs in all analyses, though no more than six cases were ever deleted. All analyses are conducted using R version 2.14.1.

Results

The Social Distribution of Stress Process Variables

Table 1 presents the means and proportions of social characteristics, stress exposure, social support, personal resources, and depressive symptomatology by socioeconomic status of origin. SES of origin was divided into four quartiles based on the 25th, 50th, and 75th percentiles. Compared to those who grew up in lower socioeconomic statuses, those from higher socioeconomic backgrounds tend to have fewer eventful and chronic stressors, experience fewer major discriminatory events, perceive to have more family and friend social support, possess a higher sense of mastery, and report fewer depressive symptoms. The majority of those in the lowest quartile are from non-two parent households while about roughly half of those in the highest quartile come from two parent households. Major and potentially traumatic events, day-to-day discrimination, self-esteem, and mattering do not significantly differ across SES of origin.

These descriptive results represent a preliminary test of the stress process model. They depict the distribution of various stressors and coping resources across socioeconomic positions. Those African American young adults who came from higher socioeconomic contexts, overall, have fewer risk and more protective factors that, perhaps, lead to fewer depressive symptoms. This is consistent with what the stress process model would predict.

Though the above results provide evidence for the social distribution of various stressors, coping resources, and depressive symptoms among African American young adults, they are descriptive in nature and do not tell us anything about how much each stress process element contributes to explaining variations in depressive symptomatology. Table 2 shows the cross-sectional analysis of the extent to which stress process elements predict depressive symptoms in wave one of the data. Magnitudes of both the individual and collective impacts of these elements are considered. Ordinary least squares (OLS) regressions are used to examine the extent to which each model element significantly contributes to the variation in depressive symptoms. Such a method is in accordance with other studies examining the stress process model (e.g., Turner and Lloyd 1999). In Model 1, CES-D scores are regressed on the four social characteristic measures: age, gender, SES of origin, and household type. In Models 2-4, the stress process elements (social stressors, social support, and personal resources, respectively) are added separately to Model 1. This is done in order to examine the individual contribution of each stress process model element in explaining the observed variation in depressive symptoms among African American young adults. In Model 5, all stress process elements are considered together in order to examine their collective and independent impacts on depressive symptoms.

In Model 1 (see Table 2), only gender and age significantly impact depressive symptoms. Older individuals and women tend to have more depressive symptoms than younger individuals and men. These characteristics, however, only account for 6.6 percent of the observed variation in depressive symptoms. In the subsequent models, we see that each stress process element has a significant independent impact on depressive symptoms in the expected directions. Increased social stressors and emotional reliance are associated with more depressive symptoms, while higher perceived social support from family and friends, higher sense of self-esteem and mastery, and a heightened sense of mattering all predict fewer depressive symptoms. Social stress, social support, and personal resources each individually account for a substantial amount of observed variation in depressive symptoms. Net of demographics, these elements explain 14.5, 12, and 23 percent, respectively, of the observed variation. It should also be noted that when considered individually (in supplemental analyses), each dimension of stress significantly

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contributes to the prediction of depressive symptoms, with day-to-day discrimination contributing the most. When all of the stress process elements are considered together, 29 percent of the observed variation in depressive symptoms is accounted for (net of demographics). With the exception of social support, all elements in the final model remain significant and exert the same type of influence on depressive symptomatology. The coefficient of social support is reduced to nonsignificance. It appears as if the other stress process elements account for the effects of social support. Thus, one could conclude that collectively, social stressors and personal resources are the more impactful elements on depressive symptomatology for this African American young adult sample. It is also worth pointing out that the stress process elements make no contribution toward understanding gender differences in risk of depression. This indicates that the stress process does not completely account for such status variations in depressive symptoms. This inability to explain the gender difference in depressive symptoms has been found elsewhere (e.g., Turner and Lloyd 1999).

Though not presented here, supplemental analyses (see Appendix A) were conducted to examine interactions between social statuses and stress process model elements. Significant interactions are found between social context variables and stressors and personal resources.

While these regression models show direct and reduced effects of stress process model elements on risk of depression, they mask potential indirect effects of predictors. A closer examination of the relationship among the stress process variables is accomplished with a path analysis. Figure 1 shows the significant path coefficients representing cross-sectional relationships among the elements in wave one. Significant direct and indirect effects of social statuses on stress exposure and availability of social and personal resources are evident. Gender appears to be particularly relevant in stress processes among African American young adults given its significant direct impact on stress exposure, perceived social support, emotional reliance, and depressive symptoms. African American men tend to have more social stressors and perceived support from family and friends, yet lower levels of emotional reliance and depressive symptoms. The apparent impact of gender on stress process model elements in this path diagram, however, does not translate into explanations for the gender-depression linkage.

SES and household type also condition stress exposure. Those of lower socioeconomic statuses of origin and those from non-two parent households experience higher levels of stress compared to their counterparts. SES further patterns levels of perceived support, with those from higher classes having higher perceptions of support.

Evidence of the indirect effects of social characteristics is also seen. As stated above, gender, SES, and household type all influence levels of stress exposure. Stress exposure, in turn, influences depressive symptoms and the perception of all the social and personal resources. Specifically, higher levels of stress are associated with more depressive symptoms and lower levels of social and personal resources, except for emotional reliance. Stress exposure is linked to higher levels of emotional reliance. Further, there are linkages between all of the personal resources and depressive symptoms. Fewer depressive symptoms are associated with higher levels of self-esteem, mastery, and mattering and lower levels of emotional reliance. What is surprising, however, is that none of the social context variables (gender, SES of origin, and household type) have significant direct linkages with personal resources with the exception of gender and emotional reliance. Furthermore, given that these analyses are cross-sectional in nature, the exact causal direction is unknown such that personal resources, for example, may be predicting stress exposure. Theory, however, would suggest that the causal direction goes from stressors to personal resources to depressive symptoms.

Overall, these initial descriptive and multivariate analyses provide some evidence for the utility of the stress process model in accounting for variations in depressive symptoms among African American young adults. The analyses summarized in Table 2 and in Figure 1, however, only depict effects of the stress process elements at one point in time. It is reasonable to suggest that the effects of these elements on depressive symptoms change over time. It is also possible that some stress process elements have shorter or longer subsequent effects on depressive symptoms. To examine this possibility, a two-wave panel is employed.

Table 3 presents results from the two-wave panel. Model 1 regresses time two CES-D scores on respondent social characteristics. Models 2 and 3 add time one and time two predictors, respectively, to the first model. Model 4 regresses time two CES-D scores on all time one and time two predictors, plus respondents' initial (time one) CES-D scores. A number of interesting findings are evident. First, we see that none of the social context measures predict depressive symptoms two years later. They are not significant in any of the models. Implications and explanations for such a finding is considered in the discussion section. Various time one predictors, however, significantly predict subsequent depressive symptoms (model 2). Initial exposure to social stressors and emotional reliance both have a positive relationship with depressive symptoms two years later, while baseline levels of perceived social support and self-esteem have inverse relationships with subsequent depressive symptoms. Initial high levels of social stress and emotional reliance predict more symptoms, while high levels of social support and self-esteem predict fewer symptoms over time. Baseline self-esteem exerts a particularly powerful influence on depressive symptoms, given that it remains significant after time two predictors are added to the model (model 3). Its impact, however, is partially reduced when time two predictors are accounted for. Nonetheless, high levels of initial self-esteem are associated with fewer depressive symptoms two years later.

Furthermore, changes in social stress and emotional reliance over time both significantly predict subsequent CES-D scores and changes in CES-D scores (models 3 and 4). Specifically, increases in stress exposure and emotional reliance over a period of two years predict higher levels of, and increases in, depressive symptoms over time. Lastly, findings from supplemental analyses (see Appendix B) show that gender, SES, and household type all significantly interact with various stress process elements over time to influence changes in depressive symptoms.

Figure 2 presents a path diagram of the significant path coefficients representing relationships between the stress process variables over two years. In addition to the results derived from the cross-sectional path analysis, each stress process element in time one significantly predicts their subsequent measure in time two. For example, stress exposure in time one predicts stress exposure two years later. The same holds true for the social and personal resources. Contrary to findings from the cross-sectional path diagram, stress in time two significantly predicts only time two social support, emotional reliance, and depressive symptoms in the expected directions, rather than all of the coping resources. Higher amounts of stress two years later are associated with less perceived support, higher levels of emotional reliance, and more depressive symptoms. Subsequent depressive symptoms are additionally predicted by only baseline depressive symptoms and subsequent emotional reliance.

Taken together, these cross-sectional and longitudinal results suggest that the stress process model has explanatory ability within African American young adults. Stress process elements directly and indirectly impact initial and subsequent depressive symptoms for young adult African Americans over time. One's social characteristics influence the initial amount of stress one faces, as well as the availability of various social and personal resources. These initial

stressors and coping resources condition subsequent stressors and resources years later, which go on to impact depressive symptoms over time. All of the interrelations between stressors and resources, over time, stem from the initial social context in which one lives. Implications and further explanations of these results are discussed.

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Table 1. Means and Proportion of Study Variables by SES

	Wave 1				
	Q1	Q2	Q3	Q4	
Age	20.47	20.16	19.85	19.67	*
Gender					
Female	60.42%	49.18%	37.14%	28.70%	
Male	39.58%	50.82%	62/86%	71.30%	
Household Type					
Two Parent	25.26%	34.43%	34.29%	46.30%	*
Non-Two Parent	74.74%	65.57%	65.71%	53.70%	
Eventful Stress	3.21	2.39	2.69	2.24	*
Life Traumas	8.26	7.39	7.93	7.13	
Chronic Stress	14.64	12.63	13.45	12.54	*
Major Discrimination	1.66	1.51	1.75	1.18	*
Day To Day Discrimination	20.58	19.48	18.90	19.32	
Social Stress	1.07	-0.33	0.24	-0.78	*
Family Support	49.81	53.48	53.75	55.57	*
Friend Support	26.06	25.67	26.30	28.19	*
Social Support	-.45	-.10	.03	.53	*
Self Esteem	26.60	26.94	27.11	27.19	
Mastery	25.90	26.71	27.83	26.93	*
Mattering	17.15	16.98	17.08	17.16	
Emotional Reliance	16.49	16.05	15.32	16.00	t
CES-D	7.579	6.06	5.89	5.06	*
N	95	122	105	108	

Total N		431			

Sig. Differences between Means and Proportions: ^{t}p<.10; *p<0.05 (at least)

NOTE: differences in household type are sigificant for both two parent and non two parent households

Table 2. OLS Coefficients of Time 1 CES-D Scores Regressed on Time 1 Stress Process Model Variables

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Estimate		Estimate		Estimate		Estimate		Estimate	
Age	.539	*	.557	*	.353		.250		.266	
	(.235)		(.216)		(.222)		(.211)		(.203)	
Gender[a]	-1.612	**	-2.083	***	-1.465	**	-1.464	***	-1.729	***
	(.487)		(.451)		(.456)		(.432)		(.419)	
SES	-.462	t	-.116		-.135		-.386	t	-.125	
	(.252)		(.235)		(.240)		(.221)		(.216)	
Household Type[b]	.529		-.026		.451		.658		.268	
	(.504)		(.468)		(.472)		(.443)		(.428)	
Social Stress			.593	***					.374	***
			(.067)						(.068)	
Social Support					-1.113	***			-.214	
					(.143)				(.158)	
Self Esteem							-.459	***	-.399	***
							(.087)		(.085)	
Mastery							-.141	**	-.112	*
							(.048)		(.046)	
Mattering							-.470	***	-.302	**
							(.097)		(.100)	
Emotional Reliance							.196	**	.163	*
							(.070)		(.067)	
Intercept	-4.143		-3.894		-0.448		22.545	***	17.892	***
	(4.665)		(4.292)		(4.394)		(5.100)		(4.971)	

	R^2	.066	R^2	.211	R^2	.183	R^2	.293	R^2	.356
	N	429	N	429	N	429	N	428	N	428
	F-Statistic	7.49	F-Statistic	22.67	F-Statistic	18.95	F-Statistic	21.72	F-Statistic	23.07

[t] p<.10; *p<0.05; **p<0.01; ***p<0.001

Note: Unstandardzed OLS regression coefficents; standard errors are in parentheses

[a] Ref group = Female

[b] Ref group = Two Parent Household

Table 3. OLS Coefficients of Time 2 CES-D Scores Regressed on Time 1 and Time 2 Stress Process Model Variables

	Model 1		Model 2		Model 3		Model 4	
	Estimate		Estimate		Estimate		Estimate	
Age	.301		.052		.073		.020	
	(.278)		(.253)		(.239)		(.230)	
Gender[a]	-.507		-.377		-.346		-.033	
	(.530)		(.481)		(.455)		(.441)	
SES	-.439		-.146		-.016		.003	
	(.266)		(.244)		(.230)		(.221)	
Household Type[b]	.773		.454		.346		.337	
	(.548)		(.497)		(.468)		(.450)	
Social Stress T1			.267	**	.020		-.077	
			(.082)		(.090)		(.088)	
Social Support T1			-.441	*	-.266		-.223	
			(.211)		(.223)		(.215)	
Self Esteem T1			-.326	**	-.201	*	-.117	
			(.098)		(.098)		(.096)	
Mastery T1			-.056		.021		.061	
			(.055)		(.055)		(.053)	
Mattering T1			-.043		-.033		.074	
			(.124)		(.121)		(.118)	
Emotional Reliance T1			.184	*	.130		.114	
			(.079)		(.079)		(.076)	
Social Stress T2					.492	***	.516	***
					(.105)		(.101)	
Social Support T2					-.085		-.016	
					(.194)		(.187)	
Self Esteem T2					-.142		-.063	
					(.090)		(.088)	
Mastery T2					-.072		-.064	
					(.054)		(.052)	
Mattering T2					-.093		-.180	
					(.124)		(.120)	
Emotional Reliance T2					.201	**	.196	**
					(.069)		(.066)	
CES-D T1							.260	***
							(.054)	
Intercept	-.952		12.240	*	11.436	t	4.681	
	(5.482)		(5.998)		5.923		(5.859)	
R^2	.041		R^2 .267		R^2 .378		R^2 .429	
N	283		N 283		N 283		N 283	
F-Statistic	2.98		F-Statistic 9.92		F-Statistic 10.12		F-Statistic 11.69	

[t] $p<.10$; *$p<0.05$; **$p<0.01$; ***$p<0.001$

Note: Unstandardzed OLS regression coefficents; standard errors are in parentheses

[a] Ref group = Female

[b] Ref group = Two Parent Household

Figure 1. Cross-Sectional Path Diagram with Indirect and Causal Relationships among Time 1 Stress Process Elements (N=434)
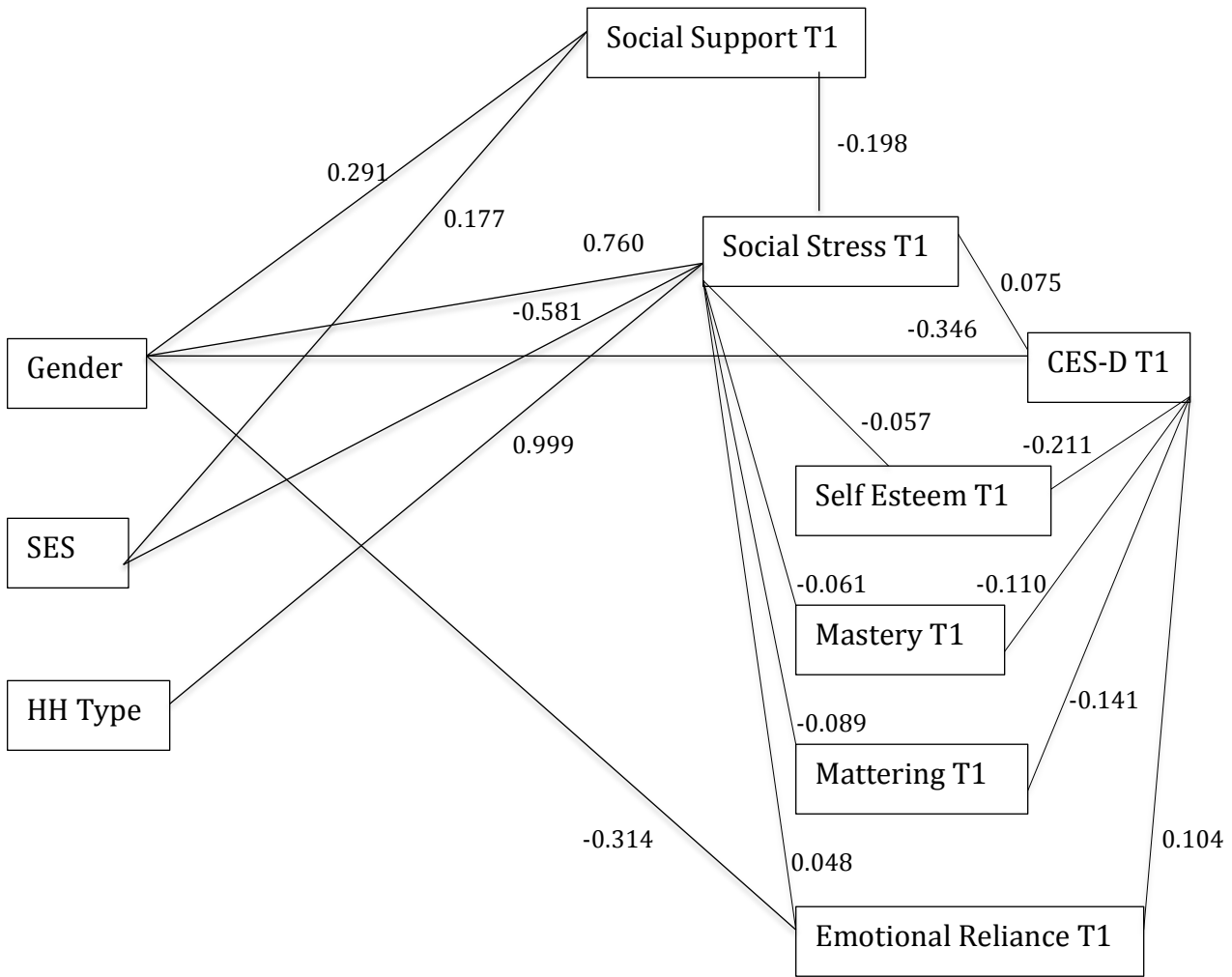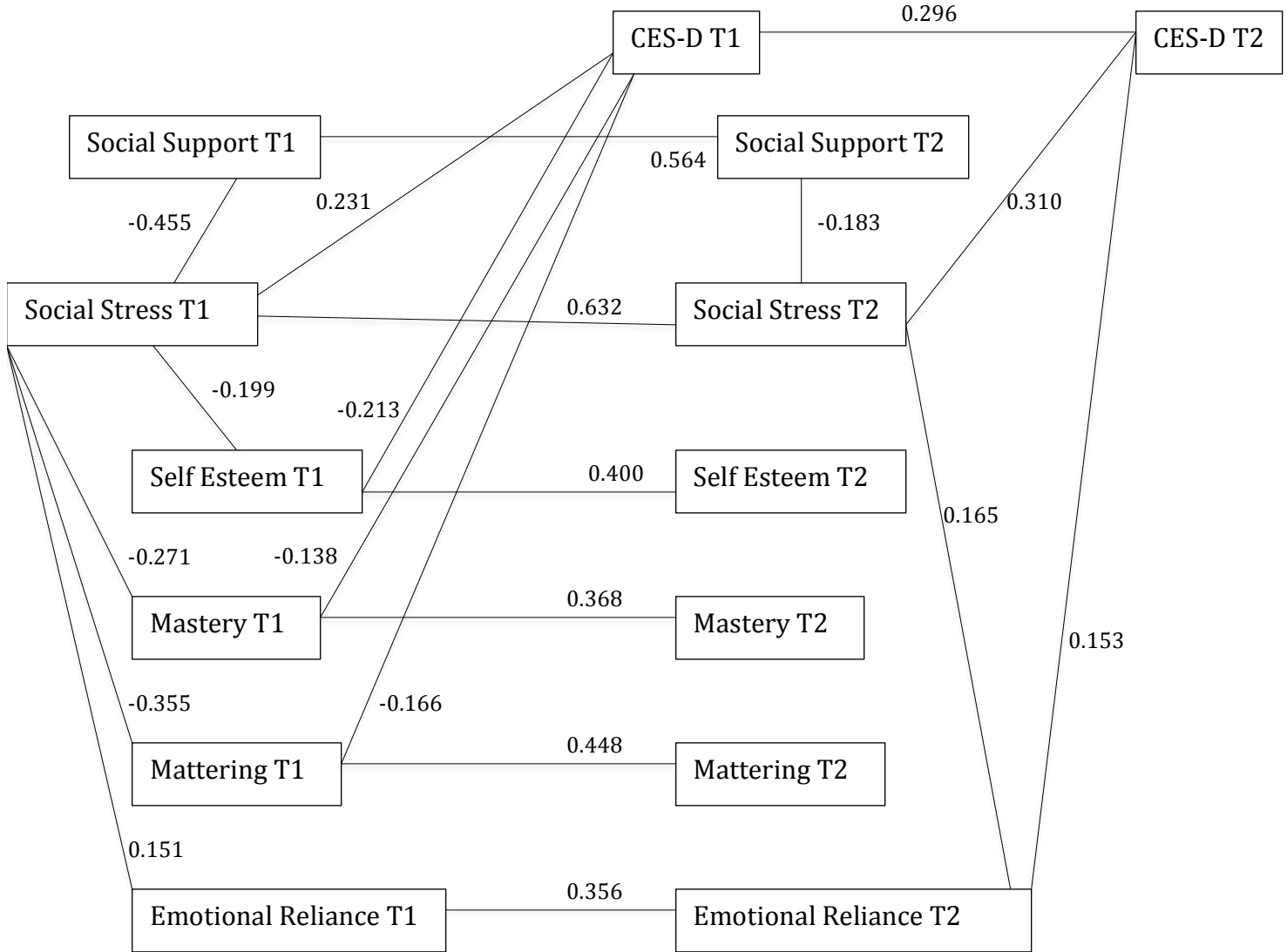
Figure 2. Path Diagram with Indirect and Causal Relationships among Time 1 and Time 2 Stress Process Elements (N=283)

Appendix A. OLS Coefficients of Time 1 CES-D Scores Regressed on Time 1 Predictors and Interactions Between Stress Process Model Mediators and Gender, SES, and Household Type

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Estimate		Estimate		Estimate		Estimate		Estimate		Estimate	
Age	0.255		0.262		0.256		0.249		0.226		0.278	
	(0.202)		(0.202)		(0.202)		(0.202)		(0.203)		(0.202)	
Gender[a]	-1.729	***	-1.678	***	-1.748	***	-1.802	***	-1.701	***	-1.743	***
	(0.417)		(0.418)		(0.417)		(0.418)		(0.417)		(0.416)	
SES	-0.151		-0.116		-0.171		-0.084		-0.129		-0.150	
	(0.215)		(0.215)		(0.216)		(0.216)		(0.215)		(0.215)	
Household Type[b]	0.294		0.320		0.346		0.305		0.330		0.245	
	(0.427)		(0.427)		(0.428)		(0.426)		(0.427)		(0.425)	
Social Stress	0.370	***	0.363	***	0.337	***	0.374	***	0.370	***	0.369	***
	(0.068)		(0.068)		(0.070)		(0.068)		(0.068)		(0.068)	
Social Support	-0.199		-0.240		-0.219		-0.193		-0.231		-0.213	
	(0.157)		(0.158)		(0.157)		(0.157)		(0.157)		(0.157)	
Self Esteem	-0.407	***	-0.400	***	-0.395	***	-0.399	***	-0.402	***	-0.399	***
	(0.085)		(0.085)		(0.085)		(0.085)		(0.085)		(0.085)	
Mastery	-0.109	*	-0.112	*	-0.114	*	-0.104	*	-0.112	*	-0.122	**
	(0.046)		(0.046)		(0.046)		(0.046)		(0.046)		(0.046)	
Mattering	-0.529	***	-0.303	**	-0.308	**	-0.335	***	-0.295	**	0.030	
	(0.144)		(0.100)		(0.100)		(0.100)		(0.100)		(0.158)	
Emotional Reliance	0.169	*	0.316	**	0.164	*	0.161	*	0.156	*	0.157	*
	(0.067)		(0.101)		(0.067)		(0.067)		(0.067)		(0.067)	
Gender x Mattering	0.375	*										
	(0.172)											
Gender x Emotional Reliance			-0.261	*								
			(0.129)									
SES x Social Stress					-0.139	*						
					(0.065)							
SES x Mastery							0.097	*				
							(0.041)					
SES x Emotional Reliance									-0.142	*		
									(0.063)			
HH Type x Mattering											-0.488	**
											(0.180)	
Intercept	12.996	*	20.488	***	18.001	***	15.781	**	21.144	***	12.876	*
	(5.041)		(4.846)		(4.950)		(4.789)		(4.849)		(5.024)	
R^2	0.364		0.363		0.363		0.365		0.364		0.367	
N	428		428		438		428		428		428	
F-Statistic	21.6		21.5		21.6		21.72		21.65		22	

[†]$p<.10$; *$p<0.05$; **$p<0.01$; ***$p<0.001$
Note: Unstandardzed OLS regression coefficents; standard errors are in parentheses
[a]Ref group = Female
[b]Ref group = Two Parent Household
NOTE: coefficients for variables in interaction term are for the centered form of variables

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Appendix B. OLS Coefficients of Time 2 CES-D Scores Regressed on Time 1 Predictors, Time 2 Predictors, Time 1 CES-D, and Interactions Between Stress Process Model Mediators and Gender, SES, and Household Type

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Estimate		Estimate		Estimate		Estimate		Estimate		Estimate		Estimate	
Age	0.002		0.057		0.002		-0.038		0.028		0.011		0.056	
	(0.228)		(0.228)		(0.227)		(0.230)		(0.228)		(0.228)		(0.229)	
Gender	-0.046		0.014		0.025		-0.120		-0.102		-0.091		-0.022	
	(0.438)		(0.438)		(0.025)		(0.440)		(0.439)		(0.439)		(0.439)	
SES	0.023		0.013		0.018		-0.001		0.007		-0.019		-0.050	
	(0.219)		(0.219)		(0.218)		(0.219)		(0.219)		(0.219)		(0.221)	
Household Type[b]	0.373		0.345		0.317		0.463		0.233		0.398		0.375	
	(0.447)		(0.446)		(0.445)		(0.450)		(0.449)		(0.447)		(0.447)	
Social Stress	-0.089		-0.073		-0.067		-0.093		-0.072		-0.240	*	-0.083	
	(0.088)		(0.088)		(0.087)		(0.088)		(0.088)		(0.113)		(0.088)	
Social Support	-0.272		-0.237		-0.279		-0.197		-0.286		-0.197		-0.252	
	(0.214)		(0.213)		(0.213)		(0.213)		(0.215)		(0.213)		(0.214)	
Self Esteem	-0.107		-0.082		-0.118		-0.116		-0.114		-0.125		-0.130	
	(0.095)		(0.096)		(0.095)		(0.095)		(0.095)		(0.095)		(0.095)	
Mastery	0.155	*	0.066		0.057		0.055		0.064		0.059		0.049	
	(0.068)		(0.053)		(0.053)		(0.053)		(0.053)		(0.053)		(0.053)	
Mattering	0.094		0.316	*	0.088		0.023		0.123		0.070		0.309	t
	(0.118)		(0.155)		(0.117)		(0.120)		(0.120)		(0.118)		(0.162)	
Emotional Reliance	0.103		0.101		0.115		0.109		0.119		0.101		0.109	
	(0.075)		(0.075)		(0.075)		(0.075)		(0.075)		(0.075)		(0.075)	
Social Stress Time 2	0.534	***	0.503	***	0.494	***	0.509	***	0.525	***	0.472	***	0.520	***
	(0.101)		(0.100)		(0.100)		(0.100)		(0.100)		(0.102)		(0.100)	
Social Support Time 2	-0.006		0.000		-0.013		-0.018		0.021		-0.024		0.019	
	(0.185)		(0.185)		(0.185)		(0.185)		(0.186)		(0.185)		(0.186)	
Self Esteem Time 2	-0.061		-0.060		-0.067		-0.066		-0.047		-0.064		-0.050	
	(0.087)		(0.087)		(0.087)		(0.087)		(0.087)		(0.087)		(0.087)	
Mastery Time 2	-0.055		-0.072		-0.060		-0.060		-0.056		-0.077		-0.072	
	(0.052)		(0.051)		(0.051)		(0.051)		(0.051)		(0.052)		(0.052)	
Mattering Time 2	-0.183		-0.167		-0.167		-0.156		-0.233	t	-0.146		-0.148	
	(0.119)		(0.119)		(0.119)		(0.120)		(0.122)		(0.120)		(0.120)	
Emotional Reliance Time 2	0.197	**	0.205	**	0.398	***	0.200	**	0.190	**	0.201	**	0.197	**
	(0.065)		(0.065)		(0.100)		(0.065)		(0.065)		(0.065)		(0.065)	
CES-D Time 1	0.264	***	0.276	***	0.245	***	0.252	***	0.266	***	0.262	***	0.244	***
	(0.054)		(0.054)		(0.054)		(0.054)		(0.054)		(0.054)		(0.054)	
Gender x Mastery Time 1	-0.187	*												
	(0.084)													
Gender x Mattering Time 1			-0.450	*										
			(0.187)											
Gender x Emotional Reliance Time 2					-0.318	**								
					(0.120)									
SES x Social Stress Time 2							-0.178	*						
							(0.080)							
SES x Mattering Time 2									-0.184	*				
									(0.083)					
HH Type x Social Stress Time 1											0.303	*		
											(0.134)			
HH Type x Mattering Time 1													-0.416	*
													(0.196)	
Intercept	5.961		4.075		7.625		6.486		0.519		5.120		5.461	
	(5.575)		(5.858)		(5.724)		(5.872)		(6.413)		(5.817)		(5.825)	
R^2	0.440		0.441		0.443		0.440		0.439		0.440		0.438	
N	283		283		283		283		283		283		283	
F-Statistic	11.48		11.57		11.68		11.48		11.48		11.50		11.44	

[t]$p<.10$; *$p<0.05$; **$p<0.01$; ***$p<0.001$
Note: Unstandardzed OLS regression coefficents; standard errors are in parentheses
[a]Ref group = Female
[b]Ref group = Two Parent Household
NOTE: coefficients for variables in interaction term are for the centered form of variables