Published in final edited form as:
Br J Health Psychol. 2011 May ; 16(0 2): . doi:10.1348/135910710X504932.

The Relationship between Self-Efficacy and Resting Blood Pressure in Spousal Alzheimer's Caregivers

Alexandrea L. Harmell[2], **Brent T Mausbach**[2], **Susan K. Roepke**[1,2], **Raeanne Moore**[2,5], **Roland von Känel**[2,3], **Thomas L Patterson**[2,4], **Joel E Dimsdale**[2], **Paul J Mills**[2], **Michael G. Ziegler**[2], **Matthew A. Allison**[2], **Sonia Ancoli-Israel**[1,2], and **Igor Grant**[2,4]

[1]University of California, San Diego / San Diego State University Joint Doctoral Program in Clinical Psychology, San Diego, USA [2]Department of Psychiatry, University of California, San Diego, USA [3]Department of General Internal Medicine, Inselspital, Bern University Hospital, and University of Bern, Switzerland [4]San Diego Veterans Affairs Healthcare System, La Jolla, California, USA [5]Alliant International University, San Diego, USA

Abstract

OBJECTIVE—To examine whether increased self-efficacy for using problem-focused coping was significantly related to several resting blood pressure measures in spousal Alzheimer's disease caregivers.

METHODS—Participants included 100 older caregivers (mean age= 73.8 ± 8.14 years) providing in home care for a spouse with Alzheimer's disease (AD). All participants completed a 13 item short form of the coping self-efficacy scale and underwent an in-home assessment where a visiting nurse took the average of three serial blood pressure readings. Multiple regression was used to examine the relationship between self-efficacy and mean arterial pressure (MAP), systolic blood pressure (SBP), diastolic blood pressure (DBP), and pulse pressure (PP) after controlling for age, gender, smoking history, body mass index, the care recipient's clinical dementia rating (CDR), diabetes, alcohol use, and the use of anti-hypertensive medications.

RESULTS—Overall, increased self-efficacy (as measured by the Coping Self-efficacy scale) was significantly related to lower resting MAP ($\beta = -.26$, $t(90) = -2.47$, $p = .016$) and SBP ($\beta = -.28$, $t(90) = -2.74$, $p = .007$) . Self-efficacy was marginally associated with resting DBP, but not significant ($\beta = -.20$, $t(90) = -1.91$, $p = .06$). Lastly, self-efficacy was significantly related to pulse pressure ($\beta = -.21$, $t(90) = -2.31$ $p = .023$). In addition, 1 standard deviation increase in self-efficacy was associated with a decrease of approximately 4 mmHg in SBP.

CONCLUSIONS—These results suggest an association between high self-efficacy on resting blood pressure. Because psychosocial interventions for Alzheimer's caregivers have potential to increase self-efficacy, it appears possible that these interventions could have a beneficial impact on caregivers' cardiovascular function.

Keywords

self-efficacy; caregiver; coping; blood pressure; Alzheimer's

Requests for reprints should be addressed to Igor Grant, M.D.; Professor & Executive Vice Chairman; Department of Psychiatry, School of Medicine; University of California San Diego, 9500 Gilman Drive; La Jolla, California, 92093-0680; phone (858) 534-3652, fax (858) 534-7723; igrant@ucsd.edu.

Introduction

Research has shown that blood pressure is elevated in chronically stressed populations (1). Elevated blood pressure has been associated with cardiovascular diseases including myocardial infarction, heart failure, stroke, and kidney disease (2). One population that faces substantial psychosocial burden and encounters chronic stress on a daily basis is elderly caregivers of Alzheimer's disease patients. Alzheimer caregivers, relative to other caregivers, have been shown to spend considerably more hours caring for their loved ones per week and also report more employment difficulties, caregiver strain, and mental and physical health complications (3). Alzheimer's caregivers also report elevated rates of clinical depression (10–34%) and anxiety (10–35%) (4). In addition, research has found that Alzheimer caregivers are at a much higher risk for hypertension when compared with non-caregiving peers (5). Further, caregivers experiencing high strain are at greatest risk for cardiovascular disease morbidity (6) and mortality (7).

In some caregivers, however, stress-related health consequences, including blood pressure elevation, do not occur, raising the question as to why caregivers in very similar situations may experience very different health outcomes. One construct that has received a great deal of attention has been perceived control over stressful situations. Indeed, current literature suggests that people who have greater perceived control have a greater sense of well-being (8) and increased quality of life (9).

One specific type of control is "self-efficacy", or the belief that one has the ability to successfully engage in specific actions (10). Specifically, Bandura (10) conceptualizes that self-efficacy beliefs determine whether or not individuals think in self-aiding or self debilitating ways, their emotional well-being, and how vulnerable they are to stress and depression. Thus, it is self-efficacy that further drives their emotions and reactions to stressful stimuli as opposed to the stressful stimuli itself. Bandura (11) further adds that self-efficacy is responsible for regulating cognitive processes (e.g. goal-setting), motivational processes (e.g. persevering in the face of challenges/not giving up), and also affective processes (e.g. what type of emotions one elicits when faced with an external threat). Therefore, self-efficacy in large part, determines whether problems appear manageable or overwhelming. It also influences whether a person will feel an overpowering sense of depression/anxiety when faced with difficult challenges or if they would instead adopt the belief that they are capable of exercising control and can turn any difficulty into something far less threatening.

Since the conceptualization of self-efficacy, there have been several studies examining its relationship with various health outcomes. Bandura demonstrated a relationship between high levels of coping self-efficacy and reduced cardiac reactivity and blood pressure in the short-term (12). In addition, a study looking at the relationship between self-efficacy and physical health in elderly female Alzheimer's caregivers found that those who thought that they had control and confidence over their situation and had the ability to manage upsetting thoughts had reduced risk to their physical health as determined by health factors such as smoking, alcohol consumption, weight management, exercise, and diet (13).

While previous studies have examined the relationship between self-efficacy and short-term blood pressure response to a stressful task, this study sought to expand the existing literature by examining the relationship between a specific form of self-efficacy and "long-term" mean resting arterial blood pressure in a sample of chronically stressed individuals (i.e., elderly spousal Alzheimer's caregivers) . Given the unique psychological distress inherent in caring for someone with Alzheimer's disease (as opposed to those experienced by non-caregivers), we theorized that increased self-efficacy may have a protective effect on blood

pressure. Therefore, we hypothesized that increased self-efficacy for using "problem-focused coping" would be significantly related to lower levels of several blood pressure measures. If confirmed, this study would raise the possibility that improving self-efficacy through psychosocial interventions might have "long-term" health benefits.

Methods

Participants

The study sample included 100 (71 women and 29 men) spousal caregivers of patients diagnosed with probable or possible Alzheimer's disease. The caregivers reported caring for their spouse for an average of 4.23 years (±3.32). Caregivers were primarily recruited through various community programs including referrals from the University of California San Diego's (UCSD) Shiley-Marcos Alzheimer's Disease Research Center as well as through staff presentations at local caregiver support groups and senior health fairs. Prior to enrollment, all participants provided written informed consent to participate as approved by the UCSD Institutional Review Board.

To be eligible for the study, participants were required to be at least 55 years of age, married, and providing in-home care for their spouse. Participants were excluded if they were diagnosed with a serious medical condition (e.g. cancer requiring chemotherapy), had hypertension of greater than 200/120 mmHg, or if they were taking anti-coagulant medication (an exclusion criteria due to other data collected for this prospective study).

Procedure

The baseline data reported in this study is a subset of a larger 5 year longitudinal study assessing the psychological and physiological changes that occur as a result of the chronic stress of caring for a loved one with Alzheimer's disease. All participants underwent a 2 hour structured psychosocial interview conducted in their home. The interview consisted of several questionnaires' asking participants about their background demographic characteristics, the severity of their spouse's dementia, their coping self-efficacy, and their health characteristics and behaviors.

In addition to the psychosocial interview, approximately one week later participants received a visit from a registered nurse in their home for a biological assessment. To avoid diurnal effects and to maintain consistency, all measurements were taken between 8:30am-10:30am. During this visit, the nurse took three different blood pressure readings using a non-invasive Microlife Blood Pressure monitor (model number 3AC1-1PC) while the participant was asked to lie down in a supine position. The three separate readings were recorded with 5 minute resting breaks in between. These three readings were then averaged to create a composite resting blood pressure estimate. Resting systolic and diastolic measurements were used to calculate mean arterial pressure (MAP), using the following formula (Systolic BP + 2 × Diastolic BP)/3. Pulse pressure (PP) was calculated using Systolic BP – Diastolic BP.

Psychosocial Measures

Clinical Dementia Rating (CDR)-—The severity of the care recipient's dementia was assessed using the Clinical Dementia Rating (CDR) scale (14). This scale incorporates six different behavioral and cognitive domains including Memory, Orientation, Judgment &Problem Solving, Community Affairs, Home and Hobbies, and Personal Care. Each domain is evaluated separately and scores range from 0 (non-demented) to 3 (severely demented). The scores in each domain are then taken into account and an overall dementia

rating is determined. This scale has been shown to have both high interrater reliability and high validity (15).

Alcohol Use-—All participants were asked about the frequency with which they consumed alcohol (not including a few sips of wine for religious purposes) over the past 30 days. They were asked about the number of days that they had at least one drink containing alcohol. Response options included “0 days”, “1 or 2 days”, “3 to 5 days”, “6 to 9 days”, “10 to 19 days”, “20 to 29 days”, and finally “All 30 days”. In addition, participants were asked about the average number of drinks they consumed on the days that they drank. Responses ranged from none to 5 or more drinks. To calculate the number of drinks participants consumed per month, we multiplied the mean number of days participants consumed alcohol (e.g. “3 to 5 days” was converted to 4) by the average number of drinks consumed on the days that they drank. It was this variable that was included in our analysis.

Coping Self-Efficacy-—Participants were administered a truncated 13 item version of the coping self-efficacy scale (CSE) which is an accepted modification of the original 26 item scale (16). The goal of this measure is to assess how confident or certain someone is that they can do certain behaviors when faced with life challenges. Ratings are based on an 11 point scale ranging from 0 (‘cannot do at all’) to 10 (‘certain you can do’). The 13 items are broken up into 3 different subscales and include one’s perceived ability to a) use problem-focused coping (“break an unpleasant problem down into smaller parts”), b) stop unpleasant thoughts and emotions (“keep from feeling sad”), and c) get emotional support from friends and family (“get friends to help you with the things you need”). Each category contains 6, 4, and 3 items respectively. A self-efficacy score is created for each of the 3 domains by adding the items in each category together. For the purpose of this study, we solely focus on a caregiver’s ability to use problem-focused coping ($\alpha = .87$) which has been shown to be predictive of decreased psychological distress and an augmented sense of psychological well-being (16).

Data Analysis—We conducted a primary hierarchical regression analysis using MAP as the main dependent variable. Covariates including age, gender, smoking history, body mass index, the care recipient’s clinical dementia rating (CDR), diabetes, alcohol use, and the use of anti-hypertensive medications were entered in step 1; self-efficacy for using problem-focused coping was entered in step 2. Subsequently, three follow-up regressions were performed using systolic BP, diastolic BP, and pulse pressure with the same covariates and hierarchical steps.

Results

Participant demographic and health characteristics are presented in Table 1. Caregivers were largely female (71%), Caucasian (94%), and highly educated (nearly half were college graduates). Caregivers were on average slightly overweight and nearly half reported taking at least one antihypertensive medication. Caregivers’ spouses were typically in the mild to moderate stages of dementia.

Primary Analysis: Self-efficacy for problem-focused coping and MAP

In the first step of the regression model, there were no significant predictor s of MAP. However, in step 2 of the model, gender emerged as a significant predictor of MAP ($t(90) = -2.55$, $p = .012$), such that males exhibited elevated MAP compared to females. As predicted, self-efficacy for using problem-focused coping was a significant predictor of MAP, above and beyond covariates ($t(90) = -2.47$, $p = .016$). That is, caregivers endorsing higher self-efficacy for problem focused coping were more likely to have lower MAP

compared to caregivers endorsing less self-efficacy. The full model explained 18.9% of the variance in MAP. The addition of self-efficacy for problem-focused coping uniquely explained 6.8% of the variance in MAP above and beyond the effects of covariates. Detailed results for this regression model are presented in Table 2.

Secondary Analyses: Examining the association between self-efficacy for problem-focused coping and systolic BP, diastolic BP, and Pulse Pressure independently

Age was the only significant predictor of resting systolic blood pressure ($t(91) = 2.25$, $p = .027$) in step 1 of our regression model such that as age increased, so did mean resting systolic pressure. This covariate remained significant in step 2 of the model. In addition, male gender emerged as a significant predictor in step 2 of the model ($t(90) = -2.13$ $p = .036$). Also consistent with the primary findings, self-efficacy for using problem-focused coping was significantly and negatively associated with systolic pressure, controlling for covariates ($t(90) = -2.74$, $p = .007$). The full prediction model accounted for 15.9% of the total variance in mean resting systolic pressure. In this model, self-efficacy for problem-focused coping uniquely accounted for 3.4% of the variance in systolic pressure. Results for this model are presented in Table 3.

In the regression model predicting mean resting diastolic blood pressure, both decreasing age ($t(91) = -2.21$, $p = .030$) and male gender ($t(91) = -2.06$, $p = .042$) emerged as significant predictors. The addition of self-efficacy for using problem-focused coping was marginally significant ($t(90) = -1.90$, $p = .060$). Although this relationship did not quite meet significance, the finding was in the hypothesized direction, such that caregivers reporting higher self-efficacy for problem focused coping had reduced diastolic pressure compared to those reporting less self-efficacy. The full model (as seen in Table 4) explained 15.9% of the variance in mean resting diastolic blood pressure. The addition of the self-efficacy variable uniquely explained 3.4% of the variance in DBP.

In our final regression analysis predicting pulse pressure, only age was found to be a significant predictor ($t(91)=5.06$, $p<.001$) in step 1. Age also remained a significant predictor in step 2 of our model. Furthermore, as with our previous analyses, the addition of self-efficacy for using problem- focused coping was found to be significantly related to reduced pulse pressure ($t(90)=-2.31$, $p=.023$). The full model accounted for 33.9% of the total variance in pulse pressure. Self-efficacy for problem-focused coping uniquely accounted for 3.9% of the variance in pulse pressure.

Discussion

The primary goal of this study was to examine the effects of self-efficacy for problem-focused coping on mean resting blood pressure in a population of Alzheimer caregivers. Our results found that both mean resting arterial blood pressure and resting systolic blood pressure are indeed lower in caregivers with higher self-efficacy for using problem-focused coping. These results remained significant even after controlling for empirically relevant covariates such as age, gender, smoking history, body mass index, the care recipient's clinical dementia rating (CDR), diabetes, alcohol use, and the use of anti-hypertensive medications. While several studies show that increased self-efficacy promotes a higher sense of psychological well-being (17)–(18), our current findings illustrate that increased self-efficacy can also possibly have physiological advantages such as the lowering of resting blood pressure. It was found that for every standard deviation increase in using problem solving coping, systolic blood pressure decreased by almost 4 mm Hg. To place this in context, it has been reported that a 5 mm Hg point reduction in systolic blood pressure is clinically significant because it has been shown to reduce mortality by 7% (2) and risk of stroke by 30% (19).

Although many investigators have reported the positive impact that self-efficacy as a whole may have on different mental and physical health outcomes (20)–(21) this study was unique as it looked at one specific aspect of self-efficacy and applied it to a uniquely stressed population. Also, a strength of this study is that it explores one possible mechanism for lowering blood pressure in a sample that has reportedly been found to be at a higher risk of elevated blood pressure (5).

Von Känel (22) reported that the accumulation of 30 minutes of moderate exercise daily lowered systolic blood pressure by 3–5 mm Hg. Considering that there is physical activity restriction in caregivers (23), there is a possibility that increasing exercise or physical activity in caregivers in conjunction with increasing their self-efficacy may decrease their blood pressure to the same extent as or even more than that which is achieved by antihypertensives alone which is around 9 mm Hg (24). This alternative hypertensive treatment may be of clinical importance due to some of the difficulties that many clinicians experience in motivating their patients to comply with antihypertensive drug treatment (25). Existing literature provides initial support that treatments to increase self-efficacy have proven to be successful, at least in the short-term (26)–(27). Also, this new approach to increasing self-efficacy would prevent patients from experiencing some of the negative side effects that anti-hypertensive medications cause, especially older patients who are comparably more sensitive to these side effects (28).

While much of the recent literature focuses on various ways to decrease caregiver's distress and level of burden, the results of this study suggest that future treatment interventions might target increasing Alzheimer caregiver's self-efficacy. For example, one strategy that Coon et al. (2003) (26) used was offering female caregiver's a series of psychoeducational and skills training classes focusing on either depression or anger management. Caregivers in these two programs were taught either cognitive (e.g. self-talk) and behavioral strategies (e.g. assertiveness skills), or were instructed on how to incorporate enjoyable events into their daily lives. It was found in both groups that caregiver's self-efficacy significantly increased, and that increased self-efficacy mediated the effectiveness of the treatments for reducing depressive symptoms.

Although this study explores the potential beneficial impact that self-efficacy for using problem-solving skills has on blood pressure, there are caveats that must be acknowledged. One limitation of the present study is its cross-sectional design which precludes inferring causality and also lacks in important longitudinal information which may vary depending on a caregiver's specific life circumstances. Another limitation is that we did not control for some important environmental (e.g. diet and exercise) and genetic determinants of hypertension. Lastly, the fact that this study only looked within Alzheimer caregivers and did not explore whether increased self-efficacy is correlated with decreased blood pressure in other caregiver populations and non-caregivers should be noted. It is possible that self-efficacy is more important among Alzheimer caregivers due to some of the unique stressors associated with the disease. Such stressors include management of patient problem behaviors and having to provide constant vigilance for wandering and other behaviors (29).

In sum, the literature suggests that caring for a spouse with AD is associated with detriments to one's physical health, including blood pressure. However, not all caregivers demonstrate compromised health. This study demonstrates that increased confidence in one's ability to use problem-focused coping strategies (e.g., think of multiple solutions to a problem, develop a strategy for coping with stress, etc.) is associated with significantly reduced blood pressure. In addition, these reductions appear clinically meaningful and may be associated with reduced mortality and risk of stroke. As such, future research should examine whether

psychosocial interventions aimed at increasing self-efficacy have a beneficial impact on caregivers' blood pressure.

Acknowledgments

Primary research support was provided via funding from the National Institute on Aging (NIA) through award AG15301. Additional support was provided by NIA awards AG031090 and AG08415.

References

1. Matthews KA, Katholi CR, McCreath C, et al. Blood Pressure Reactivity to Psychological Stress Predicts Hypertension in the CARDIA Study. Circ Res. 2004; 110:74–78.
2. Chobanian AV, Bakris GL, Black HR, et al. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. J Am Med Assoc. 2003; 289:2560–2571.
3. Ory MG, Hoffman RR 3rd, Yee JL, et al. Prevalence and impact of caregiving: A detailed comparison between dementia and nondementia caregivers. The Gerontologist. 1999; 39:177–185. [PubMed: 10224714]
4. Cooper C, Balamurali T, Livingston G. A systemic review of the prevalence and associates of anxiety in caregivers of people with dementia. Int Psychogeriatric. 2007; 19:175–195.
5. Shaw WS, Patterson TL, Ziegler MG, et al. Accelerated risk of hypertensive blood pressure recordings among Alzheimer caregivers. Journal of Psychosomatic Research. 1999; 46:215–277. [PubMed: 10193912]
6. Mausbach BT, Patterson TL, Rabinowitz Y, et al. Depression and Distress Predict time to Cardiovascular Disease in Dementia Caregivers. Health Psychology. 2007; 26:539–544. [PubMed: 17845105]
7. Schulz R, Beach SR. Caregiving as a risk factor for mortality: the Caregiver Health Effects Study. JAMA : the Journal of the American Medical Association. 1999; 282:2215–2219. [PubMed: 10605972]
8. Hesselink AE, Penninx BWJH, Schlosser MAG. The role of coping resources and coping style in quality of life in patients with asthma or COPD. Quality of Life Research. 2004; 13:509–518. [PubMed: 15085923]
9. Rosenfield S. Factors contributing to the subjective quality of life of the chronic mentally ill. Journal of Health & Social Behavior. 1992; 33:299–315. [PubMed: 1464716]
10. Bandura, A. Self-efficacy: The exercise of control. W. H. Freeman; New York: 1997.
11. Bandura A. Human agency in social cognitive theory. American Psychologist. 1989; 44:1175–1184. [PubMed: 2782727]
12. Bandura A, Reese L, Adams NE. Microanalysis of action and fear arousal as a function of differential levels or perceived self-efficacy. J Pers Soc Psychol. 1982; 43:5–21. [PubMed: 7108745]
13. Rabinowitz YG, Mausbach BT, Thompson LW, et al. The relationship between self-efficacy and cumulative health risk associated with health behavior patterns in female caregivers of elderly relatives with Alzheimer's dementia. Journal of Aging and Health. 2007; 19:946–964. [PubMed: 18165290]
14. Hughes CP, Berg L, Danziger WL, et al. A new clinical scale for the staging of dementia. British Journal of Psychiatry. 1982; 140:566–572. [PubMed: 7104545]
15. Burke WJ. Reliability of the Washington University Clinical Dementia Rating. Archives of neurology. 1988; 45:31–32. [PubMed: 3337672]
16. Chesney MA, Neilands TB, Chambers DB, et al. A validity and reliability study of the coping self-efficacy scale. Br J Health Psychol. 2006; 11:421–437. [PubMed: 16870053]
17. DeWitz SJ, Walsh WB. Self-efficacy and college student satisfaction. Journal of Career Assessment. 2002; 10
18. Yue X. Test anxiety and self-efficacy: Levels and relationship among secondary school students in Hong Kong. An Intervational Journal of Psychology in the Orient. 1996; 39:193–202.

19. Staessen JA, Gasowshi J, Wang JG. Risks of untreated and treated isolated systolic hypertension in the elderly: Metaanalysis of outcome trials. Lancet. 2000; 355:865–872. [PubMed: 10752701]

20. Luszczynska A, Benight CC, Cieslak R. Self-efficacy and health- related outcomes of collective trauma: A systemic review. European Psychologist. 2009; 14:51–62.

21. Hoffman B, Schraw G. The influence of self-efficacy and working memory capacity on problem-solving efficiency. Learning and Individual Differences. 2009; 19:91–100.

22. Von Känel R. Accumulation of 30 min of moderately intense physical activity is a clinically meaningful treatment to reduce systolic blood pressure in prehypertension. Journal of Human Hypertension. 2008; 22:444–446. [PubMed: 18432256]

23. Mausbach BT, Patterson TL, Grant I. Is depression in Alzheimer's caregivers really due to activity restriction? A preliminary mediational test of the Activity Restriction Model. Journal of Behaviour Therapy and Experimental Psychiatry. 2008

24. Law M, Wald N, Morris J, et al. Value of low dose combination treatment with blood pressure lowering drugs: analysis of 354 randomized trials. BMJ. 2003; 326:1427. [PubMed: 12829555]

25. Lindholm L. The problem of uncontrolled hypertension. J Hum Hypertens. 2002; 16(Suppl 3):S3–S8. [PubMed: 12140722]

26. Coon DW, Thompson L, Steffen A, et al. Anger and depression management: Psychoeducational skill training interventions for women caregivers of a relative with dementia. The Gerontologist. 2003; 43:678–689. [PubMed: 14570964]

27. Steffen A. Anger management for dementia caregivers: A preliminary study using video and telephone interventions. Behavior Therapy. 2000; 31:281–299.

28. Fogari R, Zoppi A. Effect of antihypertensive agents on quality of life in the elderly. Drugs Aging. 2004; 21:377–393. [PubMed: 15084140]

29. Gold DP, Cohen C, Shulman K, et al. Caregiving and dementia: Predicting negative and positive outcomes for caregivers. International Journal of Aging and Human Development. 1995; 41:183–201. [PubMed: 8666465]

Table 1

Participant Characteristics (N=100)

Age, M (SD), y	73.8 (8.1)
Gender %	
Male	29
Female	71
Ethnicity %	
Caucasian	94
Non-Caucasian	6
Education %	
Less than high school	2
High school	18
Some college	34
College graduate	46
Antihypertensive Drug Use %	
Present	56
Absent	44
BMI, M (SD)	26.5 (4.7)
Patient CDR, M (SD)	1.7 (0.6)
Ever Smoke, %	
Past/Current Smoker	45
Never Smoked	55
Systolic BP, M (SD)	134.2 (14.9)
Diastolic BP, M (SD)	75.6 (8.6)
Mean Arterial Pressure M (SD)	95.14 (9.6)
Pulse Pressure M (SD)	58.56 (11.6)

Table 2

Regression Model Predicting Mean Arterial Pressure (MAP)

	Df	ΔF	*p*	ΔR^2	**Entered Variables**	***B***	***SE***	***β***
Step 1	91	.808	.597	.066	Intercept	97.267	13.441	
					Age	−.019	.131	−.016
					Gender	−4.012	2.191	−.190
					Body Mass Index	.007	.239	.004
					Ever Smoke	1.403	2.125	.073
					Taking any HBP med	.865	2.142	.045
					CDR Total Score	.686	1.601	.045
					Diabetes	−3.389	3.053	−.119
					Drinks per month	.007	.057	.013
Step 2	90	6.076	.016	.059	Intercept	112.190	14.414	
					Age	−.044	.128	−.037
					Gender*	−5.729	2.243	−.271
					Body Mass Index	−.029	.233	−.014
					Ever Smoke	1.722	2.072	.089
					Taking any HBP meds	1.638	2.108	.085
					CDR Total Score	.269	1.567	.018
					Diabetes	−3.405	2.971	−.119
					Drinks per month	.002	.055	.004
					Self-Efficacy for using Problem-Focused Coping*	−.244	.099	−.259

Note:

* $p \leq .05$

** $p \leq .01$

Table 3

Regression Model Predicting Resting Systolic Blood Pressure (SBP)

	df	ΔF	*p*	ΔR^2	Entered Variables	*B*	*SE*	*β*
Step 1	91	1.574	.143	.122	Intercept	97.502	20.141	
					Age *	.444	.197	.243
					Gender	−4.282	3.284	−.131
					Body Mass Index	.040	.359	.013
					Ever Smoke	3.370	3.185	.113
					Taking any HBP meds	2.038	3.210	.068
					CDR Total Score	2.062	2.399	.393
					Diabetes	−3.718	4.574	−.084
					Drinks per month	.023	.085	.029
Step 2	90	7.514	.021	.068	Intercept	122.186	21.440	
					Age *	.401	.191	.219
					Gender *	−7.122	3.337	−.218
					Body Mass Index	−.021	.347	−.006
					Ever Smoke	3.898	3.083	.131
					Taking any HBP meds	3.317	3.136	.111
					CDR Total Score	1.370	2.331	.058
					Diabetes	−3.745	4.419	−.085
					Drinks per month	.016	.082	.020
					Self-Efficacy for ** using Problem-Focused Coping	−.403	.147	−.278

Note:

* p ≤.05

** p ≤.01

Table 4

Regression Model Predicting Resting Diastolic Blood Pressure (DBP)

	df	ΔF	*p*	ΔR^2	Entered Variables	*B*	*SE*	*β*
Step 1	91	1.632	.127	.125	Intercept	97.150	11.556	
					Age *	−.250	.113	−.238
					Gender *	−3.877	1.884	−.207
					Body Mass Index	−.009	.206	−.005
					Ever Smoke	.419	1.827	.024
					Taking any HBP meds	.279	1.842	.016
					CDR Total Score	−.001	1.376	.000
					Diabetes	−3.224	2.624	−.127
					Drinks per month	−.002	.049	−.003
Step 2	90	3.628	.063	.034	Intercept	107.192	12.553	
					Age *	−.267	.112	−.254
					Gender **	−5.033	1.954	−.268
					Body Mass Index	−.034	.203	−.019
					Ever Smoke	.634	1.805	.037
					Taking any HBP meds	.799	1.836	.047
					CDR Total Score	−.281	1.365	−.021
					Diabetes	−3.235	2.587	−.128
					Drinks per month	−.004	.048	−.010
					Self-Efficacy for using Problem-Focused Coping	−.164	.086	−.196

Note:

* p ≤.05

** p ≤.01