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# Stereotypes On Aging And Effects On The Health Of Older Adult Couples

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Stereotypes on Aging and Effects on the Health of Older Adult  
Couples

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Master of Public Health

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## **Abstract**

Negative stereotypes of aging are widespread in American culture and have been shown to have detrimental effects on the health of older individuals. Little has been done to examine the dynamics of views on aging in older adult relationships. We aim to examine the stereotypes of aging held by older married couples in which one individual has a musculoskeletal condition. Specifically we're interested in seeing if an individual's stereotypes of aging affect (1) their own physical and psychological, and relationship health (2) their partner's physical, psychological, and relationship health and (3) whether there are interaction effects of aging attitudes in relationships in predicting these health outcomes.

Using self-report questionnaires, we obtained data describing participants' health conditions, depressive symptoms, and marital satisfaction as well as a measure of their attitudes toward aging asking them to provide 5 words related to aging (Levy & Langer, 1994). Those words were coded on a 5 point scale of positivity. Baseline blood pressure readings were also taken of all participants in the study.

We found there to be no significant correlations between attitudes of partners and no main effects of their attitudes on health outcomes. However, we found there to be significant interactions between partners' views on aging in predicting care recipient physical health status and caregiver blood pressure. Agreement of attitudes in relationships is associated with more sick care recipients and lower blood pressure for caregivers. Future research should be directed at further examining the dynamics between partner attitudes as a predictor of personal and relationship health as we found preliminary evidence that such dynamics do have an impact on the health outcomes of partners in relationships.

## **Acknowledgements**

I would like to thank Dr. Joan Monin and Dr. Becca Levy of Yale School of Public Health for their guidance in this project as well as Yale School of Public Health for granting me the Dull Internship Fund for this project. I also want to acknowledge everyone in the Monin lab for their work contributing to this project.

# **Stereotypes on Aging and Effects on the Health of Older Adult Couples**

## **Background**

Negative stereotypes of aging are salient in Western culture. Popular media glamorizes youth and portrays older adults as weak and helpless, often patronizing and poking fun at their physical and cognitive decline. Older adults may experience neglect or insult through these stereotypes that perpetuate ageism (Ory, Hoffman, Hawkins, & Sanner, 2003). Despite common negative attitudes toward aging in our culture, many positive traits associating old age also exist, such as patience and wisdom.

A unique characteristic of the older adult population is that we all eventually become members of the in-group (Horton, Baker, & Deakin, 2007). Younger individuals can easily accept negative stereotypes about aging from the perspective of the out-group. Years of growing up in a society ingrained with negative attitudes toward aging also train people to be weary of the aging process. Therefore, by the time people reach later adulthood and become members of the stigmatized group, negative stereotypes of aging may already be internalized (Levy, Slade, & Kasl, 2002).

There has been much evidence that positive stereotypes of aging offer improved health benefits on functionality and longevity of older individuals. Individuals with more positive perceptions of aging are more likely to practice preventative health behaviors such as exercise, having a healthier diet, and safety compliance (Levy & Myers, 2004). Research also shows that people with positive perceptions of aging have increased longevity (Levy, Slade, Kunkel, & Kasl, 2002) and report better functional health over time (Levy, Slade, & Kasl, 2002). Positive aging stereotypes are also protective against cardiovascular stress (Levy, Hausdorff, Hencke, & Wei, 2000).

Much like how positive stereotypes seem to promote improved functionality in older individuals, negative stereotypes have been shown to hinder health performance in older adults. These effects may act on a cognitive level beneath consciousness (Levy, 2003). Research has shown that priming individuals with negative age stereotypes by flashing words such as “senile” and “deteriorating” can have detrimental effects on subsequent performance functions such as handwriting and other cognitive functions (Levy, 2009). A cross-cultural study also found that Americans with more negative perceptions of aging

compared to Chinese, who have more revered attitudes toward older adults, performed more poorly on memory tasks (Levy & Langer, 1994).

Though much research has shown the effect of attitudes toward aging on one's own health, little is known about whether close relationship partners share similar views of aging or if their stereotypes of aging influence health outcomes of relationship partners. Interdependence theory suggests the one partner's needs, cognitions, and behaviors are related to the other and can be linked to the other's outcomes (Kelley & Thibaut 1978). It is possible then in our context that stereotypes, both implicit and explicit, can be shared by couples and can have interdependent effects on their health outcomes.

We aim to examine the stereotypes of aging held by older married couples in which one individual has a musculoskeletal condition. Specifically we're interested in seeing if an individual's stereotypes of aging affect (1) their own physical health, psychological health, and marital satisfaction (2) their partner's physical health, psychological health, and marital satisfaction (3) whether there is an interaction effect between caregiver and care recipient attitudes toward aging in predicting health outcomes.

Thus, we hypothesize that (1) older married couples' stereotypes of aging will be similar. Replicating Levy's work, we also hypothesize that (2) one's own positive age stereotypes will be associated with better physical and psychological health. We extend Levy's work by hypothesizing that (3) a partner's positive age stereotypes will be protective of a person's health.

## **Method**

### **Participants**

Fifty married or cohabitating couples were enrolled from the community via newspaper advertisements, community bulletin postings, etc. To be eligible for the study, at least one partner needed to fill a care recipient role (CR) with a musculoskeletal condition (e.g., osteoarthritis of the knees, hips, wrists, hands, etc.) with the other partner acting as a caregiver (CG). CRs needed to have experienced a moderate amount of pain over the past month and have difficulty performing one instrumental activity of daily living (IADL). Both partners needed to qualify for cognitive functioning (score 7 out of 10 on Short Portable Mental Status Questionnaire; Pfeiffer 1975). Table 1 gives participant characteristics.

## **Procedure**

Participants took part in an experiment in which CG's heart rate and blood pressure were monitored as they watched CRs complete a pain-eliciting task involving transporting groceries for a 3 minute period. CGs were then asked to reflect and speak about their spouse's experience with chronic pain and their role and impact as a caregiver. The relevant data used for analysis in this article are all taken from self-reported background questionnaires completed in a private laboratory setting after the experiment as well as a baseline blood pressure reading taken at the beginning of the lab session.

## **Independent Variable – Aging Stereotype Attitudes**

A measure of an individual's stereotypes on aging was incorporated into the questionnaire asking the participants to list 5 words that came to mind when they thought of an old person (Levy & Langer, 1994). The responses were then coded on a 5-point scale of negativity to positivity. Words and expressions that carry an explicit negative connotation, such as "frail" or "feeble," were given a rating of 1. Words that are less explicitly negative, but carry a negative tone in our society such as "wrinkles" and "grey hair" were given a 2 rating. Neutrally charged words and expressions such as "health" or "old" were given a rating of 3. Slightly positive or debatably positive words such as "travel" and "experienced" were given a 4 rating. Explicitly positive words such as "wise" and "happy" were given a 5 rating. From the words provided, we calculated a mean measure of stereotype positivity for each participant in the study. Interaction between both partners' attitudes toward aging was calculated by taking the product of their individual attitudes. Between the two coders, we had an inter-rater agreement, Kappa, of 0.678 for all participants.

Table 2 lists frequently reported words from our sample. Out of the 50 couples in our sample, 1 care recipient and 5 care givers did not provide any words for this stereotype measure. There was complete stereotype attitude information for both partners in 44 of the couples. Care recipients had a mean stereotype positivity of 2.85 ( $SD=1.12$ ). Caregivers in the sample had a mean stereotype positivity of 2.38 ( $SD=0.98$ ).

## Dependent variables

Our dependent outcome variables of interest try to capture the participants' holistic health status, including physical and psychological health as well as the health of their relationship.

Physical health was measured using the physical condition index and baseline blood pressure. The physical condition index (PCI) is a self-report, 24 item survey determining a person's number of chronic conditions. Questions inquire about the respondent's history with cardiovascular, respiratory, and digestive problems as well as surgery and cancer among other health issues. Scores range from 0-24. Care recipients had a mean PCI of 3.98 ( $SD=2.89$ ) and caregivers had a mean PCI of 3.09 ( $SD=1.88$ ).

For baseline blood pressure measurements taken at the beginning of the experimental study, CRs had a mean systolic pressure of 140.93 ( $SD=21.79$ ) and a mean diastolic pressure of 71.99 ( $SD=10.78$ ). CGs had a mean systolic pressure of 133.36 ( $SD=18.36$ ) and a mean diastolic pressure of 74.55 ( $SD=11.42$ ).

Psychological health was measured by the Center for Epidemiologic Studies Depression Scale (CES-D), which is a self-report current levels of depressive symptoms (Radloff, 1977). This self-report scale contains 20 items such as "I had crying spells" and "I felt fearful" and participants are asked to rate how often they felt that way in the past 7 days. Items are added for a score ranging from 0 – 60 points, with higher scores indicating more severe depression. Typically, people who score higher than 16 are at risk for clinical depression. CRs had a mean CES-D score of 7.57 ( $SD=5.92$ ) and CGs had a mean CES-D score of 9.85 ( $SD=8.37$ ) In our sample, the CES-D scale had good internal reliability, ( $\alpha = 0.742$  for CRs and 0.845 for CGs).

Relationship quality was assessed using the 16-item Locke and Wallace Martial Adjustment Test (MAT). This scale asks participants how much they agree or disagree with their partner on matters in their relationship such as finances, recreational activities, sex, and affection. The total sum of the items gives a score ranging from 2-158. CRs had a mean MAT score of 96.63 ( $SD=14.27$ ) and CGs had a mean MAT score of 97.57 ( $SD=18.41$ ).



## **Analysis**

Multiple linear regression analysis was used to predict outcomes for both care recipients and care givers including physical condition index, depressive symptoms, marital satisfaction and blood pressure. Our main predictor variable of interest is attitude towards aging. We will also look at the interaction effect between CR attitudes and CG attitudes using the product of the two scores. We also account for significant covariates in our models. All predictor variables used in final regressions were centered.

## **Results**

### **Covariates and Potential Moderators**

We examined potential covariates including age, gender, and level of education for both partners. We also looked at whether the couples have children, their household income, and the length of their marriage. Table 3 displays the correlation matrix for identifying potential covariates. Covariates found to be significantly correlated with our study measures (Pearson  $r < 0.05$ ) were included in analysis.

Significant correlations were found between CG stereotype positivity and both partners' level of education so we included education as a covariate in all regression analysis of the outcome variables. Education for both partners was negatively correlated with CG stereotype positivity, so more educated people in our sample tend to be in a relationship in which the caregiver has more negative news toward aging.

### **Similarity of CR and CG Attitudes**

Attitudes toward aging between caregivers and care recipients were not significantly correlated in our sample ( $r(df=43)=-0.222$ , Pearson  $p\text{-value}=0.147$ ). This lack of association between partners' attitudes fails to support our first hypothesis.

### **Predicting Care Recipient Physical Health**

When predicting CR PCI, and controlling for both partner's education level, the interaction between CG and CR stereotype positivity was significant at the 0.05 level ( $\beta = .893$ ,  $SE=0.405$ ,  $t(43)=2.203$ ,  $p=0.034$ ).

The interaction was examined such that when CR stereotypes were held 1 SD above the mean, CG stereotypes were positively associated with CR chronic conditions ( $\beta = 1.282$ ,  $SE=0.781$ ,  $t(43)=1.642$ ,  $p=0.109$ ). When CR stereotypes were 1 SD below the mean, CG stereotypes were negatively associated with CR chronic conditions ( $\beta = -0.700$ ,  $SE=0.557$ ,  $t(43)=-1.257$ ,  $p=0.217$ ). Figure 1 of this interaction plot suggests that when partners have similar stereotypes of aging, the care recipient has more chronic conditions.

### **Predicting Care Giver Physical Health**

When predicting CG diastolic blood pressure, and controlling for both partner's level of education, the interaction between CR and CG stereotype positivity has a significant effect at the 0.05 alpha level ( $\beta = -3.486$ ,  $SE=1.623$ ,  $t(43)=-2.148$ ,  $p\text{-value}=0.038$ ).

The interaction was examined such that when CR stereotypes were held 1 SD above the mean, CG stereotypes were negatively associated with CG diastolic blood pressure. ( $\beta = -3.385$ ,  $SE=3.129$ ,  $t(43)=-1.082$ ,  $p=0.286$ ). When CR stereotypes were 1 SD below the mean, CG stereotypes were positively associated with CG diastolic blood pressure ( $\beta = 4.355$ ,  $SE=2.231$ ,  $t(43)=1.952$ ,  $p=0.058$ ). Figure 2 of this interaction plot suggests that when partners have similar stereotypes of aging the caregiver has lower diastolic blood pressure.

### **Predicting CR and CG Psychological Health**

Regression analysis predicting depressive symptoms in both caregivers and care recipients did not yield significant results. When predicting CES-D score in care recipients, CR aging attitudes ( $\beta = -0.471$ ,  $SE=0.820$ ,  $t(43)=-0.575$ ,  $p=0.569$ ) and CG aging attitudes ( $\beta = 0.484$ ,  $SE=0.929$ ,  $t(43)=0.521$ ,  $p=0.606$ ) were insignificant. Similarly, when predicting CES-D score in caregivers, CR aging attitudes ( $\beta = 0.211$ ,  $SE=0.267$ ,  $t(43)=0.791$ ,  $p=0.433$ ) and CG aging attitudes ( $\beta = -0.045$ ,  $SE=0.305$ ,  $t(43)=-0.148$ ,  $p=0.883$ ) were insignificant.

### **Predicting CR and CG Relationship Quality**

Regression analysis predicting marital satisfaction in both caregivers and care recipients did not yield significant results. When predicting MAT score for care recipients, CR aging attitudes ( $\beta = 3.200$ ,  $SE=1.930$ ,  $t(43)=1.658$ ,  $p=0.105$ ) and CG aging attitudes ( $\beta = -2.465$ ,  $SE=2.187$ ,  $t(43)=-1.127$ ,  $p=0.266$ ) were insignificant. Similarly, when predicting MAT

score for caregivers, CR aging attitudes ( $\beta = 3.905$ ,  $SE=2.563$ ,  $t(43)=1.524$ ,  $p=0.135$ ) and CG aging attitudes ( $\beta = 1.774$ ,  $SE=2.932$ ,  $t(43)=0.605$ ,  $p=0.548$ ) were insignificant.

## **Discussion**

We hypothesized that partners' stereotypes of aging would be similar, but we found no significant correlation between the attitudes toward aging of care recipients and caregivers in our sample.

We also hypothesized based on current literature that aging attitudes would be predictive of individual health outcomes, but we found no significant effects of aging attitudes predicting one's own physical health, psychological health, and marital satisfaction.

Lastly however, we did find a significant interaction effect between caregiver and care recipient attitudes toward aging in predicting a care recipients number of chronic conditions as well as the caregiver's diastolic blood pressure. We found that agreement between couples regardless of the aging attitudes being positive or negative is associated with a care recipient having more chronic conditions as well a caregiver having lower diastolic blood pressure.

One explanation for the association between agreement of attitudes and more sick care recipients is that couples in which a care recipient has more chronic conditions discuss their views on aging more, leading to higher agreement concerning stereotypes of aging. Being faced with one partner's illness may make the aging process more salient. Partners' may both have adopted negative perceptions of aging as a result of their negative experiences with chronic disease or they may have adopted positive perspectives to cope with their hardships.

Agreement between couples' attitudes toward aging was also found to have a lowering effect on the caregiver's diastolic blood pressure, which may be mediated through stress reduction for the caregiver due to less dissonance in the relationship.

## **Limitations**

These results do not support our original hypotheses based on current literature. However, these analyses were done on a limited sample of only 50 couples, so our study may not have enough power to detect significant effects.

It would also be ideal to have more information collected from the participants to get a more comprehensive picture of how they feel about aging. There is potential for measurement error in coding the open ended measure we used for this analysis due to the subjectivity of interpreting the words provided. It is often difficult to judge what feelings a participant truly had and misunderstanding of words with multiple meanings may occur. Ideally we would have a more structured measure with more items to estimate the unobservable factor of one's attitudes toward aging.

The context in which participants provided words related to aging also primes more negative responses than what we might normally expect. Couples were recruited into this study advertised as exploring experiences of pain in caregiving relationships. In the context of the experiment, caregivers are given the questionnaire portion of the study after they are asked to reflect upon experiences of pain and suffering that their partner has been through. These thoughts elicited during the experiment may have primed more negative responses about aging especially for the caregiver since they were explicitly asked to reflect and speak about these experiences during the experiment.

The cross-sectional design of the questionnaire is also not ideal for capturing the effects we are truly interested in studying for our hypothesis. There is no way to infer directionality of association or causality from this type of data. We can't determine if attitudes toward aging are predictive of health outcomes or if health status is influencing one's attitudes toward aging.

## **Implications**

Though this study did not find attitudes toward aging to be predictive of health outcomes for individuals, it did find some preliminary evidence that agreement in couples' attitudes on aging are associated with health outcomes, suggesting that relationship dynamics are important in considering the role of aging stereotypes. Our findings indicate that there are health factors associated with harmony and dissonance of life views in relationships and that agreement may be beneficial for caregivers tasked with caring for a sick partner. A considerable amount of research has explored the effects of stereotypes

toward aging in affecting the health of older individuals so future research should expand to exploring how related views between couples affect each other's health performance and the health of their relationship. Research should also aim to expand to more heterogeneous study samples looking at different cultural groups and gay and lesbian couples.

## Appendix

### Table 1. Sample Characteristics

Sample Characteristic	Care Recipient (N=50)		Caregiver (N=50)	
Age (Years $\pm$ SD)	65.38 $\pm$ (8.12)		64.66 $\pm$ (8.33)	
Months Married			365.17 $\pm$ (202.17)	
Gender				
Female (%)	31	(62)	19	(38)
Male	19	(38)	31	(62)
Race				
White, Caucasian	48	(96)	47	(94)
Black, African American	1	(2)	1	(2)
American Indian, Alaskan Native	0	(0)	2	(4)
Other	1	(2)	0	(0)
Education				
Less than high school	2	(4)	4	(8)
High school	16	(32)	18	(36)
Some college credit	12	(24)	6	(12)
Associate's degree	1	(2)	3	(6)
Bachelor's degree	8	(16)	4	(8)
Some graduate school	2	(4)	9	(18)
Professional degree (eg. Ph.D, MD, etc.)	9	(18)	6	(12)
Employment				
Employed for pay, full time	7	(14)	12	(24)
Employed for pay, part time	11	(22)	13	(26)
Homemaker, not working for pay	0	(0)	2	(4)
Retired	28	(56)	18	(36)
Unemployed	4	(8)	5	(10)
Household Income *				
< \$10,000			3	(6)
\$10,000 - \$39,999			15	(30)
\$40,000 - \$69,999			14	(28)
\$70,000 - \$99,999			8	(16)
\$100,000 or more			6	(12)

**Table 2. Common Responses for Words Relating to Aging**

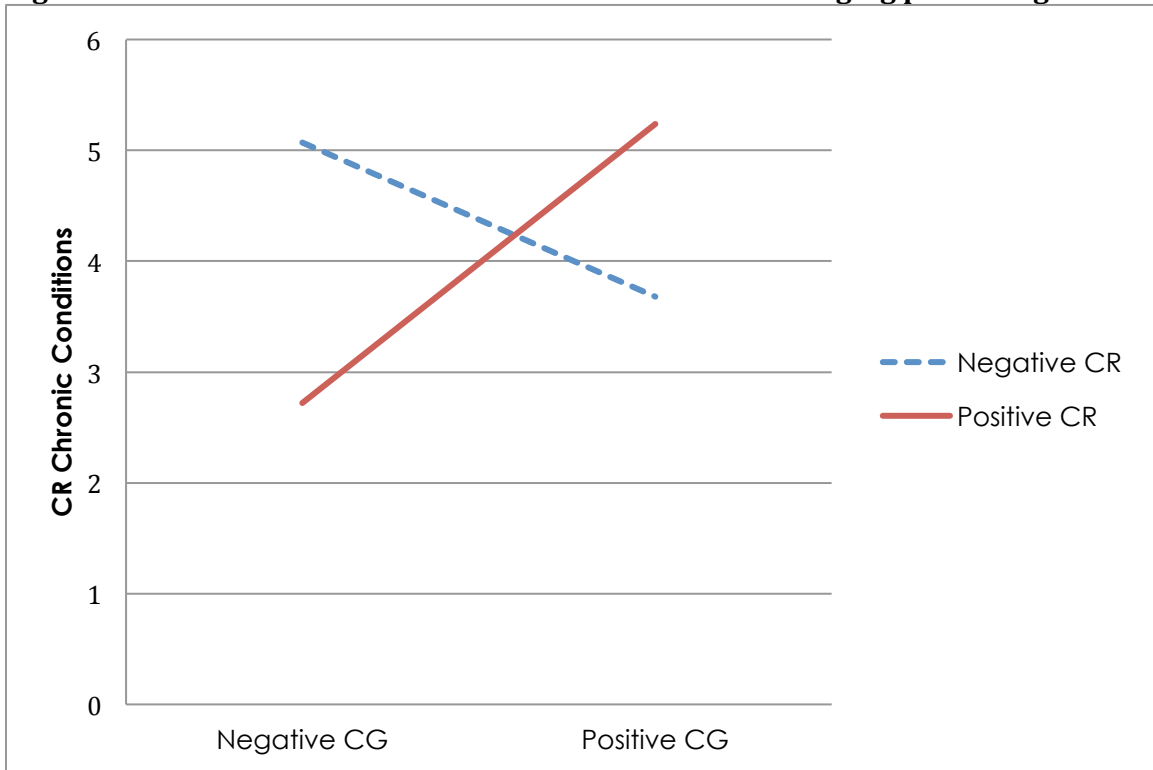
	Frequency (N=44)	Percent
Wise / Wisdom	18	40.91
Slow	17	38.64
Health	12	27.27
Grey / Grey Hair	11	25
Lonely	11	25
Wrinkled	11	25
Retired	10	22.73
Sick	10	22.73
Weak	10	22.73
Frail	8	18.18
Death / Dying	7	15.91
Tired	7	15.91
Feeble	6	13.64
Forgetful	6	13.64
Love	6	13.64
Pain	6	13.64

**Table 3. Correlation Matrix Between Potential Covariates and Study Measures**

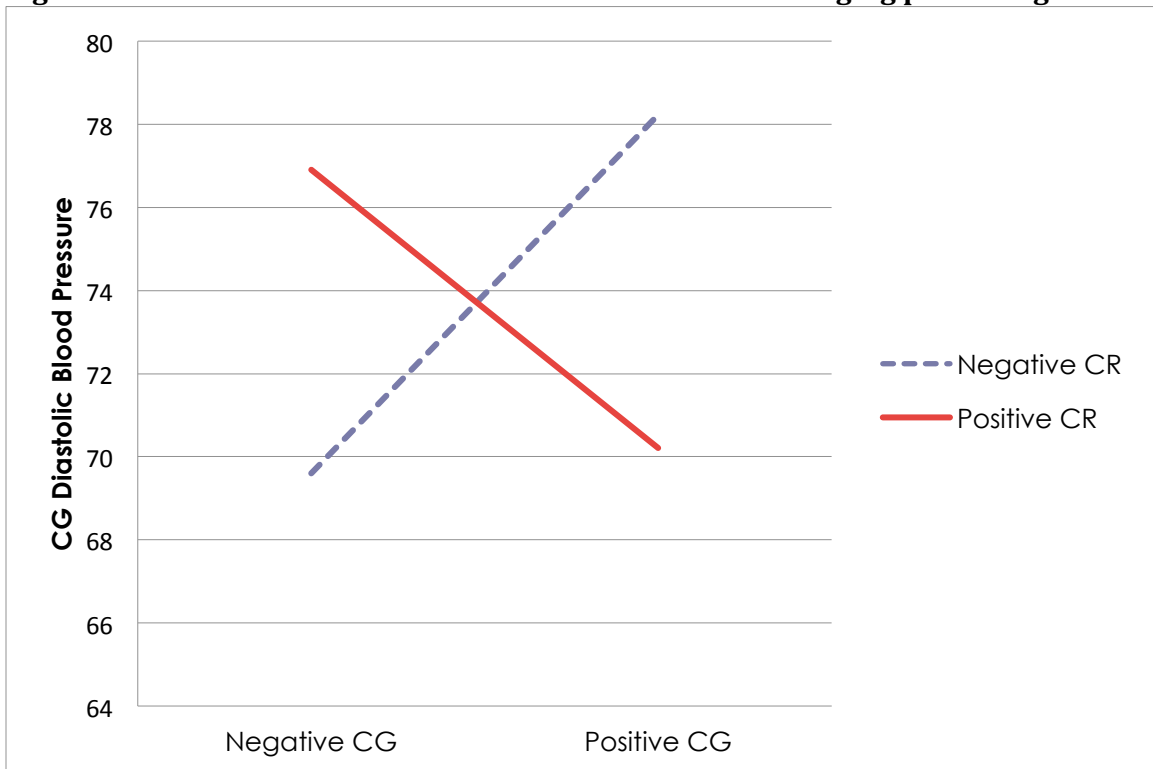
	Covariates	Care Recipient						Care Giver					
		Mean Stereotype Positivity	Physical Condition Index	CES-D Depression Scale	Marital Satisfaction	Systolic BP	Diastolic BP	Mean Stereotype Positivity	Physical Condition Index	CES-D Depression Scale	Marital Satisfaction	Systolic BP	Diastolic BP
Care Recipient	Mean Stereotype Positivity	1	-0.00149	-0.03691	0.21657	0.05522	0.15447	-0.22231	0.10262	-0.17114	0.21896	0.19458	-0.06365
		0.9919	0.8012	0.135	0.7093	0.2945	0.1469	0.4829	0.2397	0.1349	0.1803	0.6639	
		49	49	49	49	48	48	44	49	49	48	49	49
	Age	-0.02494	0.1854	-0.11711	0.10546	0.12366	-0.12073	0.00304	<b>0.29448</b>	<b>0.37991</b>	0.08019	0.12583	-0.18422
		0.865	0.1974	0.418	0.4661	0.3972	0.4086	0.9842	<b>0.0379</b>	<b>0.0065</b>	0.5839	0.3839	0.2003
		49	50	50	50	49	49	45	<b>50</b>	<b>50</b>	49	50	50
	Gender	0.1855	0.08579	-0.03382	-0.05235	-0.08107	0.10102	-0.11097	-0.07466	0.24942	-0.10275	0.08742	-0.26007
		0.2019	0.5536	0.8156	0.718	0.5797	0.4898	0.468	0.6064	0.0807	0.4823	0.5461	0.0681
		49	50	50	50	49	49	45	50	50	49	50	50
	Education	-0.10628	0.00665	-0.08894	-0.10181	-0.27838	-0.23528	<b>-0.31699</b>	-0.17059	-0.07114	-0.15629	-0.12983	-0.13407
		0.4673	0.9634	0.5391	0.4817	0.0528	0.1037	<b>0.0339</b>	0.2362	0.6235	0.2835	0.3688	0.3533
		49	50	50	50	49	49	<b>45</b>	50	50	49	50	50
Care Giver	Mean Stereotype Positivity	-0.22231	0.04421	0.08593	-0.20486	0.10896	0.05194	1	-0.03192	0.07087	0.02436	-0.07387	0.21971
		0.1469	0.773	0.5746	0.177	0.4814	0.7377	0.8351	0.6437	0.8738	0.6296	0.147	
		44	45	45	45	44	44	45	45	45	45	45	45
	Age	-0.18337	0.09367	-0.03419	-0.10881	0.10418	-0.1317	-0.11826	0.23334	-0.04531	0.10891	0.17368	-0.07645
		0.2072	0.5176	0.8136	0.452	0.4762	0.367	0.4391	0.1029	0.7547	0.4563	0.2277	0.5977
		49	50	50	50	49	49	45	50	50	49	50	50
	Gender	-0.1855	-0.08579	0.03382	0.05235	0.08107	-0.10102	0.11097	0.07466	-0.24942	0.10275	-0.08742	0.26007
		0.2019	0.5536	0.8156	0.718	0.5797	0.4898	0.468	0.6064	0.0807	0.4823	0.5461	0.0681
		49	50	50	50	49	49	45	50	50	49	50	50
	Education	0.02563	-0.17698	0.04321	-0.11244	-0.05126	0.01633	<b>-0.37656</b>	-0.01	-0.02765	-0.2727	-0.19542	-0.17019
		0.8612	0.2189	0.7657	0.4369	0.7265	0.9113	<b>0.0108</b>	0.9451	0.8488	0.058	0.1738	0.2374
		49	50	50	50	49	49	<b>45</b>	50	50	49	50	50
Couple	Income	0.02661	0.03141	-0.00466	-0.26071	-0.16711	-0.06923	-0.2539	-0.16294	-0.1344	-0.22142	-0.03195	-0.23301
		0.8623	0.8358	0.9755	0.0801	0.267	0.6476	0.1004	0.2793	0.3732	0.1392	0.8331	0.1191
		45	46	46	46	46	46	43	46	46	46	46	46
	Have Children	-0.02424	0.05325	0.1715	-0.14808	0.00139	-0.18961	-0.12673	0.05531	0.05544	-0.09804	0.2477	-0.09429
		0.8701	0.7163	0.2387	0.3099	0.9924	0.1919	0.4124	0.7059	0.7051	0.5074	0.0862	0.5193
		48	49	49	49	49	49	44	49	49	48	49	49
	Months Married	-0.24708	0.09862	<b>0.28493</b>	-0.09874	0.02013	-0.23417	-0.09598	0.16754	-0.08921	-0.0197	<b>0.31392</b>	0.0233
		0.0941	0.5049	<b>0.0497</b>	0.5043	0.892	0.1092	0.5404	0.255	0.5465	0.8954	<b>0.0298</b>	0.8751
		47	48	<b>48</b>	48	48	48	43	48	48	47	<b>48</b>	48



**Figure 1. Interaction between CR and CG attitudes toward aging predicting CR PCI**



**Figure 2. Interaction between CR and CG attitudes toward aging predicting CR PCI**



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