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Ageism in informal care network members of older women

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Abstract

Objectives: Negative attitudes toward aging are common among formal health care providers, but have been infrequently assessed among informal caregivers providing assistance to older adults. The current study sought to identify factors associated with ageism toward older women.

Design: Multivariate hierarchical linear regression model

Setting: Lower-income neighborhoods in an urban setting in the Midwestern USA

Participants: 144 care network members of White and African American women aged 65 years

Measurements: Age Group Evaluation and Description (AGED) Inventory assessed attitudes toward older women; CES-D scale measured depressive symptoms; Intergenerational Affectional Solidarity Scale assessed relationship closeness.

Results: In bivariate analyses, African American caregivers endorsed more positive attitudes toward older women. In the multivariate regression model, attitudes toward older women were associated with care recipient health ($\beta = 0.18$, $p < 0.05$) and relationship closeness with the care recipient ($\beta = 0.23$, $p < 0.05$). However, these associations were fully mediated by care recipient-specific attitude ratings by the care network member. The association between person-specific attitudes and general attitudes was uniquely directional.

Conclusions: Findings from the present study are consistent with past research suggesting that 'ageism' may, at least in part, derive from bias against perceived poor health. Further, our findings of an association between attitude toward the care recipient and attitudes toward older women in

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DESCRIPTION OF AUTHOR ROLES

Dr. Wyman provided original data and contributed to study design, data analysis, and manuscript preparation. Dr. Shiovitz-Ezra contributed to study design and manuscript preparation. Mr Parag contributed to data analysis and manuscript preparation. All authors contributed to and approved of the final submitted manuscript.

general provide support for cognitive psychology theory which emphasizes the role of personal experience in stereotype formation through the availability heuristic. The current study underlines the necessity for development of interventions to address ageism in informal caregivers.

Keywords

Healthism; Ageism; informal Caregiving; Availability Heuristic; Group impressions

The term 'ageism' refers to negative attitudes, beliefs, and behaviors toward older adults or toward the aging process (Nelson, 2017). Ageist attitudes are common in the health care setting (Institute of Medicine, 2008; Wyman et al., 2018) and influence clinical decision making by a range of health care professionals (Ben-Harush et al., 2017; Schroyen et al., 2016). This has real consequences; for example, older patients are less likely than younger patients to receive guideline-concordant diagnostic and treatment procedures (Peake et al., 2003). Research on factors associated with ageism among formal care providers indicates that more negative attitudes are related to less professional and personal contact with older adults, younger age, and male gender (Lambrinou et al., 2009; Leung et al., 2011).

Informal care network members (CNMs) are unpaid family, friends or neighbors who provide assistance to an older adult and constitute an important element within the sphere of the healthcare system of older adults (Barker, 2002; Wolff and Roter, 2011). These caregivers assist in numerous daily tasks which are essential to the health of the older adult (Donelan et al., 2002). For frail or cognitively impaired older adults, CNMs help with health care decision making and are considered key partners in the health care relationship (Borson and Chodosh, 2014). Despite their critical role, little is known about factors associated with attitudes and beliefs toward aging among CNMs. One study reported that more unfavorable attitudes toward aging among caregivers were associated with elevated caregiver burden (Loi et al., 2015). Another study revealed that greater ageism was related to assisting a care recipient (CR) who had deficits in basic activities of daily living (Luchesi et al., 2016). These studies were limited as they included only elderly, primarily White caregivers living with the CR. Ageism has not been studied among CNMs who do not live with the CR, nor among younger or non-White CNMs. Additionally, previous studies focused on CNM characteristics and did not examine CR variables or dimensions of the dyadic relationship as predictors of ageism. The limited information on diverse types of CNMs is concerning in light of the growing demand for informal caregiving as the global population ages (Verbakel et al., 2017).

In the ageism literature, there is research suggesting that what is referred to as 'ageism' may, at least in part, represent 'healthism,' or bias against persons in poor health (Gekoski and Knox, 1990). Among formal care providers, this argument was supported by results from a study of perceptions of older clients among mental health professionals (James and Haley, 1995) and from a study among primary care physicians revealing more negative attitudes toward more frail older patients (Gunderson et al., 2005). However, little is known about the association of care recipient health to attitudes toward aging among informal caregivers.

It can also be useful to examine negative attitudes about aging from a broader perspective, as a reflection of a universal cognitive bias resulting from the 'availability heuristic'. The

availability heuristic stems from cognitive psychology research which seeks to forecast how people will think and act under conditions of uncertainty (Tversky and Kahneman, 1973). According to the availability heuristic, people tend to draw conclusions about the frequency of an event, or ascribe characteristics to different groups within the population, if those events or characteristics come more readily to their mind – for instance, due to their personal experience. This mental shortcut, in turn, can lead to systematic biases (Gilovich et al., 2002; Tversky and Kahneman, 1973). The availability heuristic is more robust when comprehensive information regarding the subject being evaluated is unavailable, leading people to rely on stereotypic preconceptions to form appraisals of, for example, groups of people (Rothbart et al., 1978). This perspective on attitudes toward aging is particularly relevant for informal CNMs, who typically lack education to guide them in their caregiving role (Given et al., 2008).

The rationale for the present study is to add to the body of knowledge about ageism in informal caregivers by examining factors which may be associated with ageist attitudes in this population. Our model was developed based on existing research among informal and formal care providers and on the literature concerning the formation of stereotypes via the availability heuristic (e.g., Rothbart et al., 1978). Specifically, the model included CNM sociodemographic characteristics, the physical and mental health of the CR, and variables reflecting the nature of the relationship between CNM and CR. To test if person-specific evaluations are generalized toward older women, in accordance with the availability heuristic, the model also contained a measure of CNM attitudes specifically towards the care recipient. As there is evidence that older men are viewed more positively than older women (Gekoski et al., 1984) and that older women are particularly disadvantaged in the context of healthcare decision-making (Nussbaum et al., 2005), the aim of current study was to shed light upon gendered ageism. For this purpose, we examined various factors associated with attitudes toward older women in a sample of informal CNMs of older women living in the community.

METHOD

Sample and Design

The primary study was approved by the IRB of Indiana University-Bloomington, USA and examined social ties and depression in late life. The original study restricted recruitment to women, based on known gender differences in social relationships and coping (Blalock and Joiner, 2000) and because depressive symptoms are more prevalent among women (Callahan and Wolinsky, 1994). As described elsewhere (Swindle et al., 2001), a stratified sample of women age 65 was obtained in an urban setting in the Midwestern United States. A two-stage recruitment procedure began with random telephone calling within lower-income urban neighborhoods to identify older women, of whom 66% (N=1,963) agreed to complete a telephone-based depression screening. Respondents were oversampled (N=755, 38.5%) for depressive symptoms, consistent with previous studies among older adults (Duberstein et al., 2003), and 481 completed the first in-home interview, which included complete mood and health assessments. Purposive sampling (Tongco, 2007) to enrich the longitudinal sample for depression resulted in 254 older women completing a second interview. In this interview,

each participant (i.e., the CR) was asked to identify up to 5 names of “friends, neighbors, or family members” with whom she had contact at least monthly, with the goal of interviewing up to two of CNMs. In total, 257 CNMs nominated by 158 different CRs (62.2%) were interviewed. The current study utilized data from the first CNM interview for each CR. All interviews were typically completed by race-matched interviewers. Of the 158 CNMs, four (2.5%) were excluded as they were formal service providers or clergy, and ten (6.3%) were excluded due to missing data in one of the variables. The final analytic sample was N = 144 CNM-CR dyads.

Measures

Care network member variables included gender, age group (<50, 50–64, 65–74, and 75 years), race (White, African American) and years of formal education (<12 years, 12 years/high school diploma, >12 years).

Care recipient variables included age group (65–69, 70–74, 75–79, and 80 years) and self-rated depressive symptoms, assessed with the Center for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1977; Cronbach’s $\alpha = .86$). CNM appraisal of CR’s current health was measured using one item from the SF-36 (“In general, would you say [CR’s] health is...”; Ware and Sherbourne, 1992), rated on a scale from 0=poor to 5=excellent.

Dimensions of the CNM-CR relationship.—The *type of relation* of the CNM to CR was dichotomized into family and non-family (i.e., friends or neighbors). *Caregiver burden* was assessed with an adapted version of the Montgomery Borgatta Caregiving Burden Scale (Montgomery, 2006). This 14-item scale reflects different aspects of negative change experienced by the CNM related to assistance provided to the CR (e.g., “Has there been a change in the time you have to yourself?” and “...in the tension in your life?”). Respondents rated each item on a 3-point scale (no change, a little change, and a lot of change). Due to asymmetric distributions, item scores were dichotomized into no change vs. change, resulting in total possible scores ranging from 0 (no change) to 14 (substantial change). *Relationship closeness* was rated by the CNM using a 7-item version of the Intergenerational Affectional Solidarity Scale (Silverstein and Bengtson, 1991; Cronbach’s $\alpha = .86$) which assesses positive aspects of a dyadic relationship (e.g., “Taking everything into consideration, how close do you feel is the relationship between you and [CR] at this point in your life?”) Items are rated on a 6-point scale from 1 (not at all) to 6 (extremely), resulting in total possible scores between 7 (least positive) to 42 (most positive).

Attitudes toward older women (dependent variable) and CR-specific attitude rating.—The AGED Inventory (Knox, Gekoski, and Kelly, 1995) was designed to assess attitudes and belief in stereotypes related to various age groups, including older adults. The scale consists of 28 items, each with two descriptive terms representing the poles along a 7-point scale (e.g., “impatient-patient”; “foolish-wise”; “sexless-sexy”) with higher scores reflecting more positive ratings. Items are assigned to one of four dimensions: the dimensions “goodness” and “positiveness” are part of the Evaluative (attitudes) subscale, and the dimensions “vitality” and “maturity” comprise the Descriptive (stereotypes)

subscale. In this study, two versions of this scale were administered. To assess attitudes toward older women in general (the outcome in the regression model), participants were given the list of items and instructed by the interviewer to indicate the number that “best describes your view of the average older woman.” For the CR-specific attitude rating, reflecting the CNM’s evaluation of the CR, instructions were altered slightly, with participants asked to choose the number on the scale that “best describes your view of [CR].”

Data analysis

As can be seen in Table 1, the four-dimensional structure of the AGED Inventory could not be replicated in our sample due to low internal consistencies in the vitality and maturity dimensions; Cronbach's alpha was less than 0.70, considered a minimum reliable cutpoint for research purposes (Bland and Altman, 1997). Thus, the overall mean score was used to measure both general ageism (Cronbach's alpha = 0.87) and CR-specific ratings (Cronbach's alpha = 0.88), as has been done previously (Jelenec and Steffens, 2002). Imputation of mean within-scale item values for each respondent was used to address missingness, which was extremely low (0.13%; Twisk and de Vente, 2002). Outliers were retained to avoid the possibility of overcorrecting a sampling error (Hunter and Schmidt, 2004).

Descriptive analyses were first conducted to characterize the samples of CNMs and CRs, and bivariate analyses utilized paired and independent t-tests and chi-square tests for select group comparisons. Next, a multivariate hierarchical linear regression was performed in four steps to predict attitudes toward older women among CNMs.

Predictors in the first model were demographic variables of CNM, including gender, age, race, and education. The second model added characteristics of the CR (age, CES-D score, and CNM-rated current health), and the third model added measures of the relationship between CNM and CR (family versus non-family relation, caregiver burden, and relationship closeness). Finally, the fourth model also included the CR-specific attitude rating completed by the CNM (AGED Inventory). Variance inflation factors for each predictor, within each model, were examined to assess for multicollinearity; values were between 1.64 to 2.55 and thus acceptable. There were no violations of assumptions of multivariate normality or homoscedasticity (Couture, Larivière, & Lefrançois, 2005; Osborne, Waters, 2002). Cohen's f^2 was calculated to provide a measure of effect size for each model (Maxwell and Delaney, 2004).

Mediator effects of the CR-specific attitude rating within the regression model were probed with a bootstrap test (Shrout and Bolger, 2002), using all variables in the final model (Step 4) as covariates. In the case of significant results in the bootstrap test, the effect of the indirect path was divided by the total effect in order to scrutinize the relative effect size (Preacher & Kelley, 2011). The SPSS Process software (conditional process analysis) was used for these analyses, as it allows computation of the direct and indirect effects in multiple mediator models by calculating the product of coefficients (Hayes, 2013).

RESULTS

Sample descriptives

Most care network members were women and almost half were less than 65 years old (see Table 2). Less than one-third had formal schooling beyond high school and less than half were family of the CR. African American CNMs comprised almost half of the sample (47.9%). The average care recipient was perceived to be in frail health by the CNM. As expected, the mean depression score was relatively high, with 44% of the CR sample obtaining a CES-D score ≥ 16 points, indicating significant depression.

Bivariate analyses

CRs were significantly older than CNMs, $t(143) = 8.79, p < 0.001$. Compared to older CNMs (aged ≥ 75 years), CNMs aged less than 75 years were more likely to have a CR who was also younger (18.4% and 61.3%, respectively, provided assistance to a CR aged ≥ 75 years), $\chi^2(1) = 20.74, p < 0.001$.

As assessed by the two versions of the AGED Inventory (Table 2), CNMs endorsed more negative attitudes toward the average older woman compared to their CR-specific ratings, $t(143) = 7.46, p < 0.001$. Compared to African American CNMs, White CNMs made more negative evaluations, both of the CR specifically ($M = 5.09, SD = 0.74$ versus $M = 5.38, SD = 0.82$, respectively; $t(142) = -2.26, p < 0.05$), and of older women in general ($M = 4.61, SD = 0.59$ versus $M = 4.87, SD = 0.78$, respectively; $t(142) = -2.23, p < 0.05$). There were no differences by CNM gender in attitudes toward the CR ($t(142) = 1.66, p = 0.53$) or toward older women in general ($t(142) = 1.25, p = 0.21$), nor by CNM age ($F(3,140) = 1.05, p = 0.37$ and $F(3,140) = 0.55, p = 0.65$, respectively).

Multivariate analyses: predicting attitudes toward older women

As can be seen in Table 3, CNM race was a significant predictor in the initial model ($\beta = 0.18, p < 0.05$). Nevertheless, this model was not an adequate fit for the data, $F(7,136) = 1.03, p = 0.41, R^2 = 0.05$, and the effect size was small (Cohen's $f^2 = 0.05$). With the addition of CR characteristics in step 2, R^2 increased significantly to 0.188, $F(5,131) = 4.45, p < 0.001$ and the model itself was significant, $F(12,131) = 2.54, p < 0.01$. The effect size also increased (Cohen's $f^2 = 0.23$). More negative attitudes were endorsed by CNMs with a CR who was ≥ 80 years old compared to those with a CR age 65–69 years ($\beta = -0.22, p < 0.05$), when the CR had more severe depression ($\beta = -0.18, p < 0.05$), and when the CR was in worse perceived health ($\beta = 0.21, p < 0.05$). With the inclusion of variables assessing the relationship between CNM and CR in step 3, model R^2 increased significantly and the model explained 24% of the variability in attitudes toward older women, $F(3,128) = 2.88, p < 0.05$. The model remained significant, $F(15,128) = 2.69, p < 0.01$, with an effect size of 0.32. Attitudes were positively associated with relationship closeness ($\beta = 0.23, p < 0.01$), and CR physical health remained a significant predictor ($\beta = 0.18, p < 0.05$). When the CR-specific attitude rating was included in step 4, higher scores on this measure were related to more positive attitudes toward older women ($\beta = 0.24, p < 0.05$), but neither CR physical health nor relationship closeness remained significant predictors in the model.

Inspection of the regression coefficients revealed that an increment of one point on the CR-specific attitude rating scale CR was associated with an increase on the general ageism scale of 0.21 points, when other model predictors are held constant. There was a significant increase of 15.9% in R^2 to 0.267, $F(1,127) = 4.73$, $p < 0.05$, and the model was highly significant, $F(16,127) = 2.89$, $p < 0.001$. The estimated effect size was 0.36, considered a large magnitude of effect.

To test for a mediator effect of CR-specific attitude rating on the associations of physical health and relationship closeness with attitudes toward older women, a bootstrap test (Shrout and Bolger, 2002) was performed using conditional process analysis (Hayes, 2013). As can be seen in Figures 1 and 2, CR-specific attitudes fully mediated these associations. Specifically, the indirect path accounted for 38% of the association between physical health and attitudes toward older women and 48% of the association between relationship closeness and attitudes toward older women.

As a final step, in order to better understand the nature of the relationship between CR-specific evaluations and global attitudes toward older women, we wished to compare the relative contributions of these measures in regression models predicting each other. To this end, we conducted a second regression predicting CR-specific attitude ratings and included the same CNM and CR variables as in Model 1. However, in step 4, general attitudes toward older women was included as a predictor. This resulted in an increase in adjusted R^2 of only 3.2%, and the general attitudes score was not a mediator in the model (results not shown). This indicates that global attitudes toward older women were less predictive of CR-specific attitude ratings compared to the converse.

DISCUSSION

Ageism is common among formal healthcare providers of older adults, yet has seldom been examined in the network of family and friends who serve as informal caregivers for older persons living at home and provide important assistance in daily life. Hence, the objective of the current study was to address this gap in the literature by identifying factors associated with attitudes toward older women in a diverse sample of CNMs.

Two key findings emerged in our study. First, among informal caregivers, more negative attitudes toward older women were associated with poorer perceived health in the care recipient. An age bias was also revealed in the present study, as more negative attitudes toward older women were held by CNMs assisting an older CR, although this association did not remain significant when variables reflecting the CNM-CR relationship were included. Of note, the 'healthism' effect that emerged in the current study is subjective and based primarily in the appraisal by the informal care network member, as indicated by the modest correlation between the CNM rating of CR health and CR self-rated health ($r = 0.27$, $p < .05$; results not shown). These findings are consistent with past research demonstrating that health bias can be more powerful than age bias (Gekoski and Knox, 1990) and with results from a previous study of informal caregivers of older adults (Luchesi et al., 2016).

However, CNM appraisal of care recipient health did not emerge as the most important predictor. A second primary finding in the current study was that the CR-specific attitude rating was strongly associated with global attitudes toward older women. The associations between attitudes toward older women and the physical health of the CR, as well as the quality of the relationship between the CNM and CR, were fully mediated by the CR-specific evaluation. The effect size for the final regression model, which included the CR-specific rating, was of large magnitude (Cohen's $f^2=0.36$). Further, secondary analyses revealed that the general attitude score was not as strong a predictor of the CR-specific rating in a multivariate model, and that general attitudes did not mediate associations with CR-specific attitudes. Taken together, these findings underline the importance of the person-specific evaluation of the care recipient in predicting care network member attitude toward older women in general. These findings are consistent with the tenets of the availability heuristic, which predicts that people tend to make inferences about other groups based upon their own personal experience (Gilovich et al., 2002; Tversky, and Kahneman, 1973). In this regard, based on evidence that societal categorization can influence person-specific appraisals via stereotypes (Hilton and von Hippel, 1996), we might have observed a bi-directional relationship between general ageism toward older women (stereotypes) and CR-specific ratings (interpersonal attitudes). However, our analyses reveal that this was a uniquely directional predictive relationship, in accordance with the availability heuristic. As lack of comprehensive information supports the formation of the availability bias (Rothbart et al., 1978), it is feasible to think that this bias might be common among informal caregivers, who typically have no training in gerontology or geriatric care.

Interestingly, compared to White CNMs, African American participants reported more positive attitudes toward older women and toward the CR. These findings are aligned with past work demonstrating that African American caregivers experience more positive aspects of caregiving and less caregiving-related distress (Haley et al., 2004). Our results suggest that attitudes toward older adults are influenced by cultural norms and may be linked to appraisals of the caregiving relationship. To our knowledge, this is the first study to report on race differences in ageism among informal caregivers. This represents an understudied domain and is an important area for future research, particularly to inform development of caregiver interventions.

Limitations

Our study, while being one of the first to examine ageism among informal caregivers, had several limitations. As we had limited data on caregiving tasks, we were not able to examine how type or intensity of care provided might relate to attitudes toward aging. Further, our focus was on older women, and thus our results may not generalize to caregivers of older men. Of note, a shortcoming in the larger body of ageism research is the widespread use of general labels such as *older adult* without specifying the gender of the older person being evaluated (Kite et al., 2005). The present study helps build an evidence base for future work on gendered ageism. Finally, CR mental health was not a significant predictor in the final model. However, this finding should be interpreted with caution. Specifically, the sampling strategy of the original study decreased variability in depression level among participants, which likely impacted its role in the model. Thus, among the general population of care

network members of older women, CR mental health may represent a meaningful predictor of ageism. This should be a focus of further research.

Further, our analytic plan did not test potential mediators aside from attitudes toward the care recipient. Thus, we could not determine whether this mediating variable is the core or only mediator. Also, the indices of the CR-specific attitudes and the general attitudes toward older women aging consisted of the same items (i.e., AGED Inventory), which were given to the same person (i.e., the care network member). Shared method variance could conceivably underlie the associations between these variables. However, concerns regarding method variance are not supported by our findings that the association between these indices was not bidirectional, in that general attitudes represented a weaker predictor of CR-specific attitudes and did not mediate key associations.

Importantly, the analyses in the current study were not based on experimental manipulation or upon longitudinal evaluation of changes in variables and thus cannot demonstrate causality between attitudes toward the care recipient and attitudes toward older women in general. Nevertheless, our findings point to promising directions for future research in this area.

Conclusion

The current study makes an important contribution to the literature on attitudes toward aging among caregivers of older adults. Not only is this one of the few studies of ageism in care network members (cf. Loi, Dow et al. 2015, Luchesi, Alexandre et al. 2016), this investigation advances previous work by investigating a more diverse group of caregivers – including those who are younger and may not live with the older care recipient. Our sample included both White and African American care network members, and we were able to compare attitudes toward aging by race. This allows our findings to be more broadly generalized and make important contributions toward improving understanding of attitudes among diverse informal caregivers. Further, our inclusion of measures of the caregiver's attitude toward the care recipient and evaluation of the relationship represents a novel contribution and a meaningful step in deepening our understanding of how these factors relate to overall attitudes toward aging. Given the key role of informal caregivers within the system of care for older adults, our results have potential implications for the development of interventions to provide education and support to caregivers. As has been called for to include in geriatric training for health care professionals (Nussbaum et al., 2005), we suggest incorporating information about age and health bias, and how to reduce these biases, into caregiver education programs. Many informal care network members are making health-related decisions for older adults. Being in a surrogate health care decision maker role necessitates having the ability to consider options without prejudice based on age. Further, it is vital that care systems for older patients, which rely on informal sources of support and assistance, recognize the diversity of the caregiver experience. There can be no “one size fits all” as the field moves forward in developing caregiver interventions, and initiatives to address age and health bias in caregivers may also need tailoring.

In conclusion, the current study contributes to our knowledge about attitudes toward aging among care network members of older women living in the community, about how personal

relationships with older women may influence attitudes toward aging, and about the association between health bias and age bias. Continued research is needed in this area to best inform our efforts to educate, support and involve the diverse caregivers of our oldest citizens.

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Figure 1.

Mediator analysis of CR physical health, CR-specific attitude rating, and general attitudes toward older women. All variables rated by care network member. Analyses were adjusted by all variables in the regression model (Step 4). Path C is the total effect and Path C' is the direct effect. The two numbers in brackets represent the confidence interval for the bootstrapping method and are based upon 1000 bootstrap samples for the indirect effect. Of note, if zero is not included in the interval, as in the present study, then the indirect effect is different from zero, i.e. mediation has occurred (Shrout and Bolger, 2002).

Figure 2.

Mediator analysis of relationship quality with CR, CR-specific attitude rating, and general attitudes toward older women. All variables rated by care network member. Analyses were adjusted by all variables in the regression model (Step 4). Path C is the total effect and Path C' is the direct effect. The two numbers in brackets represent the confidence interval for the bootstrapping method (based upon 1000 bootstrap samples) for the indirect effect. Of note, if zero is not included in the interval, as in the present study, then the indirect effect is different from zero, i.e. mediation has occurred (Shrout and Bolger, 2002)

Table 1:

Cronbach's alpha of the two versions of the AGED Inventory (N = 144)

Subscale/dimension	α , "average older woman" version	α , CR-specific rating version
Evaluative subscale	0.84	0.87
Goodness dimension	0.75	0.8
Positiveness dimension	0.77	0.8
Descriptive subscale	0.67	0.73
Vitality dimension	0.62	0.64
Maturity dimension	0.48	0.70
Total mean score	0.87	0.88

Table 2:

Descriptive variables of Care Network Members and Care Recipients (N=144)

	%	Range
CNM gender (Female)	89.6	--
CNM age		
< 50 years	22.9	27 – 48
50–65 years	18.8	50 – 65
66–74 years	31.9	66 – 74
75 years	26.4	75 – 92
African American race	47.9	--
CNM education		
< 12 years	30.6	0 – 11
12 years/High School diploma	39.6	--
> 12 years	29.9	13 – 21
Family relation to CR	42.4	--
	Mean (SD)	Range
CNM perception of CR physical health	1.39 (1.06)	0 – 4
Caregiver burden	1.2 (2.34)	0 – 11.85
Relationship closeness	27.06 (5.44)	9 – 35
AGED Inventory Total score – Typical older woman	4.73 (0.7)	3.21 – 6.71
AGED Inventory Total score– CR-specific rating	5.23 (0.79)	3.14 – 6.57
CR age	75.1 (6.5)	65 – 94
CR self-rated CES-D score	12.45 (9.89)	0–41

*Note.*CNM refers to care network member; CR refers to older woman care recipient

Table 3:

Multivariate hierarchical linear regression prediction attitudes toward older women (N=144).

Variable	Step 1			Step 2			Step 3			Step 4		
	β	B	SE	β	B	SE	β	B	SE	β	B	SE
<i>Demographic variables of CNM</i>												
CNM gender	-0.07	-.16	0.2	-0.04	-.09	0.19	-0.03	-.08	0.2	-0.02	-.04	0.2
CNM age <50	-0.11	-.18	0.17	-0.17	-.28	0.19	-0.13	-.21	0.2	-0.09	-.14	0.2
CNM age 50–65	-0.01	-.02	0.18	-0.05	-.08	0.18	-0.04	-.07	0.18	-0.01	-.01	0.18
CNM age 66–74	-0.02	-.03	0.16	-0.06	-.09	0.16	-0.05	-.08	0.16	-0.04	-.06	0.16
CNM race	0.18 *	.25 *	0.12	0.14	.19	0.12	0.11	.15	0.12	0.1	.14	0.12
CNM education <12 years	-0.07	-.1	0.16	-0.07	-.11	0.16	-0.06	-.09	0.16	-0.07	-.1	0.16
CNM education =12 years	-0.08	-.11	0.15	-0.1	-.14	0.14	-0.08	-.12	0.14	-0.08	-.11	0.14
<i>Characteristics of CR</i>												
CR age 70–74				-0.11	-.17	0.17	-0.12	-.19	0.16	-0.08	-.12	0.16
CR age 75–79				0.01	.02	0.18	0.05	.08	0.17	0.06	.09	0.17
CR age 80 and over				-0.22 *	-.36 *	0.18	-0.19	-.31	0.18	-0.17	-.29	0.18
CR depression score				-0.18 *	-.01 *	0.01	-0.15	-.01	0.01	-0.11	-.01	0.01
CR physical health (CNM-rated)				0.21 *	.14 *	0.06	0.18 *	.12	0.06	0.11	.08	0.06
<i>Relationship with CR</i>												
Type of relation to CR (family or friend)							0.03	.04	0.14	0.04	.05	0.14
Caregiver burden							-0.04	-.01	0.03	0	.001	0.03
Relationship closeness score							0.23 **	.03 **	0.01	0.12	.02	0.01
<i>Attitude toward Care Recipient</i>												
CR-specific attitude rating										0.24 *	.21 *	0.1
R ²	0.05				0.188			0.24			0.267	
Adjusted R ²	0.002				0.114			0.151			0.175	
in R ²	n/a				4.45 ***			2.88 *			4.73 *	
Effect size	0.05				0.23			0.32			0.36	

Notes. CNM refers to care network member; CR refers to older woman care recipient. Reference categories are: female gender, White race, education > 12 years, CNM age group 75 years (oldest age group), CR age group 65–69 years (youngest age group), CNM family relation to CR. β = standardized coefficient, B = unstandardized coefficient, SE = standard error.

***
p<0.001.

**
p<0.01.

*
p<0.05.