Elderly patients’ heart-related conditions: Disclosing health information differs by target

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Americans are living longer, and many are managing at least one chronic illness. Having people with whom to disclose health information is a salient component of managing a chronic health condition, such as heart disease. The purpose of this study is to explore differences in elderly patients’ health disclosures by target (i.e. disclosing to a partner vs. another person). Elderly patients (≥age 60) with a diagnosed heart-related condition (n = 273) completed a survey regarding sharing information about their health condition. Results indicated significant differences between the two groups in perceived support; breadth, depth, and frequency of disclosures; and disclosure of psychological/emotional symptoms, physical symptoms, and talk about heart-healthy behaviors. No significant differences were found between the two groups for relationship quality and efficacy. Patients who reported sharing information with a partner reported significantly more health information disclosures compared to patients who reported sharing information with another person.

**Keywords:** elderly; chronic health conditions; disclosure; health information management

Part of managing a chronic illness is managing information surrounding the condition such as sharing health information with others. Having close, supportive relationships facilitates disclosure (Greene, 2009), and close relationships are important for emotional and physical health (Hawkley & Cacioppo, 2010; Ye, Hawkley, Waite, & Cacioppo, 2012). Being married and having diverse social ties provides immunological and heart-health benefits (Jaremka, Derry, & Kiecolt-Glaser, 2014).

One benefit of quality, supportive relationships is having people with whom to share health information. The notion of “disclosure” itself has health benefits and has been linked to physical and mental well-being (Frattaroli, 2006). Older adults, however, have fewer peripheral relationships than do younger adults (Hawkley & Cacciopo, 2010). The purpose of this study was to explore whether health disclosures for older patients\textsuperscript{1} managing heart-related conditions differ by target, such as information shared with a spouse/partner\textsuperscript{2} compared with information shared with another person (e.g. child, sibling, or friend).

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Health disclosure decision-making in relationships

People manage personal or private information through a variety of strategies (Greene, Derlega, & Mathews, 2006; Petronio, 2002). One strategy that has received considerable attention is disclosure. Greene’s (2009) health disclosure decision-making model (DD-MM) was used as a framework in this study as it explains factors associated with health disclosure decisions in relationships (see also Checton & Greene, 2012). The DD-MM (Greene, 2009) posits that a decision to share health information with others is a process based on assessment of several factors. For example, individuals assess the information such as a diagnosis. They also assess a potential receiver in terms of relationship quality and anticipated reaction to the information. Because people disclose information to those with whom they are close, whom they can trust, and who will support them (Greene, 2009; Petronio, 2002; Vangelisti, Caughlin, & Timmerman, 2001), it is expected that there will be no significant differences in perceived quality by relationship type.

H1: There will be no significant difference in relationship quality for patients who reported sharing information with a partner compared to patients who reported sharing with another person.

People’s perceived expectations for receiving support (emotional, instrumental) may be somewhat different depending on the target. Although others (son, daughter, close friend) may provide support for elderly patients, partners are often the first to provide tangible assistance and support for ill partners (Revenson, Kayser, & Bodenmann, 2005). Partner support is especially important for people with heart-related illnesses in terms of managing depression (Bosworth et al., 2000; Shen, McCreary, & Myers, 2004), promoting health (Franks, Wendorf, Gonzalez, & Ketterer, 2004; Goldsmith, Lindholm, & Bute, 2006), preventing accelerated disease progression (Wang, Mittleman, & Orth-Gomer, 2005), and perceived ability to talk to a partner about one’s heart-related condition (Checton & Greene, 2012). People’s perceived expectations for receiving support, however, may be significantly different depending on the target.

H2: Perceived support will be significantly higher for patients who reported sharing information with a partner compared to patients who reported sharing with another person.

Disclosure efficacy is another component in the decision-making process and is defined as perceived ability to share a particular piece of information with a specific person (Greene, 2009). Efficacy has been linked with disclosing heart-related information with a partner (Checton & Greene, 2012), disclosure depth for people with a non-visible health condition (Greene et al., 2012), better health condition management for both patients and partners (Checton, Greene, Magsamen-Conrad, & Venetis, 2012), and topic avoidance for patients with cancer (Venetis, Greene, Checton, & Magsamen-Conrad, in press), and heart disease (Checton & Greene, 2014). In general, when people perceive the ability to share a piece of information with a particular person, they are more likely to do so (Affi & Steuber, 2009; Greene et al., 2012).

H3: There will be no significant differences in communication efficacy for patients who reported sharing information with a partner compared to patients who reported sharing with another person.
Differences in disclosure patterns

People in established and/or long-term relationships engage in topic avoidance (Checton & Greene, 2014; see also Dailey & Palomares, 2004; Goldsmith, Miller, & Caughlin, 2007) and have legitimate reasons for not disclosing certain health topics (Goldsmith et al., 2007; Greene, Derlega, Yep, & Petronio, 2003). Yet, married couples express intimacy by sharing thoughts, feelings, attitudes, and dreams (Derlega, Metts, Petronio, & Margulies, 1993). Thus, it is expected that patients will report significantly more disclosure breadth, depth, and frequency with a partner vs. another person.

H4–6: Disclosure breadth, depth, and frequency will be significantly higher for patients who reported sharing information with a partner compared to patients who reported sharing with another person.

Being in a close, supportive relationship is one reason why married people live longer and enjoy better health than do unmarried people (Jaremka et al., 2014). More specifically, partners play a critical role in helping patients recover from acute cardiac events (McLean & Timmons, 2007). In terms of sharing specific physical symptoms (shortness of breath, swelling, bleeding) and psychological/emotional symptoms (depression, fears, anxiety), it is expected that patients will report significantly more disclosure with a partner vs. another person.

H7–H8: Disclosure of physical and psychological/emotional health information will be significantly higher for patients who reported sharing information with a partner compared to patients who reported sharing with another person.

Partners are often the first to provide tangible assistance and support for ill partners (Revenson et al., 2005). Patients who have experienced a cardiac event, such as a heart attack, are typically encouraged to make certain lifestyle changes (adhere to a heart-healthy diet, exercise, manage stress) to target risk factors for heart disease (scai.org, Society for Cardiovascular Angiography and Interventions [SCAI], n.d.). Although a partner’s attempts at support may facilitate (or interfere) with patient behavior change (Goldsmith et al., 2006), it is expected that patients will report significantly more frequent talk with a partner about making heart-healthy changes than with another person.

H9: Talk about heart-healthy behaviors will be significantly more frequent for patients who reported sharing information with a partner compared to patients who reported sharing with another person.

Methods

This study is part of a larger study of disclosure among patients with a heart-related condition. Participants were recruited from a private medical office in a suburban area of the northeastern United States. The 20-physician practice specializes in cardiovascular diseases. Participants were 18 years of age or older and had a previously diagnosed heart-related condition.

Because this study focuses on older people sharing information about a heart-related condition with a partner or other person, the subsample reported here includes 273 patients >age 60. Of these participants, 148 (54%) were male and 125 (46%) were female. Patients completed surveys regarding either their partner (n = 191) or another person such as a daughter, son, or friend (n = 82). Participants ranged in age from 61
to 97 years (M = 74.39, SD = 8.03). They were predominantly Caucasian (90%), followed by African-American (4.2%), and other (<2%); 11 people did not report race/ethnicity. Participants reported being in a relationship with the other person from 2 to 85 years (M = 43.92, SD = 14.89). Time since diagnosis ranged from <1 to 71 years (M = 9.97, SD = 10.86).

On arrival at the medical office, researchers approached patients and asked whether they would agree to complete an anonymous questionnaire about sharing information about their heart-related condition. Two versions of the survey were developed: one for patients with a partner/spouse and another targeting another person. Patients who agreed to participate were asked to complete the survey in relation to their partner or another; patients who did not have a partner were asked to complete the survey about sharing with one specific other person (e.g. daughter, son, or friend). A University IRB approved all procedures.

Measures
We conducted exploratory factor analysis on all variables using principle components analysis and varimax rotation to evaluate the dimensionality of the measures. Criteria for factor retention included eigenvalues >1, scree plot examination, and parallel analysis (Hayton, Allen, & Scarpella, 2004). Composite scores were created by averaging responses to the individual items.

Relationship quality
The quality of individuals’ relationship with the target person was measured by eight Likert items adapted from Vangelisti et al. (2001) (see also Greene, 2009) with responses ranging from 1 (strongly disagree) to 5 (strongly agree). Results indicated a single factor (eigenvalue = 4.16, 52% var., eight items loading above .60). Higher scores indicated greater relationship quality (α = .85; M = 4.35, SD = .54).

Perceived support
The extent to which patients perceive that their partner/other person provides support was adapted from Greene (2009) using four Likert items with responses ranging from 1 (strongly disagree) to 5 (strongly agree). Results indicated a single factor (eigenvalue = 2.44, 61% var., four items loading above .64). Higher scores indicated greater support (α = .77; M = 4.21, SD = .75).

Communication efficacy
Items measuring individuals’ ability to share information about a health condition with their partner/other person were adapted from prior disclosure literature (Affifi & Steuber, 2009; Greene, 2009) using four Likert items with responses ranging from 1 (strongly disagree) to 5 (strongly agree). Results indicated a single factor (eigenvalue = 2.70, 68% var., four items loading above .79). Higher scores indicated greater communication efficacy (α = .82; M = 4.48, SD = .60).
Disclosure breadth
The range of topics individuals disclose about their health condition to their partner/other person was measured by six Likert items developed by the authors, with responses ranging from 1 (strongly disagree) to 5 (strongly agree). Results indicated a single factor (eigenvalue = 3.30, 55% var., six items loading above .60). Higher scores indicated greater breadth (α = .83; M = 3.56, SD = .87).

Disclosure depth
Level of disclosure to a partner/other person about a health condition was measured by four Likert items developed by the authors with responses ranging from 1 (strongly disagree) to 5 (strongly agree). Results indicated a single factor (eigenvalue = 2.24, 58% var., four items loading above .69). Higher scores indicated greater depth (α = .73; M = 3.76, SD = .85).

Disclosure frequency
How often patients disclose to a partner/other person about the health condition was measured by four Likert items developed by the authors, with responses ranging from 1 (strongly disagree) to 5 (strongly agree). Results indicated a single factor (eigenvalue = 2.70, 68% var., four items loading above .68). Higher scores indicated more frequency (α = .83; M = 3.02, SD = .89).

Disclosure of physical and psychological/emotional health information
The extent to which patients with heart-related conditions share specific physical and psychological/emotional symptoms with a partner/other person was measured with 15 items created by the authors based on standard health assessment forms used in the sampled cardiology practice, with responses ranging from 1 (never) to 5 (always). Results indicated two factors underlie the dimension. Factor 1 (eigenvalue = 6.96, 46% var., three items loading above .73) was named psychological/emotional health information. Reliability was good (α = .80; M = 2.43, SD = .80). Factor two (eigenvalue = 4.57, 57% var., eight items loading ≥.63; four items were eliminated due to low loadings) was named physical health information. Reliability was good (α = .89; M = 2.32, SD = .91).

Disclosure of heart-healthy behaviors
The authors created three items to measure the frequency of talk about heart-healthy behaviors with responses ranging from 1 (Never) to 5 (Always). Results indicated a single factor (eigenvalue = 2.30, 77% var., three items loading above .85). Higher scores indicated more frequent talk (α = .82; M = 3.23, SD = .89).

Results
We conducted zero-order correlations for all study variables. Table 1 presents bivariate correlations. Next, we conducted independent-samples t-tests to test our hypotheses (see Table 2).
Table 1. Bivariate zero-order correlation matrix for study variables.

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<td>2. Support</td>
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<td>3. Efficacy</td>
<td>.47**/.53**</td>
<td>.64**/.60**</td>
<td>1.00</td>
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<td>4. Breadth</td>
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<td>.54**/.51**</td>
<td>.54**/.52**</td>
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<td>5. Depth</td>
<td>.52**/.44**</td>
<td>.54**/.55**</td>
<td>.54**/.62**</td>
<td>.73**/.78**</td>
<td>1.00</td>
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<tr>
<td>6. Freq</td>
<td>.24**/.06</td>
<td>.35**/.22</td>
<td>.25**/.20</td>
<td>.54**/.45**</td>
<td>.47**/.51**</td>
<td>1.00</td>
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<td>7. Physical</td>
<td>−.04−.15</td>
<td>−.05−.04</td>
<td>.04/.12</td>
<td>.10−.05</td>
<td>.00/.05</td>
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<td>8. PsychEmot</td>
<td>.04−.10</td>
<td>.03−.04</td>
<td>.08**/.09</td>
<td>.21**/.15</td>
<td>.21**/.13</td>
<td>.27**/.42**</td>
<td>.68**/.41**</td>
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<td>9. Hrt Health</td>
<td>.19−.08</td>
<td>26**/.32**</td>
<td>.24**/.25**</td>
<td>.26**/.29**</td>
<td>.30**/.28**</td>
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<td>.34**/.27**</td>
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Notes: ** Patient to partner (n = 191); * Patient to other (n = 82).

RelQual – is Relationship quality; Support – is perceived support; Efficacy is communication efficacy; PsychEmot is disclosure of psychological/emotional health information; Physical is disclosure of physical health information; Breadth is disclosure breadth; Depth is disclosure depth; Freq is disclosure frequency; Hrt Health talk about heart-healthy behaviors.

**p ≤ .01, two-tailed
*p ≤ .05, two-tailed.
Differences in relational components

Hypothesis 1 was not supported, $t(263) = -0.17, p > .86$, such that patients who reported sharing information with a partner did not report significantly higher relationship quality ($n = 187; M = 4.35, SD = .54$) compared to patients who reported sharing information with another person ($n = 78; M = 4.11, SD = .82$). For Hypothesis 2, Levene’s test indicated unequal variances, thus we report the adjusted test (supported), $t(131.25) = 1.88, p < .03$, such that patients who reported sharing information with a partner reported significantly higher perceived support ($n = 183; M = 4.32, SD = .67$) compared to patients who reported sharing information with another person ($n = 82; M = 4.11, SD = .88$).

Differences in communication efficacy

Hypothesis 3 was supported, $t(257) = .11, p > .90$, such that patients who reported sharing information with their partner reported no greater communication efficacy ($n = 180; M = 4.48, SD = .60$) compared to patients who reported sharing information with another person ($n = 79; M = 4.47, SD = .61$).

Disclosure differences

Hypothesis 4 was supported, $t(265) = 1.69, p < .05$, such that patients who reported sharing information with a partner reported significantly more disclosure breadth ($n = 185; M = 3.62, SD = .87$) than did patients who reported sharing information with another person ($n = 82; M = 3.42, SD = .84$). Hypothesis 5 was supported, $t(266) = 1.78, p < .04$, such that patients who reported sharing information with a partner reported more disclosure depth ($n = 186; M = 3.80, SD = .83$) than did patients who reported sharing information with another person ($n = 82; M = 3.60, SD = .87$). Hypothesis 6 was supported, $t(257) = 1.89, p < .04$, such that patients who reported sharing information with a partner reported more disclosure frequency ($n = 180; M = 2.86, SD = .88$) than did patients who reported sharing information with another person ($n = 79; M = 2.86, SD = .88$).

Hypothesis 7 was supported, $t(259) = 3.35, p < .01$, such that patients who reported sharing information with a partner were significantly more likely to report sharing information with a partner ($n = 187; M = 4.35, SD = .54$) compared to patients who reported sharing information with another person ($n = 78; M = 4.11, SD = .82$).

For Hypothesis 8, Levene’s test indicated unequal variances; thus, we report the adjusted test (supported), $t(188.64) = 3.26, p < .01$, such that patients who reported sharing information with a partner were significantly more likely to report sharing information with a partner ($n = 187; M = 4.35, SD = .54$) compared to patients who reported sharing information with another person ($n = 78; M = 4.11, SD = .82$).
physical health information \((n = 157; \ M = 2.44, \ SD = .98)\) than were patients who reported sharing with another person \((n = 73; \ M = 2.07, \ SD = .71)\). Similarly, for Hypothesis 8, Levene’s test indicated unequal variances; thus, we report the adjusted test (supported), \(t(157.04) = 4.17, \ p < .001\), such that patients who reported sharing information with a partner were significantly more likely to share psychological/emotional health information \((n = 166; \ M = 2.55, \ SD = .83)\) than were patients who reported sharing with another person \((n = 66; \ M = 2.13, \ SD = .63)\).

Hypothesis 9 was supported, \(t(259) = 3.35, \ p < .01\), such that patients who reported sharing information with a partner were significantly more likely to report more frequent talk about heart-healthy behaviors \((n = 180; \ M = 3.33, \ SD = .82)\) than were patients who reported sharing with another person \((n = 81; \ M = 2.93, \ SD = .88)\).

**Discussion**

Elderly patients reported high-quality relationships with the people with whom they share health information whether that person was a partner or other. This finding supports research suggesting that although we may have fewer social relationships as we age, emotional closeness in those relationships increases (Hawkley & Cacciopo, 2010; see also Holmen & Furukawa, 2002). For elderly people, having good relationships with a few people may be the secret to happiness and longevity. Alternately, we found significant differences in perceived support for patients who reported sharing information with a partner compared to those who reported sharing information with another person. One explanation for this finding is that although elderly people may have a close, quality relationship with a daughter/son, or close friend, expectations regarding support are different for partners compared to others. Partners are often the first to provide tangible assistance and support for ill partners (Revenson et al., 2005), and partner support is especially important for managing heart-related illnesses (Bosworth et al., 2000; Franks et al., 2004; Shen et al., 2004; Wang et al., 2005). Results for support are especially salient since people who feel supported have better immune function than people who feel less supported (see Jaremka et al., 2014).

As hypothesized, there were no significant differences in perceived ability to share information with a partner vs. another person. While prior research indicates that efficacy is a strong predictor of disclosure (Afifi & Steuber, 2009; Checton & Greene, 2012; Checton et al., 2012), other research suggests that people in long-term, satisfactory relationships avoid sharing certain topics (Checton & Greene, 2014; Dailey & Palomares, 2004; Finkenauer & Hazam, 2000). Thus, while our findings indicate that patients are as confident in their ability to share information with a partner as they are sharing with another person, it is likely that they avoid sharing certain topics altogether.

Patients were significantly more likely to (a) share a range of topics (breadth); (b) disclose more intimately (depth); (c) talk about their health condition more frequently; (d) disclose both psychological/emotional and physical health information; and (e) talk about heart-healthy behaviors with a partner vs. another person. Thus, while topic avoidance may be common in relationships, patients reported more health information sharing with a partner vs. a son/daughter or friend.

**Limitations and future research**

Data were collected in a suburban community from one cardiology office, and therefore, the results cannot be generalized. Also, the predominantly Caucasian sample limits
generalization to other ethnic groups. Another limitation is the use of individual data to examine dyadic relationship processes and make relationship conclusions. Future research should explore ways to recruit couples where one partner is managing a chronic health condition.

While life expectancy for Americans is increasing (Molla, 2013), many people are managing at least one chronic health condition and are likely to have fewer social ties as they age. Patients who lack a person in whom to confide may not be sharing important health information. Exploring elderly patients’ social ties and support systems is imperative for a better understanding of their likelihood of sharing important health information. Although we know that there are health benefits of having close relationships, continued research is necessary to explore the role of information sharing in relationships on health outcomes.

Notes
1. We used the World Health Organization’s (WHO) definition of older adult to mean people ≥ age 60 (http://www.who.int/healthinfo/survey/ageingdefnolder/en/).
2. Hereafter, the inclusive term “partner” will refer to both spouses and partners in committed romantic relationships.
3. Patients completed surveys in relation to another person including a daughter (n = 36), son (n = 20), friend (n = 10), and other (n = 14). One-way within-subjects ANOVAs were conducted on all study variables to examine differences by relationship category. Results for relationship quality indicated a significant main effect, $F(3, 72) = 4.09, p < .01, \eta^2 = 0.78$. Pairwise comparisons were conducted to assess significant mean differences among the pairs. A significant difference was found in relationship quality for patients and their sons and daughters compared to friends. That is, patients reported better relationship quality with both daughters ($M = 4.45, SD = .54$) and sons ($M = 4.57, SD = .45$) compared to friends ($M = 4.04, SD = .60$). Results for all other study variables were not significant.
4. We also ran all hypotheses for “older Americans” ≥ age 65 (Agingstats.gov) to compare differences in the WHO’s definition of older adults as ≥ age 60. Findings indicated that greater than half of the hypotheses were the same. For example, independent-samples t-test results for the older group were similar for Hypotheses 1, 3, 7, 8, and 9. However, t-test results for the older group differed for Hypotheses 2, 4, 5, and 6. For Hypothesis 2, Levene’s test indicated unequal variances; thus, we report the adjusted test (not supported), $t(127.56) = 1.25, p > .63$, such that patients who reported sharing information with a partner did not report significantly higher perceived support ($n = 153; M = 4.27, SD = .67$) compared to patients who reported sharing information with another person ($n = 77; M = 4.16, SD = .83$). Hypothesis 4 was not supported, $t(230) = 1.10, p > .27$, such that patients who reported sharing information with a partner did not report significantly more disclosure breadth ($n = 185; M = 3.62, SD = .87$) than did patients who reported sharing information with another person ($n = 82; M = 3.42, SD = .84$). Hypothesis 5 was not supported, $t(232) = .91, p > .36$, such that patients who reported sharing information with a partner did not report more disclosure depth ($n = 157; M = 3.75, SD = .82$) than did patients who reported sharing information with another person ($n = 77; M = 3.64, SD = .87$). Finally, Hypothesis 6 was not supported, $t(223) = 1.16, p > .24$, such that patients who reported sharing information with a partner did not report more disclosure frequency ($n = 151; M = 3.06, SD = .89$) than did patients who reported sharing information with another person ($n = 74; M = 2.91, SD = .89$).

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