THESIS

HEALTH DISCREPANCIES AND MARITAL SATISFACTION IN OLDER COUPLES

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ABSTRACT

HEALTH DISCREPANCIES AND MARITAL SATISFACTION IN OLDER COUPLES

Many studies have explored marital satisfaction and the factors that contribute to it such as communication, shared values, sexual satisfaction, and marital conflict. Furthermore, marital satisfaction has been robustly linked to health, and well-being. However, health discrepancy between romantic partners and how such differences in health may be linked to marital satisfaction has received far less attention. The current study extends previous research by examining the degree to which health discrepancy between partners is associated with marital satisfaction, using multidimensional assessments of both health (self-rated health, and chronic health conditions) and marital satisfaction (daily and global). Participants from the Relocation and Transitional Experiences (RELATE) study (N=82, comprising 41 heterosexual couples) completed questionnaire packets regarding demographics, health status, and global marital satisfaction. Additionally, participants completed experience sampling surveys, called ecological momentary assessment surveys (EMA), each day for 7 consecutive days via mobile smart phones. The results demonstrated that people with better self-rated health compared to their partner tended to report lower average daily marital satisfaction. Health discrepancy was not predictive of global marital satisfaction. These findings point to the importance of refining the distinctions between daily and global marital satisfaction, as well as further differentiating health conditions based on severity, to elucidate how different dimensions of health uniquely contribute to different dimensions of marital satisfaction.

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DEDICATION

To my dad, who is the smartest person I know. Thank you for editing every piece of writing, from my fourth-grade book reports to my master's thesis. I credit you for every academic achievement in my life.

And, to Zach, the best part of the past two years. Thank you for carrying me through, wiping every tear, and celebrating every success. Your steadfastness, and love sustains me. I have none of this without you, and without you, none of this matters.

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HEALTH DISCREPANCIES AND MARITAL SATISFACTION IN OLDER COUPLES

A noteworthy paradox is observed in later adulthood, wherein declining physical health is prevalent, but socioemotional functioning is stable or even improved (e.g., Charles & Carstensen, 2010). In fact, older romantic partners are more satisfied with their relationships and view their relationship and conflict interactions more positively than do younger and middle-aged romantic couples (Story et al., 2007; Luong et al., 2011). Yet, poorer health can contribute to lower marital satisfaction, perhaps especially so when romantic partners are more dissimilar in their health status from one another (Torvik et al., 2015; Yorgason et al., 2008). Health discrepancies between romantic partners may serve as a stressor or signal growing dissimilarities between older romantic partners and in turn, may be an important predictor of marital satisfaction.

Marital satisfaction is a multidimensional concept that describes stability, happiness, and overall assessments of relationship satisfaction (Samadaee-Gelehkolaee, et al., 2016; Tavakol et al., 2017; Zaheri et al., 2016). It is shaped by relationship dynamics such as sexual satisfaction, communication, shared values, and marital conflict (Fatehizadeh & Ahmadi, 2006; Javanmard & Garegozlo, 2013; Tavakol et al., 2017). Satisfaction in one's relationship or marriage is associated with several benefits, including greater overall subjective well-being and life satisfaction (Demirtas & Tezer, 2012; Dush & Amato, 2006), greater positive emotions, and fewer depressive symptoms (Demirtas & Tezer, 2012; La Greca & Harrison, 2005).

Because marital satisfaction is a multidimensional concept, it can be assessed in several different ways. Two such ways are: as a stable, global evaluation of how an individual feels about their relationship *overall*, as well as a daily assessment of one's *day-to-day* satisfaction (Driver & Gottman, 2004; Boerner et al., 2014). The experiences and interactions a couple has in their everyday lives may contribute to each partner's general assessment of their relationship satisfaction, but research points to the importance of considering how those daily moments, even if mundane or fleeting, impact an individual's day-to-day marital satisfaction, as well (Driver & Gottman, 2004). Thus, it is important to consider both constructs,

and the potential differences between them when studying marital satisfaction, as they may reveal different findings. With between 40-50% of marriages ending in divorce (Abdel-Sater, 2022; Fanchang et al., 2021), and given the often significant financial, psychological, and physical consequences of marital conflict and dissolution (Sbarra & Whisman, 2022; Whisman et al., 2022), there is interest among researchers and therapists in better understanding the specific factors associated with relationship satisfaction and dissatisfaction. In particular, in later adulthood, physical health declines are prevalent, but global marital satisfaction is often quite high (e.g., Rook & Charles, 2017). Thus, more work is needed to understand how physical health status may influence marital satisfaction at both the global, and daily level.

Health and Marital Satisfaction

An individual's health comprises multiple biopsychosocial factors such as physical and emotional functioning, health behaviors, and health conditions present (Bergner & Rothman, 1987; Braveman & Gottlieb, 2014; Fayed et al., 2011). There are also large qualitative differences between different health conditions. For example, some conditions are chronic, develop slowly, and worsen over time, while acute illnesses have a more sudden onset, and shorter duration (Grichnik & Ferrante, 1991). In this way, some illnesses and conditions interfere more with daily functioning and have side effects or treatments that are more impactful on daily life and well-being than others (Corbin & Strauss, 1985; Ohman et al., 2003).

A robust literature demonstrates associations between marital satisfaction, and health and well-being (Hughes & Waite, 2009; Karraker & Latham, 2015; Sbarra & Whisman, 2022, Whisman et al., 2018; Yorgason et al., 2008). Marriage is associated with better health outcomes, with married persons experiencing lower mortality risk than unmarried persons (Karraker & Latham, 2015; Ma & Gu, 2022). A body of research has also explored how one's health may shape their marital satisfaction. For example, those in better physical and mental health report greater marital satisfaction (Tadros et al., 2021; Tavakol et al., 2017). Some research also suggests that poor health worsens marital quality (Kiecolt-Glaser & Newton, 2001; Yorgason et al., 2008), and that lower levels of marital satisfaction are a significant predictor of marital dissolution and/or divorce (Fan & Lui, 2004; Tavakol et al., 2017; Hirschberger et al.,

2009). Kitson et al. (1985) conducted a review of the literature on divorce and found mental, and physical health issues to be among the reasons as to why couples decide to end their marriages.

Karraker and Latham (2015) were interested in serious-illness onset as a potential predictor of marital dissolution. They predicted that physical illness would increase risk of divorce by acting as a stressor on the relationship, thus lowering marital quality and satisfaction. They studied a sample of over 2,000 marriages, focusing on the onset of four illnesses in one of the spouses: cancer, heart problems, lung disease, and stroke. Results showed that the onset of a serious illness was linked to risk of divorce. Additionally, Daniel et al. (2009) conducted a meta-analysis to examine the consequences of strokes in working-age adults and found that following a stroke marital conflict was amplified, and divorce risk was increased. Much of the research in this area focused on the whether the onset and/or presence of illness affected only one individual in a romantic dyad. Perhaps, then, beyond health issues themselves leading to marital problems, it is worth considering if discrepancy in health status between partners may be a stronger predictor of marital satisfaction.

Discrepancies in Health Status Between Partners as Predictors of Marital Satisfaction

The spousal caregiving literature provides some insights into how relatively large discrepancies in health status between partners may contribute to poorer marital satisfaction. For example, illness may lead to spousal role changes by increasing caregiving duties and demands for the healthier spouse, thus challenging the healthier partner, and straining the relationship in multiple ways (Monin et al., 2019; Solomi & Casiday, 2017; Wolff & Casper, 2006). Although healthier partners may not always take on formal caregiving role or duties, they can provide various types of informal social support that can be taxing and cause relationship strain. Caregiving for a sick spouse, even if informally, has been found to be associated with psychological and physical burden for the healthier spouse (Oldenkamp et al., 2016; Pinquart & Sorensen, 2011; Wolff & Casper, 2006; Yorgason et al., 2020).

Considering the strains that spousal caregiving dynamics place on both individuals and the marriage as whole, it is worth considering how health discrepancies in couples, wherein one spouse is healthier than the other, might differentially predict each spouse's perceived marital satisfaction. Prior

research suggests that the impact of declines in health have greater unfavorable effects on marital quality for the spouse of the afflicted individual, such that the partner with relatively better health tends to show greater declines in their marital satisfaction, whereas the relatively less healthy partner often shows attenuated decreases in satisfaction (Booth & Johnson, 1994; Yorgason et al., 2008). For example, Yorgason et al. (2008) were interested in how the onset of illness and disability might negatively affect the quality of marriage. The researchers examined longitudinal data from a survey on married persons ages 24 to 76 years. Results indicated that whereas individual's self-reported decreases in health had a small influence on reported marital quality, it was in fact the healthier partners who reported steeper declines in marital quality when reporting on their spouses' declines in health (Yorgason et al., 2008).

Monin et al. (2017) were also interested in determining whether an individual's health was associated with their own as well as their partner's satisfaction in the relationship. The study looked at 233 dyads ranging in age from 64 to 99 years. When depressive symptoms were high and self-reported health was low, relationship satisfaction was diminished for both caregivers and care recipients.

Furthermore, among caregivers, greater disability was related to lower relationship satisfaction. These results suggest that in addition to an individual's health, it is also important to consider the health status of both partners in relation to one another as predictors of marital satisfaction.

Torvik et al. (2015) explored the health-mismatch hypothesis, which posits that romantic dyads in which one partner is in significantly better health than the other are more likely to divorce than are couples with similar health status. Torvik et al. studied the degree to which health indicators as well as health behaviors (i.e., smoking, alcohol use, exercise, etc.) were associated with divorce. Additionally, they were interested in whether spousal similarities in these factors might be linked to a lowered risk for marital dissolution. Results demonstrated that couples with similar health, and health behaviors were less likely to divorce than couples who were more dissimilar in health. Such results further support the health-mismatch hypothesis and suggest that health differences between partners may act as a stressor on the couple and the marriage.

Wilson and Waddoups (2003) also tested the health-mismatch hypothesis. Researchers were interested in investigating the effect of health status and health discrepancy on risk of divorce in late-middle aged couples. Data from over 4,000 couples ranging in age from 51 to 61 years of age supported the health-mismatch hypothesis, but only for couples where both spouses rated their marriage to be very satisfying prior to the health diagnosis. Among those couples who rated their marriage before the health diagnosis to be unsatisfying, subsequent health mismatch had no effect on marital satisfaction. Perhaps, then, in addition to discrepant health, it is also the relative comparison of having had a great marriage and then experiencing steep declines due to health issues that puts undue strains on a marriage, impacting marital satisfaction.

Research has also demonstrated that in health-discrepant couples, the gender of each spouse is associated with marital satisfaction. For example, Korporaal et al. (2013) were interested in the influence of health problems on marital satisfaction among 78 community-residing, heterosexual older couples. Health status was assessed using measures of functional disability, the number of chronic diseases, as well as self-reports of health. Results demonstrated that for wives, if their health status was good, then health problems in their husband were negatively associated with their own marital satisfaction. For husbands, neither their own health nor their wife's health were related to marital satisfaction.

Langer at al. (2003) found a similar effect of gender. Couples were studied pre- and post- stem cell transplant, and couple's marital satisfaction scores were compared before and after the medical procedure. Prior to the transplant, patients and spousal caregivers reported similar marital satisfaction. However, a mismatch in satisfaction increased in the 6-months and year following the transplant, wherein caregivers reported lower marital satisfaction relative to their partner. This change in satisfaction was correlated with caregiver gender, wherein female caregivers were at greatest risk for decreases in marital satisfaction than male caregivers. Furthermore, Choi (2021) found that in a sample of older Korean heterosexual married couples, that when men became caregivers for their wives, they experienced a small increase in marital satisfaction. Conversely, when women became caregivers, their marital satisfaction

decreased. Receiving spousal care was associated with a decline in marital satisfaction for men, and an increase in satisfaction for women (Choi, 2021).

Theoretical Perspectives

Social Support and Romantic Relationships

Social support theory offers a framework with which to consider how health discrepancies between partners may impact satisfaction in the relationship for one or both partners. Social support comprises a variety of the features of a person's social world that contribute to their health, and well-being. Social support includes any support received in the context of interpersonal relationships (Cooke et al., 1988). More explicitly, social support includes emotional support as well as instrumental support in the form of time and/or labor, and support that is more tangible such as financial support (Cooke et al., 1988; 1998; Sherbourne & Stewart, 199).

There is agreement in the literature that social support processes are strongly associated with mental and physical health—perhaps bolstering one's resistance to health problems by shielding them in some capacity, from the impact of life's stressors (Lakey & Cohen, 2000; Frank et al., 1992, Gottlieb, 1985). Access to social support is dependent in large part on an individual's social ties to other individuals, groups, or larger communities (Cooke et al., 1988; Saltzman et al., 2020). One major source of social support comes from romantic partners. The presence of a consistent, supportive partner allows increased access to a level of social support not easily attained elsewhere (Soulsby & Bennett, 2015). In this way, such support processes may underlie the link between health discrepancy and the ways that it might contribute to marital satisfaction.

Research shows that the social support processes that accompany health challenges often shift established roles and dynamics within romantic relationships (Monin et al., 2019; Solomi & Casiday, 2017; Wolff & Casper, 2006). Health discrepancies between romantic partners might therefore alter relationship dynamics, and social support processes and behaviors, and potentially contribute to feelings of strain, guilt, and burden for one or both partners. Drawing from the caregiving literature in which partners often have extreme differences in their health, a literature review on social support and caregiver

burden showed consistent support for the strains felt by caregivers providing social support for the sick and/or elderly (Vrabec, 1997). Literature has also demonstrated that when greater social support was available to caregivers through support persons and networks, caregiver burden was significantly reduced (Dwyer et al., 1994; Vrabec, 1997). Additionally, Dwyer et al. (1994) found an association between the ability of the care recipient to reciprocate support in the form of help with household tasks, and reduced caregiver burden. This finding suggests that in the context of romantic partnerships, if the less healthy partner is unable to reciprocate social support, the burden of providing care may be felt even more intensely by the healthier partner. Healthier partners may be less satisfied in their marriages than less healthy partners, especially when health discrepancies are larger.

Finally, the research on social support in the context of romantic relationships aligns with the relationship enhancement model, which suggests that relationship satisfaction is directly affected by the trust that develops when people perceive that their partners have authentic concern for their well-being, as well as believe that if they needed care or support that their partners will provide it (Cutrona et al., 2005). In this way, support processes and being the recipient of support in intimate relationships are critical components of relationship success. These theoretical approaches imply that partners *receiving* support from their spouse might report higher satisfaction in the relationship than the spouse *providing* the support and care, who may experience the burdens and strains. Relatively few studies have directly examined these associations using multidimensional assessments of health and martial satisfaction.

The Current Study

The current study examines the extent to which health discrepancies between partners is associated with martial satisfaction. The current study contributes to the literature in that two dimensions of health are considered: individual health and health relative to one's partner. Additionally, marital satisfaction is measured at both the global and daily level.

Question 1: To what extent do health discrepancies between romantic partners predict marital satisfaction?

Hypothesis 1: Adjusting for the covariates of relationship length, age, individual health status, and gender (male vs. female), I hypothesize that the partner with increasingly better health compared to their partner will report lower marital satisfaction, on average (Hypothesis 1A), as well as lower average daily marital satisfaction (Hypothesis 1B).

Question 2: Do those spouses with poorer health in relation to their partner report greater marital satisfaction compared to their partner?

Hypothesis 2: I hypothesize that those with poorer health in relation to their partner will rate their global marital satisfaction more favorably, compared to their own partner. (Hypothesis 2A), as well as their average daily marital satisfaction (Hypothesis 2B).

METHOD

Participants

The current study is part of a larger project called the Relocation and Transitional Experiences (RELATE) study. The RELATE study tracked participants over 3.5 months to examine how a stressful event such as transitioning into a senior housing facility (e.g., independent, or assisted living facility, retirement community) may impact physical and mental health. Older adults (60+ years old) who were planning to move into a senior housing facility during the study period were eligible to participate as an individual or as part of a dyad by nominating their romantic partner or a close other (e.g., adult child, friend) to participate in the study with them.

To recruit participants, the RELATE study employed convenience sampling, collaborating with Columbine Health Systems (CHS) and other senior housing facilities in Colorado. Flyers, newspaper and magazine ads, and email listservs were used in the community to recruit participants from senior housing facilities. Those with move-in dates, or waitlisted to move into a senior housing facility, as well as people touring senior housing facilities at one of the study partner facilities, were given information about the RELATE study. Individuals could contact the RELATE research team for more information. Interested participants completed an eligibility screener that included an abridged version of the Mini Mental Status Exam (MMSE) to assess for and rule out those with cognitive impairment.

The current study focuses on the romantic partners in the RELATE study. Of the 157 participants in the RELATE study, there are 82 heterosexual romantic partners (41 men and 41 women) comprising 41 couples, ranging in age from 60 to 87 years old. These participants include 80 who are married and living together, and 2 living with a partner in a married like setting. The racial and ethnic breakdown of participants in the study is as follows: 90.2% White (European background), 2.4% Native American, 1.2% Mexican (American), 1.2% Japanese (American), and 4.9% other race or ethnicity.

Procedure

The RELATE study was a prospective longitudinal measurement burst design. Participants in the RELATE study were tracked over a roughly 3.5-month period that consisted of four different week-long assessment bursts. Assessment bursts took place at 2-6-weeks prior to relocation, as well as 2 weeks, 1.5 months, and 3-months after relocation into senior housing. During each assessment burst, participants completed two study sessions (one at the beginning and one at the end of the week) wherein they filled out different packets of questionnaires regarding demographics, health, personality traits, and other measures, as well as completed processing speed and memory tasks, and hand grip strength assessment as an index of frailty. During each assessment burst, participants also completed 6 experience sampling surveys, called ecological momentary assessment surveys (EMA) each day for 7 consecutive days. The experience sampling surveys were administered via mobile smart phones at semi-random intervals throughout each study day. The current study focuses on participant global questionnaire and EMA questionnaire data. Participants' health status, marital satisfaction, and demographic were collected during the burst that participants entered the study at. Participant compensation in the RELATE study was prorated based on number of procedures and study bursts completed. The total compensation a participant could earn was \$300.

Measures

Demographics

The demographics questionnaire included 13-items. The current study collected information on participant gender, age, relationship duration, and marital status, among other demographics. Relationship duration, and gender will serve as covariates in the current study.

Kansas Marital Satisfaction Scale (KMSS)

The KMSS (Schumm et al., 1986) is a 3-item measure of global marital satisfaction. A sample question includes, "how satisfied are you with your marriage or relationship?" Response options range from 1 (*extremely dissatisfied*) to 7 (*extremely satisfied*). Cronbach's $\alpha = .87$. Participant responses were averaged across bursts to determine their score.

Average Daily Marital Satisfaction

Daily relationship satisfaction was measured with a 1-item measure. Participants were asked this question at the end of each day for 7 consecutive days through EMA surveys during each assessment burst. Participants were asked the question: "how satisfied are you with your relationship with your study partner today?" Response options ranged from (1) *extremely dissatisfied* to (7) *extremely satisfied*. Participant responses were averaged across EMA surveys and bursts to determine a single overall score for daily marital satisfaction.

Chronic Health Conditions Checklist

The chronic health conditions checklist (Marmot & Fuhrer, 2004) comprises a list of 33 health conditions (see Appendix). Respondents indicate which, if any, conditions they have or have been treated for in the past year. Example health conditions include osteoporosis, asthma, and high blood pressure/hypertension. The questionnaire also provides respondents with options to write-in additional health conditions not listed. The total number of health conditions is calculated as the sum of all health conditions, with possible scores ranging from 0 (no health conditions) to 36. Participant summed scores were then averaged across bursts to determine their overall chronic health conditions score.

The Moss 36 Short Form Health Survey (SF-36)

A single self-rated item from the SF-36 (McHorney et al., 1993) asks participants to rate their general health on a 5-point Likert scale ranging from 1 (*excellent*) to 5 (*poor*). Values are reverse coded such that higher scores indicate better health. This single item measure of subjective health has been used in many studies, and subjective health ratings have been shown to be robustly related to mortality, as well as an individual's likelihood to develop health conditions (de Jager et al. 2017; Helmer et al.1999; Ware & Gandek 1998). Participant responses were averaged across bursts to determine their score.

Calculating Health Discrepancies

The first research question assesses the extent to which the magnitude and direction of health discrepancies between partners may predict marital satisfaction. To calculate these health discrepancies, we created a health discrepancy score for each partner within the couple, for each of the two health

measures (chronic health conditions and self-rated health). The discrepancy score for chronic health conditions was based on the difference in number of health conditions between partners, respectively. For example, if each partner within a dyad differed by 10 health conditions on the checklist, then each partner's raw difference score would be 10. We then took the raw difference score described above and divided by 2 to reflect the difference more accurately between partners. Finally, the partner in better health was given a negative score, and the partner in worse health a positive score. For example. A raw difference score of +10 became a score of +5 and -5 for each partner, respectively. This final health discrepancy score reflects how large the differences in health conditions were between partners, as well as who had better (negative score, denoting fewer health conditions) vs. worse (positive score, denoting more health conditions) health compared to their partner. A similar strategy was used to calculate health discrepancies on the self-rated health measure (SF-36), such that if the romantic partners within a dyad differed by 2 points on the self-rated health measure, then each partner receives a health discrepancy score of +1 and -1, respectively. Thus, the partner with a positive score has better health compared to the partner with the negative score.

RESULTS

Data Analytic Plan

First, we ran descriptive statistics to understand the distribution of our variables, and whether assumptions about normality were met to run our subsequent analyses, as well as to explore associations between our variables. Then, we tested research question one: to what extent does the size and direction of health discrepancies between romantic partners predict global and average daily marital satisfaction? To test this question, multiple regression analyses were performed. It should be noted, however, that multiple regression analyses do not account for dyadic relations; each person's data are assumed to be independent. Thus, we tested our second research question: to what extent does generally being in better or poorer health in relation to one's partner predict how individuals rate their global and daily marital satisfaction compared to their own partner? To test this question, paired samples analyses were conducted to examine differences in global and average daily marital satisfaction based on health differences between partners. These analyses yoke each partner's data to one another and can compare partners within a dyad.

Descriptive Statistics

Prior to testing our research questions, we examined associations between variables. The correlation matrix and descriptive statistics are shown in Table 1 for all key study variables. Inconsistent with our hypotheses, global satisfaction was not statistically significantly correlated with self-rated health discrepancy r(82) = -.019, p > .05, nor was average daily marital satisfaction r(53) = -.068 p > .05. Also inconsistent with our hypotheses global satisfaction was not statistically significantly correlated with chronic health discrepancy r(80) = -.085, p > .05, nor was average daily marital satisfaction r(53) = -.154, p > .05. However, we did find that individuals with greater self-rated health also tended to report higher marital satisfaction r(53) = .397, p < .01. Furthermore, individuals that reported a greater number of chronic health conditions, tended to have lower average daily marital satisfaction r(53) = -.350, p < .05.

Table 1. *Correlation Matrix and Descriptive Statistics of Key Study Variables*

Variables	1	2	3	4	5	6	7	8	9
1. Global		.318 *	019	085	.036	106	044	151	.039
Marital									
Satisfaction									
2. Daily Marital			068	154	.397**	350 *	040	018	.003
Satisfaction									
3. Self-Rated				289**	.612**	182	.005	.049	.127
Health									
Discrepancy									
4. Chronic					186	.630 **	.003	161	.614**
Health									
Discrepancy									
5. Individual						487**	040	.024	.114
Self-Rated									
Health Status									
6. Individual							.071	083	.387**
Chronic Health									
Status									
7. Relationship								.369**	.003
Duration									
8. Age									184
9. Gender									
Mean	6.31	5.30	0.00	0.00	3.63	4.50	43.62	73.27	50%
(SD)	(.95)	(.71)	(.49)	(1.95)	(.76)	(3.10)	(14.04)	(6.46)	women

Note. *p < .05, **p < .01. Gender was coded 0 = men, 1 = women.

We also looked at correlations between health discrepancy and individual level health. There was a small-to-moderate correlation between our two health variables: self-rated health discrepancy and chronic health discrepancy, r(80) = -.289, p < .01, suggesting that people who rated their health as better than their partner, also tended to have fewer health conditions than their partners. This correlation also suggests that that although these two measures of health discrepancy are similar, they tap into somewhat different constructs. It is worthwhile, then, to examine both measures in the current study. Of note, there is a large correlation between self-rated health discrepancy and individual self-rated health, r(82) = .612, p < .01, demonstrating that as we would expect, people who rate their health positively, also tended to have better health than their partner. There was also a large positive correlation between individual chronic health conditions and chronic health discrepancy r(80) = .630. p < .01. Indicating that, as we

would expect, individuals with better health, and therefore fewer chronic health conditions, also tended to have better health (fewer health conditions) relative to their romantic partner.

Although no significant correlations were found between our covariates of gender, age, and relationship duration, and our outcome variables of global and average daily marital satisfaction, we included them as covariates in all the following analyses testing our main research questions. The literature shows that in health discrepant couples, the gender of each spouse is associated with marital satisfaction (Korporaal et al., 2013; Langer et al., 2003). Additionally, research has demonstrated associations between length of marriage and marital satisfaction (Jose & Alfons, 2006). Finally, the current study includes quite a large spread of ages with participants ranging in age from 60 to 87 years. Not only are humans living longer than ever, and with that longer life expectancy comes an increased opportunity for a variety of health issues to arise (Veenhoven, 2005), but research also shows that in older adults, although physical health declines are prevalent, socioemotional functioning is stable or even improved in later adulthood (e.g., Charles & Carstensen, 2010).

Additionally, to determine if the current study was adequately powered to detect small, moderate, and/or large effect sizes, we conducted a priori power analyses for both our multiple regressions and Wilcoxon Signed Ranks tests. Regarding our multiple regression analyses, a priori power analyses showed 40 individuals were needed to detect large effect sizes, making us well powered to detect such findings. We were underpowered to detect moderate effect sizes, with a sample of 89 individuals needed. And we were also underpowered to detect smaller effect sizes. To detect small effect sizes, we would have needed a sample of 652 people. Regarding our Wilcoxon Signed Ranks test, a priori power analyses showed that we were underpowered to detect small effect sizes with a sample of 94 individuals needed, but adequately powered to detect moderate-to-large effect sizes with 35 or fewer individuals needed.

Testing the General Magnitude of Health Discrepancies as a Predictor of Marital Satisfaction

Our first research question examined if the magnitude, and direction of the health discrepancies between romantic partners predicts how partners rate their marital satisfaction. To address the hypothesis that partners with increasingly better health compared to their partner will report lower marital

satisfaction (global and average daily levels), we ran four separate multiple linear regression models. Each type of health independent variable (self-rated health vs. chronic health conditions) were used as predictors in separate models; we also had 2 separate dependent variables: global vs daily average marital satisfaction. In the first model, we tested the association between our independent variable of self-rated health discrepancy and our dependent variable of global marital satisfaction. Second, we tested if self-rated health discrepancy predicted our dependent variable of average daily marital satisfaction. Third, we tested how our independent variable chronic health discrepancy would predict global marital satisfaction. Finally, we tested if chronic health discrepancy predicted average daily marital satisfaction. In all four of our regression models, we adjusted for the covariates of relationship length, gender, and age, and the respective individual health status (self-rated, or chronic).

Testing Self-Rated Health Discrepancy as a Predictor of Marital Satisfaction

Global Marital Satisfaction

Inconsistent with our hypothesis that partners with increasingly better subjective health compared to their partner will report lower global marital satisfaction, the association between self-rated health discrepancy and global marital satisfaction was not statistically significant, B = -0.12, SE = .28, p = .67. This suggests that having increasingly better subjective health from one's partner is not predictive of how satisfied one is overall with their marriage (Table 2, Model A).

Average Daily Marital Satisfaction

Consistent with our hypothesis that partners with increasingly better subjective health compared to their partner will report lower daily marital satisfaction, there was a statistically significant negative association between self-rated health discrepancy and average daily marital satisfaction, B = -0.62, SE = .22, p = .007. This indicates that for each unit that a partner reports having better self-rated health than their own partner, their own average daily marital satisfaction decreased by .62 units (Table 2, Model B). In other words, partners with better health compared to their partner reported lower average daily marital satisfaction. Additionally, individual self-rated health status was positively associated with daily marital

satisfaction, B = 0.56, SE = .13, p < .001, showing that the better an individual rated their health overall, the greater their average daily marital satisfaction tended to be (Table 2, Model B).

Table 2. *Multiple Linear Regressions Testing Effects of Self-Rated Health Discrepancy on Marital Satisfaction*

	Model A: Global Satisfaction			D	l B: sfaction	
Variable	В	SE	95% CI	В	SE	95% CI
Intercept	7.55 ***	1.45	[4.67, 10.44]	3.84 **	1.14	[1.54, 6.14]
Age	022	.02	[06, .02]	01	.02	[04, .35]
Gender	.002	.23	[44, .44]	02	.18	[38, .35]
Relationship Duration	.001	.008	[02, .02]	.001	.01	[01, .01]
Individual Self- rated Health Status	.09	.18	[27, .45]	.56 ***	.13	[.29, .82]
Self-Rated Health Discrepancy	12	.28	[68, .44]	62 **	.22	[-1.07,18]
Adjusted R ²		04			.21	

Note. SE = standard error; CI = confidence interval. Unstandardized coefficients are listed for all models. Adjusted R^2 refers to the final model with all covariates included. * p < .05, ** p < .01, *** p < .001

Testing Chronic Health Discrepancy as a Predictor of Marital Satisfaction

Global Marital Satisfaction

Inconsistent with our hypothesis that partners with increasingly better health (fewer health conditions) compared to their partner will report lower global marital satisfaction, the association between chronic health discrepancy and global marital satisfaction was not statistically significant, B = -0.07, SE = .09, p = .41. This result suggests that having increasingly better health from one's partner (fewer chronic health conditions), is not predictive of how satisfied they are overall about their marriage (Table 3, Model A).

Table 3. *Multiple Linear Regressions Testing Effects of Chronic Health Discrepancy on Marital Satisfaction*

	Model A: Global Satisfaction			Model B: Daily Satisfaction		
Variable	В	SE	95% CI	В	SE	95% CI
Intercept	7.70 ***	1.40	[4.91, 10.50]	5.69 ***	1.20	[3.28, 8.09]
Age	02	.02	[06, .02]	002	.02	[03, .03]
Gender	.23	.28	[32, .79]	.28	.26	[25, .81]
Relationship Duration	.001	.01	[02, .02]	001	.01	[01, .01]
Individual Chronic Health Status	03	.05	[12, .07]	09 *	.04	[16,01]
Chronic Health Discrepancy	07	.09	[10, .24]	02	.08	[14, .17]
Adjusted R ²		03			.06	

Note. SE = standard error; CI = confidence interval. Unstandardized coefficients are listed for all models. Adjusted R^2 refers to the final model with all covariates included. * p < .05, ** p < .01, *** p < .001.

Average Daily Marital Satisfaction

Inconsistent with our hypothesis that partners with increasingly better health (fewer health conditions) compared to their partner will report lower daily marital satisfaction, the association between chronic health discrepancy and average daily marital satisfaction was not statistically significant, B = -0.02, SE = .08, p = .23. This finding suggests that having increasingly better health from one's partner (fewer chronic health conditions) is not predictive of their average daily marital satisfaction (Table 3, Model B). However, individual chronic health status was negatively associated with average daily marital satisfaction, B = -0.09, SE = .04, p = .02, For every 1 fewer chronic health condition a person reported, their average daily marital satisfaction increased by .09 units (Table 3, Model B). In other words, people with increasingly better health (fewer chronic health conditions) reported increasingly higher average daily marital satisfaction.

Testing Relative Health Status as a Predictor of Marital Satisfaction

The second research question assessed the degree to which relative differences in self-rated and chronic health between partners predict differences in marital satisfaction at the global and daily levels between partners. Specifically, we tested the hypothesis that those with poorer health in relation to their partner will rate their global and daily marital satisfaction more favorably than their partner.

Testing Assumptions of Normality

First, we conducted descriptive statistics to test for the assumptions of normality for the dependent variables. Shapiro-Wilk tests were performed and showed that the distribution of global marital satisfaction scores departed in a statistically significant way from normality (W = .750, p < .001), as did the distribution of average daily marital satisfaction scores (W = .831, p < .001). Therefore, we reject the null hypotheses that individual's marital satisfaction between romantic partners for both global and average daily satisfaction are normally distributed. Based on this outcome, we used the Wilcoxon Signed Ranks Test, which is a non-parametric test similar to the paired samples t-test that relaxes the assumption of normality.

Wilcoxon Signed Ranks Tests

We ran 4 tests to test 2 different dependent variables (global and average daily marital satisfaction) based on relative partner differences for the 2 separate health variables (self-rated health and number of chronic health conditions). Partner differences were based on coding individuals as having better (1) or worse (0) health than their partners. The dataset was sorted prior to analyses to compare those with better (1) vs. worse (0) health than their partners for each test.

First, we ran a Wilcoxon Signed Ranks Tests to compare partner's global marital satisfaction based on self-rated health differences. Inconsistent with our hypothesis that those with poorer subjective health in relation to their partner will rate their global marital satisfaction more favorably, having better self-rated health than one's own partner did not predict having poorer global marital satisfaction than one's own partner (Z = -.280, p = .780). In the next model, we compared partner's average daily marital satisfaction based on self-rated health differences but did not find that having better self-rated health than

one's partner predicted poorer average daily marital satisfaction than one's own partner (Z = -1.943, p = .052), which was counter to our hypothesis that those with poorer health in relation to their partner will rate their daily marital satisfaction more favorably, compared to their own partner.

With respect to partner differences in number of chronic health conditions, inconsistent with our hypothesis that those with poorer health (more chronic health conditions) in relation to their partner will rate their global marital satisfaction more favorably, compared to their own partner, differences in global marital satisfaction scores based on differences in number of chronic health condition were not statistically significant (Z = -1.131, p = .258), such that having better health (fewer conditions) than one's own partner did not predict having poorer global marital satisfaction than one's own partner. Also counter to our hypothesis that those with poorer health (more chronic health conditions) in relation to their partner will rate their daily marital satisfaction more favorably, compared to their own partner, differences in average marital satisfaction based on chronic health conditions were also not statistically significant (Z = -1.171, p = .241), such that having better health (fewer conditions) than one's own partner did not predict having poorer daily satisfaction than one's own partner.

Exploratory Analyses

Although the current study assessed average daily marital satisfaction, given what we know about social support and the potential for support processes to underlie the link between health discrepancy and marital satisfaction, we were interested in knowing how daily satisfaction might relate to how supported partners felt on a day-to-day basis. The original RELATE study assessed daily support satisfaction in addition to daily marital satisfaction. Thus, we ran a correlation between the two variables and found that our average daily marital satisfaction variable was highly correlated with daily support satisfaction, r = .762, p < .001, indicating that these are very similar constructs. In other words, how satisfied someone feels day-to-day, on average, in their marriage, is also closely associated with how satisfied they are with the support they receive from their partner on a day-to-day basis.

DISCUSSION

Findings and Implications

The current study yielded some, but not all, the expected results. Our first research question tested if the magnitude and direction of health discrepancies between romantic partners predicted how partners rated their marital satisfaction. Counter to our hypothesis, the association between self-rated health discrepancy and global marital satisfaction was not statistically significant. This suggests that having increasingly better subjective health from one's partner is not predictive of how satisfied one is overall with their marriage. Consistent with our hypothesis, however, there was a statistically significant negative association between self-rated health discrepancy and average daily marital satisfaction, meaning that partners with better health compared to their partner tended to report lower average daily marital satisfaction. Thus, our measure of average daily marital satisfaction seems to illuminate the variability that can exist in day-to-day marital satisfaction, even when global satisfaction remains relatively intact.

Given the moderate correlation (r = .381, p < .05) that we found between global and average daily marital satisfaction, it makes sense for our results to suggest that individuals can have better subjective health relative to their partner, yet still report *overall* satisfaction in their relationship, and, that there will still be days where their satisfaction will waver, and they will report lower *daily* satisfaction. This seems to be particularly true for individuals who are significantly healthier than their partner.

Social support research has found that the amount of support a person receives is only beneficial to their psychological well-being in so far as it modifies their perceived support—how much support they feel is available to them, and how adequate they perceive of that support to be (Haber et al., 2007; Melrose et al., 2015). Applied in the context of our findings, perhaps subjectively healthier individuals perceived the support they received from their partners to be lacking or unsatisfactory in some way, contributing to their lower daily marital satisfaction. Looking to the social support literature is appropriate in the context of our findings, in that our exploratory analyses demonstrated that our average daily satisfaction variable was highly correlated with daily support satisfaction, r = .762, p < .001.

Additionally, we know from the literature on relationship enhancement that relationship satisfaction is directly affected by the trust that develops when partners believe that if they needed care or support that their partner would provide it (Cutrona et al., 2005). If subjectively less healthy individuals are in greater need of support, or receiving support more often than their healthier counterpart, these feelings of being cared for and supported could be contributing to the greater daily marital satisfaction they are experiencing. The current study did not measure how *much* support individuals felt they provided and/or received from their partner on a day-to-day basis. Therefore, we cannot definitively say that individuals were experiencing a mismatch between received and perceived support. Nor can we say with certainty that individuals in *better* health were providing more support to their partners or receiving less support in return. However, these theoretical approaches imply that partners *receiving* support from their spouse might report higher satisfaction in the relationship than the spouse *providing* the support and care, who may experience the burdens and strain. Future studies should consider examining perceived support vs. received support (or whether one feels their needs are met) as a mediator of these associations.

Research question one also adjusted for the influence of individual health status. Our covariate of individual self-rated health status was positively associated with daily marital satisfaction. This finding suggests that the better an individual rated their health overall, the greater their average daily marital satisfaction tended to be. This result is interesting given that being in increasingly better health than one's partner was associated with lower average daily marital satisfaction. This finding suggests, that although healthier individuals tend to rate their daily marital satisfaction higher, individuals who are subjectively healthy and are with an equally healthy partner would rate their daily marital satisfaction the highest. Perhaps being healthy and having a healthy partner allows for both partners to give and receive equal amounts of support to one another, while also being free from the physical and/or emotional strains that might come along with poorer health. Additionally, being healthy and having a healthy partner could be protective or promoting of positive relationship dynamics in in some way. Research in the field of marital satisfaction has shown that negative affect, or feelings and expressions of emotional distress, is higher in dissatisfied couples than it is in satisfied couples (Gottman & Levenson, 1986; Hawkins et al., 2022).

Future research that expands on the current study could consider measuring negative affect in healthy and non-healthy individuals as well as in in health discrepant and health-congruent couples, as a potential mediator of these associations.

Regarding chronic health conditions, inconsistent with our hypothesis that partners with increasingly better health (fewer health conditions) compared to their partner will report lower global marital satisfaction, the association between chronic health discrepancy and global marital satisfaction was not statistically significant, nor was the association between chronic health discrepancy and average daily marital satisfaction. These results suggest that having increasingly better health than one's partner (fewer chronic health conditions), is not predictive of how satisfied one is overall with their marriage, nor on a day-to-day basis. There was neither a statistically significant association between chronic health discrepancy and global marital satisfaction, nor between chronic health discrepancy and average daily marital satisfaction (Table 3, Model B). However, our covariate of individual chronic health status was negatively associated with average daily marital satisfaction, but not with global martial satisfaction. These results again suggest that global marital satisfaction remains relatively intact regardless of individual health status. It is also possible that we were underpowered to detect certain findings. As outlined in our descriptive statistics, a priori power analyses showed that we were powered to detect large effect sizes, but underpowered to detect small and moderate effect sizes. It is conceivable that the true effect size for the influence of health discrepancy or individual health status on global marital satisfaction is quite small. Future researchers interested in expanding on this work should sample a larger number of individuals.

Regardless, given that our findings suggest global marital satisfaction is rather impervious to health, but daily marital satisfaction is not, the question must be asked: what is different about daily marital satisfaction that makes it seemingly more associated with one's health than their global marital satisfaction? Stated another way, what is it about one's health status that impacts how they feel day-to-day, but does not impact how they feel overall towards their relationship? It is possible that individuals in poorer health may have a difficult time or complicated feelings accepting help from their partner, or

simply have greater needs to be fulfilled on a day-to-day basis. In this way, daily feelings of satisfaction with their partner may fluctuate while their overall assessment of the relationship remains more stable. The potential functional limitations and emotional strains that could accompany poor health and may be more demanding on some days than others, might also influence one's day-to-day relationship satisfaction even if individuals feel a general sense of satisfaction in their marriage. Future research should seek to further analyze the specific components of day-to-day life, and relationship dynamics that influence one's daily assessment of relationship satisfaction to understand if these components are different than those that influence global satisfaction levels.

Our findings have several clinical implications as well. First, our findings are clinically relevant to counselors and therapists working with clients who may feel concern for their relationship longevity and success due to day-to-day struggles. To be able to tell couples in long-term relationships that it is possible for overall marital satisfaction to remain relatively stable even when day-to-day satisfaction levels may vary could be validating, affirming, and comforting for clients to hear. These findings will also be helpful for health professionals to consider in clinical practice, especially when working with romantic partners. Understanding that health status and health discrepancy might play a role in predicting average daily marital satisfaction will be validating for those struggling with their health or the health of their partner, and subsequently their daily satisfaction in the relationship. Specifically, healthier partners may benefit if healthcare professionals and counselors are attuned to the possible strains that health has on marital satisfaction and may be more likely to offer additional support and resources to these individuals.

Our second research question tested the degree to which *relative* partner differences in health predicted marital satisfaction. Specifically, the second research question focused on how being in better or worse health in relation to one's partner may be associated with one's global and average daily marital satisfaction. We predicted that that those with poorer health in relation to their partner would rate their global and daily marital satisfaction more favorably, when compared to their partner. Counter to our hypotheses, there were no statistically significant differences found in global marital satisfaction scores based on self-rated health differences, nor were there statistically significant differences found in average

daily marital satisfaction based on self-rated health differences. Likewise, we did not find significant differences in global or daily marital satisfaction scores based on differences in number of chronic health conditions, which was also counter to our hypotheses. These results would suggest that being the healthier or less healthy partner relative to one's own romantic partner does not predict how each partner will rate their relationship satisfaction. However, because Wilcoxon Signed Ranks tests were used test this research question, it could be that this measure of "different or not different" from one's partner is too crude, in that all we can glean from this type of testing is if partners differ from one another, but not *how* different people are from their own partner. This may help to explain our lack of significant findings. Furthermore, as mentioned in our descriptive statistics, we were underpowered to detect small effect sizes and therefore may have been underpowered to detect the true effect size of these correlations.

Limitations and Future Directions

There are several design limitations in the current study. Given the design of the current study, we cannot establish causal direction of the associations. That is, because the current study is based on cross-sectional data, we do not know whether health discrepancies and health status lead to poorer marital satisfaction, and/or whether strained marriages lead to poorer health. Future researchers could employ longitudinal studies that begin tracking couples when they first get together, or first get married, to gain a better sense of how health as well as marital satisfaction progress over time. Additionally, the current study is aimed at basic descriptive work to better understand how health discrepancy might predict marital satisfaction. Future work could use more advanced statistical models, such as actor-partner interdependence models to understand reciprocal, dynamic processes between partners over time.

An additional design limitation of the current study is our sample characteristics. The current study comprises predominantly white participants, all in heterosexual relationships; limits generalizability of the findings. Future researchers interested in this topic should work to expand sample characteristics to be more inclusive of race and ethnicity, different types of relationships, individuals with varying sexual, and romantic preferences, and gender identities. Previous research tells us that the experience of different illnesses, and their impacts "show up" differently depending on gender (Carmel, 2019; Marshall, 2008;

van Wijk et al., 1999). Relationship dynamics, helping behaviors, and social support expectations and roles could also differ by gender and potentially show up differently in non-heterosexual relationships (Brunel & Nelson, 2013; Eagly & Crowley, 1986). It would be worthwhile for future research to consider different relationship structures, such as same sex relationships to gain a better understanding of how health discrepancy in romantic partners might impact functioning and relationship satisfaction differently for these couples.

The current study is unique in that it investigates an older cohort of participants. In the literature on romantic relationships, this age group is not often considered. Thus, the current study offers a distinct opportunity to better understand the role that health status and health discrepancy are playing in aging populations, specifically in the context of romantic relationships. This area of research is particularly relevant given that modern medicine now allows humans to live longer than ever before (Veenhoven, 2005). With that longer life expectancy comes an increased opportunity for a variety of health issues to arise. However, it must also be acknowledged that the current study sampled from a specific subset of older adults—those that have self-selected into independent senior living facilities. It is possible, therefore, that the generalizability of this sample is limited.

Because our sample was of older adults, most of our couples had been married for quite a while. It is possible that being in a long-term marriage is associated with a more solidified sense of overall relationship satisfaction, and therefore a more stable global satisfaction score, regardless of health changes or challenges. Research in emotion regulation theory has also shown that older adults tend to be biased towards the positive aspects of close relationships and seem to view negative interactions or circumstances through a positive lens (Story et al., 2007). This might help to explain why global marital satisfaction remained impervious to health status and discrepancy, while daily satisfaction did not. Future research should sample a variety of age groups to gain a clearer understanding of these associations and how they might show up differently.

Furthermore, the sample of older adults in the current study were on average highly satisfied with their marriages, and relatively healthy. Perhaps this is partially because all participants in the current

study were living in independent or retirement communities. None of the older adults in our sample was living in facilities that provided higher levels of care, which may have contributed to our generally very happy and healthy sample. In fact, in a study comparing physical activity (PA), fear of falling (FOF) and quality of life (QOL), of older adults in assisted living facilities (ALF) with "community-dwelling" adults, it was found that those in ALF's had significantly lower PA, and QOL, and that FOF was significantly more prevalent amongst this population (Akosile et al., 2021). These findings suggest that when it comes to certain aspects of health and well-being, ageing in place may ensure better health outcomes than assisted living. Future studies that are interested in how health and health discrepancy function in relationships between older individuals might consider sampling community-dwelling older adults in addition to senior living facilities to gain a more comprehensive understanding of this population.

Furthermore, the current study uses a relatively crude measure of health to calculate health discrepancy between spouses. Although it is common in the health literature to look at health status, or discrepancies between people based on number of conditions present, this method of quantifying health does not account for the severity of each illness. There are large qualitative differences between different health conditions and illnesses. For example, some conditions are chronic, while others are more acute. Some illnesses interfere more with daily functioning and have side effects or treatments that are more impactful on daily life and well-being. While the current study illuminates the association between an individual's health status and their daily marital satisfaction, there are certainly components of health missing.

It is possible that health status and health discrepancy only predict relationship satisfaction in so far as they impact an individual's daily functioning. It is possible then, that different dimensions or categorizations of health that were not accounted for in this study might be more impactful on daily and/or global marital satisfaction. Clarifying what it is more specifically about poor health that impacts daily satisfaction, but not global satisfaction will help further refine our knowledge of how different measures of health contribute to different dimensions of marital satisfaction. Given that the current study

found individual health status was more predictive of average daily satisfaction in one's relationship, future studies may consider taking a more multidimensional approach to understanding health by examining how much each condition impairs daily functioning, and strains financial or emotional resources. In doing so, future researchers can establish a different coding scheme that differentiates illnesses based on severity, disability, functional limitations, and subjective ratings. Additionally, future research might consider other components of relationship satisfaction. The current study measures daily and global satisfaction but does not differentiate between the different factors that contribute to marital satisfaction, such as intimacy, communication, and shared values, among others. It would be interesting to better understand what specific elements of relationship functioning are associated with or impacted by health status.

Conclusion

As we age, physical health declines become increasingly prevalent. Research demonstrates that poor health can contribute to lowered relationship satisfaction (Kiecolt-Glaser & Newton, 2001; Yorgason et al., 2008). Although we tend to see greater romantic relationship satisfaction reported in older couples than in younger couples (Story et al., 2007; Luong et al., 2011), the spousal caregiving literature suggests that large health differences between romantic partners may contribute to worsened relationship quality and satisfaction (Monin et al., 2019; Solomi & Casiday, 2017; Wolff & Casper, 2006). Furthermore, a limited body of research has found support for a health-mismatch hypothesis, which is the phenomenon wherein partners who are dissimilar in health status are more at risk for divorce than those partners with similar health status (Torvik et al., 2015). The current study seeks to build on this literature.

The current study used data from the RELATE study to examine health and marital satisfaction in 41 romantic dyads to further understand how magnitude, and direction of the health discrepancies between romantic partners might predict how partners rate their marital satisfaction, at the daily and global level. The study also investigated how one's health in relation to one's romantic partner might also contribute to how one rates their marital satisfaction at the daily and global level. Average daily marital

satisfaction was positively associated with individual health status, while global marital satisfaction remained relatively stable in all our analyses. Of note, partners with better health compared to their partner reported lower average daily marital satisfaction, suggesting that perhaps healthy people with healthy spouses are the most likely to have high marital satisfaction. Findings from the current study offer important contributions to clinical work and scientific research in the field of marital satisfaction and illuminate additional and more precise avenues for future research in this area to pursue.

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APPENDIX

Chronic health conditions checklist (CIL RELATE)

The following is a list of physical conditions. Please report if you have experienced or been treated for any of the following conditions in the past 12 months by writing "Y" for conditions you have had. If you have not had a particular condition, please write "N" on that line.

1. Arthritis, rheumatism, or other bone or joint	11. Gall bladder trouble
diseases	12. Asthma, bronchitis, or emphysema
2. Osteoporosis	13. Tuberculosis
3. Any other bone problems, such as a	14. Other lung problem (Name:
fracture)
4. Sciatica, lumbago, or recurring	15. Varicose veins requiring medical
backache	treatment not included above
5. Persistent skin trouble, including	16. Deep vein thrombosis
pressure sores	17. Spasticity
6. Thyroid disease	18. Persistent foot trouble (e.g., bunions)
7. Hay Fever	19. AIDS or HIV infections
8. Recurring stomach trouble, indigestion,	20. Lupus or other autoimmune disease
or diarrhea	21. Persistent trouble with gums/mouth
9. Urinary or bladder problems	22. Persistent trouble with teeth
10. Constipated all the time	
23. High blood pressure/ hypertension	27. Chronic sleeping problems
24. Low blood pressure	28. Diabetes or high blood sugar
25. Alcohol or drug problems	29. Neurological disorders (e.g.,
26. Migraine headaches	Parkinson's)

30. Stroke (Where:)	32. Cancer (type:)
31. Hernia or rupture			
33. Pain lasting three			
months or more			
34. OTHER:			
35. OTHER:			
36. OTHER:			