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2011

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Birmingham, Wendy C.; Sanbonmatsu, David M.; and Uchino, Bert N., "On the Importance of Knowing Your Partner's Views: Attitude Familiarity is Associated with Better Interpersonal Functioning and Lower Ambulatory Blood Pressure in Daily Life" (2011). *Faculty Publications*. 6021.
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HHS Public Access

Author manuscript

Ann Behav Med. Author manuscript; available in PMC 2015 September 04.

Published in final edited form as:

Ann Behav Med. 2011 February ; 41(1): 131–137. doi:10.1007/s12160-010-9234-0.

On the Importance of Knowing Your Partner's Views: Attitude Familiarity is Associated with Better Interpersonal Functioning and Lower Ambulatory Blood Pressure in Daily Life

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Abstract

Background—Relationships have been linked to significant physical health outcomes. However, little is known about the more specific processes that might be responsible for such links.

Purpose—The main aim of this study was to examine a previously unexplored and potentially important form of partner knowledge (i.e., attitude familiarity) on relationship processes and cardiovascular function.

Methods—In this study, 47 married couples completed an attitude familiarity questionnaire and ambulatory assessments of daily spousal interactions and blood pressure.

Results—Attitude familiarity was associated with better interpersonal functioning between spouses in daily life (e.g., greater partner responsiveness). Importantly, attitude familiarity was also related to lower overall ambulatory systolic blood pressure and diastolic blood pressure.

Conclusions—These data suggest that familiarity with a spouse's attitudes may be an important factor linking relationships to better interpersonal and physical health outcomes.

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Conflict of Interest Statement The authors have no conflict of interest to disclose.

Keywords

Attitudes; Partner knowledge; Relationships; Ambulatory blood pressure; Ecological momentary assessment

Introduction

Relationships are well-documented predictors of physical health outcomes [1, 2]. Epidemiological studies indicate that individuals with high levels of social support have lower mortality rates, especially from cardiovascular disease [3]. Despite these epidemiological findings, little is known about the more specific aspects of relationships that influence these health outcomes. For instance, what are the factors that lead individuals to receive more support or experience less interpersonal conflict that might then influence physical health?

One factor that has received attention in predicting health-relevant relationship processes such as social support is the knowledge that individuals have regarding their close, social ties. Neff and Karney [4] suggest that the accuracy of spouses' trait knowledge of each other is an important determinant of social support and relationship longevity. Newlyweds in their study rated their partner and self on six traits (e.g., intelligence, tidiness). Controlling for overall marital satisfaction, the degree of correspondence between wives' perceptions of husbands' traits and husbands' self-reported traits was predictive of feelings of control in the marriage, supportive behaviors, and the likelihood of divorce. Related research on self-verification has also shown that spouses report greater commitment and are more likely to remain in a relationship when their partners see them as they see themselves [5]. Thus, converging evidence from different lines of research suggests that close relationships may be affected by aspects of partner knowledge.

Most of the research in this area has focused on how knowledge of specific partner traits (e.g., intelligence) might influence relationship functioning. It is also important to note that none of this work has been extended to explain the potential health consequences of relationships. In this paper, we explore the possibility that one important aspect of partner knowledge that may play a significant role in shaping partner interactions and thus long-term health is familiarity or knowledge of a spouse's attitudes. This possibility stems from an enormous body of research that has shown that attitudes are functional [6]; they guide information processing [7], the appraisal of situations and response alternatives [8], and behavior [9]. Studies have shown that the availability of strong attitudes facilitates decision making and diminishes the stress people experience in laboratory situations and everyday life [10, 11].

There are a number of reasons why if one's own attitudes are functional then knowledge of others' attitudes is similarly functional, especially for relationships. When individuals have more accurate knowledge of their partners, relationship processes unfold more harmoniously due to increased predictability and the comfort that such knowledge might bring [12]. Having insight into a partner's attributes also provides information on when support might be needed and could increase partner responsiveness [4, 13]. For instance, knowing that

your spouse has just argued with someone on a topic important to them (e.g., health care reform) might cue you to provide more emotional support at the time of disclosure. Likewise, even knowing partner attributes that one might disagree with (e.g., view on guns) might allow individuals to respond more positively should such conversations surface [4]. Individuals may also anticipate and potentially avoid any misunderstandings or conflicts if such attributes are well known (e.g., avoid discussion of such topics).

Consistent with this reasoning, we recently examined links between attitude familiarity and basic relationship processes such as support and conflict in romantically involved couples [14]. Although attitude familiarity was not related to overall relationship satisfaction, couples familiar with each others' likes and dislikes did indeed get along better. They were less likely to fight, less apt to upset one another, and more responsive to each others' support needs [14]. These results held even when considering the length of time couples were involved. This prior work, however, was based on more retrospective relationship assessments. Thus, a first aim of this study was to extend our prior work by examining attitude familiarity and relationship functioning during daily life. We predict that attitude familiarity enables individuals to better anticipate, influence, and respond to others' behaviors (i.e., it is functional). The overall effect of attitude familiarity would be to foster relationship processes in daily life.

The results from our prior study are also important because both support and conflict in close relationships have been linked to significant health outcomes [15–17]. The links between social support and health outcomes appear across a number of diseases, especially cardiovascular disease [18, 19]. In addition, the influence of conflict in relationships is separable from support processes and linked to physical health outcomes [15, 17]. For instance, De Vogli et al. [15] examined conflict in close relationships and incident coronary artery disease. They found that even after controlling for social support, conflict was associated with an increased risk for coronary artery disease. These data suggest that processes such as attitude familiarity that influence support and conflict may ultimately have significant influences on cardiovascular outcomes. Thus, a second goal of the proposed research is to provide a theoretical bridge between these areas by investigating the contribution of partner attitudinal knowledge to the association between relationships and health. We examined this question using daily life ambulatory blood pressure (ABP) as it is a strong predictor of future cardiovascular risk [20]. We predicted that familiarity with partners' attitudes would be related to lower ABP during daily life.

Method

Participants

Participants included 47 married couples. Overall, the mean age of the sample was 31.5 years, with a median household income of over \$40,000. The majority of the sample was White (78%). The following criteria were used to select healthy participants based on our prior work [21]: no existing hypertension, no cardiovascular prescription medication use, no history of chronic disease with a cardiovascular component (e.g., diabetes), and no recent history of psychological disorder (e.g., major depressive disorder). In addition, as part of the

larger program project, they had to be employed with no children living at home in order to focus on working marital dyads.

Procedures

Participants were recruited through advertisements placed in local newspapers, workplace newsletters, and flyers distributed around the community. Potential participants were screened for eligibility and read a standard description of the study's activities. Eligible participants who agreed to participate were scheduled for their appointments (described below) and completed the attitude familiarity questionnaire. Participants completed this questionnaire separately and were not allowed to discuss their responses. A resting blood pressure assessment was also conducted as a check against our exclusion criteria (i.e., hypertension).

As part of the larger study protocol, participants completed a 1-day ABP assessment, typically from 8 A.M. to 10 P.M. ($M=14.01$ h, $SD=0.97$). The ABP assessment included working hours and an evening at home with the spouse on the same day. The ABP monitor was set to take a random reading once every 30 min. This random interval-contingent monitoring procedure minimizes participants' anticipation of a blood pressure assessment that might lead them to alter their activities. Following each ABP assessment, individuals were instructed to complete questions programmed into a palm pilot device using the Purdue Momentary Assessment Tool [22]. The Purdue Momentary Assessment Tool contained questions on basic ambulatory control variables (e.g., posture) as well as psychosocial processes (see below).

Measures

Resting Blood Pressure—A Dinamap model 100 Pro monitor was used to measure resting systolic blood pressure (SBP) and diastolic blood pressure (DBP). The Dinamap uses the oscillometric method to calculate blood pressure. Cardiovascular assessments were obtained via a properly sized occluding cuff positioned on the non-dominant upper arm. Mean SBP, DBP, and heart rate were calculated by averaging across three consecutive 1-min assessments to increase reliability [23].

ABP Monitor—The Oscar 2 (Suntech Medical Instruments, Raleigh, NC) was used to estimate ambulatory SBP and DBP. The Oscar was developed to meet the reliability and validity standards of the British Hypertension Society Protocol [24]. The cuff was worn under the participants' clothing, and only a small control box (approximately $5.0 \times 3.5 \times 1.5$ in.) attached to the participant's belt was partially exposed. Outliers associated with artifactual readings were identified using the criteria by Marler et al. [25]. These included: (a) $SBP < 70$ or > 250 mmHg, (b) $DBP < 45$ or > 150 mmHg, and (c) $SBP/DBP < [1.065 + (0.0125 \times DBP)]$ or > 3.0 .

Ambulatory Diary Record—Participants were instructed to complete a series of programmed questions following each ambulatory cardiovascular assessment. It was designed to be easy to complete (about 2–3 min) in order to maximize cooperation and was divided into two general sections. The first section assessed information on basic variables

that might influence ambulatory blood pressure [26]. These included posture (lying down, sitting, standing), activity level (1 = no activity, 4 = strenuous activity), location (work, home, other), talking (no, yes), temperature (too cold, comfortable, too hot), prior exercise (no, yes), and prior consumption of nicotine, caffeine, alcohol, or a meal (no, yes). The second section of the ambulatory diary was adapted from prior work and included four items for perceived partner responsiveness [27], two items for perceived interaction positivity and negativity with the spouse [28], six items for state self-esteem [29], and two items for disclosure [30].

Attitude Familiarity Questionnaire—Husbands and wives indicated their evaluations of 25 different attitude objects on seven-point scales anchored by “very negative” and “very positive” [14, 31]. The items were selected to broadly sample different attitudinal objects and have been used in our prior work on attitudinal processes [31] (e.g., money, Wal-Mart, guns, recycling, etc.). Spouses also indicated their perceptions of their partners’ evaluations of the same targets on the same scale. Attitude familiarity was computed by calculating the correlation between husbands’ reported attitudes and wives’ perceptions of their attitudes as well as the correlation between wives’ reported attitudes and their husbands’ perceptions of their attitudes. This couple-based approach has advantages over using absolute difference scores as it is better suited to capture correspondence over a broad range of attributes [32]. The average level of attitude familiarity in the sample was $r=0.52$ (range 0.06–0.81). The attitude familiarity index was not significantly different between men ($r=0.50$) and women ($r=0.54$), so we averaged the two measures using Fisher’s r to z' transformation to provide a more reliable overall index of attitude familiarity in couples [33]. This z score was used in all analyses detailed below.

Inclusion of Other in Self-Scale—This scale provides a brief, but general measure of relationship closeness. It uses a pictorial Venn diagram of self/other that differs in its overlap. This measure has good alternate-form and test–retest reliability [34]. Factor analyses reveal that the inclusion of other in self-scale loads on both subjective and behavioral aspects of relationship closeness and has been shown to predict relationship maintenance 3 months later [34].

Statistical Model

We utilized proc mixed (SAS Institute) [35] in order to examine the diary ratings and ABP (see [36]). Proc mixed uses a random regression model to derive parameter estimates both within and across individuals [37]. All factors were treated as fixed [38] and proc mixed treats the unexplained variation within individuals as a random factor.

One advantage of proc mixed is the ability to model more accurate covariance structures for the repeated measure assessments. In the present study, we modeled the covariance structure for the two repeated measures factors of dyad (i.e., husband, wife) and measurement occasion (i.e., reading number). Such nested repeated measures designs can be handled in proc mixed by specifying separate covariance structures for each of the factors [39]. More specifically, we modeled the covariance structure between individuals of a dyad within each measurement occasion, as well as the covariance structure across measurement occasions

using the direct (Kronecker) product [39, 40]. This direct product is a within-subjects covariance profile containing the product of the two separate covariance matrices [40]. Proc mixed currently allows only a few possible combinations for calculating the Kronecker product [39]. Based on the recommendations of Park and Lee [39], we modeled the covariance matrices for dyad and measurement occasion using the “type=un@ar(1)” option that specifies a decreasing covariance structure between measurement occasions further apart in time for each member of the dyad. Importantly, this model allowed us to examine predictors of diary scores and ABP while controlling for the dependency within dyads and measurement occasions. The outputs of these random regression models were parameter estimates (b) with the appropriate within-subjects covariance structures considered. As recommended by Campbell and Kashy [41], we used the Satterthwaite approximation to determine the appropriate degrees of freedom.

Results

Preliminary Analyses

Before examining our primary aims, we conducted a number of preliminary analyses aimed at examining the link between attitude familiarity and other variables/constructs. We first tested if attitude familiarity was associated with the length of marriage as it was possible that longer marriages resulted in greater attitude familiarity. Importantly, attitude familiarity was not associated with the length of the marriage ($p>0.25$). It is also possible that attitude familiarity is simply a proxy for a more global relationship factor. To examine this possibility, we examined if attitude familiarity was related to relationship closeness as assessed by the inclusion of other in self-scale [33]. Importantly, attitude familiarity was also not related to general feelings of closeness ($p>0.45$).

We next examined the potential contribution of extraneous factors such as posture that might need to be statistically controlled in the analysis of ABP [25, 26]. Consistent with prior research, results of this initial model revealed that age, gender, household income, body mass, posture, temperature, activity level, prior alcohol, and prior exercise were independent predictors of higher ambulatory SBP (all $p<0.05$). In addition, age, gender, household income, body mass, time, posture, activity level, and a prior meal independently predicted ambulatory DBP (all $p<0.05$). Consistent with prior work, these factors were thus statistically controlled in all analyses involving ABP [25].

Does Attitude Familiarity Predict Daily Life Interpersonal Processes?

According to prior work, couples who are more familiar with their partners' attitudes are characterized by better relationship functioning [14]. We thus examined these associations in daily life when individuals were at home with their spouses. Statistically controlling for dyad, age, and household income, results revealed that attitude familiarity was linked to greater perceived partner responsiveness ($b=0.82$, $t=3.84$, $p<0.001$), perceived interaction positivity ($b=0.70$, $t=3.32$, $p<0.01$), and state self-esteem ($b=0.52$, $t=3.07$, $p<0.01$). It was also related to lower perceived interaction negativity ($b=-0.49$, $t=2.81$, $p<0.01$). Attitude familiarity, however, was not related to spousal disclosure ($p>0.12$). The dyad factor was significant in the prediction of partner responsiveness ($b=0.32$, $t=3.06$, $p<0.01$) and

perceived interaction positivity ($b=0.21$, $t=2.00$, $p<0.05$), with wives reporting greater responsiveness and interaction positivity than husbands. The dyad factor also moderated the link between attitude familiarity and spousal disclosure ($b= 1.00$, $t=2.00$, $p<0.05$). In this statistical interaction, attitude familiarity was linked to greater disclosure at home for wives ($p<0.01$), but not husbands ($p>0.90$). No other interactions with dyad, however, approached significance, consistent with our prior work suggesting comparable interpersonal influences of attitude familiarity for husbands and wives [14].

Does Attitude Familiarity Predict Daily Life ABP?

We next examined our prediction that attitude familiarity would be related to daily life ABP. Importantly, the extent to which spouses were familiar with each others' attitudes independently predicted lower daily life ambulatory SBP ($b=-4.33$, $t=2.08$, $p<0.05$) and DBP ($b=-3.47$, $t=2.49$, $p=0.01$). We thus calculated predicted ABP values one standard deviation above and below the mean for the continuous attitude familiarity score. Couples relatively low in attitude familiarity had daily ABP readings that were approximately 2–2.5 mmHg higher than couples relatively high in attitude familiarity. Consistent with prior work on gender differences in blood pressure, the dyad factor was significant for SBP ($b=-9.77$, $t=8.60$, $p<0.001$) and DBP ($b=-1.84$, $t=2.48$, $p< 0.05$), indicating lower blood pressure in wives. No interaction between attitude familiarity and the dyad factor approached significance, suggesting that these results were similar across both husbands and wives.

We also had assessments of resting blood pressure in the laboratory as a check against our exclusion criteria (e.g., hypertension). In ancillary analyses, we also examined if attitude familiarity predicted resting blood pressure to examine the specificity of the links reported above.¹ Interestingly, attitude familiarity did not predict general resting assessments of SBP or DBP.

Discussion

Prior work has demonstrated the importance of personal attitudes for decision making, guiding response alternatives, and coping with stress [6, 8, 10, 11]. In addition, prior work on partner knowledge of specific attributes such as traits has shown its importance for relationship functioning [4]. However, little cross-disciplinary work has occurred at the intersection of these literatures and explored its implications for health. In this study, we extend the prior literatures by examining if familiarity with a spouse's attitudes influenced daily interpersonal functioning and cardiovascular health.

A first aim of this study was to examine links between attitude familiarity and daily life interpersonal processes. Consistent with the importance of partner knowledge, Neff and Karney [4] found that knowing a partner's traits was associated with greater support and a decreased likelihood of divorce. In a recent study extending partner knowledge to the attitudinal domain, we found that it was related to less fighting/conflict and less negativity and more helpfulness during support [14]. However, our prior work used retrospective measures which may tap into different processes than more momentary assessments [42].

¹We thank the reviewers for this excellent suggestion.

Importantly, the home diary data were consistent with our prior work and provided a “snapshot” into the lives of couples varying in attitude familiarity. These data indicate that couples who were more familiar with each others’ attitudes perceived more partner responsiveness, better interaction quality, and higher state self-esteem. This study thus extends our prior findings by linking attitude familiarity to interpersonal processes during daily life. These data also extend prior work on partner knowledge as no study we are aware of has used such a daily diary protocol.

A second aim of this study was to provide a theoretical bridge between attitudes, partner knowledge, and their links to health. This is the first work that we are aware of linking specific partner knowledge to physical health outcomes. Such links are important because daily life ABP is a stronger predictor of future cardiovascular risk compared to resting assessments [20]. It was interesting that we did not find attitude familiarity to be linked to resting blood pressure assessments. However, such data are consistent with the greater sensitivity typically associated with assessments of ABP [20]. The reasons behind these differences are unclear (e.g., greater measurement reliability, ecological validity), but they point to the importance of such work in future psychosocial risk factor modeling of cardiovascular outcomes.

The results of the daily diary ratings suggest that interpersonal functioning is “smoother” (i.e., more positive and less negative) when couples have greater knowledge of their partners’ attitudes. The overall influence of these processes over time may contribute to lower cardiovascular risk, as typically seen in studies of relationships and health outcomes [16]. These data are strengthened by links to relationship processes that have been related to health in prior work and further suggest that attitude familiarity may be an important antecedent process of these more established psychosocial risk factors. However, this study is limited because we used a relatively small sample and the effect sizes associated with attitude familiarity were relatively small. Future research will be needed using larger sample sizes and tracking its potential links to other health-relevant assessments (e.g., inflammation) and actual disease endpoints (e.g., cardiovascular disease incidence).

Future work will also be needed to examine theoretically important processes potentially moderating these associations. For instance, based on the larger attitude literature, we expect that attitude familiarity may be even more strongly linked to relationships and health when this knowledge is highly accessible [43] and partners’ attitudes are liked or respected. It is possible that relationships may be especially toxic when knowledge of partners’ attitudes is high and partners’ attitudes are disrespected because the familiarity could facilitate antagonizing and manipulating partners. Tracking early relationship processes (e.g., newly-weds) may be useful to examine this “darker side” of attitude familiarity before such behaviors potentially lead to relationship breakup.

There are several limitations of this work that should be noted. First, the psychometric properties and construct validity of our attitude familiarity assessment need further work. Our data suggest that attitude familiarity links were not due to demographic factors, relationship length, or general closeness. However, this is the first study to link an aspect of partner knowledge to health-relevant physiological outcomes, so the overlapping or

independent influences of related assessments such as trait familiarity or other health-relevant factors (e.g., hostility) need to be empirically demonstrated. These findings are also correlational, so the causal influence of attitude familiarity is still in question. Laboratory or longitudinal investigations will be necessary to provide more causal inferences. Finally, the accuracy of partners' knowledge in an absolute sense cannot be determined. However, using self-reported self-perceptions as standards represents an acceptable approach to examining these issues [4]. The use of other operationalizations (e.g., implicit measures) would increase our confidence in these assessments.

We conclude by noting that many of the relationship factors that have been found to influence dyadic functioning and, hence, impact health, have proven tough to modify. Indeed, the personality conflicts, financial problems, and differences in values that commonly divide relationships are viewed by practitioners as difficult to overcome [44]. However, this research highlights the health relevance of an important component of relationships—partner knowledge—that appears to be variable and easily influenced. Future work can examine its potential implications for cost-effective intervention strategies.

Acknowledgments

This research was generously supported by grants R01 HL68862 from the National Heart, Lung, and Blood Institute.

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