

When is Your Partner Willing to Help You?

The Role of Daily Goal Conflict and Perceived Gratitude

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ABSTRACT

Motivation to provide help might vary from day-to-day. Previous research showed that autonomously motivated help (i.e., helping because you enjoy/value this behavior), compared with controlled motivated help (i.e., helping because you feel you should do so), has beneficial effects for both the help provider and recipient. In a sample of chronic pain patients and partners ($N = 64$ dyads), this diary study examined whether (1) same- and prior day perceived gratitude (i.e., received appreciation for providing support) in partners and (2) same- and prior day goal conflicts in partners (i.e., amount of interference between helping one's partner in pain and other goals) predicted partners' helping motivation. Partners provided more autonomously motivated help on days that they perceived more gratitude from their partner and when they experienced less goal conflicts. Lagged analyses indicated that perceived gratitude (but not goal conflict) even predicted an increase in autonomous helping motivation the next day. Implications are discussed in the context of Self-Determination Theory.

Keywords: Helping motivation, self-determination theory, chronic pain couples, gratitude, goal conflict

INTRODUCTION

Like all intentional acts, prosocial behaviors can vary with respect to its underlying motives (Deci & Ryan 2000). One can, for instance, help others because one likes doing so or sees the meaning and value of it (i.e., autonomous motivation) or because one experiences a sense of guilt or conflicted loyalty if one would not do so (i.e., controlled motivation). Available research indicates that both the help provider and the recipient of help benefit more when the help is autonomously offered rather than stemming from controlled motives. Specifically, greater autonomy in helping others is associated with increased closeness and well-being (Deci et al. 2006; Knee et al. 2002; Patrick et al. 2007; Weinstein and Ryan 2010), not only in helpers themselves, but also in recipients of help, a finding documented in both healthy (Gagné 2003; Weinstein & Ryan 2010) and clinical samples (Kindt et al. 2015, 2016).

Given the critical role of autonomous helping motivation, it is important to investigate factors that promote this type of motivation and prevent helpers from developing controlled motives in the helping process. The current study aimed at examining possible predictors of helping motivation in partners of individuals with chronic pain (ICP). Specifically, we investigated the contribution of perceived daily gratitude in partners in predicting their helping motivation and the role of daily experienced conflict by partners between helping their partner in pain and other personal held goals (e.g., work-related goals) in explaining their daily helping motivation. We additionally explored the extent to which daily gratitude, as expressed by ICPs, relates to daily perceived gratitude in partners.

Investigating helping interactions in chronic pain couples is especially relevant because of ICPs' frequent and repeated needs for help. As helping other individuals is by definition a social and dyadic process, the motivation to help may be influenced by factors in both the help provider (i.e., goal conflict) and the help recipient (i.e., gratitude). These two predictors form a balanced pair, both in terms of the primary target (i.e., partner him/herself or

ICP) and its valence (i.e., the one factor may be considered a protective/motivation-promoting factor and the other a risk/motivation-threatening factor). Specifically, while goal conflict concerns the partner's personal experience and represents a risk factor, gratitude is more reflective of the interpersonal dynamics between ICPs and partners and constitutes a growth-promoting factor. Second, given our central focus on explaining day-to-day variations in helping motivation, we selected predictors which may have sufficient day-to-day variation as suggested by past work (Casier et al. 2013; Gordon et al. 2011).

Not All Help is Created Equal: A Consideration of its Motivational Basis

Self-determination theory (SDT) is a broad theory of human motivation, which maintains that individuals' sustainable motivation, development, and integrative functioning are facilitated when their basic psychological needs for autonomy, competence, and relatedness are nurtured (Deci & Ryan 2000). SDT employs a differentiated view on motivation, distinguishing between more optimal (i.e., autonomous) and less optimal (i.e., controlled) forms of motivation (Vansteenkiste et al. 2006). When applied to helping behavior, *autonomous helping motivation* refers to helping out of enjoyment and inherent satisfaction the helping provides or because helping is perceived as personally valuable and meaningful. In contrast, *controlled helping motivation* involves pressure to help, which can either reside in external forces, such as the avoidance of the recipients' criticism or the garnering of external approval, or in internal forces, such as a sense of pressured loyalty or guilt. Abundant research has found autonomous, relative to controlled, motivation to yield manifold benefits, including behavioral persistence, enhanced well-being, and better relational functioning (Vansteenkiste et al. 2010).

Also in the domain of prosocial behavior it is critical to take into account the motives underlying helping behavior to better understand when and why provided help yields benefits. Presumably, not all provided help is experienced as gratifying and helpful, neither by the help

provider nor by the recipient. In an initial study among elementary school children it was shown that more autonomous motives for prosocial behavior related to greater empathy and relatedness with parents and teachers (Ryan et al. 1989). Subsequent work among adults showed that more autonomous motives for volunteering related to greater satisfaction (Millette & Gagné 2008) and work effort (Bidee et al. 2013). Interestingly, the well-being benefits of autonomous motives for prosocial behavior, in samples of university students, radiated towards the recipients of help, who also experienced greater relatedness need satisfaction and rated the received help to be of higher quality (Weinstein & Ryan 2010).

Similar findings have recently been documented among ICPs. Kindt et al. (2015) showed that the reasons why partners provided help to their partner in pain related positively to their self-rated well-being and relationship quality. Interestingly, autonomous helping motivation in partners was also associated with a better relational functioning of ICPs, but only for those with high levels of pain. These findings were replicated in a diary study where daily autonomous helping motives in partners related to improvements in partners' and ICPs' affective (e.g., positive affect), relational (e.g., conflict) and help-specific (e.g., exhaustion, satisfaction with help) outcomes (Kindt et al. 2016). These studies provided new insights into the question when partners of ICPs may be distressed or relationally dissatisfied. However, there is a need for further studies to examine factors that may potentially promote autonomous helping motives as well as those factors that increase partners' risk from becoming controlled motivated in the helping process. Two factors that might have an impact upon daily helping motives in partners will be discussed, that is, perceived gratitude and daily goal conflicts.

Gratitude and Helping Motivation

While some recipients of help are grateful for the received help, others may instead perceive the received help as expected and normal such that they fail to express their gratitude. Such expressed gratitude may nevertheless have a motivating impact on help providers, leading

them to become more strongly committed and more willing to provide help, an issue we sought to examine in the present study.

Gratitude has been defined as “the recognition and appreciation of an altruistic gift” (Emmons & McCullough 2004, p.9). It is the positive emotion felt when another person has intentionally given (or attempted to give) something of value (McCullough et al. 2001). Previous research typically examined whether expressed gratitude yields benefits for the person being grateful. Feelings of gratitude were found to improve mood, coping behaviors, and physical health symptoms (Emmons and McCullough 2003), to increase individuals’ life satisfaction (Lambert, Fincham, et al. 2009) and sense of coherence (Lambert, Graham, et al. 2009) as well as to reduce depressive symptoms over time (Wood et al. 2008). Experimental studies, involving a gratitude induction, showed that participants who were made to feel grateful toward a benefactor were more likely to provide help themselves (Bartlett & DeSteno 2006; Tsang 2006).

Although the benefits of gratitude for the person expressing it are well-documented, few studies have examined whether expressed gratitude impacts on the benefactor (Algoe et al. 2016). In the case of a helping relation, the question is whether the gratitude as displayed by the recipient of help affects the help provider. A few older experiments indicated that gratitude expressions can increase both the initiation (McGovern et al. 1975; Rind and Bordia 1995) and maintenance (Clark et al. 1988) of prosocial behavior of others even when it has a certain cost (e.g., receiving an electrical shock). In a more recent experimental study, gratitude expressions motivated healthy participants to provide help a second time and made them persist longer in their helping activities without being asked (Grant and Gino 2010). In an observational study benefactors rated how understood, validated, and cared for they felt during an interaction with a grateful person. After this laboratory-based conversation, the

benefactor rated the grateful person as being more responsive and also reported higher positive emotions (Algoe et al. 2016).

Taken together, research suggests that saying “thank you” to your helper might be a powerful tool for receiving support in the future. Indeed, the reason why we consider gratitude as a good candidate for predicting someone else’s helping motivation is because of its unique characteristics, compared with other positive emotions, in promoting healthy relationships (Algoe & Stanton 2012). For instance, when romantic partners receive gratitude from their partner, they feel closer and more satisfied with their relationship (Algoe et al. 2010), they indicate to be more responsive to their partners’ needs, and to be more committed to remain in their relationship (Gordon et al. 2012), thereby engaging in more relationship maintenance behaviors (e.g., trying to resolve conflicts; Kubacka et al. 2011), while feeling less inhibited to voice relationship concerns (Lambert and Fincham 2011).

Clearly understudied, however, is the extent to which expressed gratitude is effectively received by the person for whom it is intended. Are partners of ICPs able to “read” the gratefulness of their partner? To our knowledge no other studies included this research question. In this study it is explored whether *expressed* gratitude by ICPs is related to *perceived* gratitude in partners. Another important question that remains to be examined, is how perceived gratitude impacts helpers’ motivation to provide help. Here, it is expected that higher perceived (and expressed) gratitude would relate to stronger autonomous helping motives. This study is particularly valuable as it consists of measures assessed in a daily context, which are more ecologically valid than those obtained as part of some experimental paradigms.

Goal Conflict and Helping Motivation

Apart from (perceived or expressed) gratitude, individual differences in helpers’ own functioning may relate to their daily helping motivation. Herein, we argue that one viable

candidate is the help provider's daily experienced goal conflict. Typically, individuals, including partners of ICPs, strive to attain multiple goals within a given day. While some of these goals may be highly compatible and even strengthen each other, other goals may interfere with each other. Goal conflict occurs "when the pursuit of one goal impairs the likelihood of success in reaching another goal" (Riediger and Freund 2004, p.1511), often due to the lack of sufficient resources, such as time, energy, or money. For example, if one has the goal to become successful at work, the pursuit of this goal may require spending long hours at the office and working on weekends. However, if one's partner has chronic pain and is in need of help, this work-related goal might interfere with the goal of being available for one's partner with pain and providing practical or emotional support.

To our knowledge, studies that linked relational functioning with pursuing different goals are scarce. A study of romantic partners showed that both partners' reports of higher goal conflicts were associated with lower relationship quality and lower subjective well-being (Gere and Schimmack 2013). Studies have further shown that, as can be expected, greater goal conflict impedes successful goal attainment (Boudreaux and Ozer 2012). Further, a diary study among adults (Riediger & Freund, 2004) indicated that goal interference, in terms of time, energy or financial constraints, predicted relative decline in positive affect as well as relative increase in negative affect. In line with such findings, Righetti et al. (2016) showed that encountering situations of goal conflict with one's partner resulted in higher levels of daily negative affect and stress and also impacted daily relationship satisfaction.

Overall then, goal conflict comes with a personal cost, yet, the relation with partners' helping motivation has, to the best of our knowledge, not been investigated yet. From the perspective of SDT (Deci and Ryan 2000), goal conflict may create pressure as one feels conflicted to divide one's limited time and energy across different goals. If helping one's partner needs to be combined with the pursuit of other life goals, providing help might

directly hinder partners from doing something else, thereby eliciting the experience that helping is a daunting duty. We further argue that people who perceive helping as interfering with other activities have not entirely integrated this behavior within their other life values and goals. In line with SDT, we therefore propose that goal conflicts create pressure and come with more controlling motives (e.g., “I have to help” instead of “I want to help”) to provide support to one’s partner.

Present Study

The current study is the first to examine two potential antecedents of someone’s helping motivation. It is hypothesized that perceived gratitude and goal conflict are two possible candidates to investigate. By letting couples complete diaries, data are more ecologically valid than when, for example, feelings of gratitude are elicited through an experimental paradigm. Another interesting feature of diary data is that they allow differentiating within- and between-person variation in gratitude and goal conflict. As a first research question, it is hypothesized that ICPs’ day-to-day variation in expressed gratitude (i.e. expressed appreciation for receiving partner support) will relate to the day-to-day fluctuations in partners’ perceived gratitude. It remains important to examine whether expressed gratitude in one person is associated with perceived gratitude in another person. No other studies investigated expressed and perceived gratitude simultaneously in a daily context. Second, it is expected that perceived gratitude by partners on a given day will predict partners’ helping motivation the same day. Third, it is hypothesized that, beyond the effect of perceived gratitude, day-to-day fluctuations in partners’ experienced conflict between goals related to helping their partner in pain and other personal goals will be associated with partners’ daily helping motivation during the same day. The beneficial role of perceived gratitude and the hampering role of goal conflict for partners’ motivation may not only be observed on the same day, but also radiate to the next day. Therefore, in a series of lagged analyses, we sought

to examine whether both predictors, as assessed on a given day, would relate to a change in helping motivation the next day.

METHODS

Study design

The present study is part of a larger study, the “Helping Motivation Diary and Longitudinal Study” (HMDAL-Study), among individuals with chronic pain (ICPs) and their partner, which comprises, apart from the diary assessment that is reported herein, three separate waves of questionnaire administration, spread across 6 months. For the purpose of the present study, ICPs and their partners completed daily diaries during 14 days, starting after the Time 1 questionnaire administration. This study was approved by the ethical committee of the Faculty of Psychology and Educational Sciences of Ghent University.

Study participants

Participants were couples ($N = 64$), recruited through the Flemish Pain League (FPL; $N = 23$), an umbrella organization for ICPs, and through the Flemish League for Fibromyalgia Patients (FLFP; $N = 41$), which is an organization specifically for individuals with fibromyalgia (see Figure 1). Details about the recruitment of patients through the Flemish Pain League are described in the paper of Kindt et al. (2016). With regard to the recruitment of participants through the FLFP, 1391 members received an invitation letter in February 2015 to participate in studies about chronic pain and quality of life in our lab. About 35% ($N = 485$) agreed to be contacted by phone. Three hundred seventy-seven of them indicated that they were currently in a romantic relationship. Inclusion criteria for participation of ICPs in the present study were (1) having chronic pain for at least 3 months, (2) physically living together with a partner for at least one year and (3) being sufficiently proficient in Dutch. From the couples that were

contacted by phone ($N = 79^1$), 64 couples were reached and 44 were willing to participate. Two ICPs were excluded, five were not willing to participate and 13 asked to be contacted again in the future.

- Insert Figure 1 about here -

The majority of ICPs was female ($N = 58$; 90.6%). The mean age of ICPs and their partner was 48.56 years ($SD = 11.78$) and 50.78 years ($SD = 12.64$), respectively. All couples were Caucasian and almost half of them (42.2% of ICPs; 43.8% of partners) reported an education beyond the age of 18. More than 80% of the couples was married or legally cohabiting (82.8%). The mean relationship duration was 21.27 years ($SD = 14.51$). The majority of partners was employed ($N = 49$; 76.6%), while only 17.5% of ICPs ($N = 11$) was employed. All ICPs reported more than one pain location ($M = 4.75$, $SD = 1.47$; range 2–7), with pain in the back (93.87%), neck (92.2%), and lower extremities (70.3%) being reported most frequently. The mean pain duration was 11.23 years ($SD = 10.04$). On a scale from 0 to 10, ICPs reported a mean pain intensity of 6.96 ($SD = 1.20$) and a mean disability of 6.36 ($SD = 2.01$). Twenty-one partners (i.e., 32.8%) also reported pain complaints during the past three months (which is similar to other studies with chronic pain couples, e.g. Issner et al. 2012). Paired-samples *t*-tests showed that pain intensity ($M=4.21$, $SD=1.56$) and disability ($M=2.21$, $SD=1.57$) were significantly lower in partners compared with the ICPs (all $ps < .01$; $M=7.38$, $SD=1.29$; $M=6.81$, $SD=2.39$).

Data collection procedure

Participants were contacted by telephone to (1) provide more information about the present study and (2) assess inclusion criteria. The informed consents and baseline questionnaires were administered via a home visit. After completing the questionnaires, further explanation about the diary study was given. Participants were instructed to fill out the diary in the

¹Not all members of the FLFP were contacted for this particular study. The intended sample size for the HMDAL-study was 140 couples; the recruitment of participants was ended when this number was reached.

evening for 14 consecutive days. If there were no planned holidays, participants started filling in the diary the day after the home visit. Both partners received a link and a personal code for completing the diary online (through LimeSurvey). When no computer and/or internet was available, or when participants indicated to have no experience with computer/internet, they received a diary booklet on paper². As a sign of appreciation, couples received a fee of 30 euros after completing the 2-week diary. To enhance completion rates we offered the opportunity to receive a text message every evening as a reminder for completing the diary.

Out of a potential 1792 end-of-day observations (128 individuals (within 64 couples) x 14 days), a total of 1700 were complete (94.87%). Records completed after 10AM the next morning³ were deleted, as suggested by Nezlek (Nezlek 2012). Using this criterion 1686 of the 1700 completed observations were included in the analyses (i.e., 99.18% of the completed observations, 94.08% of total possible observations).

Baseline measures

Relationship quality in partners was assessed with the 32-item Dyadic Adjustment Scale (DAS) (Spanier 1976), which provides a global measure of relational adjustment. The DAS consists of four subscales. Dyadic satisfaction (10 items) measures the tension between partners and the extent to which ending the relationship has been considered. The degree of agreement between partners is called dyadic consensus (13 items). Dyadic cohesion (5 items) assesses shared interests and activities and affectional expression (4 items) reflects the satisfaction with affection and sex in the relationship. Higher sum scores represent higher levels of relationship quality. Heene et al. (2000) confirmed reliability and validity of the overall scale. In this study, Cronbach's alpha for the total score was .93.

² Nine ICPs and 7 partners used the paper version of the diary.

³ For the paper versions of the diary we relied on the date/time indicated by the participant.

Diary measures

All measures described below were collected each evening during 14 consecutive days. For partners, daily goal conflict, perceived gratitude, and helping motivation were assessed, whereas ICPs reported on asking and demanding help, their expressed gratitude towards their partner and daily pain intensity. To estimate item reliability, a multilevel confirmatory factor analysis framework was used that enables the examination of level-specific reliabilities (Geldhof et al. 2014). Within- and between-level alphas are reported.

Partner items

Partners reported every day to what extent helping or supporting their partner interfered with five other (potential) goals on a scale from “0” (not at all) to “6” (extremely). These goals were (1) maintaining relationships with others, (2) participating in leisure activities, (3) performing work-related activities, (4) taking care of own health and (5) pursuing personal growth and development (e.g., learning new skills). The mean score on these 5 items was used as a measure of daily goal conflict. If pursuing one of these goals did not apply for a person that day, there was also an option to answer “inapplicable”. The scale was reliable at the within-person ($\alpha = .86$) and between-person ($\alpha = .98$) level.

They further reported whether they perceived gratitude from their partner with pain for the provided help/support during the day: “My partner expressed appreciation” and “my partner showed gratefulness”. Items were rated on a 7-point scale ranging from “0” (totally disagree) to “6” (totally agree). The scale was reliable at the within-person ($\alpha = .92$) and between-person ($\alpha = .99$) level.

To measure partners’ daily helping motivation, 8 items from the Motivation to Help Scale were selected, which was adapted in a previous study for use with chronic pain couples (Kindt et al. 2015). These items appeared reliable in another diary study with chronic pain couples

(Kindt et al. 2016). Every evening, partners received a list of 8 reasons for helping or supporting their partner in pain. They reported on how true these motives were for helping their partner the past day on a 7-point scale ranging from “0” (not at all true) to “6” (totally true). Drawing from SDT, four different types of motivation were distinguished: external motivation (2 items, e.g., “because my partner demanded it from me”), introjected motivation (2 items, e.g., “because I would feel guilty if I didn’t help”), identified motivation (2 items, e.g., “because I think it is important to help my partner”) and intrinsic motivation (2 items, e.g., “because I enjoy helping my partner”). Items of external and introjected motivation were summed up to represent controlled motivation to help; items of identified and intrinsic motivation were summed to represent autonomous motivation to help. In line with previous studies (e.g., Kindt et al. 2015, 2016; Weinstein & Ryan 2010), an overall index reflecting the relative degree of autonomous helping motivation was calculated by subtracting controlled motivation from autonomous motivation scores. The scale was reliable at the within-person ($\alpha = .62$) and between-person ($\alpha = .70$) level.

When partners indicated that they did not provide help during the past day, the items measuring helping motivation, goal conflict and perceived gratitude were not displayed in the online system. Out of a total of 896 days (64 partners * 14 days), only for 51 days (i.e., 5.7%) scores for helping motivation and goal conflict were missing because partners reported they did not provide support that day.

ICP items

ICPs reported every day on the extent to which they asked (1 item) or demanded (1 item) help or support from their partner. Both items ranged from “0” (not at all) to “6” (always).

ICPs further reported whether they expressed gratefulness for the received help/support of their partner during the day: “I expressed my appreciation today” and “I showed

gratefulness”. Items were rated on a 7-point scale ranging from “0” (totally disagree) to “6” (totally agree). The scale was reliable at the within-person ($\alpha = .92$) and between-person ($\alpha = .99$) level.

Items to assess pain intensity were based on the Graded Chronic Pain Scale (Von Korff et al. 1992) and adapted to a daily context. Every evening, ICPs completed an item asking “On average, how much pain did you have today?” and “How intense was your worst pain today?”. Items were rated on a 7-point scale ranging from 0 (no pain) to 6 (worst imaginable pain). The scale was reliable at the within-person ($\alpha = .89$) and between-person ($\alpha = .92$) level.

Data analytic strategy

Multilevel models were fitted using PROC MIXED in SAS 9.4 to examine associations between the different predictors and partners’ daily helping motivation. Data were analyzed considering two different levels. The *within-couple* level (Level 1) represents the daily variations of our measures, while the *between-couple* level (Level 2) represents the differences between persons or between couples (Bolger and Laurenceau 2013).

In preparation for data analysis, all daily predictors were centered within clusters (i.e. in this case person-mean centered) (Enders and Tofighi 2007), as this is considered the most appropriate form of centering when the primary interest involves a Level 1 predictor (i.e., daily helping motivation). This method removes all between-couple variation from the predictor and yields a “pure” estimate of the pooled within-couple (i.e., Level 1) regression coefficient (Enders and Tofighi 2007). To control for between-couple variation, the mean values for the different independent variables were added as predictors at Level 2 (West et al. 2011). Level 2 covariates were grand-mean-centered (e.g., relationship quality). No random intercepts and slopes were added in the analyses.

First, a baseline model was estimated to calculate the intraclass correlation coefficient. Next, predictors were added in the model. Diary data not only differ across persons; they are also strictly ordered in time. It is possible that concurrent changes in gratitude or goal conflict and helping motivation are not due to any causal process but may be due to the passage of time, for this reason an autoregressive covariance structure was used in the analyses to take autocorrelation into account (Bolger and Laurenceau 2013). To examine whether gratitude and goal conflict related to a change in partners' helping motivation in partners, we controlled for prior day levels of partners' helping motivation.

At Level 1, we controlled for the extent to which ICPs ask or demand help from their partner because of theoretical considerations. Demanding help might put partners under pressure to respond rather in the short-term and might lead them to focus rigidly on a desired outcome, compared with when help was kindly asked. Also daily pain intensity, reported by ICPs, was added in our analyses because the need for help, and hence the motives for helping, might differ between days in which high pain is experienced compared to days with only pain of low pain intensity. Two sets of analyses are performed, one set involving same day predictors (see Table 2, left half) with only helping motivation as lagged variable and another set involving previous day predictors (see Table 2, right half), where also (perceived) gratitude and goal conflict were entered as lagged predictors at Level 1. At level 2, we also added several variables to control for their possible role. Specifically, because this sample includes couples, we controlled for relationship duration and relationship quality. The quality of close relationships has important implications for how well people accomplish their everyday goals (Hofmann et al. 2015) and has also been linked with gratitude (Gordon et al. 2012). As independent samples *t*-tests showed that there were no differences in daily helping motivation according to partner/ICP sex, marital status, having children, education level, work

status and presence of pain in both partners we did not control for these variables in the analyses.

RESULTS

Descriptive statistics

Table 1 provides within-couple correlations (based on person-centered diary scores across days) between the variables of interest. The ICC represents the percentage of the total variance of a variable that is due to between-couple mean differences (Bolger and Laurenceau 2013). The amount of within-couple variation can be calculated by subtracting the ICC from 1. Within-couple differences accounted for 31.54% of the variance in partners' helping motivation. The variables with the largest within-couple variation were the extent to which individuals with chronic pain (ICPs) asked (69.58%) or demanded help (68.77%) from their partner.

- Insert Table 1 about here -

Multilevel Same-Day Analyses

In our first analysis (see Table 2, left half), same-day effects of partners' perceived gratitude and goal conflict were investigated, while controlling for the extent to which ICPs asked or demanded help, ICPs' pain intensity during the day and the previous day-level of partners' helping motivation. Daily fluctuations in partners' perceived gratitude predicted fluctuations in partners' helping motivation the same day ($B=.14$, $SE=.04$, $p=.000$), indicating that the more gratitude partners perceived on a given day, the more autonomously motivated they were for providing help that day when compared to the previous day. Results further showed that fluctuations in partners' daily goal conflict related negatively to fluctuations in partners' autonomous helping motivation the same day ($B=-.14$, $SE=.06$, $p=.030$), indicating that the more goal conflict partners perceived on a given day, the less they were

autonomously motivated to provide help that day compared to the previous day. Asking and demanding help by ICPs, and ICP pain intensity showed no significant association with the daily fluctuations in partners' helping motivation (see Figure 2).

- Insert Figure 2 about here -

In a set of exploratory analyses, we tested whether expressed gratitude on a given day was associated with partners' perceived gratitude, measured the same day. Multilevel analyses showed that daily expressed gratitude in ICPs significantly positively related to daily perceived gratitude reported by partners ($B=.13$, $SE=.03$, $p=.000$).

Multilevel Lagged Analyses

In a second analysis (see Table 2, right half), we investigated the lagged effects of partners' perceived gratitude and goal conflict. That is, rather than introducing both predictors on a given day to account for helping motivation that day, both predictors as reported on the previous day were inserted, thus, allowing for a more conservative test of our hypotheses. Partners' perceived gratitude on a given day significantly predicted partners' helping motivation the next day, indicating that the more gratitude partners perceived on a particular day, the more they were autonomously motivated to provide help the next day ($B=.09$, $SE=.04$, $p=.039$). There was no lagged effect for partners' goal conflict, meaning that the level of goal conflict on a given day was not carried over to partners' helping motivation the next day. Similarly, asking and demanding help by ICPs and ICP pain intensity during the day showed no significant association with the daily fluctuations in partners' helping motivation (see Figure 3).

- Insert Table 2 and Figure 3 about here -

Supplementary analyses

In a series of supplementary analyses, we examined whether daily variation in expressed gratitude could predict partners' daily helping motivation, above and beyond the effects of perceived gratitude. For the same-day analyses, both fluctuations in perceived ($B=.13$, $SE=.03$, $p=.003$) and expressed gratitude showed a significant positive relation with daily fluctuations in partners' helping motivation ($B=.11$, $SE=.03$, $p=.001$). As for the lagged analyses, fluctuations in previous-day perceived gratitude remained a significant predictor ($B=.10$, $SE=.04$, $p=.017$), whereas fluctuations in previous-day expressed gratitude showed no significant relation with daily fluctuations in partners' helping motivation ($B=-.02$, $SE=.03$, $p=.532$).

As a second supplementary analysis, we checked for the potential reciprocal role of helpers' motivation on gratitude and goal conflict, thus investigating reverse effects. Specifically, we examined whether daily fluctuations in autonomous helping motivation predicted changes in daily goal conflict and perceived gratitude as assessed that day (i.e., same-day analyses) and whether daily fluctuations in autonomous helping motivation predicted daily changes in perceived gratitude and goal conflict (i.e., next-day analyses). With respect to the same-day associations, daily fluctuations in partners' helping motivation predicted daily fluctuations in partners' perceived gratitude ($B=.17$, $SE=.04$, $p=.000$) and ICPs' expressed gratitude ($B=.21$, $SE=.05$, $p=.000$) as assessed the same day, while it did not predict daily fluctuations in goal conflict ($B=-.03$, $SE=.03$, $p=.297$).

With regard to lagged effects of partners' helping motivation, there were no significant results found, indicating that partners' helping motivation on a given day was not predictive for partners' perceived gratitude ($B=-.03$, $SE=.05$, $p=.494$), ICPs' expressed gratitude ($B=-.07$, $SE=.05$, $p=.162$) and partners' experience of goal conflicts ($B=.01$, $SE=.03$, $p=.867$) during the next day.

DISCUSSION

Given the benefits associated with volitionally provided help (in contrast to help arising from pressured motives), both for the well-being of helpers and recipients of help (Kindt et al. 2015, 2016; Weinstein and Ryan 2010), it is important to study determinants of helpers' autonomous helping motivation. To our knowledge this is the first study that investigates determinants of helping motives in couples, using a daily diary approach. This research question was addressed in couples facing chronic pain, given the relevance of helping interactions in the context of the frequent needs for help by the individual in chronic pain (ICP).

The Motivating Role of Gratitude

As a first determinant, the present study investigated the predictive role of (perceived) gratitude in explaining partners' helping motivation. In line with our expectations, if partners perceived more gratitude from ICPs on a given day, they not only reported helping for stronger autonomous helping motives during the same day, but they even provided more autonomously motivated help the next day. Such effects emerged even after controlling for the extent to which ICPs asked or demanded help and their daily pain intensity. These findings indicate that perceiving one's partner as grateful is critical to maintaining one's autonomous motivation to provide help in the future and/or may prevent partners from experiencing the helping as a daunting duty, a "should" they cannot escape.

Notably, ICPs expressed gratitude may not only enhance their partner's willing motivation to provide help, it also has been linked with different well-being benefits. Previous studies show that gratitude is associated with a decrease in depressive symptoms, stress, and negative affect, and an increase in happiness, positive affect, and improved sleep quality in the person expressing gratitude (Cheng et al. 2015; Emmons and McCullough 2003; Seligman et al.

2005). Furthermore, felt and expressed gratitude have also been shown to be related to positive relational processes such as feeling more satisfied with (Algoe et al. 2010) as well as being more responsive and committed to one's relationship (Gordon et al. 2012) for both the benefactor as the person expressing gratitude.

One may argue that couples in long-term relationships (as were most couples in our sample) have established routine-based communication patterns and habits, suggesting that expressing gratitude towards one's partner would have minimal effects. Our results, however, showed that expressions of gratitude by ICPs were associated with perceived gratitude in partners from day-to-day and, moreover, even yielded a unique association with autonomous helping motivation on the same day above and beyond the role of perceived gratitude. Such findings suggest that expressed gratitude influences partners' helping motives even when the gratitude is left unnoticed by the help provider. However, only the contribution of perceived gratitude (but not of expressed gratitude) carried over to the next day, meaning that perceived gratitude not only yields an immediate motivating effect, but that its motivational advantages last for days. Presumably, when partners provide help on a given day they may recall to what extent they felt appreciated for their efforts on previous days, which could then further boost their motivation to put effort in the helping process.

The Motivational Pitfalls associated with Goal Conflict

Apart from gratitude, which we considered a more protective factor that relates to the interpersonal dynamics in couples, we also considered goal conflict as potential threat for providing autonomously motivated help. Different from gratitude, this predictor concerns partners' own functioning. Partners have their own agenda and goals, which on some days may conflict with providing adequate help to their partner in need. Indeed, on days that the provision of help would hinder partners in pursuing other (valued) activities or goals,

partners' autonomous helping motivation may be diminished. The findings confirmed this hypothesis, showing that day-to-day variation in experienced goal conflicts was negatively associated with daily variations in partners' (relative) autonomous helping motivation. On days where partners experienced more interference between helping the ICP and other personal goals they strived for, they reported less autonomous motives to provide help compared to the day before. Presumably, when encountering goal interference, partners may more easily feel conflicted about the helping. Because other goals may be given higher priority, on such days, supporting one's partner may be experienced more easily as a burden they would rather want to avoid. Notably, the motivational pitfalls associated with goal conflict only emerged on a given day and did - different from the contribution of perceived gratitude - not carry over to the next day. Technically speaking, no lagged effect of goal interference was obtained. Presumably, each day brings its own degrees of goal conflict, such that there are no left-overs of previous goal conflicts the next day. Given this is the first study to focus on goal conflict as a potential threat to autonomous helping motivation, future work may need to replicate this finding in more diverse populations.

Implications

The findings of the current study have some clinical relevance. Several studies already demonstrated the benefits of partners having stronger autonomous helping motives for their own-well-being (Kindt et al. 2015), as for the well-being and relational functioning of the help recipient (Kindt et al. 2016; Weinstein and Ryan 2010). Therefore, enhancing the expression of gratitude towards caregivers may be an important target point for intervention in ICPs. Our results specifically suggest that couples may benefit from expressing more gratitude, but also from learning to pay attention and to make positive attributions when spouses express gratitude to them (see also Gordon et al., 2011). It might be the case that the same processes are present in other relationships, as for example formal caregivers and

patients, but further research is needed to investigate this possibility. Likely, gratitude needs to be expressed authentically to yield these motivational benefits. If ICPs show their gratitude in an *instrumental* way, that is, with the aim of enhancing the motivation of their partner and getting something done from them, the expressed gratitude may not be perceived as such and may have a more limited effect on partners' autonomous helping motivation.

Furthermore, it seems important that both partners and ICPs are aware of goal conflicts and communicate about them. Partners are sometimes pressured to divide their time and energy across different sets of valued activities and goals. It seems useful to address partners' experience of goal conflicts in clinical practice, as these may constitute a threat to partners' autonomous helping motivation and a source of relational conflicts (Gere and Schimmack 2013; Righetti et al. 2016).

Limitations and future directions

This study has several limitations, which have implications for future research in this area. First, although we were able to demonstrate lagged effects of perceived gratitude on helping motivation, we cannot address causality. A bidirectional relationship may be present between perceiving more gratitude and higher autonomous helping motives. Indeed, Weinstein et al. (2010) reported, using a vignette methodology, that participants were more likely to express gratitude towards the helper if they perceived the helper to be autonomously motivated to help than when the helper was perceived as controlled motivated. Specifically, autonomously motivated, as compared to neutral helpers, elicited more gratitude, while controlled motivated helpers did not differ from neutral helpers in terms of expressed gratitude (Weinstein et al. 2010). However, in our study, the reverse effects were less convincing than the results in the hypothesized direction. Daily variation in partners' autonomous helping motives was not associated with same-day goal conflict, but only with higher perceived and expressed

gratitude during the same-day, but not during the next day. Future studies may manipulate gratitude in the lab by using an interview in couples to elicit low or high levels of gratitude expressions, and examining its effects upon partners' subsequent helping behaviors.

Likewise, it may also be true that partners who provide autonomously motivated help perceive less goal conflicts or are better capable to manage them. There is one study showing that increases in relationship satisfaction benefited everyday goal pursuit by experiencing more control, a higher goal focus, more perceived partner support and more positive affect during goal pursuit (Hofmann et al. 2015). Relational processes may also impact the extent to which providing help is experienced as a hindrance for other goals. Experimental designs are necessary to ascertain causality with regard to the relationship between experienced goal conflicts and helping motivation. However, using diary methodology has several advantages. These data provide temporal information, which makes it possible to determine the antecedents of daily experiences. By collecting daily information, individuals' experiences are captured in their natural context and closely to their occurrence (Bolger et al. 2003), which is beneficial for the ecological validity. It furthermore provides the opportunity to investigate the ratio between variations between and within persons of the variables of interest, as was shown in this study. Our study showed substantial day-to-day variation in partner's helping motives, perceived gratitude and goal conflict.

Second, our data only included partner and ICP self-reports of daily behavior. To overcome this limitation, future studies may use observational methods. For instance, goal conflict may be induced in a lab setting (by asking partners to perform several tasks simultaneously including a helping task), and examine the effects on their helping motivation and helping behaviors. Third, all included couples were Caucasian, in a stable relationship, with high levels of average marital satisfaction, which limit the generalizability of our findings. Finally, this study only investigated two potential predictors of helping motivation. Our current list is

far from exhaustive but, from a theoretical perspective, the two formed a balanced set of predictors, both in terms of the primary target (i.e., partner him/herself or ICP) and its valence (i.e., protective/motivation-promoting and risk/motivation-threatening). At the same time, we hasten to say that future research could investigate whether other variables may additionally predict partners' helping motivation. That is, also motivation-threatening factors in the couple may receive attention (e.g., daily quarrels), while motivation-enhancing factors in the help provider may also be studied (e.g., daily mindfulness). In addition, the mechanisms accounting for the contribution of gratitude and goal conflict (e.g., daily vitality or daily stress; Righetti et al. 2016) could also be targeted in future work.

Conclusion

In sum, the present study provides new insights into factors that might enhance partners' daily autonomous helping in a context of chronic pain. Previous research has shown that autonomous help is beneficial for both partners (providers of support) and ICPs (receivers of support) (Kindt et al. 2015, 2016). This study showed that if partners perceive the ICP to be grateful of the provided help on a given day, they are not only more willingly to provide help the same day, they even do so the next day. Furthermore, on days that partners experience a lot of interference between helping the ICP and other life goals, they feel more pressured to provide help that day, which might also affect the quality of help that is provided, a question that may be addressed in future research.

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Conflict of interest statement

The authors have no conflicts of interest to disclose.

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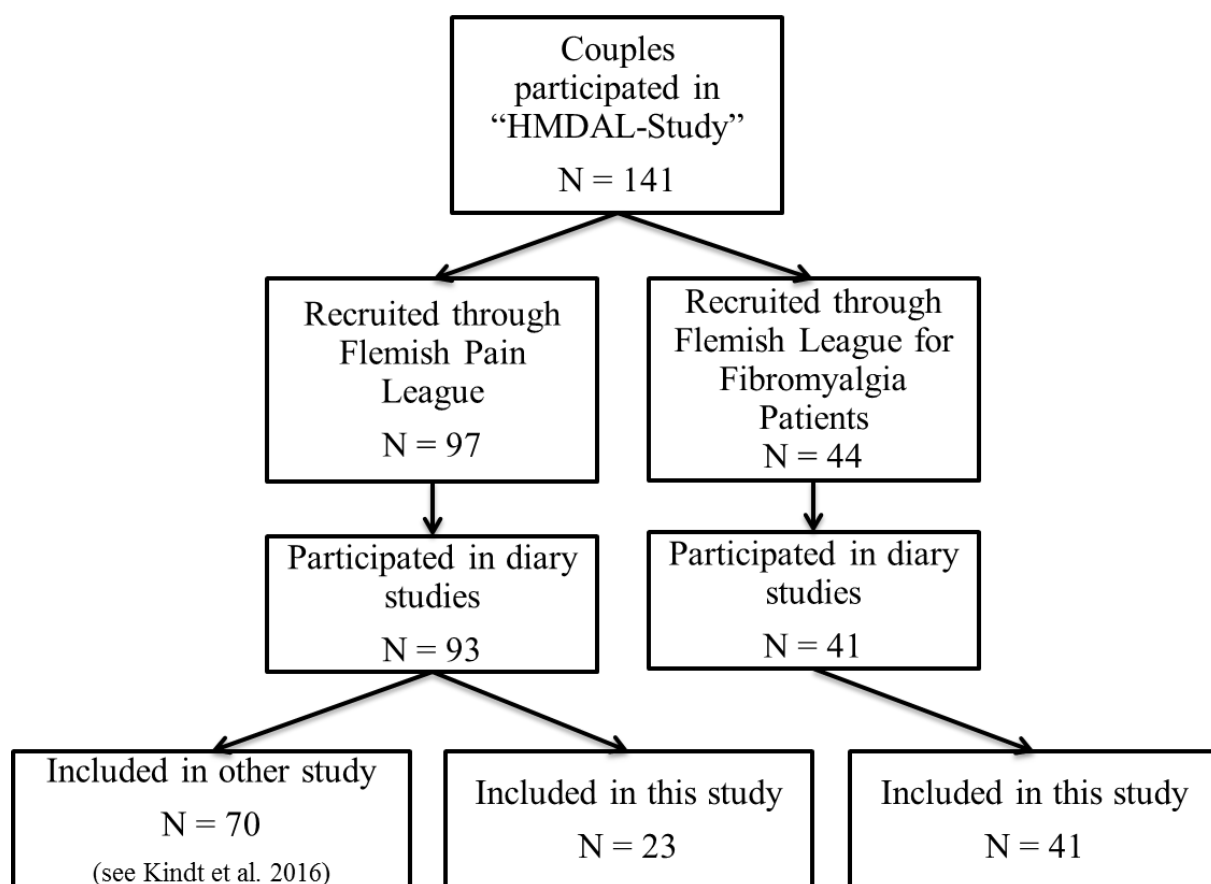


Figure 1. Overview of recruitment.

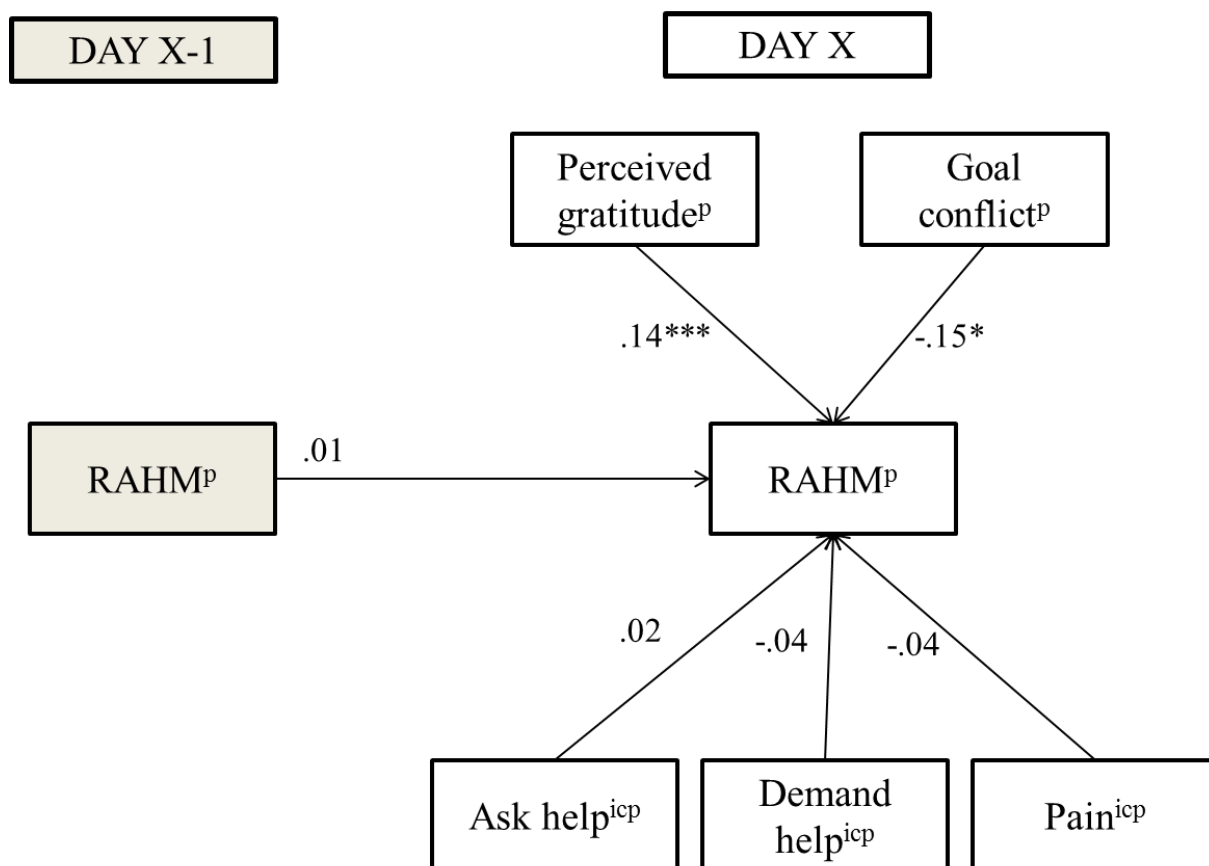


Figure 2. Same-day associations for partners' relative autonomous helping motivation (RAHM).

Note. icp=measured in individuals with chronic pain; p=measured in partners

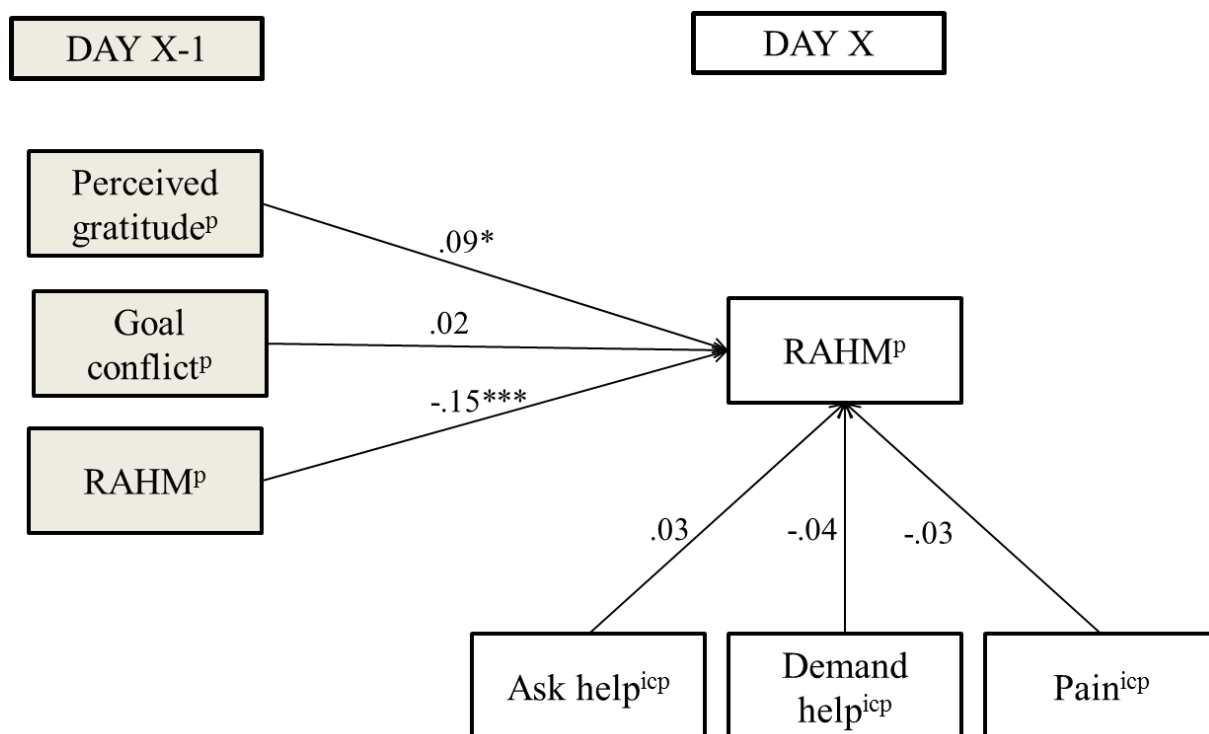


Figure 3. Lagged associations for partners' relative autonomous helping motivation (RAHM).

Note. icp=measured in individuals with chronic pain; p=measured in partners

Table 1. Means, Standard Deviations, ICC values and Within-couple, across-day correlations among Study Variables

	1	2	3	4	5	6	7	ICC	Mean	SD
1. Relative autonomous helping motivation ^P	-							68.46	2.37	1.75
2. Expressed gratitude ^{ICP}	.16***	-						52.67	3.71	1.58
3. Perceived gratitude ^P	.26***	.16***	-					70.30	4.36	1.37
4. Goal conflict ^P	-.10**	-.02	-.20***	-				57.31	.64	1.09
5. Asking help ^{ICP}	.05	.20***	.06	-.02	-			30.42	1.86	1.60
6. Demanding help ^{ICP}	-.06	-.03	-.01	.04	.46***	-		31.23	.56	1.06
7. ICP Pain Intensity ^{ICP}	-.02	-.02	-.06	.14***	.22***	.20***	-	47.01	3.45	1.19

Note. The potential number of observations can reach up to 896 (64 couples across 14 days). ICP = measured in ICPs, P = measured in partners, M=mean, SD=standard deviation, ICC=intraclass correlation coefficient. *p<.05, **p<.01, ***p<.001.

Table 2. Multilevel regression analysis: same-day and lagged predictors of partners' relative autonomous helping motivation.

Same-day analyses	RAHM		Lagged analyses	RAHM	
	B (SE)	95% CI		B (SE)	95% CI
<i>Level 1 (within-couple)</i>			<i>Level 1 (within-couple)</i>		
Previous day RAHM	.01 (.04)	[-.07; .09]	Previous day RAHM	-.15 (.04)***	[-.24; -.06]
Perceived gratitude	.14 (.04)***	[.06; .23]	Previous day perceived gratitude	.09 (.04)*	[.00; .18]
Goal conflict	-.14 (.06)*	[-.26; -.01]	Previous day goal conflict	.02 (.06)	[-.10; .14]
ICP Asking Help	.02 (.03)	[-.05; .08]	ICP Asking Help	.03 (.03)	[-.04; .09]
ICP Demanding Help	-.04 (.05)	[-.13; .05]	ICP Demanding Help	-.04 (.05)	[-.14; .05]
ICP Pain Intensity	.04 (.05)	[-.05; .13]	ICP Pain Intensity	-.03 (.05)	[-.12; .06]
<i>Level 2 (between-couple)</i>			<i>Level 2 (between-couple)</i>		
Mean Perceived Gratitude	.38 (.16)*	[.05; .70]	Mean Perceived Gratitude	.38 (.16)*	[.06; .69]
Mean Goal Conflict	-.06 (.21)	[-.47; .35]	Mean Goal Conflict	-.04 (.20)	[-.44; .36]
Mean Asking Help	.03 (.19)	[-.34; .41]	Mean Asking Help	-.04 (.19)	[-.41; .32]
Mean Demanding Help	-.27 (.28)	[-.82; .28]	Mean Demanding Help	-.28 (.27)	[-.82; .25]
Mean ICP Pain Intensity	-.30 (.28)	[-.84; .25]	Mean ICP Pain Intensity	-.30 (.28)	[-.84; .25]
Relationship Quality	.01 (.01)	[-.01; .04]	Relationship Quality	.01 (.01)	[-.01; .04]
Relationship Duration	-.02 (.01)	[-.04; .01]	Relationship Duration	-.02 (.01)	[-.04; .01]
-2 Res Log Like	1574.5		-2 Res Log Like	1613.2	
DFs	494		DFs	495	

Note. RAHM = relative autonomous helping motivation, ICP = individual with chronic pain, 2 Res Log Like = value of -2 times Residual Log Likelihood, DFs = degrees of freedom, CI = confidence interval.

*p<.05, **p<.01, ***p<.001.