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Original experimental

I see you're in pain – The effects of partner validation on emotions in people with chronic pain

Sara M. Edlund [a,*], Maria L. Carlsson [a], Steven J. Linton [a], Alan E. Fruzzetti [b], Maria Tillfors [a]

[a] Center for Health and Medical Psychology (CHAMP), School of Law, Psychology and Social Work, Örebro University, Sweden
[b] Department of Psychology 298, University of Nevada, Reno, USA

HIGHLIGHTS

- Validation communicates understanding and acceptance of the other person's experience.
- We examine feasibility and effects of a brief validation training in chronic pain couples.
- The training increases validation and decreases invalidation in spouses to people with chronic pain.
- This is associated with decreases in negative affect in people with chronic pain.
- This suggests the usefulness of further research on validation with these couples.

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ABSTRACT

Background and aims: Chronic pain not only affects the person in pain, but can also have a negative impact on relationships with loved ones. Research shows that chronic pain is associated with difficulties in marital relationships, which in turn is related to a variety of negative outcomes such as psychological distress and conflict within the family. This suggests that couples where chronic physical pain is present also struggle with emotional pain and relationship problems, and thus targeting relationship skills and interpersonal functioning might be helpful for these couples. Although studies in this area are promising, their numbers are few. In the present study, validation as a way of communicating is suggested for handling emotional expression in interpersonal interactions. Validation communicates understanding and acceptance of the other person's experience, and it has been shown to have a down-regulating effect on negative emotions. It has previously been demonstrated to be important for these couples. However, the feasibility and effects of increasing partner validation in these couples are unknown. Therefore, the aim of the present study was to investigate if a brief training session in validation for spouses would result in more validating and fewer invalidating responses towards their partners with pain, and to investigate if changes in these behavioural responses were associated with changes in emotion and pain level in the partner with pain.
Methods: Participants were 20 couples where at least one partner reported chronic pain. The study employed a within-groups design in which spouses of people with pain received validation training (without their partner's knowledge), and their validating and invalidating responses were rated pre- and post-intervention using a reliable observational scale. Also, positive and negative affect and subjective pain level in the persons with pain were rated pre- and post-intervention.
Results: Results showed that the validation training was associated with increased validating and decreased invalidating responses in the partners. Their spouses with chronic pain reported a decrease in negative affect from pre- to post-training.
Conclusions: Our results indicate that the partner or closest family member, after brief validation training, increased validating responses and decreased invalidating responses towards the person with pain, which had an immediate positive impact on emotions in the other person.
Implications: This study suggests that using validation in interpersonal interactions is a promising tool for couples where chronic pain is present.

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* Corresponding author at: JPS: Psychology, Örebro University, 701 82 Örebro, Sweden. Tel.: +46 19 301266; fax: +46 19 303484.
E-mail addresses: sara.larsson@oru.se (S.M. Edlund), maria.carlsson2@orebroll.se (M.L. Carlsson), steven.linton@oru.se (S.J. Linton), aef@unr.edu (A.E. Fruzzetti), maria.tillfors@oru.se (M. Tillfors).

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1. Introduction

Chronic pain negatively affects both people suffering from it and those close to them. It is associated with marital difficulties [1,2], which in turn is related to depressive symptoms in chronic pain patients [3,4], and family conflict [5]. Also, marital dissatisfaction is related to psychological distress in these couples [3], and sexual problems are common [2,6]. Hence, couples where chronic pain is present struggle with a variety of difficulties besides pain. Targeting interpersonal functioning might therefore be relevant for these couples.

One factor that affects pain and marital functioning is partner solicitousness. Responses that are considered solicitous are positive and negative reinforcement of pain behaviours, as well as insufficient reinforcement of well behaviours [7]. More specifically, examples of solicitous responses are to take over household chores, offer help, or in other ways adapt daily activities to the person in pain when it reinforces dysfunction. Pain patients with a solicitous partner report more relationship satisfaction [2]. However, solicitous responses are associated with greater pain intensity [4,8,9], increased frequency of pain behaviours [9–11], less activity [8] and increased disability [9] in patients. Thus, despite good intentions and positive consequences for marital satisfaction, solicitous responses likely exacerbate pain-related problems through operant mechanisms. This stresses the importance of finding a partner response style that provides support without reinforcing dysfunction.

Targeting interpersonal functioning in these couples has been suggested [3,12], but not studied much. There are, however, a few promising results [13,14]. One form of communication that might be helpful in interpersonal interactions is validation [15,16]. Validation communicates understanding, legitimacy, and acceptance of the other's experience. In contrast, invalidation communicates that what the other person feels, thinks, wants or does is wrong, illegitimate, and does not deserve sympathetic attention or respect [17]. Validation has been shown to reduce moderate to high negative emotional arousal, and invalidation has been shown to maintain or worsen negative emotional arousal [18]. Also, validation may contribute to healthy emotion regulation in couples [19,20]. In chronic pain couples, validation and invalidation have been examined as empathic and non-empathic responses [21,22]. Among other things, results showed that validation was associated with perceived spousal support for persons with pain, and marital satisfaction for both partners [21]. Another study showed that greater invalidation was related to lower marital satisfaction [23]. The importance of emotional disclosure and validation in chronic pain couples has been suggested [24]. However, the feasibility and effects of trying to increase validation and decrease invalidation in these couples have not been investigated.

Therefore, the aim of this study was to investigate if brief validation training for spouses would result in more validation and less invalidation towards their partners with chronic pain, and if this would be associated with changes in emotion and subjective pain for them. Change in subjective pain level was investigated because of its heuristic value for future research and to ascertain that validation operates primarily on emotion and not on emotion through pain. There were no hypotheses concerning pain level, given the brief intervention. It was hypothesized that, (1) validating responses will increase and invalidating responses will decrease in the partners from pre- to post training; (2) increased validating and decreased invalidating behaviours from partners will be associated with decreased negative and increased positive affect in the persons with pain.

2. Method

This study used a within-group design, with pre- and post-intervention assessments. This design requires fewer participants to obtain sufficient power than between-groups designs do, as subjects are their own controls and error variance is reduced. In the current study, couples in which one person had chronic pain were video recorded before and after the partner received validation training. This training occurred without the knowledge of the partner identified with chronic pain. The study was conducted according to the current ethical principles for clinical research stated in the Declaration of Helsinki [25] assured by the Masters Degree programme of the University of Örebro, Sweden. Information to participants, see Section 2.3 below.

2.1. Participants

Participating in the study were 20 couples where at least one of them suffered from chronic pain. In 70%, $N = 14$, of the couples, the person with pain was female. Mean age of the people in pain was 43.6 years (SD = 13.0). Most of the couples were married (75%) and 10% were unmarried and cohabitating. In 10% of the couples, the significant other was a parent and in 5% they were a sibling. According to ratings on Quality of Dyadic Relationships (QDR-36 [26]) half of the relationships were in the non-distressed range ($N = 10$, 50%), and 35% were in the distressed or low quality range, and 15% were missing data. Musculoskeletal pain was the most common pain condition, mainly low back and neck/shoulders ($N = 14$, 70%). Also, nerve pain such as sciatic nerve and fibromyalgia ($N = 2$, 10%) were reported. Mean duration of the chronic pain problem was slightly below 15 years (176.8 months; SD = 132.2; median = 180; range = 24–600). Among the 20 participating couples, pain was present for both people in eight of the couples (40%). In these cases partners were randomized to determine which one received the training. The slight majority of the people with pain were pre-retired or on long-term sick leave or disability leave ($N = 11$, 55%). The rest of the patients worked full time ($N = 9$, 45%).

2.1.1. Inclusion and exclusion criteria

To be included in the study, the person with the pain problem had to be 18–64 years old and meet the criteria for chronic pain (duration for more than three months). The person had to be in a close relationship, but not necessarily a romantic one. The criterion was that they interacted every day. It was assumed that this was enough for the purpose of investigating the immediate effects of validation on emotion of this study. Even though not all participants accompanying the person in pain were romantic partners, they will be referred to as the partner in this article.

2.1.2. Recruitment

Participants were recruited in several ways, including advertising in the area's largest newspaper and at the local hospital. Most participants were contacted through telephone calls because they had registered as interested in participating in pain research. The advertisement in the newspaper was directed towards a broad population. It asked people with chronic pain if they and their partner or close family member were interested in participating in a study on communication about pain. This information was also given to couples that were contacted through telephone calls.

2.1.3. Power calculation

Power calculations were made based on within-group effect sizes (Cohen's d) from a previous study that investigated the relationship between partner's validating and invalidating behaviours and affect in couples with a depressed partner [Fantozzi and Fruzzetti, unpublished manuscript]. Overall, this previous study

followed the same procedure as the present study, only in a different population. In the previous study, the within-group effect sizes for validation and invalidation were both higher than 1.00 and for negative affect the within-group effect size was 0.71. Based on this lower effect size, it was calculated that 16 couples would be sufficient for .80 power. Thus, our sample of 20 couples provides adequate power.

2.1.4. Participation, retention, and dropout

29 couples were recruited to go through the procedure, and 22 completed it as planned. Because the first two (2) couples involved pilot testing, their results were not included in the analyses. Seven (7) couples cancelled their participation due to time constraints. No couple dropped out after showing up to complete study procedures in the research setting.

2.2. Measures

2.2.1. Validating and invalidating behaviour coding scale (VIBCS [27])

This scale was used for independent coding of validating and invalidating behaviours of the partner. Independent coders were trained before using the instrument. Each partner received a score for validating responses and for invalidating responses, with ratings ranging from 1 to 7 (low to high). Examples of responses that are coded as validation are basic listening, empathically reflective comments and normalizing the other person's behaviour in the current context. Examples of responses that are coded as invalidation are; not paying attention, agreeing with the other's self-invalidation and statements that the other person should not feel the way he/she is feeling. The scale has shown to have good inter-rater reliability with an intra-class correlation coefficient (ICC) of .74 [18]. Concurrent validity has also been examined with couples where validation was associated with greater relationship satisfaction ($r = .37$, $p < .001$), and invalidation was associated with aggression ($r = .39$, $p < .001$) [28].

Several precautions were taken to ensure reliable and valid independent ratings of partner validating and invalidating behaviours. Three interactions of couples, not included in the study, were coded by an experienced coder using the VIBCS to get a validation and invalidation score on each interaction. These scores were then used as a reference. The same interactions were then coded by 12 people after being trained on how to use the VIBCS. Intraclass correlation coefficients (ICC) [29] were calculated, and the four coders most consistent with the reference scores were selected to score the actual video interactions for the study couples. An ICC of 1.0 is considered to indicate perfect agreement [29], and the requirement to be selected as a coder in this study was an ICC of 0.80 or higher, which reflects excellent reliability. After coding these video interactions another test coding was conducted and compared with the reference, to make sure the coders were still consistent. Inter-rater reliability for the four coders was at this time point were 0.96, 0.94, 0.91 and 0.87. Thus, all four showed excellent inter-rater reliability after the coding process ended. Couple interactions were randomized to each independent coder, and coders were blind to details about the purpose of the study and which interactions were pre- or post-intervention.

2.2.2. Positive affect negative affect scale (PANAS [30])

This self-report questionnaire was used to investigate changes in affect from pre- to post-intervention in the persons with pain. It consists of 20 items, each labelling a specific emotion. Ten of the items measure positive affect and ten measure negative affect. Total score on each subscale ranges from 10 to 50 points. The people with pain rate how much they experience the specific emotions in the moment. PANAS is one of the most common instruments when you want to measure positive and negative affect, and it is considered to have good psychometric properties [31]. Cronbach's alpha for positive affect was .91 for positive affect and .82 for negative affect in the present study.

2.2.3. Subjective ratings of pain intensity

To investigate if pain intensity levels changed from before to after the validation training in the person with pain, we employed a standardized item: "How much pain are you experiencing right now?", followed by a visual analogue scale ranging from 0 (no pain at all) to 5 (unbearable pain). This question was primarily used as a control to make sure that the independent variables (validation and invalidation) operated primarily on emotions per se, and not on emotions through pain levels.

2.2.4. Quality of dyadic relationships (QDR-36 [26])

This instrument measures self-reported quality of the couple relationship. The patients completed the QDR-36, and results were used for descriptive and grouping purposes. The cut-off score of 20 was used to classify which relationships were considered distressed or non-distressed (T. Ahlborg, personal communication, December, 2011). According to the creator of QDR-36, scores should primarily be seen as continuous. However, if usage of a cut-off score is valuable, results from a study investigating the psychometric properties of the QDR-36 indicate that 20 is adequate. Psychometric evaluation shows that QDR-36 has acceptable reliability and validity [26].

2.3. Procedure

The details of this study's procedure were developed through several role-play sessions and were tested on two pilot-couples before they were finalized to make sure they were standardized. The two experiment leaders (the first and second authors) developed the content of the training based on the existing literature on validation [16,20]. Couples were given minimal information on the purpose of the study, and were told only that they would find out more about a specific way to communicate that might be helpful for them in their relationship. The person in pain did not get information about the partner receiving validation training until the study was completed, and the partner did not receive this information until the training began. Before the couples went home, they were debriefed about the structure and purpose of the procedures and the study.

When the couples first arrived, the partner with pain was instructed to come up with two topics that evoked some kind of negative emotion for them. The topics were randomized to either their first (pre-training) or second (post-training) video-recorded discussion. The couples were then instructed to discuss the first topic for 8–10 min and the conversation was recorded.

After the first video recording, the couples were split up and validation training of the partner took place. The validation training followed a standardized protocol, but was adapted and complemented with examples and metaphors relevant both to pain experiences and to the specific dyad. Topics included what validation is, what the effects of validation are, what to validate in another person, how to do it and what makes it hard to validate another person. Overall, training lasted approximately 45 min. During this time, the person in pain filled out questionnaires.

After this, the second video recording took place. The instructions were the same as for the first video interaction, but this time the partners who received the training were also instructed to validate the other person as much as possible. After that the couples were split up again for post measures. For an overview of the procedure, see Fig. 1.

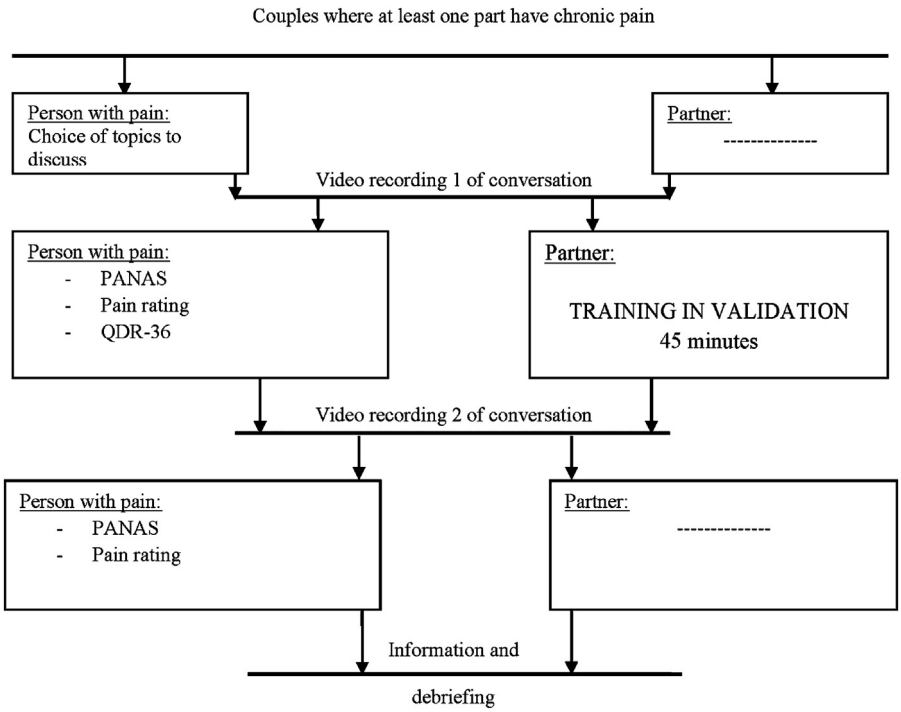

Fig. 1. Overview of the procedure. An overview of the different steps in the procedure for the person in pain and the partner.

2.3.1. Statistical analyses

Dependent *t*-tests were utilized to determine whether a change in validation, invalidation, affect and pain level occurred from pre- to post-intervention. Cohen's *d* was calculated for each dependent measure.

3. Results

3.1. Can brief validation training increase validating responses and decrease invalidating responses in partners of people with chronic pain?

According to scores on the VIBCS, partners increased their validation from pre- to post intervention, and decreased their invalidating responses as well. The within group effect size was large for validating behaviour increases and medium for invalidating decreases (see Table 1). These results indicate that partners did increase their validating responses and decrease their invalidating responses after a rather short training.

3.2. Are changes in partners' validating and invalidating responses associated with a change in positive and negative affect in people with chronic pain?

Results showed that negative affect decreased from pre- to post-intervention. The effect size was small (see Table 1). These results indicate that changes in partner validating responses were associated with decreased negative affect. The participants suffering with pain did not significantly change their ratings of positive affect from pre- to post.

3.3. Are changes in partners' validating and invalidating responses associated with a change in subjective pain ratings in people with chronic pain?

No significant changes in subjective pain intensity levels occurred from pre- to post (see Table 1).

Table 1
Comparison of means (standard deviations) from pre- to post measurement on validation, invalidation, positive and negative affect, and pain intensity with dependent *t*-test. *N* = 20.

Variable	Pre *M* (SD)	Post *M* (SD)	ES *d*	*t* (df)	*p*
Validation					
VIBCS	2.45 (1.54)	3.85 (1.35)	.97	−4.08 (19)	<.001
Invalidation					
VIBCS	3.40 (1.63)	2.50 (1.43)	.59	2.27 (19)	<.05
Affect					
Negative affect	15.75 (5.62)	14.10 (4.83)	.32	1.76 (19)	<.05
Positive affect	30.50 (8.55)	28.65 (9.43)	.20	1.49 (19)	.077
Pain intensity					
Estimated pain: 0–5 scale	2.35 (.81)	2.55 (.83)	.24	−1.71 (19)[a]	.052

Note: *N*, number of participants; *M*, mean; SD, standard deviation; *t*, *t*-value; df, degrees of freedom; VIBCS, validating and invalidating behaviour coding scale.
[a] Two-tailed.

4. Discussion

This study was conducted to extend research on couple interactions in the chronic pain field, and it provides support for the importance of validation and validation training for couples suffering from persistent pain. The results indicated that a rather short training session in validation was associated with increased validating and decreased invalidating responses from their partners. This in turn was associated with less reported negative emotion by the people with pain. These results are in line with previous research on normative and depressed populations regarding validation [18; Fantozzi and Fruzzetti, unpublished manuscript], and suggest that validation is a way to target negative emotions in the chronic pain population as well, possibly without simultaneously reinforcing pain.

An important finding is the balance between validation and invalidation from the partners. The independent coders rated the partners in the current study as low on both validation and invalidation before the training, a balance also found by Cano and colleagues [21]. This relationship is described in the literature as avoidant [32]. These couples are viewed as less prone to destructive conflict patterns, but have a relatively disengaged way of acting towards each other. It is likely to think that they have lower levels of emotional closeness and intimacy. This might make it hard to be supportive when outside stressors, such as pain, are present, and based on this minimal emotional support one might speculate that these couples are at risk for individual and relational problems if stressful life situations occur. If this balance between validation and invalidation is common in chronic pain couples, couples' interventions aimed at increasing validation should be considered as a complement to ordinary pain treatment. Similarly, adding a training component to encourage more self-disclosure and accurate expression could increase partner engagement and provide more opportunities for validating responses, and reciprocal expression and self-disclosure, both hallmarks of closeness in couples [33].

Although our results were mostly in line with our hypotheses, it was unexpected that positive affect in the pain patients did not increase significantly from pre- to post measurement. In fact, there was a trend in the opposite direction, although not significant. Of course with non-significant results it is hard to have confidence in speculation, but it is possible that fatigue (and increased discomfort or pain) resulting from the duration of study participation played a role. It is also possible that either a larger sample or more extensive training would yield different results, or that for couples that are distressed, it might take longer for positive affect to increase than it takes for negative affect to decrease. As mentioned, half of the couples in the present sample were in the distressed range. In other words, a more extensive training might be needed to achieve an effect on positive affect for this generally distressed sample.

The design of this study makes it impossible to draw any conclusions about the possible long-term effects of validation in the chronic pain population. Unfortunately, studies investigating this in other populations are also limited. Conclusions are primarily drawn from cross-sectional data or based on theoretical models indicating certain relationships. For example, results from experimental data suggests that effects of validation and invalidation on emotional reactivity may be more pronounced over time, and people exposed to invalidation over and over again may be more prone to emotional reactivity [18]. Also, there are studies describing the long term effects of invalidating responses in combination with absence of validating responses on development of psychopathology, in this case increased risk of developing Borderline personality disorder [17]. Overall, the long-term effects of validation are promising but controlled longitudinal studies investigating the effects empirically are needed.

This study has both limitations and strengths. Limitations include the lack of a control group (which would have allowed us to evaluate a possible fatigue factor), and a modest (albeit sufficiently powered) sample that was recruited in a special way. Also, participants knew beforehand that the study was about communication. Further details were avoided due to the risk of expectancy effects and other potential bias. Information given was considered necessary in order to increase the participation rate in the study, but could be a potential bias. It is also possible that the people in pain suspected that their partners received some kind of training. This could also be a potential bias. These issues might have affected internal as well as external validity of the study. The mixture of intimate partners and other dyads is both a strength (highly generalizable) and a limitation (there may be undetected differences between intimate partner and other dyads). Future studies should consider recruiting larger samples and blocking analyses by type of relationship. Another limitation is the risk of so-called "order effects". Because all of the participants received the baseline condition and then training, there might be effects associated with the order of recording, e.g. habituating to the video camera. The nature of the intervention however made it impossible to change the order of presentation of the two conditions.

Strengths include a standardized and thoroughly tested procedure for meeting the couples, with built in possibilities to make suitable adaptations in the validation training for each individual couple. This heightens the internal validity of the study, while still making the more detailed examples in the validation training relevant to each individual couple. Strengths also include the use of the independent and reliable coding of videos, which further enhances the internal and external validity, by not relying on self-report. Also, the couples did not discuss validation or the training of the partner while the study lasted, because the couples were not left alone without being videotaped and the videos do not contain any such discussions. This also strengthens the internal validity of the study. Overall, we can conclude that despite its limitations, the results from this study set the stage for further investigation of validation from the partner as an intervention for pain patients.

Although our results point to the possible benefits of teaching validation techniques to couples, there is a real need to replicate and extend these findings with a bigger sample, and utilizing a control group. Future studies should also examine whether a more extensive treatment regime featuring increasing self-disclosure and accurate expression (of emotions, thoughts, and pain experiences) and enhanced validation strategies might affect couples over the long-term. Caution should also be taken when teaching partners to be more validating. If correctly taught, we suggest that validation can be used to provide social support without reinforcing dysfunction. However, if not correctly taught there might be a risk that solicitous behaviours increase, which in turn might reinforce dysfunction in the patients. Thus, it is important to be thorough when teaching the partner what to validate and what not to validate (that is, only to validate experiences that are legitimate and functional).

Future research also needs to take gender differences within the dyad into account. Previous research indicates that male patients might not benefit from interventions aimed at increasing validation [23]. In their study, male patients appeared to have worse adjustment with higher levels of validation from their partner. Their results indicate that gender differences need to be taken into account when treating pain patients and couples. Unfortunately, our sample was not big enough to investigate gender differences, but results presented by Leong and colleagues suggest that this should be taken into account when trying to increase validation in these couples in the future.

In conclusion, our results indicate that the partner or closest family member can be taught to be more validating as well as

less invalidating and that this can have an immediate and salutary impact on the emotion of the person in pain. Thus, this study suggests that using validation in interpersonal interactions is a promising tool in patients with chronic pain. Due to the amount of time the partner or closest family member spends with the patient, this should be taken into account in the treatment of chronic pain, and future pain research with a social component.

Conflict of interest

None declared.

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