

# Facing negative emotions: Evaluation of a brief training in validating communication for contact nurses in cancer care

Sara M. Edlund<sup>a,\*</sup>, Johan Carstens Söderstrand<sup>b</sup>, Björn Åkerman<sup>c</sup>, Elsa Hed<sup>c</sup>, Maria Larsson<sup>d</sup>, Maria Tillfors<sup>e</sup>, Cecilia Olsson<sup>d,f</sup>

<sup>a</sup> Center for Health and Medical Psychology, Örebro University, Örebro, Sweden

<sup>b</sup> Health, Healthcare and Welfare, Mälardalen University, Västerås, Sweden

<sup>c</sup> School of Behavioural, Social and Legal Sciences, Örebro University, Örebro, Sweden

<sup>d</sup> Department of Health Sciences, Karlstad University, Karlstad, Sweden

<sup>e</sup> Department of Social and Psychological Studies, Karlstad University, Karlstad, Sweden

<sup>f</sup> Department of Bachelor Education in Nursing, Lovisenberg Diaconal University College, Oslo, Norway

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## ABSTRACT

**Background:** Contact nurses in cancer care (CNCC) often face challenges when communicating with patients and their families. The overall aim was to evaluate a brief digital validation training for CNCC, to test whether it was associated with increased validation and decreased invalidation. Associations between communication skills in validation and markers of work-related stress were also investigated.

**Methods:** This intervention study investigated associations between the training and validation skills using a within-group design with repeated measures (at pre, post, and eight-week follow-up). Additionally, associations between the training and occupational self-efficacy, self-validation, and exhaustion symptoms were explored.

**Results:** Seventeen CNCCs (all female with relatively long work experience) completed a five-week digital training program. Results indicated a statistically significant increase in validation and a statistically significant decrease in invalidation, showing that the nurses improved their communication skills following the training. No changes were found in markers of work-related stress.

**Conclusion:** The results indicate that digital validation training for CNCCs is potentially beneficial by means of improving communication skills. This study further demonstrates that a brief digital training in validating communication to CNCC is associated with improved person-centered communication regarding strong negative emotions.

## 1. Introduction

In Swedish healthcare, contact nurses in cancer care (CNCC) interact with patients and their families, dealing with strong negative emotions on a daily basis. A negative emotion could be defined as “an unpleasant, often disruptive, emotional reaction designed to express a negative affect” (VandenBos, 2015). Examples of negative emotions that CNCCs deal with are anger, sadness, and fear. This puts high demands on their communication skills. There is consensus that communication in healthcare should be person-centered, i.e., recognize the patient as a person and be based on the patient’s needs, feelings, and preferences concerning their own care. One method that is both person-centered and facilitates the management of negative emotions is validating

communication, also known as validation, which has earlier displayed potential in meeting these demands (Linton et al., 2017; Shenk and Fruzzetti, 2011). The overall aim of this study is to evaluate a brief validation training for CNCCs, to strengthen their ability to work in a person-centered way.

To improve satisfaction with care and health outcomes for patients and their families, advanced nursing roles in cancer care have been developed in many parts of the world (Baileys et al., 2018; Kerr et al., 2021). Based on the Swedish national cancer strategy launched in 2011 (Swedish Government Official Reports, 2009), the CNCC role has been implemented to enhance continuity of care and patient participation. The role and function of the CNCC is specifically adapted to Swedish cancer care but can be compared to the advanced role of oncology nurse

\* Corresponding author. Center for Health and Medical Psychology (CHAMP) BSR Örebro University, 70182, Örebro, Sweden.

E-mail address: [sara.edlund@oru.se](mailto:sara.edlund@oru.se) (S.M. Edlund).

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navigators or clinical nurse specialists in other settings (Baileys et al., 2018; Jeyathevan et al., 2017). CNCCs should be a source of information, education, and psychosocial support for patients and their families throughout the care trajectory. In line with person-centered care, the role entails being accessible to patients and their families, assessing and supporting symptoms, problems, and needs based on evidence, as well as involving patients in planning and decisions. Altogether, this implies a need for high competence in CNCCs, especially regarding their communication skills.

Person-centered communication can be difficult to achieve when negative emotions are present. To effectively communicate in these situations, CNCCs need methods for managing and confirming the patients' and their family members' emotions. Validating communication is one such method, originally defined as a way of communicating acceptance and understanding of another person's emotions, thoughts, and behaviors (Linehan, 1997). Invalidation, in contrast, can be seen as the opposite of validation, and it communicates that the other person's experiences are wrong, irrational, or exaggerated (Fruzzetti et al., 2005). Validation is known to reduce negative emotions in another person (Edlund et al., 2015; Shenk and Fruzzetti, 2011), which in turn improves that person's ability to clearly communicate his/her experiences, making it easier to understand and further validate that person. A positive spiral of validation and improving understanding thus develops. Invalidation creates the opposite spiral, of increasing negative emotions and worsening ability to express one's experiences accurately (Fruzzetti and Worrall, 2010). In summary, by reducing the invalidation and increasing the validation of patients' emotions, CNCCs can ensure that all parties receive the information needed for person-centered care and increase the patients' ability to communicate about symptoms, preferences, and needs for support.

Several studies have evaluated the effects of validation training. For example, brief validation training was associated with increased validation and decreased invalidation in couples in which one member suffered from chronic pain (Edlund et al., 2015) or was depressed (Fantozzi and Fruzzetti, 2012). Similar results were found in medical students (Linton et al., 2017). Another study found that physiotherapists displayed more validating and less invalidating communication after receiving education that included one validation training session (Holopainen et al., 2021). Taken together, these studies indicate that a brief validation training can increase the degree of validation communication and decrease the invalidation communication of the person who has completed the training. However, studies evaluating the effects of validation training for nurses in cancer care with an advanced nursing role, such as CNCCs, are lacking. In order to fit CNCC's working conditions as well as the data collection took place during the Covid-19 pandemic, we adapted the validation training somewhat in relation to previous studies (e.g., Edlund et al., 2015; Linton et al., 2017). For example, the training sessions were administrated via Zoom, and each training session was preceded by a prerecorded theoretical lecture that could be watched when it was suitable. By the latter, the focus during each session could mainly be on skills training in validation.

Besides the challenge of achieving effective communication with patients, CNCCs also need skills to counterbalance a demanding work environment and their own negative emotions that might arise at work. As a group, nurses are at risk of stress and burnout (Gribben and Semple, 2021; Canadas-De la Fuente et al., 2015). Studies have shown that low self-efficacy related to communication skills is linked to burnout, and that confidence in one's ability to have difficult conversations with patients can have a protective effect against symptoms of exhaustion (Emold et al., 2011; Messerotti et al., 2020). Pehrson et al. (2016) found that skills training in empathic communication increased self-efficacy in oncology nurses, which also is confirmed by earlier studies (Ammentorp et al., 2007; Doyle et al., 2011; Nørgaard et al., 2012). Moreover, earlier studies have also shown that competence development and its implementation is related to work related stress (Paulsson et al., 2005). In addition, low self-compassion is also related to burnout in nurses (Dev

et al., 2018). Self-compassion, which shares common ground with self-validation, refers to how we direct compassion towards ourselves to understand and reduce our own suffering (Neff, 2003b). Overall, these findings show that occupational self-efficacy, self-validation, and symptoms of exhaustion are constructs worth targeting if one wants to improve the psychosocial work environment for CNCCs.

Based on the above, the overall aim was to evaluate a brief validation training for CNCCs, to test whether it is associated with increased validation and decreased invalidation. Also, associations between communication skills in validation and markers of work-related stress were investigated.

Specific research questions included:

1. Is a brief validation training of CNCCs associated with increased validation and decreased invalidation?
2. Is a brief validation training of CNCCs associated with increases in their occupational self-efficacy and self-validation?
3. Is a brief validation training in CNCCs associated with decreased ratings of symptoms of exhaustion?

## 2. Methods

### 2.1. Design/overview of the study

This study has a within-group design, evaluating a training in validating communication for CNCCs. Questionnaires were administered to the CNCCs before, just after, and eight weeks following the training. At each data collection time point, the CNCCs also participated in video-recorded interactions with actors who played the role of cancer patients. Recruitment and data collection were ongoing in 2021 and ended in January 2022. The study was conducted through collaboration between Karlstad University, Region Värmland, and Örebro University, Sweden. The study was approved by the Ethics Review Board in Uppsala (2020-07021; 2021-04529), and has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki). The Transparent Reporting of Evaluations with Non-randomized Designs (TREND) Statement checklist was used (Des Jarlais et al., 2004).

### 2.2. Recruitment

To qualify for the study, participants had to work as contact nurses in cancer care or palliative care (hereafter, CNCCs). They were recruited in two ways. First, information about the study was provided to supervisors and managers located in cancer care in Region Värmland and Region Örebro, Sweden; if they were interested in the study, an information meeting (led by someone in the research group) was booked with CNCCs at their units. Second, information about the study was provided via regional coordinators participating in a network meeting for CNCCs working in central Sweden. CNCCs interested in participating were asked to contact the research group via e-mail. One member of the research team with recruitment and planning responsibilities was also a CNCC participating in the study. Since complementary analysis showed that the results of this study did not change whether or not this participant was included in the analysis, it was decided to include this participant.

### 2.3. Procedures

Fig. 1 presents a flowchart of the study procedure. When CNCCs were assessed as eligible for the study, written information and an informed consent form were sent to and signed by them. Also, a training schedule was sent together with the questionnaires for the pre-training assessment. All questionnaires were completed on paper and included demographic questions as well as questions related to the outcome measures of the study. At this time, the first video-recording of an actor

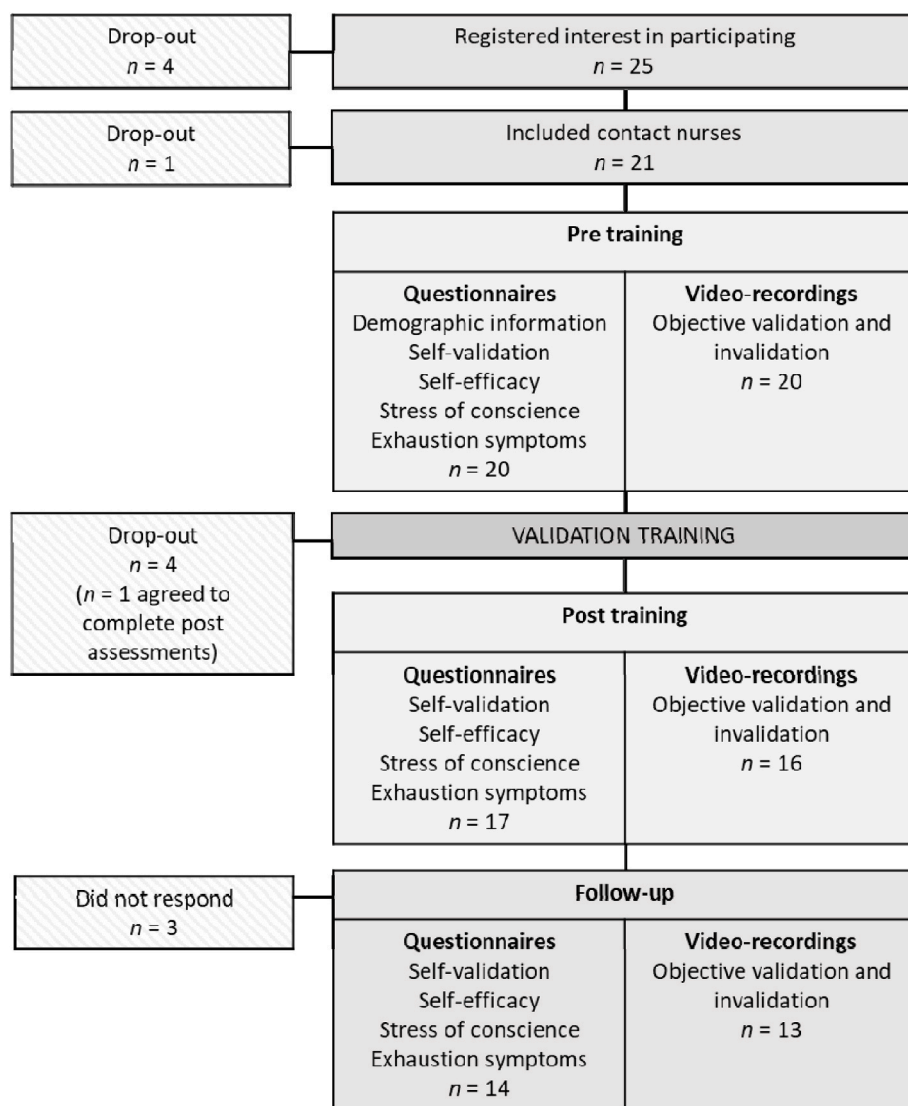


Fig. 1. Flowchart of the study procedure.

playing a patient was made. The CNCCs interacted with the actor on video for about 10 min. Master's students in psychology administered the recordings via a digital platform. After this, the training in validating communication took place. The training lasted five weeks in total and comprised three prerecorded lectures, three digital group sessions, and homework between sessions. After the training, questionnaires related to outcome variables were administered again, and the second video-recording was made via Zoom. This data collection procedure was repeated eight weeks after the training for the follow-up.

#### 2.4. Attrition and attendance

In total, 25 CNCCs showed interest in the study, 21 of whom agreed to participate (four declined to participate due to lack of time). After inclusion, one CNCC chose to discontinue participation before pre-measurements and four more discontinued during the training. Lack of time, impossibility of attending training sessions, and the training not living up to expectations were given as reasons for choosing to discontinue participation. The four who discontinued during the training were all asked to take part in the post-measurements and one agreed, only completing the questionnaires. Lastly, three CNCCs chose not to be involved in the follow-up assessments but reported no specific reasons for this. For an overview of the intervention attendance of the 16

participants who completed the training plus the participant that dropped out during training but agreed to complete post assessments, see Table 1. When a participant was absent from a training session, a brief summary of the session content and information about homework were sent.

#### 2.5. Intervention

The validation training consisted of three prerecorded lectures, each

**Table 1**  
Overview of intervention attendance and adherence.

	n	%
Training sessions via Zoom		
All three	13	76.5
Two	4	23.5
One	0	0
Prerecorded theoretical lectures		
All three	16	94.1
Two	1	5.9
One	0	0
Homework assignments		
Two	15	88.2
One	2	11.8

followed by a digital skills training session. In addition, homework was assigned to participants between sessions. The prerecorded lectures presented theoretical knowledge of the seven levels of validation (as described in the VIBCS (Fruzzetti, 2001)), invalidation, and their application when communicating with cancer patients. The training sessions focused on skills training and feedback to attain not only theoretical knowledge of validation but also behavior change. One purpose of delivering theoretical knowledge in a prerecorded format was to make participation in the study more flexible with regard to scheduling. The skills training sessions were led by licensed psychologists with expertise in validating communication, together with students in the final semester of the clinical psychology program. The content of the training (i.e., both prerecorded lectures and skills training sessions) was based on results of a qualitative study of CNCCs' experiences of dealing with strong emotions in cancer patients (Nouri and Rommedahl, 2021). The content was also based on previous studies in other settings investigating the applicability and effects of validation training (Edlund et al., 2015; Holopainen et al., 2021; Edlund, unpublished data). For an overview of the content of the intervention studied here, see Table 2.

## 2.6. Video-recordings

To ensure that all CNCCs received the same instructions, a standardized procedure was developed for the video-recorded interactions. The video-recordings were made via Zoom and were overseen by students in the final semester of the clinical psychology program.

## 2.7. Actors and the cases

Two actors (one male and one female) were recruited to play the roles of cancer patients in the video-recorded interactions. Which actor each CNCC would interact with was randomized, and each CNCC interacted with the same actor at all time points. Two exceptions to this randomization procedure were made due to the unavailability of a specific actor: first, one participant who entered the recruitment process late was automatically assigned to the male actor; second, one participant interacted with the female actor after the training although randomized to the male actor.

Three cases (one for each data collection time point, see Appendix 1) were formulated to guide the actors in the role playing. The details of the cases were developed by experienced nurses in the research group to ensure congruence with the lived experience of actual cancer patients, and to ensure that the three cases would not differ in degree of interaction difficulty. The cases described cancer patients in different situations of the treatment procedure, all showing strong emotions when interacting with the CNCC. For each case, brief background information

was also authored for the CNCCs to read before interacting with the actor. The CNCCs were instructed to perform a brief evaluation of the medical and general health status of the case patient.

## 2.8. Coding procedure and selection of coders

Four trained coders were recruited for the study, all with previous experience of using the Validating and Invalidating Behavior Coding Scale (Fruzzetti, 2001), see under measures below. All coders participated in a calibration session with two experienced master coders (SE and JCS) to ensure high agreement in coding. As an additional quality check, the calibration session ended with all coders individually coding a test clip. Their validation and invalidation scores were then compared with the scores of the master coders using the intraclass correlation coefficient (ICC). To be selected as a coder, the ICC cutoff was set to  $\geq .75$ , which all four coders attained. All four coders coded all videos in the study. Using multiple coders is a way to make observational data less sensitive to coder subjectivity (Kazdin, 2010). The coders were blinded to whether a specific video had been recorded pre, post, or follow-up. To control for drift, another test clip was administered after all videos were coded. Again, the coders' scores were compared with the scores of master coders and the ICC was calculated. Three coders retained coherence with the master coder when drift was controlled for. To ensure inter-rater agreement, the standard error of measurement (SEM) method<sup>24</sup> was used on each of the videotaped observations. This method provides a metric that expresses the differences between coders in the measurement scale (i.e., 1–7 for validation and invalidation). Throughout the observations in this study, the SEM between raters amounted to 0.69, which is comparable to the level in another study using this metric (Holopainen et al., 2021). This means that the mean values of three coders were ultimately used as an objective measure for CNCC validation and invalidation.

## 3. Measures

### 3.1. Demographic information

Information about age, gender, marital status, workplace, and level of education was collected before the training as part of the pre-assessments. In addition, CNCCs were asked to specify the number of years in the profession and the percentage of working time spent on CNCC-related tasks.

### 3.2. Validating and invalidating communication

The Validating and Invalidating Behavior Coding Scale (VIBCS;

**Table 2**  
The training.

Part	Prerecorded lecture	Training session	Homework
1	Theoretical background to validation and the seven levels of validation Emotions and emotion regulation What is validation and invalidation? Effects of validation and invalidation How to validate cancer patients	Presentation Questions related to the prerecorded lecture  Skills training: Validation levels 1–3 Skills training: Validation levels 1–5	Observe validation and invalidation in everyday life Validate patients at levels 1–5 Note what is easy/difficult when you validate
2	Demonstration videos When to validate and when to invalidate Challenges when you validate someone else Self-validation	Previous homework Questions related to the prerecorded lecture Skills training: Validation levels 1–5 Skills training: Validation levels 1–5, invalidate the invalid	Continue to validate patients Self-validation: note successes and difficulties
3	What makes it difficult to validate? Communicating without judgment	Previous homework Skills training: Validation levels 1–5, invalidate the invalid Summary and questions	



Fruzzetti, 2001) was used to objectively code our primary outcome measures, the validating and invalidating behaviors of CNCCs. After training in how to use the instrument, trained coders watched the videos and, using VIBCS, coded the validating and invalidating behaviors of CNCCs. VIBCS provides a separate rating for validation and invalidation, respectively, that ranges from 1 (no validation/invalidation) to 7 (only validation/invalidation). Examples of behaviors coded as validation are clarification, asking relevant questions, and specifying how the other person's experiences make sense (either in a specific situation or based on previous experiences). Examples of behaviors coded as invalidating are not paying attention, being judgmental, stating that the other person should not feel a certain way when the response is in fact understandable, and agreeing with the other person's self-invalidation. In previous studies, VIBCS has been shown to have good inter-rater reliability with intra-class correlations of 0.74 (Shenk and Fruzzetti, 2011) and 0.77 (Lowry et al., 2002), respectively. In addition, concurrent validity has been explored, showing a relationship between validation and relationship satisfaction ( $r = .37, p < .001$ ) and between invalidation and aggression ( $r = 0.39, p < .001$ ) when assessed in couples (Lowry et al., 2002).

### 3.3. Self-validation

As a proxy for the secondary outcome measure self-validation, the Self-compassion Scale (Neff, 2003a) was used. SCS contains 26 statements to which respondents are instructed to respond on a five-point Likert scale ranging from 1 (never) to 5 (always). Overall, SCS measures lack of uncompassionate responses and the presence of compassionate responses. The scale can be divided into six subscales or be used as a single scale calculated by summing the mean levels of all subscales (Neff et al., 2017). This study used the full 26–130-point scale, with high scores indicating high levels of self-compassion. Which factor structure to use has been discussed with divergent results, but there is evidence that the total score can be used as an overall measure of self-compassion (Neff et al., 2017, 2019). Regarding psychometric properties, SCS has been shown to have good internal reliability across various populations (Neff, 2003a; Allen et al., 2012; Neff and Pommier, 2013). In addition, the full scale has good test–retest reliability (Neff, 2003a; Neff et al., 2007). In this study, the Cronbach's alpha for the full scale was 0.96 at pre-assessment, 0.94 at post-assessment, and 0.95 at follow-up assessment.

### 3.4. Occupational self-efficacy

To evaluate the secondary outcome measure occupational self-efficacy, the Short Occupational Self-Efficacy Scale (Rigotti et al., 2008) was used, originally developed to evaluate self-efficacy in a work-related context. This measure is a short version of the original Occupational Self-Efficacy Scale (Schyns and Collani, 2002) and comprises six items to which participants respond on a six-point (1–6) Likert scale. Respondents are instructed to respond to the items with their daily work tasks in mind, and the mean value of all items represents an average level of work-related efficacy. The scale has been shown to have good internal reliability (Rigotti et al., 2008; Gray et al., 2019) and construct validity (Rigotti et al., 2008). In this study, the Cronbach's alpha was .87 at pre-assessment, 0.88 at post-assessment, and 0.89 at follow-up assessment.

### 3.5. Symptoms of exhaustion

To measure symptoms of exhaustion as a secondary outcome measure in the CNCCs, the Karolinska Exhaustion Disorder Scale (KEDS) was used (Besèr et al., 2014). KEDS comprises nine items capturing the consequences and symptoms of long-term stress (e.g., regarding memory, sleep, hypersensitivity to sensory impressions, irritation, and ability to concentrate) over the past two weeks. Participants rate their

responses on a seven-point (0–6) Likert scale, and scores range from 0 to 54 points, with higher values indicating more severe symptoms. A score of 19 has previously been used as a cut-off indicating exhaustion disorder (Besèr et al., 2014). The reliability and validity of KEDS have been investigated and proven to be acceptable (Besèr et al., 2014; Persson et al., 2017). In this study, the Cronbach's alpha was .90 at pre-assessment, 0.90 at post-assessment, and 0.85 at follow-up assessment.

### 3.6. Statistical analyses

Power calculation was based on an earlier study in validation (Linton et al., 2017), where large with-in effect sizes (ES) were obtained (with-in ES validation = 1.28; with-in ES invalidation = 1.09). With the desired power of 0.80, an alpha level of 0.05, a minimum of 22 participants was required to detect a medium to large standardised mean difference effect size ( $\geq d = 0.65$ ) according to G\*Power 3.1. Due to sample attrition (internal attrition <5%; for dropout see Fig. 1), primarily at follow-up, multiple imputation was used on the dataset. Missing completely at random (MCAR) testing showed that data were missing completely at random, and further analysis revealed that data were missing in a monotonic way. Consequently, multiple imputation was used with the monotonic method. Throughout the “Results” section, the confidence intervals of the imputation *p*-values will be presented.

To determine whether changes occurred in the observed measurements following training, and whether these changes were retained at follow-up, a repeated-measures MANOVA was conducted with the three time points entered as within-subject factors and validation and invalidation as the dependent variables. For each of the other measures (i.e., occupational self-efficacy, self-validation, and symptoms of exhaustion), univariate repeated-measures ANOVAs were conducted. The significance level in the current study was 0.05. Statistic calculations were performed in IBM SPSS version 28.

## 4. Results

### 4.1. Participants

In the final sample, participant age was 33–58 years ( $M = 47$ ,  $SD = 7.54$ ). In total, 12 participants worked in oncological care and six in palliative care. Table 3 presents an overview of additional demographic characteristics.

### 4.2. Validation and invalidation

Pillai's trace revealed a multivariate effect of the combination of both validation and invalidation, suggesting that communication behaviors generally changed throughout the measurement period for the

**Table 3**  
Demographic characteristics at baseline.

	<i>n</i>	%
Years working as a nurse	18	100
<18 months	0	0
18 months–five years	0	0
Five to ten years	3	16.7
>Ten years	15	83.3
Years working as a contact nurse	18	100
<18 months	2	11.1
18 months–five years	7	38.9
Five to ten years	6	33.3
>Ten years	3	16.7
Time spent on CNCC tasks	18	100
90–100%	13	72.2
50–75%	2	11.1
5–10%	1	5.5
Missing data	2	11.1

**Table 4**

Descriptive statistics (mean and standard deviation) for each measure at each time point.

Measure	Pre	Post	Follow-up
Validation	4.52 (.85)	5.36 (.75)	5.55 (.31)
Invalidation	3.30 (1.08)	2.61 (.84)	2.21 (.65)
Occupational self-efficacy	30.67 (28.99)	31.25 (34.07)	30.75 (3.89)
Self-validation	81.08 (23.83)	84.33 (20.99)	82.92 (20.90)
Exhaustion symptoms	11.25 (8.38)	13 (9.18)	11.83 (6.32)

group ( $V = 0.61$ ,  $F(4, 40) = 4.40$ ,  $p < .001$ ,  $-0.001$ ). Mauchly's test indicated that the assumption of sphericity had been violated for validation ( $0.47$ ,  $p < .05$ ) and invalidation ( $0.43$ ,  $p < .05$ ), so the degrees of freedom were corrected using Greenhouse–Geisser estimates of sphericity ( $\epsilon = 0.65$  for validation and  $0.64$  for invalidation). Results of the repeated-measures MANOVA revealed that validating and invalidating communication behaviors significantly changed during the training period, and that these changes were retained at follow-up. Validation increased over time  $F(1.53) = 11.06$ , ( $p < .001$ ,  $-0.001$ ), whereas invalidation decreased over time  $F(1.41) = 9.71$ , ( $p < .001$ ,  $-0.001$ ). For descriptive data and more details, see [Tables 4 and 5](#).

#### 4.3. Occupational self-efficacy and self-validation

The Greenhouse–Geisser test indicated no violation of sphericity assumptions, so no Greenhouse–Geisser correction was conducted. Results of the univariate repeated-measures ANOVAs indicated that neither occupational self-efficacy,  $F(2, 12) = 1.19$ , ( $p = .17$ ,  $-0.81$ ) nor self-validation  $F(2, 12) = 0.38$ , ( $p = .51$ ,  $-0.93$ ) changed significantly during the training period or by follow-up. For descriptive statistics and more detailed data, see [Tables 4 and 5](#).

#### 4.4. Symptoms of exhaustion

The Greenhouse–Geisser test indicated no violation of the sphericity assumptions, so no Greenhouse–Geisser correction was conducted. Results of the univariate repeated-measures ANOVA indicated that symptoms of exhaustion  $F(2, 12) = 1.21$ , ( $p = .544$ ,  $-0.893$ ) did not change significantly during the training period or by follow-up. For descriptive statistics and more detailed data, see [Tables 4 and 5](#).

### 5. Discussion

Person-centered communication is central to achieving person-centered care. This study evaluated digital training in validating communication for contact nurses in cancer and palliative care. Results indicated improved validation skills when pre-measures were compared with post and follow-up measures, showing that even experienced CNCCs could benefit from communication training focusing on validation. No significant effects were found for measures related to occupational self-efficacy, self-validation, or symptoms of exhaustion. This indicates that digital training for CNCCs is feasible and potentially beneficial for improving communication skills. These findings are promising because they indicate that it is possible for CNCCs to improve

their validation skills, which is a prerequisite for their role and function and for their ability to deliver person-centered cancer care.

This study complements and builds on existing research on validation training conducted in other formats, populations, and contexts ([Linton et al., 2017](#); [Edlund et al., 2015](#); [Holopainen et al., 2021](#)). It shows that it is possible to obtain positive effects on validating and invalidating behaviors even in nurses exhibiting good skill levels before training. It also improves our knowledge of a more extensive, digital training protocol using prerecorded theoretical lectures to enable a focus on skills training and feedback during sessions. Also, the design included an objective measure of validation and invalidation (i.e., VIBCS) at follow-up, which has not been done in previous studies.

The main finding of this study is the CNCCs' improvement in validating communication, which was expected based on previous studies ([Edlund et al., 2015](#); [Holopainen et al., 2021](#)). However, the effect sizes were somewhat surprising, especially considering the starting levels. The CNCCs were already good at validating communication, and they got even better following the training. Interestingly, the same positive result was not found for occupational self-efficacy in our sample. Previous studies evaluating communication training and its effects have shown increased self-efficacy for nurses working in cancer care ([Pehrson et al., 2016](#); [Banerjee et al., 2017](#); [Darban et al., 2016](#)). However, lack of power, a ceiling effect, and/or differences in measuring occupational self-efficacy might explain the lack of significant results. This non-significant change in occupational self-efficacy might also explain the non-significant change in symptoms of exhaustion, considering the clear connection between the constructs ([Emold et al., 2011](#); [Messerotti et al., 2020](#)). Also, no change in self-validation was found, which can be seen as surprising considering that training time was spent on improving this in the nurses. Possible explanations include the training focus being primarily on validating others, lack of power, and/or a ceiling effect. The lack of significant results might also be a result of using a self-compassion scale as a proxy for self-validation. Although the two constructs are related, they also differ: self-compassion includes the intention to treat oneself and one's emotions with kindness and compassion ([Neff, 2003b](#)), while validation is more about allowing, normalizing, and showing understanding of one's experiences ([Linehan, 1993](#)). Taken together, these results indicate that it is possible to improve already skillful communicative behaviors, while more effort is needed to change measures related to the psychosocial work environment.

#### 5.1. Strengths and limitations

This study has a few limitations worth mentioning. First, the design lacks a control group, increasing the risk of confounding variables. One possible confounding variable is a training effect resulting from multiple videotaped interactions with the actors. However, precautions (including blinding the coders) were taken to reduce this risk. Also, the sample may not be representative of the population of CNCCs at starting levels of occupational self-efficacy, factors related to willingness to develop communication skills through training, work experience, and age. All studied CNCCs were middle aged and had over five years' experience in the profession, with most working longer than ten years. Younger age and fewer years in the profession have previously been

**Table 5**  
Univariate results and effect sizes of repeated-measures ANOVAs.

Outcome	Within-subject effect			Effect size		
	SS	Df	MS	F	p	d
Validation	6.65	1.53, 11	3.33	11.10	<.01	1.40
Invalidation	6.71	1.41, 11	4.75	9.71	<.01	.84
Occupational self-efficacy	12.61	2, 12	12.61	1.19	.68	.02
Self-validation	87.52	2, 12	43.76	.38	.66	.08
Exhaustion symptoms	1.7	2, 12	.85	1.21	.32	.08

Note. Cohen's  $d$  estimates for differences between pre and follow-up measurements.

identified as risk factors for emotional burnout, which might indicate that this sample comprises nurses with a higher resilience to emotionally demanding work (Gribben and Semple, 2021). Overall, these biases may have influenced the generalizability of our findings. Lastly, we did no adjustment for multiple testing even though it may increase the risk of type 1-errors. The reason behind, was not to further increase the risk of type 2-errors because the small sample size in our study. However, our results regarding validation and invalidation would still have been significant even if we had made a Bonferroni correction for our five analyses ( $0.05/5 = 0.01$ ).

In addition, validating and invalidating behaviors were measured using a standardized format with actors and not real patients. There are both advantages and disadvantages to this setup: while it protects patient integrity, the setup makes it possible to question the ecological validity and, thus, the generalizability of the results. The standardized procedure also reduces the impact of confounding variables, increasing the reliability and the possibility of replicating the results in other settings.

It is also a strength that validation and invalidation were measured objectively. This increases the chance of measuring actual behavior change in a trustworthy way compared with, for example, the self-reporting of perceived behavior change (Kazdin, 2010). However, using an objective measure is also sensitive to rater subjectivity. To reduce this risk, two separate measures of inter-rater agreement (i.e., ICC and the standard error method) were included. The standard error averaged .69 between raters, which can be interpreted as high. However, mean changes in validation and invalidation between the time points were both larger than the SEM between raters. Also, the SEM obtained here is comparable to what has previously been seen. This indicates that, despite the study's limitations, the observed differences are trustworthy.

## 5.2. Future studies

Future studies should focus on several aspects. First, results should be replicated in randomized controlled trials that continue to investigate the long-term effects of validation training. The results also need to be replicated in samples with less experienced CNCCs. Different results might be found in nurses with lower ratings for occupational self-efficacy who cannot rely on long experience to handle difficult and strong emotions that arise in patients. Further work also needs to be done related to self-validation. Although no significant change in self-validation was found here, previous studies have shown an association between similar constructs and positive health outcomes for nurses (Duarte and Pinto-Gouveia, 2017). Lastly, validating communication is of interest not only to CNCCs but to all healthcare professionals concerned with cancer patients, so future research should expand recruitment to encompass other professions. Future studies also need to include variables related to health and function in patients, something that is rarely found (Moore et al., 2018).

## 6. Conclusion

This study shows that validation training, a promising tool for dealing with intense, negative emotions, is associated with improved communication skills in a sample of experienced CNCCs. The training was delivered in a digital format, which can increase accessibility for participants with high workloads as well as increase flexibility in a strained healthcare context. No significant changes were found in measures related to the CNCCs' psychosocial work environment. The overall effects found here are promising and warrant future research, mainly because of the similarities between validation and person-centered communication.

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## CRediT authorship contribution statement

**Sara M. Edlund:** Methodology, Investigation, Writing – original draft. **Johan Carstens Söderstrand:** Methodology, Formal analysis, Investigation, Writing – original draft. **Björn Åkerman:** Formal analysis, Investigation. **Elsa Hed:** Formal analysis, Investigation. **Maria Larsson:** Conceptualization, Methodology, Investigation, Writing – original draft, Funding acquisition. **Maria Tillfors:** Conceptualization, Methodology, Formal analysis, Investigation, Writing – original draft, Writing – review & editing, Supervision, Project administration, Funding acquisition. **Cecilia Olsson:** Conceptualization, Methodology, Investigation, Writing – original draft, Writing – review & editing, Funding acquisition.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ejon.2023.102401>.

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