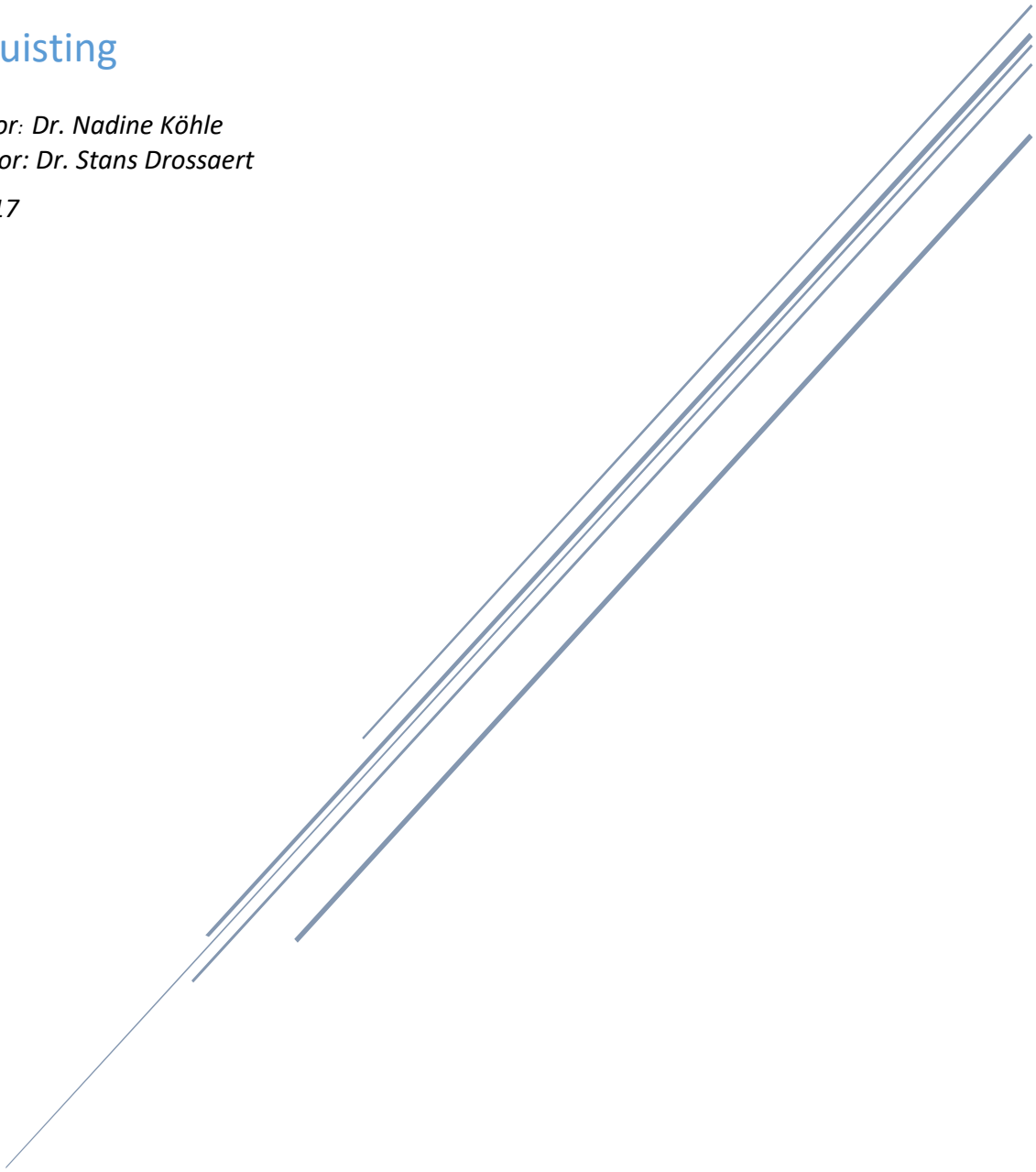
FEATURES OF EMAIL SUPPORT THAT ARE LINKED TO ADHERENCE IN THE WEB-BASED INTERVENTION "HOLD ON, FOR EACH OTHER"

Anna Fuisting

1. Supervisor: Dr. Nadine Köhle
2. Supervisor: Dr. Stans Drossaert

August 2017



University of Twente
Master Thesis: Positive Psychology and Technology

Abstract English

Adherence is still a major challenge in designing web-based interventions. There is a lot of evidence that email support has an influence on the adherence of participants to web-based interventions. But the evidence is smaller when it comes to the question what exactly effective support should entail, because in most studies, the human support is not manualized. Therefore, this study analysed which characteristics of the personalized email support of a web-based intervention may have influence on the adherence to the intervention. In addition, it was also analysed if there was a correlation between the number of words and emails and the adherence.

The question was answered by a content analysis of 38 email conversations of participants and counsellors of the web-based intervention 'Hold on, for each other'. 'Hold on, for each other' aims at providing information and support for partners of cancer patients. For the content analysis, an adjusted version of a coding scheme was used, structured in three levels of communication (content, procedure and relationship). With the help of logistic regression analyses, evidence was found that characteristics of email support have an influence on the adherence to the web-based intervention 'Hold on, for each other'. The more emails the counsellors wrote, and the more words per email the counsellors used, the higher was the probability of adherence. Adherent participants, in addition, wrote significantly more mails to the counsellors than non-adherent participants, what could show a greater commitment. Regarding the content, only 12 of 33 different kinds of expressions by the counsellors and only 2 of 27 kinds of expressions by the participants were positively associated with adherence (respectively one of them with non-adherence). Most of the associated codes belonged to the communication-level *relationship*. This underlines the importance of creating a good therapeutic relationship. Furthermore, it turned out that a clear communication about personal deadlines had a positive influence on the likelihood of adherence of the participants. Surprisingly, no evidence was found that technical problems had any influence on the likelihood of adherence, leastwise not the communication over technical problems. These findings make a useful contribution to overcome the challenge of a low level of adherence. With the results of this study and results of further research, it would be possible to conduct a manual for online counsellors of web-based interventions that would heighten the probability of adherence of the participants.

Abstract Dutch

Adherentie is nog steeds een grote uitdaging bij het ontwerpen van web-based interventies. Er is veel bewijs dat email support invloed heeft op de adherentie van deelnemers van web-based interventies. Maar het bewijs is kleiner als het gaat om de vraag wat precies effectieve ondersteuning zou moeten bevatten, want in de meeste studies wordt de gepersonaliseerde ondersteuning niet naar een handleiding gedaan. Daarom heeft deze studie geanalyseerd welke kenmerken van de gepersonaliseerde email ondersteuning van een web-based interventie invloed kunnen hebben op de adherentie van de interventie. Daarnaast werd ook geanalyseerd of er een verband was tussen het aantal woorden en emails en de adherentie.

De vraag werd beantwoord door een inhoudsanalyse van 38 email-conversaties van deelnemers en counsellors van de web-based interventie ‘Houvast, voor elkaar’. 'Houvast, voor elkaar' is gericht op het verstrekken van informatie en ondersteuning voor partners van kankerpatiënten. Voor de inhoudsanalyse werd een aangepaste versie van een coderingsschema gebruikt, gestructureerd in drie communicatie-level (inhoud, procedure en relatie). Met behulp van logistieke regressieanalyses is gebleken dat kenmerken van e-mailondersteuning invloed hebben op de adherentie van de web-based interventie 'Houvast, voor elkaar'. Hoe meer e-mails de counselors schreven, en hoe meer woorden per e-mail de begeleiders gebruikt, hoe hoger was de kans op adherentie. Adherente deelnemers schreven verder aanzienlijk meer mails aan de counselors dan niet-adherente deelnemers, wat een grotere inzet zou kunnen tonen. Wat betreft de inhoud, waren er slechts 12 van de 33 verschillende soorten uitdrukkingen van de counsellors en slechts 2 van de 27 soorten uitdrukkingen door de deelnemers significant geassocieerd met adherentie (respectievelijk één met non-adherentie). De meeste bijhorende codes behoorden tot de relatie op communicatieniveau. Dit onderstreept het belang van het creëren van een goede therapeutische relatie. Bovendien bleek dat een duidelijke communicatie over persoonlijke deadlines een positieve invloed had op de waarschijnlijkheid van de adherentie van de deelnemers. Verrassend was, dat er geen bewijs gevonden werd dat technische problemen invloed hadden op de waarschijnlijkheid van adherentie, tenminste niet de communicatie over deze problemen. Deze bevindingen zijn een nuttige bijdrage om de uitdaging van een laag niveau van adherentie te overwinnen. Met de resultaten van deze studie en de resultaten van verder onderzoek zou het mogelijk zijn om een handleiding voor online counselors van webgebaseerde interventies te maken die de waarschijnlijkheid van adherentie van de deelnemers zou verhogen.

Table of Contents

Our population is getting older, which increases the costs for the health care for, inter alia, chronic diseases steadily (van Gemert-Pijnen et al., 2013). Web-based interventions as part of the eHealth movement are one answer to the growing health care costs (van Gemert-Pijnen, Peters & Ossebaard, 2013). They are to be found in many variations, sharing the goal of promoting health and health-related behaviours (Kelders Kok, Ossebaard & Van Gemert-Pijnen, 2012). Barak, Klein and Proudfoot (2009) defined web-based interventions as

> *a primarily self-guided intervention program that is executed by means of a prescriptive online program operated through a website and used by consumers seeking health- and mental-health related assistance. The intervention program itself attempts to create positive change and or improve/enhance knowledge, awareness, and understanding via the provision of sound health-related material and use of interactive web-based components. (p.5)*

There are several advantages to be found in the way web-based interventions are provided: The internet provides anonymity, it can be used very flexibly and is easily accessible for everyone, who has access to the internet (van Gemert-Pijnen et al., 2013). These three arguments also lower the threshold to use web-based interventions (van Gemert-Pijnen et al., 2013). In addition, these interventions can be as effective as traditional face-to-face interventions, as shown in a review by Barak, Hen, Boniel-Nissim and Shapira (2008). But while web-based interventions are equally effective, they have the potential to make the health-care system more cost-effective, as shown for example by Smit and colleagues (2011) with the help of a simulation model. Furthermore, in their systematic review, Elbert et al. (2014) concluded that there is more and more evidence that eHealth is effective and/or cost-effective.

On the other hand, Elbert et al. (2014) also state that there are still challenges to be solved to optimize web-based interventions. They suggest to lay a stronger focus on the strategies of implementing eHealth interventions, because the dissemination of web-based interventions is a challenge (Elbert et al., 2014; Andersson & Hedman, 2013), because of the following reasons. Therapists generally have a positive attitude towards web-based interventions, but the opinion of patients differs (Andersson & Hedman, 2013). There are, for example, concerns about data security (Bennett, Bennett & Griffiths, 2010). Furthermore, the healthcare regulations of many countries forbid communication with patients via the internet (Nordgreen

et al., 2012), which makes it difficult to design effective interventions. Finally, the funding of web-based interventions differs between countries, too, ranging from free-of-charge services to services that are paid by insurance companies (Andersson & Hedman, 2013). If the challenge of dissemination is overcome, and the patients participate in the interventions, another major challenge arises: the low level of adherence.

1.1 Adherence to Web-based Interventions

Generally, only 50% of the participants in web-based interventios adhere, as found in a systematic review by Kelders et al. (2012), which means that only half of the participants follow the intervention as intended (Kelders et al., 2012). This is a challenge to the designers of these interventions, because it is assumed that the interventions can only have the greatest impact if followed completely, since adherence correlates strongly to the outcome (Donkin et al., 2011), and a higher level of adherence increases the probability of a positive outcome (Van Gemert-Pijnen et al., 2013). Therefore, it is of great importance to explore the reasons and early indications for non-adherence and to develop strategies to handle these.

1.2 Reasons for Non-adherence

Christensen, Griffiths and Farrer (2009) conducted a systematic review of internet interventions for anxiety and depression to analyse which factors are linked to a poor level of adherence. They found several self-reported reasons for non-adherence. Firstly, there are personal reasons for the participants, such as having a depressive episode or a physical illness, and improvement in condition. Secondly, there are reasons that have to do with the attitude of the participants towards internet interventions: perceived lack of treatment effectiveness, lack of motivation, preference for taking medication, and perceived burden of the programme. Lastly, the participants reported also intervention characteristics as reasons for non-adherence: time constraints, the lack of face-to-face contact, and technical (or computer-access) problems. Lange and colleagues (2003), one of the reviewed articles by Christensen et al. (2009) found that technical problems were vital; 41% of the non-adherent participants did not finish the intervention because of problems with the network or the computer (Lange et al., 2003). Thus, there are several reasons for non-adherers to quit interventions before finishing them, and although the personal reasons and the attitude of the participants are difficult to change, there are still many intervention characteristics that could be adjusted to counteract non-adherence.

1.3 Ways of Optimizing Adherence

Besides reminders, frequent updates, and a more frequent intended usage, Kelders and colleagues (2012) found that integrating human support or interaction with a counsellor support a higher level of adherence (Kelders et al., 2012; Mohr, Cuijpers & Lehman, 2011). According to Andersson, Carlbring, Ljótsson and Hedman (2013), guidance is essential for as well the outcome as the adherence to an internet-based Cognitive Behaviour Therapy (CBT) for common mental disorders. A meta-analysis on internet-based CBT by Spek and colleagues (2007) showed similar evidence, namely that web-based interventions with support by a counsellor had significantly more effect than interventions without one.

There are also indications that the amount of contact between counsellor and participant has an influence on the therapy-outcomes and therefore, maybe also on the adherence (Palmqvist, Carlbring & Andersson, 2007; Kelders et al., 2012; Spek et al., 2007). Palmqvist et al. (2007) found in their study that there is a correlation between the amount of time spent by the therapist per client during a web-based intervention and the treatment outcome. Kelders et al. (2012) showed that the frequency of contact correlates positively with the outcome. But on the other hand, Andersson and colleagues (2012) concluded in their study that correlations between the therapeutic relationship and outcome measures were only small. One possible reason for these ambiguities is that the human support is seldom manualized or based on theory (Mohr et al., 2011). Concluding, it seems that there is a lot of evidence that characteristics of human support in a web-based intervention are helpful in enhancing the treatment outcome and the adherence. However, it is still unclear which components effective support should entail. Therefore, further investigation of these characteristics is needed.

To examine which components of counsellor behaviour are supportive to optimize adherence, Paxling and colleagues (2013) did a content analysis of the messages of counsellors and concluded that different behaviours have a different impact on the outcomes and module completion. They found that the behaviours ‘task reinforcement’, ‘task prompting’, self-efficacy shaping’, and ‘empathetic utterances’ of the online counsellor correlated positively to the adherence to an internet-based cognitive behaviour therapy (Paxling et al., 2013). According to Andersson et al. (2013) encouragement is a major part of the email contact, and encouragement in turn is positively correlated to outcome and adherence (Paxling et al., 2013). Furthermore, a clearly defined deadline is related to a higher level of adherence (Paxling et al., 2013). In addition, Farber (2003) has shown that a strong therapeutic relationship in the context of internet-delivered treatment will help the patient to disclose and be honest with the counsellor, which in turn has a positive effect on treatment

outcome and adherence. Because of the text-based way of communicating in web-based interventions, it is impossible to use non-verbal communication to underline the content or to help building a therapeutic relationship. Therefore, it is not only important what is written, but also how it is written. The use of conversation techniques can help to create explicitness, and it is shown in face-to-face therapy that they are helpful in creating a good therapeutic relationship (Ehlers & Volkers, 2013). These include 'showing empathy', 'reflecting', 'asking questions', 'giving information', 'asking for feedback', 'providing feedback', 'structuring', 'thinking aloud', 'relabelling', 'confronting', 'paraphrasing', and 'paying attention' (Ehlers & Volkers, 2013). But it is unclear, until now, which of these techniques are effective as to enhancing adherence in web-based interventions.

On the other hand, Svartvatten, Segerlund, Dennhag, Andersson and Carlbring (2015) found evidence that the components of the participants' emails also have a relation to adherence. They analysed participants' emails in a guided internet-based therapy for depression and found characteristics that correlate positively with adherence. Thus, if the participants wrote more often the following contents, the likelihood of adhering was greater for them. These include the contents 'observing positive consequences', 'trying alternative behaviours', 'avoidance of treatment', 'choosing alternative behaviour', and a feeling of 'alliance' with the counsellor (Svartvatten et al., 2015).

One possibility of structuring the different expressions in the emails of the counsellors and the participants is dividing them into different communication-levels. According to Crashborn and Buis (2008), the components of face-to-face communication can be divided into the three levels of communication *content, procedure* and *relationship*. In this case, the communication-level *content* would include all expressions that are related to the topic of the intervention, for example statements about the different tasks or texts in the intervention. *Procedure* would clarify the structure of the intervention and its rules, for example deadlines, agreements, but also the progress that the participant is making. The third level of communication, *relationship,* would include all statements that are on a more personal level. Examples of this are statements about feelings, expectations and the personal life (Crashborn &Buis, 2008).

1.4 Research Question and Sub-questions

There is lots of evidence that email support has an influence on the adherence of participants to web-based interventions. But the evidence is smaller when it comes to the question what exactly effective support should entail, because in most studies, the human support is not

manualized. Therefore, this study tries to analyse the characteristics of the personalized email support of the intervention “Hold on, for each other” to find out which components may have an influence on the adherence to the intervention. In addition, it will also be analysed if there is a correlation between the scope of the support, thus the number of words and emails, and the adherence. If it is clear which components are helpful, it will not only be possible to find points to enhance adherence to the web-based intervention “Hold on, for each other”, but also to gain knowledge, on which other interventions can lean on. In addition, knowledge about the most effective scope of support may help to make interventions more cost-efficient.

To structure the results, the research-question “Which features of email support of the intervention ‘hold on, for each other’ are linked to the adherence of the participants?” is subdivided into questions concerning the emails of the counsellors and concerning the emails of the participants. Furthermore, a subquestion concerning expressions of technical problems is added, to prove the fact that technical problems have a great impact on adherence, as described in section 1.2 (Lange et al., 2003).

Questions concerning the counsellors’ emails:

1. Which features are used by the counsellors in their emails?
2. Which features in the messages of the counsellors are linked to the adherence of the participants?
    a. Which expressions on *content*-level are linked to adherence?
    b. Which expressions on *procedure*-level are linked to adherence?
    c. Which expressions on *relationship*-level are linked to adherence?
3. To what extent are the scope of the messages (number and length) written by the counsellors and the adherence of the participants linked to each other?

Questions concerning the participants’ emails:

4. Which features are used by the participants in their emails?
5. Which features in the messages of the participants are linked to their adherence?
    a. Which expressions on *content*-level are linked to adherence?
    b. Which expressions on *procedure*-level are linked to adherence?
    c. Which expressions on *relationship*-level are linked to adherence?
6. To what extent are the scope of the messages (number and length) written by the participants and their adherence linked to each other?

7. To what extent are expressions and questions concerning technical problems linked to adherence?

2. Methods

2.1 Design

Content analysis of exchanged email correspondence between counsellor and participants was done, using a coding scheme by Salita (2016). Thereafter, a quantitative analysis of the emails was performed.

2.2 Setting: Hold on, for each other

To answer the research questions, the web-based intervention 'hold on, for each other' by Köhle and colleagues (2015) was chosen to serve as the setting. 'Hold on, for each other' aims at providing information and support, and helping the target group "to make the most of the difficult times they are in" (Köhle, 2016, p.135). The intervention is one of the first web-based interventions addressing partners of cancer patients. It is based on Acceptance and Commitment Therapy (ACT), and was designed in close collaboration with the target group.

The intervention consists of 6 obligatory modules and 2 optional modules, and the participants are instructed to work on one module per week. All modules consist of information over a specific topic, exercises about the topic and a mindfulness exercise. In addition, the participants are provided with tips and links to helpful websites at the end of each module and they will receive an automated or personalized feedback. The first topic deals with emotions. The second module is about the construction of one's own resilience plan. Thirdly, the participants will learn techniques to help them to worry less. Fourthly, they will gain insight in their values regarding their relationship and life. The fifth module addresses precious moments and positive emotions in difficult times. The last obligatory module is about the communication in times of cancer. The next two modules are optional: either the participants choose module 7, which is intended for the participants, whose partner is cured, or they choose module 8, which will help those participants, whose partner will not get better, to make the best of the remaining time.

A randomized controlled trial (RCT) was conducted to analyse the effects of this intervention (Köhle, 2016). A multi-component recruitment approach was used to recruit the participants (for more information, see Köhle et al., 2015). Only people 18 years or older were included who speak Dutch sufficiently, and have access to the internet and their own email address (for more inclusion criteria, see Köhle et al., 2015). 203 participants were included in

the study and they were randomly assigned to an automated feedback condition, a personalized feedback condition and a waiting list condition, so that there were 67 participants in the first condition, 70 in the second, and 66 participants in the third condition. The participants of the personalized feedback condition had the task to write to their counsellor about their experiences by completing each module. The personalized feedback was performed by five female psychology students, who followed a training about email support and were supervised by experienced psychologists of the University of Twente. Besides answering the emails of the participants and giving feedback, the counsellors also wrote a welcome-email to every participant of the personalized feedback condition. When writing the feedback emails, the counsellors always followed the same structure: After a short greeting, the counsellors should give a compliment for finishing the module. Then, they would give a short summary about the finished module. The next part was dependent on what the participant had written in his email before, because the counsellors would then give personalized feedback to the exercises and answer the participant's questions. Finally, the counsellor would end the email with a short preview of the next module, and an agreement about the next email contact.

2.3 Data Set

The current research analysed messages that were written as well as received by participants of the personalized feedback condition in the RCT by Köhle (2016). From a total of 47 participants in this condition, all non-adherent participants were selected (n=15). Additionally, another 23 adherent participants were randomly selected. 68.4% of the 38 participants were female and 73.7% were aged between 51 and 70 years. All but 3 participants were Dutch (92.1%), and had at least a medium level of education (middle: 26.3%; high: 63.2%). Two third of the participants had a job (for more demographics and cancer-specific characteristics, see Table 1). In total, 587 emails from 38 email correspondences were analysed. Of these, 389 emails were written by 5 different counsellors (welcome emails excluded, because they all contained the same content) and 198 emails were written by the participants.

2.4 Materials

A coding scheme which was developed by a master's degree student of the University of Twente (Salita, 2016) served as a basis to perform the content analysis (see Appendix A and

Table 1

Demographic and cancer-specific characteristics (N=38)

	N	%
Sex		
Male	12	31.6
Female	26	68.4
Age		
29-50	9	23.7
51-70	28	73.7
>70	1	2.6
Ethnicity		
Dutch	35	92.1
Non-Dutch	3	7.9
Relationship		
Married and/or living together	38	100
Children		
Yes, living at home	16	42.1
Yes, living elsewhere	18	47.4
No	4	10.5
Level of education		
Low	3	7.9
Middle	10	26.3
High	24	63.2
Working situation		
Working	26	68.4
Not working	12	31.6
Sort of cancer		
Breast cancer	5	13.2
Lymph node cancer	5	13.2
Intestinal cancer	5	13.2
Lung cancer	4	10.5
Head-neck cancer	4	10.5
Bone marrow cancer	3	7.9
Prostate cancer	3	7.9
Others	9	23.6
Time since diagnosis		
3-6 months	9	23.7
6-12 months	7	18.4
1-5 years	15	39.5
5-10 years	4	10.5
> 10 years	3	7.9
Currently getting treatment		
Yes	20	52.7
No	17	44.7

B or Tables 3-5 and 7-9). It was divided into one version for the emails written by the counsellors and one version for the participants' emails. Salita (2016) based the coding scheme mainly on the therapeutic behaviours found by Paxling et al. (2012) as described above and the basic communication techniques by Ehlers and Volkers (2003). During her content analysis, she supplemented the coding scheme with codes for statements that did not fit in yet. All codes were subordinated to one of the three levels of communication determined by Crashborn and Buis (2008), *content'*, *procedure*, and *relationship*. Two additional codes

were used to analyse if the participant encountered technical problems: “Questions about technical problems” and “Expressing technical problems”.

For the current study, the coding scheme was slightly adjusted during the coding phase. For a summary of all changes of the coding scheme, see Appendix C. Names of codes and definitions were changed, so that the descriptions were a better fit for all statements of that topic and to were able to include more statements with only slightly different meanings into the same code. New codes were added, too, because there were statements that did not fit in any other coding category.

2.5 Coding Procedure

A content analysis was performed, in which the researcher and co-researcher coded the emails according to the coding scheme (Salita, 2016). A code was used for every sequence of information that had a different content than the one before. Thus, it was possible that two or more sentences were coded with only one code, for example “Reflecting on content”, but also that one sentence was coded with two different codes.

To reach a sufficient interrater-reliability, the following procedure was employed: After coding the first 10 emails together, the following 20 emails were coded separately, and compared and discussed after that, until no more disagreements occurred. At that stage, the new codes were added to the coding scheme and some codes were adjusted. Then, 22 emails by the participants and 22 emails by the counsellors, taken from 6 different conversations, were again coded separately and the interrater-reliability was calculated: with the help of IBM SPSS Statistics 22 Cohen’s kappa was analysed. Finally, all other emails were divided equally and coded by the researcher and co-researcher.

After coding all emails, a quantitative data file (File 1) was made in IBM SPSS Statistics 22 by summing up the frequency of each code in each email. In this way, the raw data was produced with the frequency of each code for each of the 587 emails. Secondly, means per code per sender were calculated by dividing the frequency of codes by the number of emails send by the sender. In addition, the mean number of words per email was calculated by summing up all words and dividing them by the number of emails, which had been summed up before. In that way, the File 1 was converted into a new quantitative data file (File 2). Finally, the variable “adherence” from the RCT by Köhle et al. (2016) was added to File 2. Köhle et al. (2016) defined every participant who reached module 6 as adherent. Participants were classified as adherent objectively by log files. The ones who were adherent were coded with ‘1’ and those who were not adherent with ‘2’ in the quantitative data file.

2.6 Analysis

The data was analysed with the help of IBM SPSS Statistics 22. Firstly, Cohen's kappa was calculated for the interrater-reliability for each code separately and, thereafter, means for all codes of the participants' and the counsellors' coding scheme were calculated. Secondly, the File 1 with all 587 emails was used to perform a descriptive analysis. In this descriptive analysis, the number of emails, in which a particular code was used, and the percentage of the emails, in which a code was used, were calculated for the subquestions 1 and 4. File 2 with the mean frequency of the codes per participant and sender was used to carry out several binary logistic regression analyses for each research-subquestion. Adherence served as the dependent variable in each analysis. The independent variables differed per subquestion (see Table 2). *P*-values smaller than or even 0.05 were considered as significant. With the help of regression analyses it is possible to predict an outcome. It was chosen for a logistic regression because the dependent variable is a dichotomous one.

Table 2

Overview of Independent and Dependent Variables used per subquestion in Binary Logistic Regressions

Subquestion	Independent variables	Dependent variable
2. Which features in the messages of the counsellors are linked to the adherence of the participants? a. Which expressions on *content*-level are linked to adherence? b. Which expressions on *procedure*-level are linked to adherence? c. Which expressions on *relationship*-level are linked to adherence?	- mean frequency of codes used per conversation in the counsellors' emails (one analysis per code)	Adherence
3. To what extent are the scope of the messages (number and length) written by the counsellors and the adherence of the participants linked to each other?	- mean number of words used in the counsellors' emails - number of emails by the counsellors	Adherence
5. Which features in the messages of the participants are linked to their adherence? a. Which expressions on *content*-level are linked to adherence? b. Which expressions on *procedure*-level are linked to adherence? c. Which expressions on *relationship*-level are linked to adherence?	- mean frequency of codes used per conversation in the participants' emails (one analysis per code)	Adherence
6. To what extent are the scope of the messages (number and length) written by the participants and their adherence linked to each other?	- mean number of words used in the participants' emails - number of emails by the participants	Adherence
7. To what extent are expressions and questions concerning technical problems linked to adherence?	- mean frequency per sender of the code "Questions concerning technical problems" - mean frequency per sender of the code "Expressions about technical problems"	Adherence

3. Results

3.1 Interrater-reliability

Cohen's kappa was analysed and stated that the interrater-reliability for the measured variables was on average .87, ranging from .53 to 1, thus the researcher and the co-researcher had an 'almost perfect agreement' according to the categories of Landis and Koch (1977). As well for the coding scheme of the counsellors' emails as the coding scheme of the participants' emails, the Cohen's kappa was on average .87 (Tables 3 – 5, and Tables 7– 9).

3.2 Adherence

In total, 23 of the 38 (60.5%) participants were adherent, thus reached module 6 of the intervention.

3.3 Emails of the Counsellors

3.3.1 Descriptive statistics: features in the emails of the counsellors

Table 3

Frequency and percentage of the messages in which an expression of the counsellors occurred at the communication level content *with corresponding example and Cohens kappa (N = 389)*

Code	Example	N	%	kappa
Summary content	"Je bent bezig geweest met het opschrijven van belangrijke 'wat-als-vragen'. Deze heb je beantwoord, waardoor er nieuwe 'wat-als'vragen' ontstonden"	203	52.2	.8
Reflecting on content	"Je noemt dat je vroeger het liefst door je moeder getroost wilde worden en de nabijheid opzocht"	194	49.9	.9
Psychoeducation	"Aardig zijn naar jezelf is waardevol, omdat het je helpt om te kunnen gaan met de ongemakken die het leven met zich meebrengt"	192	49.4	.9
Questions concerning the content	"Heb je deze kenmerken bij jezelf opgemerkt?"	180	46.3	.8
Advising	"Het lijkt toch vaak makkelijker om vriendelijk te zijn tegen anderen dan voor onszelf. Misschien kun je eens proberen jezelf te behandelen als een goede vriend?".	168	43.2	1
Giving a preview on the module(s)	"Volgende week ga je aan de slag met een nieuwe module die zich zal richten op 'Hoe houd ik het vol?'"	126	32.4	.8
Others		97	24.9	.6
Empathy (concerning the content)	"Je geeft aan dat het toch wel heftig was om de teksten te lezen. Dit kan ik me zeker voorstellen".	64	16.5	.9
Showing interest	"Ik ben benieuwd naar je reactie over de mindfullnessoefening"	53	13.6	1
Reassuring (concerning the content)	"Het is geen probleem als je de oefening niet bij je past".	34	8.7	.9
Mean				**.9**

3.3.1.1 Content

The frequencies and percentages of all codes in the category *content* are illustrated in Table 3. This category included 10 different codes for the messages of the counsellors. The most frequently present code was "Summary content", which was present in more than half of the 389 messages (52.2 %). In nearly half of the messages, there were also expressions of the codes "Reflecting on content" (49.9%) and "Psychoeducation" (49.4%) observable. Furthermore, the counsellors frequently asked questions concerning the content (in 46.3% of all counsellors' messages) and gave advice in 43.2% messages. In nearly one third of the messages, they gave a preview on the following module(s) (32.4%). On the other hand, "Reassuring (concerning the content)" was present in only 8.7% of the messages, and therefore the least present code of this category.

Table 4

Frequency and percentage of the messages in which an expression of the counsellors occurred at the communication level procedure *with corresponding example and Cohens kappa (N = 389)*

Code	Example	N	%	kappa
Agreement	"Ik ontvang graag maandag je ervaringen over les 3".	210	54.0	.8
Giving information about the intervention	"Op het moment dat je dan inlogt, gaat de teller van 8 dagen in. Dit is mede zo bedoeld omdat je dan 8 dagen te tijd hebt om over een les te doen, en om ook stil te staan bij de lesstof"	197	50.6	.9
Questions concerning the procedure	"Is alles met betrekking tot de cursus duidelijk?"	166	42.7	.8
Progress				
Positive	"Ik zie dat het gelukt is om de oefeningen van week 4 in te vullen"	148	38.1	.8
Negative	"Ik zie dat u hier nog niet aan toe bent gekomen"	103	26.5	.8
Reassuring (concerning the procedure)	"Het is geen probleem dat je even niet met de les bezig bent geweest."	131	33.7	.8
Empathy (concerning the procedure)	"Ik kan me voorstellen dat dit jou erg veel tijd en energie kost, gezien de technische problemen die zich helaas vaak bij jou voordoen".	33	8.5	.8
Deadline flexibility	"Mocht je extra tijd nodig hebben, dan kan dat"	30	7.7	-
Change of coach	"Zoals Lotte in haar vorige bericht al aangaf, ga ik u gedurende deze cursus verder begeleiden."	22	5.7	1
No experiences received	"Ik heb nog geen bericht met ervaringen van je ontvangen"	16	4.1	1
Mean				**.9**

Note. If the code was not present in one of the messages that were coded to analyse the interrater-reliability, it was not possible to calculate a Cohen's kappa for it.

3.3.1.2 Procedure

The frequencies and percentages of all codes in the category *procedure* are presented in Table 4. This category included 10 different codes for the messages of the counsellors. "Agreement" was present in more than half of the 389 messages (54.0%), as well as "Giving information about the intervention" (50.6%). The counsellors also frequently asked questions concerning the procedure (42.7%). In addition, the counsellors wrote more often messages including expressions about positive progress (38.1%), than about negative one (26.5%). On the other hand, the codes "Empathy (concerning the procedure)", "Deadline flexibility", "Change of coach" and "No experiences received" were all present in less than 10% of the messages.

Table 5

Frequency and percentage of the messages in which an expression of the counsellors occurred at the communication level relationship *with corresponding example and Cohens kappa (N = 389)*

Code	Example	N	%	kappa
Good wishes	"Veel succes volgende week"	278	71.5	.8
Complimenting	"Mooi!"	210	54.0	.8
Hoping	"Ik hoop dat…"	178	45.8	1
Thanking	"Als je geen van de aanvullende lessen meer wilt volgen, dan wil ik je bij deze hartelijk danken voor je inzet en deelname aan dit onderzoek"	157	40.4	1
Being open for questions	"Als ik nog wat voor je kan doen dan hoor ik het graag"	104	26.7	1
Showing empathy	"Fijn dat zoveel mensen te hulp schieten"	76	19.5	.9
Questions about the personal situation	"Hebben jullie al een uitslag van de test gekregen?"	66	17.0	1
Looking forward to reaction	"Graag hoor ik even van je"	63	16.2	.7
Confirming	"Dat klopt!"	52	13.4	.8
Reflecting on personal life	"In je vorige bericht gaf je aan dat je het niet fijn vond dat de verjaardag niet vlekkeloos verliep. Dit gaf jou het gevoel van falen terwijl je zo je best ervoor had gedaan".	18	4.6	1
Excuses	"Sorry voor het ongemak".	10	2.6	-
Value for others	"Hier kunnen andere mensen veel steun aan hebben in de heftige en emotionele tijd die ze doormaken."	8	2.1	1
Condoling	"Gecondoleerd"	3	0.8	-
Mean				**.9**

Note. If the code was not present in one of the messages that were coded to analyse the interrater-reliability, it was not possible to calculate a Cohen's kappa for it.

3.3.1.3 Relationship

The frequencies and percentages of all codes in the category *relationship* are presented in Table 5. This category included 13 different codes. The most frequently present code in this

category and simultaneously the most frequently present one of all three categories was "Good wishes", which was included in more than two third of the counsellors' messages (71.5%). On the other hand, "Condoling" could be found in only 0.8% of the messages, which was therefore the least present code of this category and of all categories together. In more than half of the messages, the code "Complimenting" was present (54.0%). "Hoping" and "Thanking" were also used frequently (45.8%, respectively 40.4%). The codes "Reflecting on personal life", "Excuses" and "Value for others" were only used in less than 10% of the counsellors' emails.

3.3.2 Explanatory Research: Features in the emails of the counsellors

Logistic regression showed that, of all 33 codes, 12 codes were statistically significant associated with adherence. For all *Wald*- and *p*-values, see Table 6. The counsellors of adherers included on average more expressions of the following 12 significant codes in their mails. In the category *content*, a higher occurrence of the 3 codes "Reflecting on content", "Advising", and "Empathy (concerning the content)" was positively associated with adherence. In the category procedure, a higher frequency of the expressions belonging to the 3 codes "Agreement", "Progress – positive", and "Deadline flexibility" and a lower frequency of "Progress – negative" were associated with a higher probability of adherence. In the third category, *relationship*, a high frequency of the 5 codes "Complimenting", "Hoping", "Thanking", "Showing empathy", and "Confirming" was associated with adherence. Thus, the most expressions that correlate positively with adherence were found in the last category. It is also noteworthy that empathy only had an effect on adherence on the communication levels *content* and *relationship*.

3.3.3 Descriptive Statistics and Explanatory Research: Scope of Communication Counsellors

The counsellors wrote 389 emails in total, with more than 121100 words. Thus, each participant received on average 10.4 emails from their counsellors with a mean number of 311.3 words per message. The counsellors of adherent participants wrote on average 12.3 emails to the participants with an average of 334.7 words per email. In contrast, the counsellors of non-adherent participants wrote an average of 7.1 emails with a mean number of words of 249.8 per email.

Table 6

Average occurrence (M, sd) of particular expressions by the counsellors to adherers and non-adherers, as well as Wald χ^2 and p-value of the Regression analyses of the 33 codes of the counsellors' coding scheme.

Code	Adherent M (sd)	Non-adherent M (sd)	Wald $\chi^2(1)$	*p*-value
Content				
Questions concerning the content	2.2 (.9)	2.1 (1.2)	.1	.766
Psychoeducation	1.7 (.7)	1.4 (.8)	1.2	.269
Summary content	2.0 (.7)	1.7 (.9)	1.1	.299
Reflecting on content	2.1 (1.0)	.9 (.6)	9.1	.003**
Advising	1.1 (.6)	.6 (.4)	6.6	.010**
Giving a preview on the module(s)	.3 (.1)	.3 (.2)	< .05	.964
Empathy (concerning the content)	.2 (.2)	.1 (.1)	5.8	.016*
Showing interest	.1 (.1)	.1 (.1)	.7	.405
Reassuring (concerning the content)	.1 (.1)	< .05 (.1)	3.2	.073
Others	.4 (.6)	.2 (.3)	2.6	.108
Procedure				
Agreement	.6 (.2)	.5 (.3)	4.4	.036*
Progress				
Positive	.5 (.3)	.3 (.2)	4.9	.027*
Negative	.3 (.3)	.5 (.3)	5.1	.024*
Giving information about the intervention	.8 (.4)	.7 (.2)	.3	.578
Questions concerning the procedure	.6 (.3)	.6 (.3)	.9	.348
Reassuring (concerning the procedure)	.4 (.2)	.5 (.2)	.6	.440
Deadline flexibility	.1 (.1)	< .05 (< .05)	6.0	.015*
Empathy (concerning the procedure)	.1 (.1)	.1 (.1)	.6	.449
No experiences received	< .05 (.1)	< .05 (.1)	.1	.736
Change of coach	< .05 (.1)	.1 (.1)	3.0	.085
Relationship				
Good wishes	.8 (.2)	.7 (.2)	1.5	.224
Complimenting	1.9 (1.0)	.7 (.5)	9.0	.003**
Hoping	.8 (.3)	.5 (.2)	7.7	.006**
Thanking	.6 (.2)	.3 (.1)	8.2	.004**
Showing empathy	.3 (.3)	.1 (.1)	5.8	.016*
Being open for questions	.2 (.2)	.4 (.2)	3.4	.064
Looking forward to reaction	.2 (.2)	.3 (.3)	2.0	.153
Reflecting on personal life	.1 (.1)	< .05 (< .05)	2.1	.147
Confirming	.2 (.1)	.1 (.1)	3.9	.049*
Questions about the personal situation	.2 (.2)	.2 (.3)	< .05	.883
Excuses	< .05 (< .05)	0	< .05	.999
Condoling	< .05 (< .05)	< .05 (< .05)	.1	.754
Value for others	< .05 (.1)	0	< .05	.998

Note. * $p \leq .05$ ** $p \leq .01$

Logistic regression showed that an increasing number of emails [Wald $\chi^2(1)= 8.5$, $p= .004$] as well as an increasing number of words per message [Wald $\chi^2(1)= 5.8$, $p= .012$] were associated with an increased likelihood of adhering to the intervention. That the adherent

participants received more emails than the non-adherent ones, was expected, because they fulfilled per definitionem more modules and therefore, received more feedback emails on the modules. But that would not have automatically meant that the emails contained more words.

3.4 Emails of the Participants

3.4.1 Descriptive Statistics: Features in the Emails of the Participants

Table 7.

Frequency and percentage of the messages in which an expression of the participants occurred at the communication level content *with corresponding example and Cohens kappa (N = 198)*

Code	Example	N	%	kappa
Reflection	"Je noemt dat je vroeger het liefst door je moeder getroost wilde worden en de nabijheid opzocht"	78	39.4	.7
Sharing experiences: content				
Positive	"Ik ben vandaag begonnen en vind het heel prettig om met deze cursus te werken."	74	37.4	.7
Negative	"De mindfulness oefening trekt mij totaal niet aan."	42	21.2	.6
Neutral	"Ik weet nog niet wat ik van de mindfulness oefening moet vinden".	41	20.7	.7
Other		61	30.8	.5
Questions concerning the content	"Wat betekent :"een niet-vereenzelvende houding?"	3	1.5	1
Mean				**.7**

3.4.1.1 Content

The frequencies and percentages of all codes in the category *content* are presented in Table 7. The first category for the messages of the participants included 6 different codes. The most frequently present code was "Reflection", which was observable in more than one third of the 198 messages (39.4 %). It is also remarkable that the participants shared positive (37.4%) experiences in more messages than negative (21.21%) or neutral ones (20.7%). "Questions concerning the content" was used in only 1.5% of the messages.

3.4.1.2 Procedure

The frequencies and percentages of all codes in the category *procedure* are presented in Table 8. This category included 12 different codes. In more than one third of the messages, the code "Intention to do sth." was present (34.3 %). The participants wrote about positive progress (30.3%) in more than 4 times as much messages as about negative progress (6.6%). Furthermore, the participants shared neutral experiences of the procedure (15.7%) in more

messages than negative (9.1%) or positive ones (6.1%). “Reason tasks not done – non-personal” and “Looking forward to module” were both present in only 3.0% of the messages and therefore the least present codes in this category.

Table 8

Frequency and percentage of the messages in which an expression of the participants occurred at the communication level procedure *with corresponding example and Cohens kappa (N = 198)*

Code	Example	N	%	kappa
Intention to do sth.	“Ik neem mezelf voor om vanaf donderdag de oefeningen weer op te pakken.”	68	34.3	.9
Progress				
Positive	“Ik heb les 5 afgerond”	60	30.3	1
Negative	“Ik heb de oefeningen nog niet gemaakt”	13	6.6	1
Questions concerning the procedure	“Hoe kan ik de ervaringen van andere cursisten lezen?”	32	16.2	.9
Sharing experiences: Procedure				
Positive	“Ik vind het fijn dat ik er twee weken de tijd heb om de oefeningen te maken.”	12	6.1	-
Negative	“Ik vind een week te kort om de lessen te doen, het moet soms echt even bezinken.”	18	9.1	.8
Neutral	“Ik heb steeds begrepen dat je niet direct de hele oefening hoefde te maken, maar ook in delen kon/kan doen.”	31	15.7	-
Agreement	“Ik zal je wel laten weten wanneer ik de module afgerond heb”.	25	12.6	1
Deadline flexibility	“Ik wil graag langer doen over de module”.	24	12.1	-
Reason tasks not done				
Personal	“Ik had geen tijd om de oefeningen te maken.”	14	7.1	1
Non-personal	“Ik kon de oefeningen niet maken omdat ik de module niet kon openen.”	6	3.0	-
Looking forward to module	“Ik ben benieuwd naar de volgende module”	6	3.0	1
Mean				**1.0**

Note. If the code was not present in one of the messages that were coded to analyse the interrater-reliability, it was not possible to calculate a Cohen’s kappa for it.

3.4.1.3 Relationship

The frequencies and percentages of all codes in the category *relationship* are presented in Table 9. This category included 9 different codes. The most frequent one was “Thanking”, which was present in nearly one third of the 198 messages (32.8 %). In contrast to the frequencies of sharing experiences of the content or the procedure, the frequencies of sharing experiences of personal life are nearly equally divided: The frequencies range from 24.8% of the messages messages (positive experiences), over 25.8% (negative experiences), to 29.3% of the messages (neutral experiences). The codes “Good wishes” and “Excuses” were only

present in less than 10% of all participants' messages. "Questions concerning the personal situation" were not present at all in the messages and therefore the least present code of all codes.

Table 9

Frequency and percentage of the messages in which an expression of the participants occurred at the communication level relationship *with corresponding example and Cohens kappa (N = 198)*

Code	Example	N	%	kappa
Thanking	"Ik wil je bedanken voor de informatie."	65	32.8	.9
Sharing experiences: Personal life				
Positive	"De kinderen gaan weer naar school, wij zijn weer aan het werk, de regelmaat is terug. Nu gun ik mezelf ook weer de tijd om met de cursus bezig te zijn, had daarvoor geen rust en stelde het daarom steeds uit."	49	24.8	1
Negative	"Wij hebben geen goed nieuws gehad over de gezondheid van mijn man. In de afgelopen 3 weken zijn er 3 ziekenhuis-opnames geweest en is een intensief behandeltraject gestart."	51	25.8	.9
Neutral	"A.s. donderdag hebben we een afspraak, dan horen we of de knobbel goed- of kwaadaardig is."	58	29.3	.7
Hoping	"Ik hoop dat…"	25	12.6	1
Good wishes	„Het ga je goed"	15	7.6	-
Excuses	"Het spijt me dat het zo lang duurt"	7	3.5	1
Confirming	"Inderdaad."	4	2.0	-
Questions concerning the personal situation	"Wat denk je dat ik moet doen?"	0	0	-
Mean				**.9**

Note. If the code was not present in one of the messages that were coded to analyse the interrater-reliability, it was not possible to calculate a Cohen's kappa for it.

3.4.2 Explanatory Research: Features in the Emails of the Participants

Logistic regression showed that only two codes of all 27 were significantly associated with adherence: "Questions concerning the procedure" [communication-level *procedure*; Wald $\chi^2(1)= 5.6$, $p= .018$] and "Sharing experiences: Personal life – neutral" [communication-level *relationship*; Wald $\chi^2(1)= 4.2$, $p= .04$]. See Table 10 for all *Wald*- and *p*-values. If the participants asked more often questions about the procedure and/or shared experiences about their personal life, the probability that they would adhere to the intervention was higher in comparison to those, in whose emails these codes were not often represented.

Table 10

Average occurrence (M, sd) of particular expressions by the adherent and non-adherent participants, as well as Wald χ^2 and p-value of the Regression analyses of the 27 codes of the participants' coding scheme.

Code	Adherent M (sd)	Non-adherent M (sd)	Wald $\chi^2(1)$	*p*-value
Content				
Questions concerning the content	< .05 (.1)	0	< .05	.999
Sharing experiences: content				
Positive	.6 (.5)	.5 (.9)	.5	.498
Negative	.4 (.5)	.5 (1.3)	.2	.620
Neutral	.3 (.2)	.3 (.8)	.1	.802
Reflection	1.0 (.9)	.7 (1.3)	.4	.509
Other	.4 (.4)	.3 (.8)	< .05	.837
Procedure				
Progress				
Positive	.3 (.2)	.4 (.6)	.7	.397
Negative	.1 (.1)	.1 (.3)	.1	.732
Sharing experiences: Procedure				
Positive	.1 (.1)	< .05 (.1)	2.2	.136
Negative	.1 (.1)	.3 (.7)	1.4	.244
Neutral	.2 (.3)	.3 (.6)	.4	.528
Agreement	.1 (.2)	< .05 (.1)	3.0	.086
Reason tasks not done				
Personal	.1 (.2)	.2 (.4)	.8	.368
Non-personal	< .05 (< .05)	.1 (.3)	.8	.375
Intention to do sth.	.4 (.3)	.4 (.3)	< .05	.895
Deadline flexibility	.1 (.1)	.05 (.1)	1.6	.210
Looking forward to module	< .05 (.1)	0	.7	.419
Questions concerning the procedure	.2 (.2)	< .05 (.1)	5.6	.018*
Relationship				
Sharing experiences: Personal life				
Positive	.3 (.4)	.1 (.3)	2.9	.090
Negative	.4 (.4)	.2 (.4)	1.9	.170
Neutral	.4 (.4)	.1 (.3)	4.2	.040*
Questions concerning the personal situation	0	0		
Thanking	.3 (.3)	.2 (.3)	1.9	.172
Good wishes	.1 (.1)	< .05 (.1)	< .05	.835
Excuses	< .05 (.1)	.1 (.4)	1.4	.232
Confirming	< .05 (< .05)	< .05 (.1)	1.1	.284
Hoping	.1 (.1)	.2 (.4)	.7	.392

Note. * $p \leq .05$

3.4.3 Descriptive Statistics and Explanatory Research: Scope of Communication Participants

The participants wrote in total 198 emails to their counsellors, with over 24900 words. Thus, each participant wrote on average 5.2 emails with a mean scope of 125.7 words per message.

The adherent participants wrote on average 7.6 emails with a mean number of words of 113.6. The non-adherent ones wrote on average only 1.6 messages with a mean number of words of 103. Not surprisingly, the analyses showed that an increasing number of emails was statistically significant associated with an increased likelihood of adhering to the intervention [Wald $\chi^2(1)= 9.4$, $p= .003$].

3.5 Technical Problems

3.5.1 Descriptive Statistics and Explanatory Research: Technical Problems

It was asked about technical problems in 2.6% of the 389 messages of the counsellors and spoken about it in 8.5% of the emails. The participants on the other hand asked about technical problems in 3.0% of their 198 messages, while discussing technical problems in 13.1% of the emails. Surprisingly, the topic 'technical problems' was not statistically significant associated with adherence according to logistic regression analyses (see Table 11).

Tabel 11

Average occurrence (M, sd) of expressions and questions concerning technical problems by the counsellors to adherers and non-adherers and by the participants, as well as Wald χ^2 and p-value of the Regression analyses.

Technical Problems (TP)				
	Adherent M (sd)	Non-adherent M (sd)	Wald $\chi^2(1)$	*p*-value
Counsellors				
Questions concerning TP	< .05 (< .05)	< .05 (.1)	1.2	.267
Expressions about TP	.1 (.1)	.1 (.1)	< .05	.828
Participants				
Questions concerning TP	< .05 (.1)	0	< .05	.998
Expressions about TP	.1 (.2)	.3 (.6)	1.9	.173

4. Discussion

This study analysed the personalized email support of the intervention "Hold on, for each other" by Köhle et al. (2015) to find out which characteristics may have an influence on the adherence to the intervention. In order to gain a picture that is as complete as possible, the research question "Which features of email support of the intervention 'hold on, for each other' are linked to the adherence of the participants?" was subdivided into questions about the scope and content of the emails of the counsellors, about scope and content of the emails of the participants and into one question about sharing and asking about technical problems.

Looking at the scope of communication of the counsellors, it is noteworthy that a higher number of counsellors' emails as well as a higher mean number of words per email were

associated with the adherence of the participants. These findings underline the assumption that the amount of contact, respectively the frequency of contact not only positively correlate with the outcome of a web-based intervention, as found by Kelders et al. (2012) and Palmqvist et al. (2007), but with adherence to a web-based intervention, too. Thus, this underlines that it is better for counsellors of web-based interventions to spend more time on the participants in the form of writing more frequently and writing more extensively. Further research could concentrate on the dose-response relationship. It is not expected that the relationship between the likelihood of adherence and the number of messages and words is a linear one. For example, if the counsellor would write an email every two hours with thousands of words, it would not be likely that it would heighten the probability of adherence of the participant more than if the counsellor would write once a week.

Looking at the number of messages written by the participants, it is at first glance not surprising that the adherent participants wrote more emails to their counsellors than the non-adherent ones, because the adherent participants completed more modules and therefore also received more (feedback-) emails from the counsellors. But if the number of emails of the participants is compared to the number of emails of the counsellors, it is remarkable that the adherent participants wrote as much as 60% of the amount of emails of their counsellors, and the non-adherent ones simultaneously only wrote 22% of the emails they received. Possible reasons for this could be that they had less time or less motivation to write reply-emails next to finishing the tasks of the intervention. But it is also possible that some of the participants were not reading the emails, because they had no time, no motivation or they did not find them. Another aspect that needs to be considered is that the participants received reminding emails if they were not making any progress in the intervention. It would be interesting to analyse log data in further research to see if the participants had clicked on the messages and for how long, to draw conclusions if they were reading the feedback- (or reminding-) emails at all. This could then be used to analyse if not-replying could be considered as an early sign for non-adherence.

Regression analyses showed that, in total, only 12 of 33 features of email support by the counsellors were linked to adherence, and only 2 of 27 features in the emails of the participants. The most codes that were significantly associated with adherence belonged to the communication-level *relationship* (i.e. 5 codes of the counsellors' and 1 code of the participants' coding scheme). The main findings are discussed in detail in the following.

On the communication level *content*, the codes "Reflecting on content", "Advising", and "Empathy (concerning the content)" were positively associated with adherence. This suggests that it has a positive influence on adherence, if the counsellor refers frequently to what the participant had done in the tasks of the intervention and shows that he dealt with what the participant has done. It also underlines the aspect that it seems to have a positive influence on adherence if the feedback mails are personalized. That showing a lot of empathy (concerning the content) has a positive influence on the likelihood of adhering stresses the importance of a good therapeutic relationship between the counsellor and the participant, which is later discussed in detail.

In addition, it is noteworthy that a clear communication about personal deadlines had a positive influence on the likelihood of adherence of the participants. This is reflected in the positive association of the codes "Agreement" and "Deadline flexibility" by the counsellors and "Questions concerning the procedure" by the participants on the communication-level *procedure* with the likelihood of adherence. This is in accordance with findings of a content analysis of Paxling and colleagues (2013), who have also shown that clearly communicated deadlines were positively associated to adherence. That the adherent participants were more frequently asking about the procedure than the non-adherent could be a sign that these participants were more interested in how the intervention worked, and showed more commitment. Another interpretation could be that they were more motivated during the intervention so that they would have asked if problems with the procedure had occurred instead of simply stopping with the intervention.

Furthermore, the frequent occurrence of the codes "Progress – positive" and "Progress – negative" on communication-level *procedure* of the counsellors' coding scheme had a significant influence on the adherence, as well as on the non-adherence. The utterance of positive progress is found more often in the conversations of counsellors with adherent participants, while the utterance of negative progress in conversations with non-adherent participants. This suggests that it could be an early sign of non-adherence to notice that a participant is not making progress. But to prove this and to evaluate means to help the participant to adhere, further research is needed. For example, the activity of participants over time could be analysed with the help of log data. In this way, it would be possible to see if the participants would react to means such as reminders to find the most efficient ways of dealing with these supposed early signs of non-adherence.

On the communication-level *relationship,* the 5 codes "Complimenting", "Hoping", "Thanking", "Showing empathy", and "Confirming" from the counsellors' coding scheme and the code "Sharing personal experiences – neutral" from the participants' coding scheme were found to increase the likelihood of adherence. These findings underline that general conversation techniques of face-to-face therapy, for example the techniques described by Ehlers and Volkers (2013), are also important in web-based interventions to create a stronger therapeutic relationship. A stronger relationship in turn, positively correlates with adherence according to Svartvatten et al. (2015), too. Another possible result of these better therapeutic relationships can be noticed in the higher occurrence of shared experiences, especially neutral experiences of personal life, by the adherent participants. That a strong therapeutic relationship in the context of internet-delivered treatment will help the patient to disclose was also suggested by Farber (2013). The finding that especially expressions of empathy had an influence on the likelihood of adherence is in accordance with findings by Paxling et al. (2013), who found that 'empathetic utterances' in an internet-based cognitive behaviour therapy correlated positively with adherence. Thus, for counsellors in a web-based intervention, it is important to use general conversation techniques and show a lot of empathy to create a trust-based therapeutic relationship, which in turn can help the participants to disclose and increase the likelihood of adherence. A subject to further research could be to analyse the best dose-response relationship between the different correlating utterances and adherence, as already mentioned regarding the scope of communication. An example question could be, how many empathetic utterances a message should contain, to heighten the probability of adherence.

Finally, there were no indications to find in this study that technical problems had an influence on the probability to stop with the intervention, although Lange et al. (2003) found that technical problems are a main reason for non-adherence (Lange et al., 2003). Neither questions about technical problems nor utterances of technical problems were associated with non-adherence. It could be that technical problems occur nowadays less than in 2003 when Lange and colleagues conducted their study. Another reason could be that the participants were not surprised or frustrated by technical problems, because it was communicated to the participants that the intervention was a new one, and therefore technical problems could occur. Another possibility could be that the participants, who experienced technical problems, simply stopped with the intervention without communicating it to the counsellors.

4.1 Strong and Weak Points

Until now, not much research has been done analysing the influence of email correspondence on adherence. The human support has seldom been manualized, and therefore generalizable conclusions have been difficult to draw. This study tried to provide results on the question, what effective support should entail. There are several strong points in favour of this study. Firstly, not only messages written by counsellors were the subject of analysis, but also messages by the participants. The advantage over other studies, for example the study by Svartvatten et al. (2015) who analysed participants' messages or the study by Paxling et al. (2013) who analysed counsellors' messages, is that this study is able to provide a broader picture, because there is data available from both. Because of this, it is even possible to hypothesise on relationships between what the counsellors wrote and what the participants wrote, such as the hypothesis mentioned above that the adherent participants could have shared more personal experiences because of a better therapeutic relationship through utterances of empathy. Secondly, this study analysed a large sample of conversations with a high number of messages. The large sample in turn increased the reliability of the analyses. A third advantage is that the coding scheme by Salita (2016) is grounded in theory and has been tested before. It was shown that the three communication-levels by Crashborn and Buis (2008) are also applicable to communication in web-based interventions. In addition, the coding scheme by Salita (2016) was expanded and edited so that an optimized version of the coding scheme originated. Because the researcher and co-researcher edited the coding scheme together, a high interrater-reliability resulted as a fourth strong point of this study.

On the other hand, there are also some limitations. Firstly, because of the correlational design, it was not possible to make statements on the effectivity of the single codes. Exploratory research is needed to be able to comment on cause-and-effect relationships between adherence and counsellor/participant behaviour. Secondly, the coding scheme included two codes that would have needed more differentiation. These codes were "Other" in both coding schemes, and "Reflecting" in the coding scheme of the participants. Both codes were added during this study, and in the coding process it became evident that the code "Reflecting" would have needed to be subdivided in, for example, self-disclosure, reflecting on the tasks, or reflecting on the illness of the partner. It is possible that expressions of one of these subcategories, for example reflecting on the tasks, would have had more influence on the adherence than others. The code "Other" could have been analysed and structured, too, but due to time restraints, it was not feasible to do this in this study.

5. Conclusion

This study found evidence that characteristics of email support have an influence on the adherence to the web-based intervention ‘Hold on, for each other’. The more emails the counsellors wrote, and the more words per email the counsellors used, the higher was the probability of adherence. Adherent participants, in addition, wrote significantly more mails to the counsellors than non-adherent participants, what could show a greater commitment. Regarding the content, only 12 of 33 different kinds of expressions by the counsellors and only 2 of 27 kinds of expressions by the participants were positively associated with adherence (respectively one of them with non-adherence). Most of the associated codes belonged to the communication-level *relationship*. This underlines the importance of creating a good therapeutic relationship. Furthermore, it turned out that a clear communication about personal deadlines had a positive influence on the likelihood of adherence of the participants. Surprisingly, no evidence was found that technical problems had any influence on the likelihood of adherence, leastwise not the communication over technical problems. These findings make a useful contribution to overcome the challenge of a low level of adherence. With the results of this study and results of further research, it would be possible to conduct a manual for online counsellors of web-based interventions that would heighten the probability of adherence of the participants.

References

Andersson, G., Carlbring, P., Ljótsson, B., & Hedman, E. (2013). Guided internet-based CBT for common mental disorders. *Journal of Contemporary Psychotherapy, 43*(4), 223-233. doi:10.1007/s10879-013-9237-9

Andersson, G., & Hedman, E. (2013). Effectiveness of guided internet-based cognitive behavior therapy in regular clinical settings. *Verhaltenstherapie, 23*(3), 140-148. doi:10.1159/000354779

Andersson, G., Paxling, B., Wiwe, M., Vernmark, K., Felix, C. B., Lundborg, L., ... & Carlbring, P. (2012). Therapeutic alliance in guided internet-delivered cognitive behavioural treatment of depression, generalized anxiety disorder and social anxiety disorder. *Behaviour Research and Therapy, 50*(9), 544-550. doi:10.1016/j.brat.2012.05.003

Barak, A., Hen, L., Boniel-Nissim, M., & Shapira, N. A. (2008). A comprehensive review and a meta-analysis of the effectiveness of internet-based psychotherapeutic interventions. *Journal of Technology in Human services, 26*(2-4), 109-160. doi:10.1080/15228830802094429

Barak, A., Klein, B., & Proudfoot, J. G. (2009). Defining internet-supported therapeutic interventions. *Annals of Behavioral Medicine, 38*(1), 4-17. doi:10.1007/s12160-009-9130-7

Bennett, K., Bennett, A. J., & Griffiths, K. M. (2010). Security considerations for e-mental health interventions. *Journal of medical Internet research, 12*(5), e61. doi:10.2196/jmir.1468

Christensen, H., Griffiths, K. M., & Farrer, L. (2009). Adherence in internet interventions for anxiety and depression: systematic review. *Journal of medical Internet research, 11*(2), e13. doi:10.2196/jmir.1194

Crashborn, J. & Buis, E. (2008). *HOE-boek voor de Coach*. Zaltbommel: Thema.

Donkin, L., Christensen, H., Naismith, S. L., Neal, B., Hickie, I. B., & Glozier, N. (2011). A systematic review of the impact of adherence on the effectiveness of e-therapies. *Journal of medical Internet research, 13*(3), e52. doi:10.2196/jmir.1772

Ehlers, S. & Volkers, A. (2013). *Gespreksvaardigheden voor de hulpverlening*. Amersfoort: ThiemeMeulenhoff.

Elbert, N. J., van Os-Medendorp, H., van Renselaar, W., Ekeland, A. G., Hakkaart-van Roijen, L., Raat, H., ... & Pasmans, S. G. (2014). Effectiveness and cost-effectiveness of

ehealth interventions in somatic diseases: a systematic review of systematic reviews and meta-analyses. *Journal of medical Internet research, 16*(4), e110. doi:10.2196/jmir.2790

Farber, B. A. (2003). Patient self-disclosure: A review of the research. *Journal of Clinical Psychology, 59*(5), 589-600. doi:10.1002/jclp.10161

Kelders, S. M., Kok, R. N., Ossebaard, H. C., & Van Gemert-Pijnen, J. E. (2012). Persuasive system design does matter: a systematic review of adherence to web-based interventions. *Journal of medical Internet research, 14*(6), e152. doi:10.2196/jmir.2104

Köhle, N. (2016). *Hold on, for each other: supporting partners of cancer patients via eHealth and positive psychology.* (Doctoral dissertation). Retrieved from http://doc.utwente.nl/102230/

Köhle, N., Drossaert, C. H., Schreurs, K. M., Hagedoorn, M., Verdonck-de Leeuw, I. M., & Bohlmeijer, E. T. (2015). A web-based self-help intervention for partners of cancer patients based on Acceptance and Commitment Therapy: a protocol of a randomized controlled trial. *BMC public health, 15*(1), 303. doi:10.1186/s12889-015-1656-y

Landis, J. R., Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics* 33:159-174. doi:10.2307/2529310

Lange, A., Rietdijk, D., Hudcovicova, M., Van De Ven, J. P., Schrieken, B., & Emmelkamp, P. M. (2003). Interapy: a controlled randomized trial of the standardized treatment of posttraumatic stress through the internet. *Journal of consulting and clinical psychology, 71*(5), 901. doi:IOJ037/0022-006X.71.5.901

Mohr, D., Cuijpers, P., & Lehman, K. (2011). Supportive accountability: a model for providing human support to enhance adherence to eHealth interventions. *Journal of medical Internet research, 13*(1), e30. doi:10.2196/jmir.1602

Nordgreen, T., Havik, O. E., Öst, L. G., Furmark, T., Carlbring, P., & Andersson, G. (2012). Outcome predictors in guided and unguided self-help for social anxiety disorder. *Behaviour research and therapy, 50*(1), 13-21. doi:10.1016/j.brat.2011.10.009

Palmqvist, B., Carlbring, P., & Andersson, G. (2007). Internet-delivered treatments with or without therapist input: does the therapist factor have implications for efficacy and cost?. *Expert Review of Pharmacoeconomics & Outcomes Research, 7*(3), 291-297. http://dx.doi.org/10.1586/14737167.7.3.291

Paxling, B., Lundgren, S., Norman, A., Almlöv, J., Carlbring, P., Cuijpers, P., & Andersson, G. (2013). Therapist behaviours in internet-delivered cognitive behaviour therapy:

analyses of e-mail correspondence in the treatment of generalized anxiety disorder. *Behavioural and cognitive psychotherapy*, *41*(03), 280-289. doi:10.1017/S1352465812000240

Salita, R.C. (2016). *Kenmerken van online begeleiding: onderzoek naar de kenmerken van online begeleiding en de mate van tevredenheid van de deelnemers van de interventie "Hou vast voor elkaar".* (Master's thesis). Retrieved from http://purl.utwente.nl/essays/71137

Smit, F., Lokkerbol, J., Riper, H., Majo, C., Boon, B., & Blankers, M. (2011). Modeling the cost-effectiveness of health care systems for alcohol use disorders: how implementation of eHealth interventions improves cost-effectiveness. *Journal of medical Internet research*, *13*(3), e56. doi:10.2196/jmir.1694

Spek, V., Cuijpers, P. I. M., Nyklícek, I., Riper, H., Keyzer, J., & Pop, V. (2007). Internet-based cognitive behaviour therapy for symptoms of depression and anxiety: a meta-analysis. *Psychological medicine*, *37*(03), 319-328. doi:10.1017/S0033291706008944

Svartvatten, N., Segerlund, M., Dennhag, I., Andersson, G., & Carlbring, P. (2015). A content analysis of client e-mails in guided internet-based cognitive behavior therapy for depression. *Internet Interventions*, *2*(2), 121-127. http://dx.doi.org/10.1016/j.invent.2015.02.004

van Gemert-Pijnen, J. E. W. C., Peters, O., & Ossebaard, H. C. (Eds.). (2013). *Improving eHealth*. Den Haag, The Netherlands: Eleven international publishing. ISBN 978-94-6212-021-1

Appendix A: Coding Scheme Counselor

Kenmerken bericht		
Afzender	*Begeleider*	
Aantal woorden	*Volgens het programma words*	
Inhoud bericht		
Gesprekstechniek	**Omschrijving**	**Voorbeelden**
Bedanken	Dank uiten	„Bedankt voor je berichtje.“
Excuses	Spijt betuigen, excuseren voor ongemakken.	*“Sorry voor het ongemak”* *“Het spijt me dat het zo lang duurt”*
Informeren werking interventie	Vertellen hoe de interventie in elkaar zit.	„Het systeem zal morgen automatisch les 5 voor je openzetten.“
Afspraken	De ander laten weten wanneer je reactie verwacht of wanneer de ander een reactie kan verwachten en wanneer een module af moet zijn.	„Graag ontvang ik volgende week donderdag je ervaringen over les 5, zodat ik je de dag erna direct feedback kan geven.”
Deadline flexibiliteit	Aangeven dat de ander extra tijd kan krijgen voor het afronden van de module of de ander geeft aan extra tijd nodig te hebben.	*“Mocht je extra tijd nodig hebben, dan kan dat”*
Uitingen technische problemen	Technische problemen bespreken.	*“Ik zal het doorgeven aan de webmaste dat je problemen hebt”*
Vragen		
Inhoud	Vragen stellen over de ervaringen met de oefeningen.	„Lukte het om op te merken wat dit met je lichaam deed en wat dit met je gedachten en emoties deed?“
Procedure	Vragen m.b.t. procedures	„Heb je besloten of je de aanvullende les 7 of 8 wilt maken?”
Technische problemen	Vragen m.b.t. techniche zaken/problemen.	*“Welke internetprovider gebruik je?”* *“Is het al gelukt om de oefeningen op te slaan?”*
Persoonlijk leven	Vragen over persoonlijke situatie die niets met de oefeningen of modules te maken hebben of de werking van de interventie.	„In je vorige bericht gaf je aan dat jullie in een nieuw traject zijn gestart bij het Helen Downing instituut. Hoe gaat het daar nu mee?“
Open staan voor vragen en berichten toesturen	Aangeven dat de ander bij je terecht kan voor vragen en opmerkingen en ook nog berichten mag sturen.	„Mocht je nog vragen hebben stel ze mij gerust!”
Empathie	Laten zien dat je met de ander meeleeft of in kan leven met de	

	ander.	
Inhoud		„Ik kan me voorstellen dat dit lastige is, maar erg goed dat jullie met elkaar in gesprek blijven!“
Procedure		„Heel erg begrijpelijk dat je door je thuissituatie een tijd niet aan de cursus hebt kunnen besteden.”
Relatie		„Ik kan me voorstellen dat jullie nu in een ontzettend heftige en onzekere situatie zitten”
Hopen	Teken van hoop uiten	„… hopelijk levert jullie dit het gewenste resultaat op.”
Complimenteren	De ander een compliment geven, om te laten weten dat hij/zij het goed doet. Ook complimenten die gericht zijn op de patiënten.	*“Mooi!“* „Ik wil je dan ook complimenteren dat je ondanks de drukte toch de tijd vindt om de oefeningen te maken.“
Interesse tonen	De ander laten weten dat je geïnteresseerd bent.	*“Ik ben benieuwd naar je reactie over de mindfullnessoefening”* *“Ik zou graag weten wat je van de oefening vindt of hoe je dit hebt ervaren”*
Geruststellen		
Inhoud	De ander geruststellen wanneer deze ongerust overkomt of denkt dingen verkeerd te doen die te maken hebben met de modules/oefeningen.	*“Het geeft niets als de oefeningen niet lukken”.* *“Het is geen probleem als je de oefening niet bij je past”*
Procedures	De ander geruststellen wanneer deze ongerust overkomt of denkt dingen verkeerd te doen die te maken hebben met de werking van de interventie.	„Mocht het je deze periode even niet uitkomen om de oefeningen te maken dan is dit natuurlijk geen probleem.“
Bevestigen	Akkoord geven of de deelnemer mededelen dat iets is zoals gevraagd is of verondersteld wordt.	*“Dat klopt”!”* *“Inderdaad.”*
Adviseren	Er wordt geadviseerd om de oefeningen uit een bepaalde module te maken, of het toepassen van wat er geleerd is. Er worden indirecte adviesen gegeven.	*“Zie het nog even aan”* *“Het lijkt toch vaak makkelijker om vriendelijk te zijn tegen anderen dan voor onszelf. Misschien kun je eens proberen jezelf te behandelen als een goede vriend?”.*

		"Dan heb je nog een week de tijd om eventueel de lesstof te herhalen, mocht je dit prettig vinden."
Voortgang	Het verloop van de interventie bespreken.	
Positief	Het verloop is positief. Er is vooruitgang geboekt.	*"Ik zie dat het gelukt is om de oefeningen van week 4 in te vullen"* *"Met deze les heb je de online cursus 'Houvast, voor elkaar' afgerond"*
Negatief	Het verloop is negatief. Er is geen vooruitgang geboekt, het proces is tijdelijk gestaakt etc. of het is niet duidelijk hoe de cursist het heeft gedaan.	„Ik zou je deze week voorzien van feedback op les 3 van de cursus. Ik zie dat je hier nog niet aan toegekomen"
Geen ervaringen ontvangen	Laten weten dat de deelnemer nog geen bericht met diens ervaringen heeft gestuurd.	*"Ik heb nog geen bericht met ervaringen van je ontvangen"* *"Hoewel ik nog geen bericht van je heb ontvangen met jouw ervaringen, wil ik je toch graag de feedback op les 1 geven."*
Psychoeducatie	Ingaan op de teksten van de cursus en de werking of achtergrond uitleggen van een oefening.	„De oefening is er om je er bewust van te worden dat goed voor jezelf zorgen belangrijk is om je partner goed te kunnen bijstaan."
Samenvatting inhoud	Kort herhalen waar de voorgaande berichten, modules of oefeningen over gingen.	„Je hebt deze week stilgestaan bij het onderwerp 'communicatie in tijden van kanker'."
Reflecteren		
Inhoud	De begeleider geeft weer wat de deelnemer beschreven heeft in de oefeningen of in zijn/haar feedbackbericht.	"Je noemt dat je vroeger vooral alles alleen wilde doen en niet getroost wilde worden."
Persoonlijk leven	De begeleider geeft weer wat de deelnemer geschreven heeft in zijn/haar brief over zijn/haar persoonlijke situatie. Dit heeft niets te maken met de interventie zelf.	„Goed om te lezen dat jullie een nieuw traject in gaan"
Uitkijken naar reactie	De ander laten weten graag van hem of haar een reactie te willen.	„Graag hoor ik of u de les al heeft afgerond, zou u mij dan een berichtje kunnen sturen?"

Goede wensen	De ander succes, sterkte of positiviteit wensen.	„Veel succes met de oefeningen komende week!"
Condoleren	De ander condoleren met diens verlies.	*"Gecondoleerd"*
Vooruitblikken op de volgende module	Vertellen wat er in de volgende module(s) besproken zal worden.	„De volgende les gaat over dierbare momenten en positieve emoties in moeilijke tijden."
Waarde voor anderen	Ingaan op de toestemming van de deelnemer voor het gebruiken van citaten.	*"Hier kunnen andere mensen veel steun aan hebben in de heftige en emotionele tijd die ze doormaken"*
Wisseling begeleiding	Laten weten, dat de counselor moet worden gewisseld.	"Ik wil middels dit bericht laten weten dat ik mijn studie Psychologie bijna heb afgerond en dat ik daarom helaas niet meer langer in de gelegenheid ben om je wekelijks te begeleiden bij de lessen."
Overige	Uitspraken van begeleiders die bij geen andere variabele/categorie passen.	*"Als aanvullende les heb je nog gekozen voor les 8"* *"Dan weet ik dat je klaar bent met de les"*

Appendix B: Coding Scheme Participant

Kenmerken bericht		
Afzender	*Deelnemer*	
Aantal woorden	*Volgens het programma words*	
Inhoud bericht		
Gesprekstechniek	**Omschrijving**	**Voorbeelden**
Bedanken	De deelnemer bedankt de begeleider.	„Bedankt voor je bericht“
Excuses	De deelnemer betuig spijt, excuseert zich.	*“Sorry voor het ongemak”* *“Het spijt me dat het zo lang duurt”*
Hopen	Zinnen met het woort *“*hoop*”* erin.	„Ik hoop dat dat ons wat rust gaat brengen. “
Bevestigen	Akkoord geven of de begeleider mededelen dat iets is zoals gevraagd is of verondersteld wordt.	*“Dat klopt”!”* *“Inderdaad.”*
Afspraken	Afspraken maken, herhalen of herinneren van afspraken.	*“Ik zal je wel laten weten wanneer ik de module afgerond heb”.* *“Zullen we afspreken dat ik het morgen in lever?”*
Deadline flexibiliteit	Bespreken van de mogelijkheid om de gestelde afspraken te verlengen of te verkorten.	„Ik ben vanaf 13 juni tot 20 juni een week met vakantie en zou de volgende les daarna graag willen oppakken.“
Uitingen technische problemen	Bespreken van technische mankementen, **exclusief** de gestelde vragen.	*“Het lukt niet om ervaringen van anderen te lezen”* *“Tot twee keer toe ging dat fout en kon ik de les niet afmaken”*
Vragen		
Inhoud	Vragen stellen over de inhoud van de modules en/of oefeningen.	*“Wat betekent :"een niet-vereenzelvende houding?”*
Procedure	Informatie vragen wat de procedures zijn van de interventie.	*“Hoe kan ik de ervaringen van andere cursisten lezen?”* *“Wanneer wordt ik doorgezet naar de volgende module?”*
Technische problemen	Vragen stellen over techniche zaken.	*“Het lukt me niet om op te slaan…wat moet ik nu doen?”*

		"Ik weet niet of het gelukt is om op te slaan. Kan jij even voor me kijken?"
Persoonlijk	Vragen over eigen persoonlijke situatie.	*"Weet je hoe ik in contact kan komen met andere vaders?"* *"Wat denk je dt ik moet doen?"*
Voortgang interventie		
Positief		„Ik heb net les 1 afgerond."
Negatief		*"Ik heb de oefeningen nog niet gemaakt"* *"Ik heb niet alle oefeningen kunnen maken"* *"Ik heb les 6 nog niet helemaal af"*
Reden oefening niet gemaakt/geen feedbackbericht gestuurd		
Persoonsgebonden	De modules zijn niet gemaakt of er is geen feedbackbericht gestuurd, doordat de deelnemer er geen tijd voor had of geen zin had.	*"Ik had geen tijd om de oefeningen te maken"* *"Ik was helemaal vergeten om de oefeningen te maken"*
Niet-persoonsgebonden	De modules zijn niet gemaakt of er is geen feedbackbericht gestuurd, omdat dit niet mogelijk was door technische problemen etc. Het is buiten de schuld van de persoon.	„De reden dat ik een tijd niet heb ingelogd is omdat er op dit moment veel speelt in ons leven."
Ervaringen delen		
Inhoud	De deelnemer vertelt hoe hij/zij de Modules, teksten en/of oefeningen ervaren heeft.	
	<u>Positief</u>	*"Ik ben vandaag begonnen en vind het heel prettig om met deze cursus te werken."* *"Het is ook wel confronterend en soms emotioneel."*
	<u>Negatief</u>	*"De mindfulness oefening trekt mij totaal niet aan."* *"Ik vond de oefening te moeilijk".*
	<u>Neutraal</u>	„Ook deze les heeft veel

		dingen benoemd waar ik tegen aan loop en gelopen ben.“
Procedure	Vertellen wat je van de procedure van de interventie vindt, zoals de regels, technologie etc.	
	Positief	*“Ik vind het fijn dat ik er twee weken de tijd heb om de oefeningen te maken.”*
	Negatief	„Ik vind het echt heel erg vervelend dat het me iedere keer niet lukt om volgens afspraak de lessen af te ronden.”
	Neutraal	*“Ik heb steeds begrepen dat je niet direct de hele oefening hoefde te maken, maar ook in delen kon/kan doen.”*
Persoonlijk leven	Vertellen wat er in de persoonlijke situatie gebeurd is of een beschrijving van de persoonlijke achtergrond/levensverhaal.	
	Positief	„De vakantie was fijn. Het werkt wel als je ook niet thuis bent.”
	Negatief	„Misschien ook doordat wij weten dat de ziekte van mijn man terugkomt en niet te genezen is.“
	Neutraal	„Aankomende week heeft mijn man ook weer een controle dus dat brengt ook weer spanning met zich mee.“
Voornemen	Aangeven van plan zijn iets te gaan doen.	„Ik ga de ontspanning proberen op te zoeken.”
Uitkijken naar Module	Aangeven uit te kijken of benieuwd te zijn naar de volgende module(s).	*“Ik ben benieuwd naar de volgende module”*
Goede wensen	De ander iets positiefs wensen.	*“Goede feestdagen toegewenst!”* *“Het ga je goed”*
Reflecteren	De deelnemer reflecteerd op iets.	*“Ik ben van nature iemand die zonder oordeel naar mensen kan zijn en meerdere kanten van een situatie kan bekijken.“*
Overige	Uitspraken van deelnemers die bij geen andere variabele/categorie passen.	*“Nog even reageren op je vragen“* *“Ik zal het een beetje missen om iets als dit elke dag even op te pakken*

		maar goed“

Appendix C: Summary of changes in coding schemes

Within the coding scheme of the counsellor, the description of the codes “Being open for questions”, “Complimenting”, “Advising”, “Progress – negative”, “Psychoeducation”, and “Reflecting on content” were slightly changed, so that the descriptions were a better fit for all statements of that topic. In the coding scheme of the participants, the codes “Reason tasks not done – personal”, “Reason tasks not done – non-personal”, and “Sharing experiences – content” were changed for the same reason. The codes “Value for others” and “Other” were added in both coding schemes, and “Reflecting” was added for the participants’ one, because the statements did not fit in any other coding category. “Wishing good look” and “Looking forward to feedback” were changed into “Good wishes” and “Looking forward to reaction” to were able to include more statements with only slightly different meanings into the same code. For changes see word-colour red.

Codes nieuw counsellor		
Gesprekstechniek	**Omschrijving**	**Voorbeelden**
Open staan voor vragen en berichten toesturen	Aangeven dat de ander bij je terecht kan voor vragen en opmerkingen en ook nog berichten mag sturen.	*“Mocht je toch nog vragen/aanvullende opmerkingen hebben over de cursus en/of begeleiding dan hoor ik het graag”* *“Ook mag je nog je ervaringen sturen mocht je daar behoefte aan hebben”* *“Als ik nog wat voor je kan doen dan hoor ik het graag”*
Complimenteren	De ander een compliment geven, om te laten weten dat hij/zij het goed doet. Ook complimenten die gericht zijn op de patiënten.	*“Mooi!“* *“Erg knap dat ze ondanks de vele ziekenhuisbezoeken en teleurstellingen, zo bewust bezig was met wat ze jullie nog wilde leren zodat jullie verder konden”* *“Ik wil je complimenteren”*
Adviseren	Er wordt geadviseerd om de oefeningen uit een bepaalde module te maken, of het toepassen van wat er geleerd is. Er worden indirecte adviesen	*“Zie het nog even aan”* *“Het lijkt toch vaak makkelijker om vriendelijk te zijn tegen anderen dan*

	gegeven.	*voor onszelf. Misschien kun je eens proberen jezelf te behandelen als een goede vriend?".* *"Dan heb je nog een week de tijd om eventueel de lesstof te herhalen, mocht je dit prettig vinden."*
Voortgang	Het verloop van de interventie bespreken.	
Negatief	Het verloop is negatief. Er is geen vooruitgang geboekt, het proces is tijdelijk gestaakt etc. of het is niet duidelijk hoe de cursist het heeft gedaan.	*"Ik zie dat u hier nog niet aan toe bent gekomen"* *"Het kan natuurlijk zo zijn dat je daar niet aan bent toegekomen of dat je de les misschien wel op papier hebt gemaakt. "* *"Het is een tijd geleden dat wij elkaar hebben gesproken"*
Psychoeducatie	Ingaan op de teksten van de cursus en de werking of achtergrond uitleggen van een oefening.	*"Aardig zijn naar jezelf is waardevol, omdat het je helpt om te kunnen gaan met de ongemakken die het leven met zich meebrengt"* *"De bedoeling van deze les is dat als je stil staat bij 'piekergedachten', dus deze juist toe laat, je deze niet meer gaat vermijden en geen angst voor de angst gaat krijgen. Op den duur zal je merken dat dit je meer rust en relativeringsvermogen gaat opleveren. Het zou nu zo kunnen zijn dat je door deze oefening, deze gedachten (het overmatige piekeren) toelaat."* *"In deze heftige tijd is een goede balans tussen werk en vrije tijd erg belangrijk."*
Reflecteren		
Inhoud	De begeleider geeft weer wat de deelnemer beschreven heeft in de	*"Je noemt dat je vroeger het liefst door je moeder*

	oefeningen of in zijn/haar feedbackbericht.	*getroost wilde worden en de nabijheid opzocht"* *"Je geeft aan dat je niet vaak je emoties toonde en je het gevoel had in een fantasiewereld te verkeren."*
Uitkijken naar reactie	De ander laten weten graag van hem of haar een reactie te willen.	*"Graag hoor ik even van je"* *"Graag hoor ik daarom van je wanneer je klaar bent met de les, zodat ik je de volgende dag feedback kan geven"*
Goede wensen	De ander succes, sterkte of positiviteit wensen.	*"Veel succes volgende week"* *"Ik wens u en uw partner veel sterkte en alle goeds voor de toekomst. "* *"Het ga je goed"*
Waarde voor anderen	Ingaan op de toestemming van de deelnemer voor het gebruiken van citaten.	*"Hier kunnen andere mensen veel steun aan hebben in de heftige en emotionele tijd die ze doormaken"*
Overige	Uitspraken van begeleiders die bij geen andere variabele/categorie passen.	*"Als aanvullende les heb je nog gekozen voor les 8"* *"Dan weet ik dat je klaar bent met de les"*

Codes nieuw participanten		
Gesprekstechniek	**Omschrijving**	**Voorbeelden**
Reden oefening niet gemaakt/geen feedbackbericht gestuurd		
Persoonsgebonden	De modules zijn niet gemaakt of er is geen feedbackbericht gestuurd, doordat de deelnemer er geen tijd voor had of geen zin had.	*"Ik had geen tijd om de oefeningen te maken"* *"Ik was helemaal vergeten om de oefeningen te maken"*
Niet-persoonsgebonden	De modules zijn niet gemaakt of er	*"Ik kon de oefeningen*

	is geen feedbackbericht gestuurd, omdat dit niet mogelijk was door technische problemen etc. Het is buiten de schuld van de persoon.	*niet maken omdat ik de module niet kon openen"* *"Ik heb over het hoofd gezien dat je al zo netjes feedback hebt gegeven"*
Ervaringen delen		
Inhoud	De deelnemer vertelt hoe hij/zij de Modules, teksten en/of oefeningen ervaren heeft.	
Persoonlijk leven	Vertellen wat er in de persoonlijke situatie gebeurd is of een beschrijving van de persoonlijke achtergrond/levensverhaal.	
Reflecteren	De deelnemer reflecteerd op iets.	*"Ik ben van nature iemand die zonder oordeel naar mensen kan zijn en meerdere kanten van een situatie kan bekijken."*
Overige	Uitspraken van deelnemers die bij geen andere variabele/categorie passen.	*"Nog even reageren op je vragen"* *"Ik zal het een beetje missen om iets als dit elke dag even op te pakken maar goed"*