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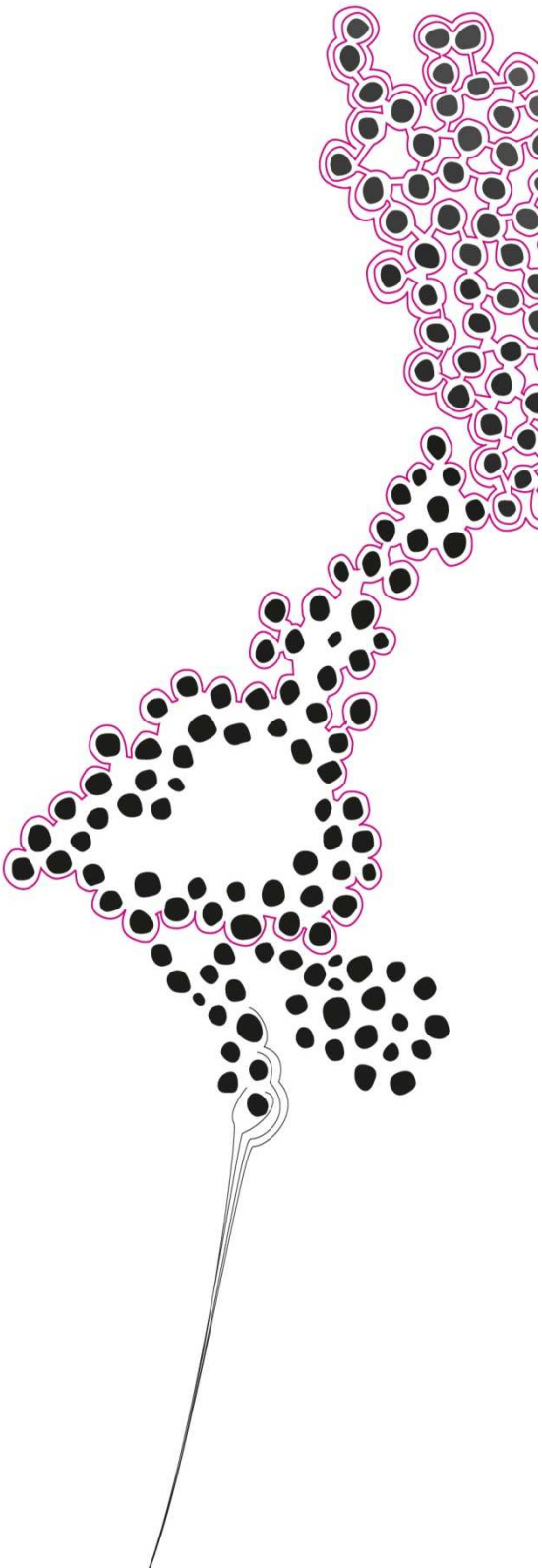

Pilot testing the mobile app of ‘Geen Paniek’: a usability and effectiveness trial

Bachelor thesis

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Abstract

Background

A lot of people in the world suffer from panic disorder. Panic can have big influence on daily life routines and causes affected people and their families to change their habits, to avoid particular situations and even to quit their jobs. Besides the personal discomfort, the financial load for treatment and work absence means expenses of millions of Euros for the government. Although panic disorder cannot be forecasted, research shows that early intervention for help-seekers is effective. In the Netherlands is an effective CBT based course developed for group sessions with guidance of a professional to reduce panic complaints (‘Geen Paniek’).

New technologies influence the development of healthcare in many ways. EHealth and mHealth in particular are widely used terms nowadays and have a lot of potential to influence healthcare. Intervention programs which are always available for the user like smartphone apps, could possibly be more cost- effective than existing face- to- face and online treatments. This paper is a pilot test about the prototype of the mobile adaptation of the course ‘Geen Paniek’. Methods used are think-aloud scenarios, a test period and interviews.

Findings

The usability test and the interviews yielded comments concerning system, content and service quality. These comments were interpreted into points of improvement. It was no indication of effect of the mobile application found.

Discussion

Examples for points of improvement in system quality are the structure of ‘Mijn geen paniek’ which should be reconsidered, the restructuring of the home screen to make the app more

intuitive, an optical differentiation between ‘Mijn geen Paniek’ and ‘cursus’ and the reduction of depth of the exercise links. Promising results in the content and the service quality were found. No significant points of improvement could be identified. The respondents were mostly satisfied with the given information and the service the app offers. Because of the non-affected sample in this trial, an effect of the app could not be expected. The result of the PDSS-SR pre and posttest comparison supports this expectation. Recommendations for further development and research are given.

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1. Introduction

Panic is a widely spread disorder. In the Netherlands about 1.5% to 3.5% of every adult to 65 years has a panic disorder once in his lifetime. The costs of the consequences of panic for affected people and the society reaches the millions (Trimbos Instituut, 2008). The most effective way to safe costs and to help people adequately is to prevent serious panic disorder by treating minor symptoms (Diggelen, 2011). Research validated already the effectiveness of the early group intervention for panic complaints in the Netherlands ‘Geen Paniek’ which is based on CBT (Meulenbeek, Willemse, Smit, Balkom, Spinhoven & Cuijpers, 2010).

But to continue progress in the field of treatment further consideration about the form are made. According to Kiropoulos et al. (2008), internet based treatment can successfully treat mental disorders with similar effect as face-to-face treatments. Those two treatment methods were compared while both interventions significantly reduced severe of panic disorder and agoraphobia rated by several tests. Anderson & Cuijpers (2008) support this finding in their research and took a critical look on online CBT.

In 2007, Bang et al. pointed out the possibilities of mobile Cognitive Behavioral Therapy (CBT) with smartphones. They outlined a set of tools that can be part of a client mobile application to support CBT. They implemented the digital dysfunctional thought record (DDTR) for recording negative situations and the related emotional and automatic thoughts. They found programs for training relaxation skills via the mobile phone promising. Furthermore they suggested using the app to support daily routines of the clients by remembering or motivating. In addition they found that it is possible to implement distraction support in smartphones, this can be done by image, sound or even videos. Nearly six years later, smartphones are spread enough to think about interventions which could intervene cost-effectively. To our knowledge little is known in the field of mobile CBT, yet. Considering the

cost- effectiveness of this opportunity, it is necessary to explore the potentials of apps in the mental health sector.

‘Geen Paniek’ is a CBT based course, developed for group sessions with guidance of a professional to reduce panic complaints (Meulenbeek et al, 2010). After positive feedback of participants the decision was made to adapt this course to a mobile app for smartphones. According to the latest information, this is the first app for smartphones concerning panic disorder in the Netherlands. Research is necessary to identify criteria of such an app to be successful. This research will be the first pilot study in this subject. It will focus on the system quality, content quality and service quality with the method of user-based usability evaluation (scenario based think aloud). Furthermore, a first indication of its effectiveness by measuring the degree of panic suffering of participants before and after a test period could be identified. Research about mental health smartphone apps based on CBT is hitherto rare. All the more it is important to discover the strengths and weaknesses of mobile apps and in particular the mobile app of the course ‘Geen Paniek’.

The introduction of this paper begins with a brief summary of panic disorder. It contains an overview over diagnosis, causes, prevalence and consequences. Afterwards, it continues with recent developments in cognitive behavioral therapy from group sessions to online CBT and in particular ‘Geen Paniek’. Next, the technological developments of smartphones, its capabilities, potentials and dangers by using them for health purposes will be described. Finally, an overview over mobile Health, apps in general and panic apps in particular including recent state of researches is given.

1.1. Panic Disorder

According to the current edition of the Diagnostic and Statistical Manual of Mental Disorders (APA, 2000), panic disorder belongs to the category of anxiety disorders. Anxiety can have different causes. Although anxiety is an essential and effective function to survive, an

extreme sensitivity influences the quality of life (Grohol, 2010). In a healthy way experiencing anxiety and stress prepares the body for difficulties. If the symptoms of anxiety become chronic and interfere with the daily life and the ability to function it becomes a disorder. People suffering from chronic anxiety often report frequent symptoms like muscle tension, physical weakness, poor memory, sweaty hands, fear or confusion, inability to relax, constant worry, shortness of breath, palpitations, upset stomach and poor concentration.

One particular diagnosis of anxiety disorders is the panic disorder which includes panic attacks (Grohol, 2010). The diagnosis of panic disorder is differentiated in panic disorder with and without agoraphobia. Agoraphobia is the anxiety about being in places or situations from which escape might be difficult or in which help may not be available. People affected of panic disorder have feelings of terror in situations that do not require such a reaction. Without warnings or signs the panic strikes repeatedly. Above that, the lack of influence gives a feeling of helplessness. Symptoms of a panic attack are for example heart pounding, tingling hands, chest pain, smothering sensations, sweating and feelings of weakness, faintness or dizziness and even fear of death.

The roots of this disorder are not yet completely discovered. The bio-psycho-social model distinguishes between biological, psychological and social factors which influence the possibility to develop a panic disorder (Trimbos Instituut, 2010). These include factors respectively as *hereditable vulnerability*, *previous promotional factors* as experiences in childhood of adolescence, the kind of nurture or traumatic events, *triggering factors* as very stressful times in life (divorce, loss of home etc.) and *maintaining factors* of the panic disorder as agoraphobia which prevents positive experiences and inhibit cure.

The proportion of a population found to have a panic disorder at least once in a lifetime (lifetime prevalence) of adults to 65 years is between 1.5% and 3.5% (Trimbos Instituut, 2010). The diagnosis of panic disorders without agoraphobia is two times higher for

women. For panic disorders with agoraphobia it is three to four times as high. According to recent studies, the lifetime prevalence of adults above 65 years is about 1% to 2%.

The consequences of this disorder are categorized as personal and social consequences. On the one hand, panic disorder has a big impact on the quality of life and the daily functionality as compared to mood disorders, other anxiety disorders or problematic alcohol abuse (Trimbos Instituut, 2010). In addition panic disorder has a negative impact on wellbeing, perception of the own health and work performance. On the other hand, anxiety disorders were responsible for 2.3% of the costs of the Netherlands healthcare in 2003. The cost of anxiety disorder in 2005 is estimated to be about 285 million euro. When indirect costs are included, panic disorder is one of the most expensive mental disorders. Compared to a healthy person, the costs for a person with panic disorder each year are 8.390 euro higher. Especially untreated disorders are responsible for the high costs through medical consumptions or the loss of work.

Diggelen (2011) defines a risk group as a group of individuals with sensibility to develop a disorder. Aforementioned reasons (bio-psycho social model) are not sufficient to identify people with a risk to develop anxiety disorders because far more people would be included who do not have any symptoms of panic complaints. One possibility to define a high risk group is to address people with subclinical panic disorder symptoms and a help request. Statistical evidence proofs that people with symptoms of panic, which do not yet correspond to DSM-IV criteria, have a realistic chance to develop a panic disorder. Therefore the most important reason to recommend an intervention is a direct help-request of affected people. The prevalence rate of this subclinical group is 1.9% of the people in the Netherlands. Different scientific trials approve cognitive behavioral therapy as sufficiently effective.

Cognitive behavioral therapy is based on behavioral therapy and interventions developed by cognitive psychology. Irrational cognitions (thoughts) are assumed to cause

dysfunctional behavior like aggressions or the avoiding of situations. Techniques, which are used in the cognitive therapy, are directed to change the content of the irrational thoughts. Elements of the classical behavioral therapy are used to change avoidance behavior (Diggelen, 2011).

Effective cost savings in the treatment of panic disorder can be reached by early intervention and prevention (Trimbos Instituut, 2010). Research documents indicate that panic attacks can be reduced or prevented by 70 to 90 percent for people with panic disorder, when treated appropriately by an experienced professional (Grohol, 2011). In the Netherlands are currently different approaches used directed to reduce or prevent panic complaints. Variations in the treatment design are possible. Some treatments work individually, some work with group sessions. Further variation can be found in the contact with the professional: face to face, with distance via internet or completely without a professional. Combinations of different treatment designs are also possible. Participation willingness and the fitting of the treatment to the client’s preferences play an important role in the effectiveness of treatments (Diggelen, 2011).

A logical consequence of the technological developments is the adoption of exercises and parts of CBT courses to online programs. Anderson and Cuijpers (2008) emphasize the advantages and disadvantages of online CBT for depression. Their study indicates the effect of self- administrated internet program for symptoms of depression. Like anxiety disorders, depression is a costly disorder for those affected and for the society. In regard of this they state that “any effort to disseminate evidence-based low-cost interventions represents a welcome contribution to healthcare”. The advantages of online CBT would be especially the low costs and the possibility to spread the intervention quickly and with little effort. Even a small impact on the symptoms of depression would be a significant benefit for the treatment of depression assuming that it is safe and cheap. Furthermore online CBT would improve the

systematic follow up of patients by conducting less complex online follow up studies, and offer new possibilities for relapse prevention. They stated that online CBT could be used as self-administered program or in combination with therapist guidance which seems to be more effective. The difference in the effect of different online treatments might be explained by the characteristics of the sample included and the substantial dropout rate. In addition studies on long term effects might not be valid and help seeking for regular CBT can increase the usage of online CBT. They summarize that it is not yet clear if self- administered treatment is as effective as other interventions in the treatment of symptoms of depression.

A serious problem is the high drop-out rate in online CBT for depression without therapist support. Published evidence for this is extremely weak. Although it is mentioned that even minimal treatments can have significant effects on depressive symptoms, research faces a lot of problems including loss of data and diagnostic issues. Small effects and acknowledging the need for human support is another issue in a condition such as depression, where the motivation to change is a major issue. The issues summed up in this paper with regard to depression can be assumed to be similar to those in online CBT treatment for panic disorder.

‘Geen Paniek’ is an early group intervention for panic complaints based on CBT. In eight group sessions under supervision of two professionals, the participants are supposed to learn to handle panic attacks, to get more control over thoughts which reinforce panic attacks and to learn how to go back into difficult situations (Geen Paniek, 2005). The pilot study (Meulenbeek et al., 2009) and the randomized controlled trial (Meulenbeek et al., 2010) approved the effects and the feasibility of the course. According to Smit et.al (2011), this is the first treatment which is economically evaluated alongside a prevention trial in panic disorder. The costs of a care-as-usual client include health service uptake, medication, patients’ out of pocket costs for making visits to health services, costs related to production

losses due to absenteeism and lesser work performance. The result of the cost effectiveness analysis indicates the value of early intervention. The fewer therapists are involved, the more cost effective it is.

1.2. New technologies

To be able to offer a selective prevention which is cost-effective, easy to use and which people like to follow, new media has to be considered. Several attempts to use the internet for treatment proposal were made and many of them are promising. But still, as mentioned earlier, problems as drop-out rate, lack of effect and many times even a lack of credibility inhibits online interventions for anxiety to be reliable and useful. In the following part recent developments will be outlined.

Since the year 2000, the term “eHealth” (electronic health) is used to describe the possibilities in healthcare which were offered by computers and the internet (Pagliari, Sloan, Gregor, Sullivan, Detmer, Kahan, Oortwijn & MacGillivray, 2005). The possibility to store patient’s information digitally, to share them with other authorized people and recall them without logistic expertise, made eHealth a fast growing and popular subject in healthcare. The World Health Organization defines eHealth as follows: “eHealth is the use, in the health sector, of digital data - transmitted, stored and retrieved electronically- in support of health care, both at the local site and at a distance.” (2013). The development of eHealth and the growing potentials of technology, especially smartphones, makes a more personalized and direct healthcare possible. Health applications and smartphones are changing health promotion sustainable (Kratzke & Cox, 2012).

Ebbeling (2012) summarized the advantages and disadvantages of smartphones. The advantages of smartphones are that they are always switched on and carried with the person during the day. This means, in comparison with computers, they are more accessible during the day and can be used more spontaneously. In seconds they can be used or put away.

During a bus ride or while waiting for something, smartphones are yet used to pass time. In America, about 40% to 50% of the popularity is owner of this technology and this number is still growing. Smartphones have the potential to outnumber personal computers in the near future. In the fourth quarter of 2011 nearly the half of all Netherlanders owned a smartphone. Furthermore, it is stated that the proportion between mobile app and mobile internet usage seems to be 95:5. Therefore, apps are more and more the source of information instead of the usual used browser.

Luxton et al. (2011) pointed in their research out why the smartphone a reasonable choice is to target a change in (mental) healthcare. Starting with the potentials of smartphone technologies, they listed self-assessments, sharing possibilities, time-tracking, auto-detection of significant distress, calendar options, recording options, real-time audio and visual instructions and GPS as major benefits. According to him, videoconferencing offers new opportunities for tele-behavioral health at low costs, flexible, and mobile. The smartphone could also be used as efficient method for accessing clinical information.

Above that, advantages like the convenience, portability, quality of digital audio and video recording and of course interactivity makes smartphones a versatile tool. Some recent examples of mobile technology use in behavioral health include the assessment of support of individuals with a traumatic brain injury and intellectual disability, alcohol and substance abuse, treatment of tobacco use and severe mental illness. In addition to that, there are several apps in the areas of anxiety, smoking, alcohol use, depression, psychosis, diet, exercise, weight loss, nutrition, parenting, relationships, relaxation, sleep, cognitive performance, spirituality, and general wellbeing available. With regard to smartphone use in healthcare, they gave an overview and stated that smartphones could be integrated into conventional therapies. Self-reporting could be used to share experiences with the treating clinician and helps to track risks.

They also define considerations of smartphones in health. According to them, it is important to think about the acceptance of an app in the target group where people do not have a smartphone or do not like to use health apps. An alternative possibility should be available for those people. Furthermore the quality and the safety have to be assured. The content of the app should always be up to date, reliable, accurate and evidence based. To prevent high risks in sensitive situations from technical failure, backup plans should be considered with the users. Another important risk is data security and privacy. Personal data should always be secured. Mainly unauthorized access or loss of the device causes access of third parties. The easiest way to protect personal data is to implement a password protection feature. Above that, there are possibilities to delete all personal data remotely. A lot of apps send user-data back to the app developers; this can be a serious confidentially risk, if the data is released without the users consent.

One important connotation of smartphones are apps: smartphone applications for nearly every purpose. In all app stores there are more than 17.000 mobile health and medical apps available. Although more than 70% of these apps are targeted to health professionals, nearly 30% of all U.S. adults use those (Kratzke & Cox, 2012). Because of the mobility of smartphones, health education specialists can use mobile health behavior change interventions to be more highly-interactive. Even real-time interaction with individuals is possible to try to provoke changes in behavior. Examples of effective mobile health support are given through trials in the areas of diabetes medication and behavior change of physically inactive woman (Fukuoka, Komatsu, Suarez, Vittinghoff, Haskel, Noorishad & Pham, 2011). In addition the technology of smartphones seems to offer benefits for the medical practice itself. It helps health professionals to be more efficient and also to be able to work at a distance. Health consumers use their smartphones for mobile self-monitoring as well as

health behavior maintenance. Besides that, they use it for general information and specific information targeting of different age groups, too.

Mobile health (mHealth) can support the achievement of health objectives and has the potential to transform health service delivery when used adequately. According to the WHO (2010) mHealth is an area of eHealth and the provision of health services and information via mobile technologies such as mobile phones and Personal Digital Assistants (PDAs).

It is likely that healthcare will increasingly focus on mHealth and apps because of the cost-effectiveness. Once an app is developed follow up costs are marginal depending on the purpose of the app. Apps can be used to share experiences with others, to note events during the day by text, photos or voice/video recording. Compared to existing online/pc courses, apps offer the mobility, no time-delay to switch on and the possibility to use the course in a short moment of time (Luxton et al, 2011).

The search term ‘Panic anxiety’ in the google playstore, the appstore of Google (2012), offers roughly 83 free and charged apps. The most popular, ‘Stop panic & anxiety Self-help’ has been downloaded more than 100.000 times. It focuses on the fear of having a panic attack and the fear of the sensations when having a panic (excel at life, 2013). Developed in Ohio, USA it contains articles about panic/anxiety and CBT, an anxiety cognitive diary to learn to challenge fearful thinking, an emotion training audio to learn to access calming states, relaxation audios to learn deep relaxation, a panic assistance audio to coach through panic attacks and a password protection. Furthermore it offers motivational rewards in form of cash by signing up on an internet page. On the webpage of the producer Excel at Life there is no reference to a targeted group. To our knowledge there is no scientific research done which indicates the usefulness or the effectiveness of this app. Another point, which has to be considered critically, is the source ‘Excel at life’ of this app, of which the

credibility is not proofed. A short research on the internet gave no clues about its professionalism. An app for smartphones like this does not exist in the Netherlands yet.

With the evidenced potential of the group CBT treatment ‘Geen Paniek’, a useful smartphone app treating panic complaints would provide a more spreadable way to face panic disorder in an early stage. But nevertheless there are certain criteria which such an app has to meet as for example the quality of information. This study is the first component to be able to develop a qualitative and useful app for treating minor panic complaints early.

1.3. Research questions

Because of the aforementioned advantages of smartphones and mobile applications in comparison to computers it is highly relevant to research the abilities of CBT adaptations for smartphones. In this study this is done with the adaptation of the early group intervention for panic complaints treatment ‘Geen Paniek’.

Challenges in usability testing of mobile applications were pointed out by Zhang and Adipat (2005). According to them, mobile context (interaction within different surroundings), connectivity (slow bandwidth), small screen size, different display resolutions and limited processing capability and power, and restrictive data entry methods are challenges for examining the usability of mobile applications. Because the app has never been tested by people with different devices it is expected that these challenges will occur and will influence the results.

Besides those challenges, the focus on the usability of the prototype is a major issue. The usability of the app is categorized according to Kelders et al (2012) in *system quality* (the placement of buttons and the lay out: the user friendliness), *content quality* (usefulness and persuasiveness of the information including spelling and understandability of all texts) and *service quality* (process of care given by the application). Strengths and weaknesses of the

app should be identified. Factors as user experience and the usability of this app might affect dropout rates and effectiveness of the course.

The effectiveness will be measured by the self- report version of the Panic Disorder Severity Scale (PDSS-SR). This scale contains seven items to rate the frequency of panic attacks, anticipatory anxiety, agoraphobic fear and avoidance, body-sensation fear and avoidance, and impairment in work and social functioning. It is established to monitor overall panic severity. Research validates its reliability and validity (Houck, Spiegel, Shear & Rucci, 2002). In reference to this, the research questions are:

1.3.1. Usability

How do people evaluate the usability of the ‘Geen Paniek’ app?

- *How do people evaluate the system quality of the app?*
- *How do people evaluate the content quality of the app?*
- *How do people evaluate the service quality of the app?*

1.3.2. Effectiveness

- *In how far does the mobile version of the course ‘Geen Paniek’ indicate effectiveness in reducing discomfort of panic attacks according to the PDSS-SR?*

2. **Method**

2.1. User based usability evaluation

A working first version of the mobile adaption of the course ‘Geen Paniek’ was developed and offers the possibility to conduct a first pilot test in form of a usability test. This first prototype contains nearly every function the final version should be capable of. Exceptions are the possibility to contact experts, the function to share experiences with other app-users in

a forum and the function to import self-recorded content. The prototype was evaluated on the three dimensions: *system quality, content quality* and *service quality*. To be able to give the user a central role in the design of the mobile application a qualitative research design was chosen. Therefore user–based usability evaluation through scenario based think aloud protocols and semi-structured interviews were used. The user-based usability test is done by recording comments of the respondents and the actions he took on screen of the smartphone.

According to Jaspers (2009) ‘think aloud’ is a widely applied user-based method to find errors and to get insights in the thoughts of the users. First, by collecting think aloud protocols in a systematic way and second by analyzing the protocols it is possible to get impressions of the users and use them for recommendations to improve the app. The user is asked to comment every step he takes while using the app. The advantage of this method is that there are no long-term memories needed. Censoring and distortion can be minimized. Jaspers recommends a sample which represents the end users as good as possible.

The research of Hwang and Salvendy (2010) compared three different usability test methods (Think aloud, Heuristic Evaluation and cognitive walkthrough) and meta-analyzed how many users or evaluators are needed to achieve the targeted usability evaluation performance. This could be for example 80% of the overall discovery rate. Because there was no consensus on sample sizes, this meta-analysis is used to detect a cost-efficient way to test usability. According to them nine users are recommended when the ‘think aloud’ method is used to detect 80% of usability problems. In this study think aloud usability testing is used to identify the problems of the mobile application of ‘Geen Paniek’. They also mentioned the advantages and disadvantages of those methods which influenced the choice of the think-aloud method. This method provides good quality data from a small number of test users but the laboratory setting could influence test user’s behavior. The other two methods were

criticized because they often find too specific and low priority usability problems or needs extensive knowledge of cognitive psychology and technical details to apply.

In a study from 2005 (Kaikkonen, Kallio, Kekäläinen, Kankainen & Cankar), the usability of a consumer application was tested to identify differences between laboratory and field environment testing. Results of this experiment indicate that the time-consuming field test may not be worthwhile. It seems more reasonable to conduct a laboratory test to find user-interface flaws to improve user interaction.

2.2. Analysis

The comments yielded through the scenarios were recorded and noted. The sound records were used to assure the completeness of the comments. The comments were at first categorized in relevant verbalizations of thought, problems encountered by the participants, tasks that were completed smoothly and relevant feedback the participant provided during the interview (Kelders, Pots, Oskam, Bohlmeijer, Van Gemert-Pijnen, 2012). After the categorization of the comments into the earlier mentioned System quality, content quality and service quality, likewise comments were grouped in for example navigation or general structure (both system quality). The same procedure was adapted on the interview answers. Answers were firstly categorized in qualities, than grouped in likely comments and finally subgroups were created like ‘comments concerning navigation’.

Information about the general use of the app and the user were reported without further interpretation. The most important answers, suggestion, opinions and critics of the pre and posttest were included in the points of improvement. The pretest interview contains questions about the expectancies, the experiences and the motivation of the user. The difference between the pre- and posttest PDSS-SR scores were analyzed by a paired sampled T-test.

2.3. Material and design

The study is conducted in a two-parted experiment, consisting of a pretest, a test period and a posttest.

2.3.1. Pretest

In the first meeting, the pretest (appendix 1), the participant had to respond to an interview to get general information as gender and age. The open interview that follows focused on experience with smartphones/apps and the attitude towards health apps. Also important was the type of the used smartphone in order to differentiate between operating systems in case of occurring errors. Furthermore, the participants were asked if they already had experience with health apps and if they used them regularly. Finally, the personal attitude of the respondents towards mental health apps was figured out.

After the interview, the participant was asked to fill out the PDSS-SR questionnaire to get insight in the current severity of the panic complaints and to be able to compare the results with the posttest- PDSS-SR to identify a possible indication of effect of the app.

The main part of the first meeting was the (concurrent) think aloud usability test. Beginning with a global task to use the app, scenarios like ‘Stel je bent geïnteresseerd in de ervaringen van anderen en bent van plan een video erover te zien’ (imagine you are interested in the experiences of others and want to see their videos) were given by the researcher. The participant was asked to think aloud during any step of the scenarios he took. To identify major errors and to assure the completeness of the noted comments the sound was recorded.

The last part of the first meeting was the structured evaluation interview. This included a series of questions concerning the qualities of navigation, the easiness of scenarios and the general rating of the app. Finally, the participant was asked for suggestions and what he found useless/bad or useful/good about the app.

2.3.2. Test period

With the end of the first meeting the 4 week test period started. The participants were asked to follow the course offered by the app independently. During this period, they were reminded two times (in week two and four) to complete the course by mail.

2.3.3. Posttest

The second and last meeting was meant to identify problems and an indication of effect of the app (appendix 2). This was done by a semi-structured interview which was recorded by sound. This interview contained questions about the overall impression, the amount of time which was spent, the motivations and situations in which the app was used. Afterwards questions were asked with regard to how the app was used and if errors occurred or something was unclear.

Above that they were asked what they considered as useful/useless. A series of questions followed about system quality, content quality and service quality. The third part of the interview was about the functions of the app. Beginning with ‘cursus’ → ‘handleiding’ and finishing with ‘mijn geen paniek’ → ‘tips voor het omgaan met paniekaanvallen’. The respondent was asked what he has done in each section of the app, what his opinion about it was, and what his reasons were to do so.

After that, the interview about the future functions which will be included in the app was taken. These functions were the possibility to *contact an expert*, the possibility to communicate with others who suffer from panic via a *forum* and the possibility to *record* something with the smartphone, import it in the app. Finally, a second PDSS-SR was given to the respondents to compare the results with the results of the pretest to identify a possible indication of effect of the app.

2.4. Procedure

The procedure of the first meeting started with the welcoming. The participant was introduced by the researcher beginning with the informed consent. When the informed consent was signed, the experiment started officially. After the interview and the PDSS-SR the participant was asked to explore the app by himself with the advice to say out loud what comes to mind. As the participant accomplished a scenario or he catches on anywhere, the researcher gave advice how to go on. When the respondent had finished he was asked to evaluate the app through a series of questions. At the end, the explanation of the following tasks for the four weeks, the arrangement of the second meeting and the expression of thanks and the farewell completed the pretest.

During the four weeks test period the participant was autonomously busy with the app. Occurring questions, suggestions or problems could be mailed to the researcher who was willing to respond immediately. In the second and in the fourth week the respondents received an email as reminder to complete the whole course.

After the welcoming to the posttest, the respondent was asked to fill out the PDSS-SR again. When he had finished he was asked a series of 59 questions in a semi-structured interview which were recorded to assure the correctness of the notes. With the completion of the interview and the farewell the respondent was released.

3. Results

3.1. Participants

All 12 of the participants were recruited by the participant-pool of the University of Twente, Sona-systems. This system offers research points which are mandatory for bachelor students. An internet capable smartphone and fluent Dutch were the essential conditions for the participation. It was referred that it would be advantageous for this study if the respondents suffer from symptoms of panic disorder. Every respondent signed the informed consent to participate.

One of the respondents quitted prematurely because of illness, which means a dropout rate of 8.33%. There were eight psychology and three communication science students between 19 and 23 years old. The mean age was 20.45. There were nine females and two males among the single Dutch and the ten German participating students. Furthermore, seven of the participants had android phones and four of them Apple IOS. The mean experience with smartphones was 24.82 months, ranging from 10 to 48 months. In the pretest no participant scored above the mild panic-disorder threshold on the PDSS-SR.

In the following, the ID of the respondents is written in braces to ensure an overview over who statement what. To improve the overview of the results, in the following only comments are discussed which occurred at least three times from different participants. Otherwise, the amount of comments would exceed the purpose of this paper.

3.2. Pretest

For the analysis of the pretest (appendix 3) the data of all 12 participants were used. 11 of the respondents said that they are experienced with apps whereas one of them described himself as fairly experienced. Four of the respondents had installed at least one app on their devices which should support health (2, 4, 5, 12). One of them used it regularly approximately once a month (5). As criteria for a good health app were quality of content (1, 2, 4, 5, 8, 10, 12), ease

to use (3, 6, 9, 11, 12), motivational (2, 7, 8, 9, 11) and the possibility to see results (3, 4, 7) mentioned. Furthermore it was stated that it depends on the characteristic of the user how effective a health app could be (5, 7, 8, 10). Two participants stated that they do not think that health apps could be effective at all (3, 6). The expectations on a panic disorder app were divergent. Whereas five had no expectations (4, 5, 6, 8, 10), four of them awaited an app which can help in acute panic situations (1, 3, 11, 12). Three participants expected a preventive panic disorder app like a training program (2, 7, 11).

3.2.1. Think aloud test

The think aloud test (appendix 4) yielded in total 125 comments distributed in system, content and service quality and positive, neutral and negative as seen in table 1. It is remarkable that most comments were about system quality whereas much fewer comments were about content and service quality. Besides that, most of the comments about system quality were negative, while most comments about content and service quality were positive. The results of the pretest were split into comments yielded through the scenario and comments yielded through the interview. Both were analyzed apart.

Table 1

Total number of comments in pretest scenarios

	+	+/-	-	**Total**
System	24	5	63	92
Content	15	3	6	24
Service	6	2	1	9
Total	45	10	73	125

System quality

Positive comments on the system quality were that the summaries (5, 10, 11) and the examples were very convenient (5, 10, 11). Furthermore the easiness to safe something was evaluated positive (1, 11, 12). Negative aspects of the system quality concerned the navigation and the structure of the app. At first the starting screen was criticized for being confusing. Many of the respondents did not know how to continue (3, 4, 7, 8, 9, 10, 11). It was reported that it is difficult to find the button to mark a chapter as already read and even when it was found, some of the respondent did not precisely know what the function is (1, 2, 3, 4, 6, 8, 11). The home button was not obvious for three of the respondents (8, 10, 11). The first impression of the structure of the app was that some items were not found, mostly ‘levensstijlverandering’ (2, 6, 7, 9, 10) and ‘positieve ondersteuning’ (1, 3, 7, 8). The ‘Tips voor het omgaan met paniekaanvallen’ were expected in the main menu instead of ‘Mijn geen paniek’ (1, 4, 10, 11). It was criticized that the main menu is not ordered logically. If it is the purpose to begin with the course, the menu should support this order and the button should be on first place in the main menu (1, 4, 10, 11). Six respondents rated the amount of text as too much (1, 6, 7, 8, 10, 11).

Occurring errors concerned ‘test jezelf’(2, 5, 7, 10), the possibility to adjust the duration of a panic attack with the buttons (9, 11, 12), a problem with the navigation bar while scrolling (8) and the dysfunction of the videos (6, 10).

Content quality

Concerning the content quality of the seen parts, it was stated that the texts, introductions and exercises are explained well and comprehensibly (8, 9, 10, 11). Negative comments were not mentioned during the scenarios.

Service quality

The think-aloud test provided no comments concerning service quality which were given by three or more respondents. The given comments were mainly about the expected effectiveness of the app and some single functions. One participant said that he was motivated by the app to think more about subjects discussed in the app (10). Another one stated that he did not think that reading text could improve self-assurance (5).

3.2.2. Pretest interview

The pretest interview (appendix 5) generated 141 comments about the first impression of the app, distributed as seen in table 2. As similar to the comments in the scenarios most comments were about system quality. Different is the proportion of comments concerning content and service quality. The interview yielded more comments about service quality which was mainly perceived positive.

Table 2

Total number of comments in the pretest interview

	+	+/-	-	**Total**
System	19	12	40	71
Content	13	0	2	15
Service	43	9	5	57
Total	73	21	47	141

System quality

Positive impressions about the app were that it is structured well (respondent 4, 5, 6, 8, 9, 10, 12) and that it is easy to use (1, 2, 4, 11, 12). Neutral statements on system quality were that the app is hard to use on first sight, but after a while one gets used to it and navigation

through it becomes easier (3, 5, 6, 7, 8). The most commented issue in system quality is ‘mijn geen paniek’ (2, 3, 5, 6, 11, 12). The respondents had difficulties to identify the additional value and the use of this menu. Five of the respondents commented the amount of text as too much (1, 2, 5, 6, 11). The navigation possibilities home, back and the navigation bar was described as useful (3, 4, 7, 9, 11). Furthermore the menu was evaluated as clear (1, 2, 11, 12).

Negative statements on system quality concerned at first occurring errors while using. This were problems while scrolling (4, 5, 8) the dysfunction of the videos (1, 6, 9, 10, 11) and the problem to start the ‘test jezelf’ (2, 5, 7, 12). Furthermore 2 respondents had difficulties to adjust the duration of a panic attack by using the + / - buttons (8, 9).

Content quality

Most positively rated was ‘Tips voor het omgaan met een paniekaanval’. According to the respondents (1, 3, 9, 11, 12) it was useful because of its structure, content and compactness. It was considered as useful in the case of an attack. The videos were seen as useful alternative to the long texts and were perceived as motivational (2, 4, 12).

Service quality

The respondents named three general positive things about the service quality of the app. At first 9 of the 12 respondents would use the app if they suffered from panic. Second, 9 of the 12 respondents stated that the app meets the expectancies or even exceeds them, even if they expected a more emergency directed app. According to the respondents, the effectiveness of the app depends on the regularity of use (3, 4, 9, 10) and the level of complaints (2, 6, 9, 11, 12).

3.3. Posttest (Appendix 6)

3.3.1. Test period

The users used the app from one to four weeks. Reasons for this amount of weeks were that it was mandatory (2, 4, 5, 10) and that there was no time to use it more (6, 8, 9, 12). The app was used averagely two times a week, ranging from one to four times. Five of the respondents named as main reason for this number of uses, that one chapter per session a good amount of workload was (1, 2, 4, 5, 9). Four respondents used the app more often to complete one chapter (3, 6, 7, 12). The time spent with the app per session ranged from 10 to 30 minutes and reaches an average of 23.63 minutes. The app was used mostly as long as it takes to complete a whole chapter (1, 2, 3, 7, 8, 9, 10). Following the statements of the respondents, they spent totaled up one to nine hours with the app. For the 11 persons a mean of 3.22 hours is reached. 5 of the respondents used the app mainly while waiting. The others used it when they had nothing else to do, mostly in the evening.

5 respondents used the app at the end of the test period more than in the rest of the test period. 3 respondents used it more at the beginning because they were curious about the functions of the app. The overall impression of the 11 respondents of the app was mostly positive. The most positive things mentioned by 6 respondents were the possibility to use the app without guidance and the general idea to treat panic complaints with an app (6 respondents).

The app was used by the respondents differently. Some of them used just the ‘cursus’ and ignored ‘mijn geen paniek’ (1, 2, 8, 12). Five respondents read all chapters at first and did the exercises afterwards (4, 5, 6, 7, 10). Two respondents switched between ‘mijn geen Paniek’ and ‘cursus’ more often (6, 9). Errors were reported mainly about already named points like the scrolling issue, ‘test jezelf’, ‘duur van Paniek aanval’ and the videos. All of the

respondents believed to have a good overview over the app. At the end all respondents stated that they were able to describe panic disorder roughly, due to the app.

3.3.2. Posttest interview

The posttest interview yielded in total 396 comments about system, content and service quality. Table 3 shows the contribution of the qualities and the amount of positive, neutral and negative comments. In the post test were mainly positive comments about service quality and content quality yielded. The service quality provoked more negative than positive comments.

Table 3

Total number of comments in the posttest interview

	+	+/-	-	**Total**
System	42	9	73	124
Content	59	1	9	69
Service	135	16	52	203
Total	236	26	134	396

System quality

The impressions about the structure of the app were for example that the app was structured well (1, 2, 4, 5, 7, 8, 9, 12) and designed in a standardized manner (1, 2, 3, 4, 7, 9, 10, 12). A negative point of the structure was that ‘Tips voor het omgaan met paniekaanvallen’ could be placed better. The respondents had difficulties to find this topic and think that it would get more attention on another place (1, 2, 6, 12). Furthermore four respondents found the depth of the menus disadvantageous, as it is difficult to navigate through the app when each exercise has two or more introduction pages (1, 2, 6, 7). The difference between the

structures ‘mijn geen Paniek’ and ‘cursus’ was found confusing. The respondents would prefer the same structure in both menus (3, 6, 12). The topic ‘Ervaringen van anderen’ was perceived as hidden. Although it was perceived as useful, respondents had overlooked it. Reasons for this are the differentiation from the other links in the menu and the need to scroll (6, 7, 9).

The navigation possibilities in general and the placing of the buttons were considered good (3, 5, 7, 12). The possibility to continue directly with the next chapter was found useful by three of the respondents (1, 5, 7). Rated negative was the scrolling problem (4, 5, 8, 12). Neutral statements on the navigation concerned the home and the navigation bar. Four respondents stated that they mostly used the home button to navigate (1, 7, 10, 12) whereas three stated that they used the navigation bar the most (3, 5, 10).

Furthermore, negative statements were recorded with reference to the amount of text which was considered as too much for a mobile application (1, 2, 6, 10, 12), the exercises of ‘bemoedigende gedachten’ and ‘rustgevende gedachten’ which seemed to be too similar and because of that demotivating (3, 6, 10), the graphic of ‘test jezelf’ which is not obvious (3, 5, 6) and the choice of colors (3, 4, 5, 11).

Content quality

Comments on content quality were mainly positive. The information given in the chapters was considered good (1, 2, 4, 5, 6, 7, 8, 9, 10) and to the point (1, 6, 8, 12). All information was found credible because of the sources (5, 7, 8), the kind of writing and the videos (1, 4, 7, 10, 12). The introductions of the app and the exercises were commented as good and useful (2, 4, 7). Most positive of the content were the ‘Tips voor het omgaan met een paniekaanval’ (1, 2, 3, 4, 5, 8, 9, 10) and the ‘achtergrond informaties’ (1, 3, 5) rated. The content was described as easy to understand (1, 2, 6, 9, 10). Furthermore the respondents had no problems to understand anything (2, 3, 5, 6, 7, 8, 9, 10, 12).

Service quality

The positive comments concerning the app in general were about the idea to treat panic disorder with a mobile app (1, 2, 3, 5, 6, 8) and the amount of workload per chapter which is enough and not too much to do in one session (1, 2, 4, 5, 9). Above that, the app encourages thinking about solutions and asks to plan the treatment independently (1, 2, 3, 6, 10). The different functions which the app offers, for example to watch videos, to register a panic attack or to look for extra information, were described as extensive and useful (1, 5, 8). The opinions about the videos were diverse. On the one hand the possibility seemed to be useful and a good possibility for an alternative source of information (2, 3, 7, 12), on the other hand respondents did not value them as necessary (1, 7, 9) or they stated that they did not use them at all (1, 3, 5, 6, 8, 9). It is important to notice that there is an overlap with the users complaining that the videos did not work (1, 6, 9, 10).

The exercises in general were seen as effective and useful (1, 2, 3, 4, 6, 7, 8, 9, 10). Especially remarkable were ‘registratie van een paniekaanval’ (3, 4, 7, 9, 10), ‘stressbronnen’ (1, 2, 5, 6, 7, 12), ‘rustgevende gedachten’ (2, 7, 12), ‘bemoedigende gedachten’ (5, 6, 7), ‘beloning’ (1, 2, 3, 9, 12), ‘angstthermometer’ (7, 9, 10, 12), ‘terugvalpreventieplan’ (2, 3, 9) and ‘positieve ondersteuning’ (3, 9, 10, 12). Negative comments about the excercises were that ‘levensstijl veranderingen’ is difficult and unrealistic to perform (2, 6, 7, 12) and that ‘angstthermometer’ is perceived as unclear (1, 2, 3, 4).

Of the three future functions which will be implemented, the possibility to record something with the smartphone was the most controversial. Mainly the doubts that the recordings are safe and not available for others are reasons why seven respondents would not use this function (2, 4, 5, 6, 7, 8, 9). Other reasons for this are that it would be forgotten and it would be too inconvenient to use the function of the app. However, four respondents said that they would use the function (1, 3, 10, 12). The possibility to contact a professional was

perceived positive and would be used by all respondents when they would suffer from panic and the condition is getting worse. The forum would be used mostly to read about the experiences of others. Whereas some respondents would ask something if they do not find appropriate information, or answer when they could help (4, 7, 8, 9, 10). Some stated that they would only read and would not want to take part in an active conversation on such a platform (3, 5, 6). The overall attitude was that the respondents prefer to use a forum more passively. Respondents 1 and 2 did not want to use this function because the information found on those platforms might not be trustworthy.

3.4. Significant suggestions

The interviews and the think aloud test yielded over 660 comments. Many comments were alike so that they were grouped and categorized to be able to compare them. However, some comments were mentioned less frequent by just one or two respondents it does not meam that they were less important because they contain interesting issues which could be considered in the improvement of the app on system and service quality. Table 4 summarizes significant suggestions of the users which were named less than three times. These comments were chosen by their feasibility. Furthermore, comments concerning the taste of some respondents were not regarded because of subjectivity. Some examples for comments about system quality are the readability of the links (1, 8), the headers which were not completely readable (1), the readability of the questions and answers in ‘test jezelf’ (8), an agenda overview over all registered panic attacks (3) and an obvious differentiation between ‘cursus’ and ‘mijn geen paniek’ (1). Examples for comments in service quality are a reminder alarm to use the app (3, 9), an emergency button with short tips how to handle a panic attack (1, 3) and the possibility to download content of the app to use it offline (1, 2).

Table 4

Significant suggestions concerning system & service quality

System quality	**Respondent**
‘Tijd en duur van paniekaanval’: time cannot be registered	8
Begin with ‘Ga verder’ or ‘test jezelf’?	2, 7
Color difference between ‘mijn geen Paniek’ and ‘cursus’	1
Readability of the links	1, 8
Name of the chapters in the header	1
The questions and answer possibilities of ‘test jezelf’ do not fit in the text areas	8
Agenda overview of panic attack registration	3
Overview over own data	6, 10
Service quality	
Parallel PC version	10
Button for acute panic attacks	1, 3
Reminder to spend time with the app	3, 9
Offline version	1, 2

3.5. PDSS-SR

The PDSS-SR was done by 11 participants and was analyzed with a paired sample T-test. With a mean score of 2.18 on the pretest and 2.64 on the posttest and the significance value of 0.52 no significant difference between pre and posttest could be found.

4. Discussion

This study consisted of interviews and a scenario based think-aloud test to gather comments concerning system, content and service quality of the mobile app ‘Geen Paniek’. A comparison between the pretest and the posttest comments let no remarkable differences see. The subject of the comments (system, content or service quality) differentiates especially by the sort of data gathering and the questions asked in particular. But because it was not the aim of this paper to meta- analyze these differences, further deliberations were bypassed. In the following, the founded test results were interpreted and points of improvement were pointed out.

4.1. System quality

Referring to the research questions ‘*How do people evaluate the system quality of the app?’* it can be concluded that there are some points of improvement which can enhance the usability of the app. As mentioned earlier it was expected that the usability testing of this mobile application would face several challenges (Zhang & Adipat, 2005). This research faced problems in connectivity, small screen size and limited processing capability and power. The connectivity was a problem for most of the German respondents who had no Dutch mobile contract and were not able to use the app away from Wi-Fi. The small screen of the devices affected the readability of the answer possibilities in ‘test jezelf’ and the buttons. Furthermore the limited processing capability and power of the older devices disabled the videos.

Occurring errors like the navigation bar which moves while scrolling, the malfunction of the videos on some devices and ‘test jezelf’ which worked irregularly makes the app uncomfortable to use and should be eliminated. Besides that, many respondents found the starting screen to be irritating. It can be assumed that the removal of this screen or an added explanatory ‘click to go further’ as seen in figure 1 on the right would face this issue.

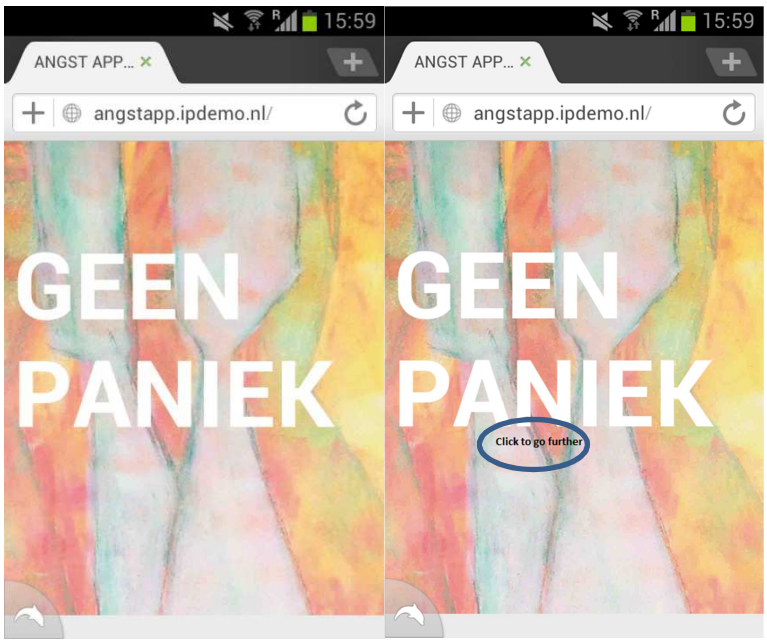

Figure 1

Left: Current starting screen, right: possible solution, starting screen with explanation

Respondents also criticized the questions and answer possibilities of ‘test jezelf’ which are not completely readable as seen in figure 2 on the left. One possibility could be to offer the answer possibilities by radio-buttons on the same screen as the question (on the right). This would avoid the pop up- submenu and could be perceived less complicated.

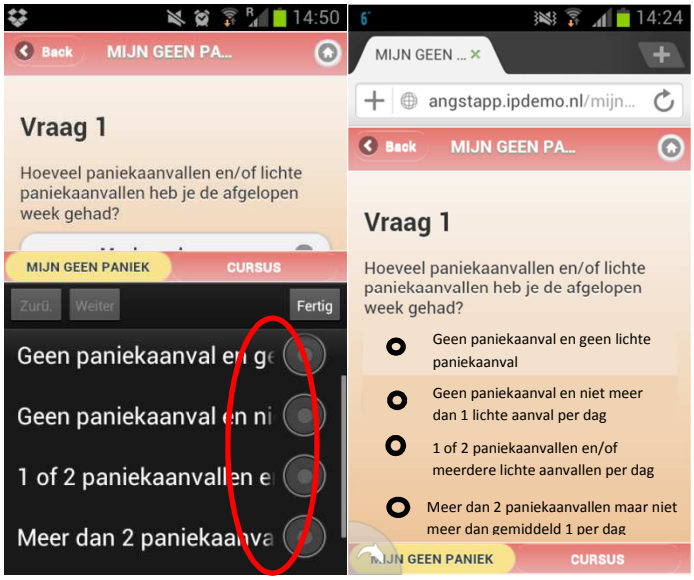

Figure 2

Left: ‚Test jezelf‘ answer possibilities not totally readable, right: possible solution: answer possibilities integrated in the question screen.

The buttons to adjust the duration of a panic attack, seen on figure 3 (left) lagged on nearly all devices and should be adjusted or removed. Another point of criticism was the graphic of ‘test jezelf’ (figure 3, right). Many respondents found it confusing so that it should be designed more self-explanatory. On some devices no graphic was shown at all.

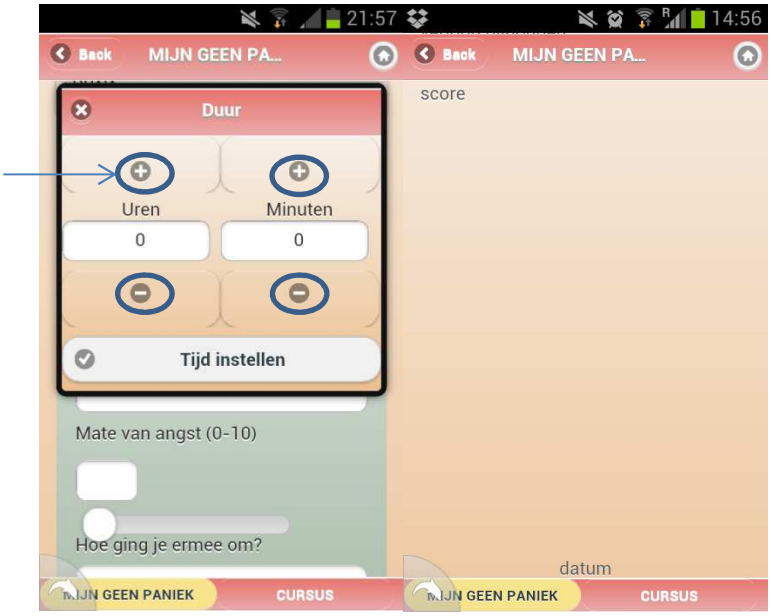

Figure 3

Left: Registration of panic attack buttons lagged. Right: Graphic of ‘test jezelf’ did not work

A lot of respondents had problems to get used to the structure of ‘mijn geen paniek’. It is recommended to reconsider this issue. Because of the structure of ‘cursus’ which most of the respondents found logical, many of the respondents had difficulties to deal with another logical order in ‘mijn geen paniek’. A possible solution could be to reorganize the ‘mijn geen paniek’ menu like the ‘cursus’ menu. Another solution could be to choose a completely different structure to avoid confusion. One example could be the substitution of the chapter distinction with an exercise overview. It could also be useful to distinct between those two sections in, for example the background color to enhance orientation in the app as seen in figure 4.

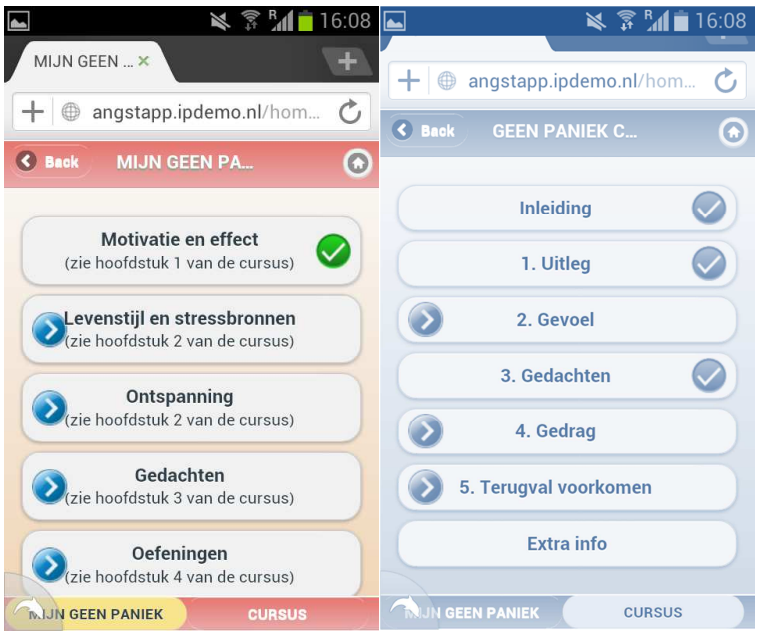

Figure 4

Possible solution: color differentiation between ‚Mijn geen paniek‘ and ‚Cursus‘

Another significant point of criticism was found in the order of the home screen (figure 5). The users should begin with ‘cursus’, likewise, the link to ‘cursus’ should be placed on the top of the menu instead on second place. Besides that the respondents wanted ‘Tips voor het omgaan met een paniekaanval’ to be placed more central in the app. In regard of this, the home screen should be revised by placing ‘cursus’ on the top and adding ‘Tips voor het omgaan met een paniekaanval’ (figure 5).

Figure 5

Left: recent order of the home screen, right: reordered and added ‘Tips voor het omgaan met paniekklachten’

A further adjustment to enhance system quality would be the implementation of an overview over all data and exercises as suggested by the respondents. The overview over the data and the exercises could replace ‘mijn geen paniek’. This could provide an uncomplicated way to show the user which exercises he already has completed and which are left. A risk would be that the user does not know which exercise belongs to which chapter.

The reduction or replacement of texts would avoid an overcharge of the user who stated that there is too much text. The user focused automatically on the texts because of the central position in each chapter. The respondents stated that the amount of text was overwhelming. Chittaro (2006) states that too much text has negative impact on the usability of apps on small devices. Although the app offers multimedia like the videos, the user focused automatically on the texts as he opens a chapter because it is the first appearing object. It would be more reasonable to exchange the texts with the videos. This could enhance the usage of the videos and could influence the opinion about the annoying amount of text as found in this research. To avoid unintended data traffic it would be useful that the video does not load until the user agrees to do so (Luxton et al., 2011). The advantage of smartphones is its multimedia capabilities like videos. This should be pointed out in the introduction of the app. Of cause should the texts be still available. One possible solution for this dropdown navigation could be found in the ‘Wikipedia mobile’ app as seen in figure 6.

The same solution could face the problem of the depth of the exercise links mentioned by the respondents. The reduction of depth of the links, especially of the exercises could improve the usability. The respondents found the menu too complex to navigate easily through the exercises. In the example of the Wikipedia app, the user is not forced to navigate through the content by clicking links as in figure 7, but has still the possibility to read more about the subject. This would guide the user more smoothly. It is possible to show the necessary information on the first sight and hide it when the user opens the exercise the next time. With such a standardization of the exercise structure, the usability would be improved further.

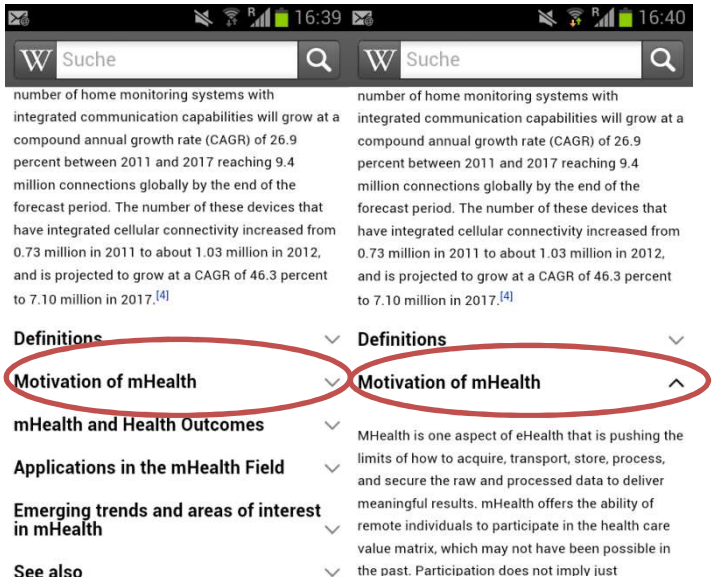

Figure 6

Possible solution: Left: ‘Motivation of mHealth minimized, right: ‘Motivation of mHealth‘ expanded

Figure 7

Current navigation through exercises: indirectly by buttons

4.2. Content quality

The research question ‘*How do people evaluate the content quality of the app?’* can be answered briefly. In this research there were no significant negative comments of respondents recorded regarding content quality. Because of this, it is not possible to consider any point of improvement. Most of the comments were positive so that it can be assumed that the quality of the content has a reasonable level. Examples for positive comments were, that ‘Tips voor het omgaan met een paniekaanval’ had a good structure, content and compactness. The information given in the chapters was perceived good, to the point and credible. Furthermore, the content was described as easy to understand. Although it is not sure how intense the respondents focused on the content of the app, it was expected that the content would be strong point of the app, because of the professional background of the app. More detailed feedback on this issue could probably be yielded by further research with respondents who suffer from panic.

4.3.Service quality

The last research question concerning the usability of the app ‘*How do people evaluate the service quality of the app?’* is a significant factor to be able to offer an effective app to treat panic complaints. The service quality was mostly perceived positive. A lot of respondents liked the idea to treat mild panic disorder simply with an app. They also appreciated that the app encourages thinking about the exercises and letting you plan the treatment independently. The videos were not used by most of the respondents which can have many causes, but it has to be assumed that the placing of the videos as mentioned in the system quality section the main reason is. Even if not all respondents used all exercises, they were perceived as mostly useful and would be used when the users would suffer from panic.

Although the interview showed that most of the users’ expectations were met or even exceeded, most of them expected an app which can be used in emergencies: during or just

before a panic attack. This gap between expectation and reality could indicate a first loss of motivation to use the app. An emergency button could be offered to meet the expectations of the users more. Although it should be introduced that the purpose of the app is to reduce panic complaints preventively, an emergency button could be considered valuable for the respondents. It should contain short tips, relaxation guides and distraction and should be available quick and straight. Different researches about expectations and treatment effect indicate that expectations can influence the outcomes. Even if the research of Kalauokalani et al (2001) was about low back pain, it can be assumed that this is valid for treatments like this, too. When the first expectations are not met, a higher dropout rate can be expected.

A lot of respondents stated that they forgot to use the app regularly. The emails and the posttest reminded them to spent time with it. Because of that it could be useful to integrate a reminder to use the app. If the users do not use the app, it has to be expected that it has no effect. Even if panic complaints itself could be enough to remind someone, the option to get a message regularly after a self-determined time could increase the times users use the app. Participation willingness, and the fitting of the treatment to the client’s preferences play an important role in the effectiveness of treatments (Diggelen, 2011) Finally, ‘levensstijl verandering’ and ‘angstthermometer’ should be reviewed. ‘Levensstijlverandering’ was by a lot of respondents perceived as a too complex issue to influence by an app. The exercise ‘angstthermometer’ was not clear for some respondents. They found it difficult to sort their fears in a scale without any points of reference and they did not know how to start. They requested more guidance.

The future functions to contact a professional and to be able to share experiences and information in a forum were estimated mainly positive. Most of the respondents stated that they would use these functions when they suffered from panic complaints.

According to the respondents the professional would be contacted mainly when the complaints getting more severe. They would prefer a fixed professional who they could trust. Two concerns were named, at first this function would be used when the professional would answer in a short time. At second it should be totally confidential. Another criterion was the sort of communication. Some respondents would prefer contact by phone, others by email. It should be considered to offer both possibilities.

The forum would mostly be used to get information by just reading or maybe asking something but in general the respondents would avoid writing something. This behavior was also found in several researches in the area of online community behavior and seems to be common (Lampe, Wash, Velasquez & Ozkaya, 2010). A possibility to face the passive attitude of the users could be to cooperate with an existing, established forum with an included section about ‘Geen Paniek’. This would provide more information exchange and more user activity. At the same time it would promote the app among the target group.

The function to import recordings into the app was perceived as critical mainly because of security doubts. It is expected that mainly a lack of information about the use of the imported data led to a negative opinion. The information given to the respondents during the interview was just that there will be such a function, further information was missed. With a detailed explanation of the risks, the purpose and the benefits in the app, it can be assumed that there is a more positive opinion about this. Another reason against this function was that it is not expected to remember it because it is not considered to be more effective than the already integrated media.

4.4.Effect

The research question ‘*In how far does the mobile version of the course ‘Geen Paniek’ indicate effectiveness in reducing discomfort of panic attacks according to the PDSS-SR?’* cannot be answered simply. It was not possible to indicate effectiveness of the app by

comparing the scores of the pre and posttest PDSS-SR. A reason for this result is probably the fact that according to the PDSS-SR none of the respondents had panic complaints at the time of the pre and posttest. Furthermore a lot of the users did not use the app regularly and did not complete all sections of it.

4.5. Limitations

Even though this study was conducted with best purposes and with the object to evaluate the usability of the mobile version of ‘Geen Paniek’ some limitations with regard to very different points exist.

The respondents, who were reached by the mandatory system of the University of Twente showed a lack of intrinsic motivation to use an app like this. The answer of many respondents to the question ‘when did you use the app the most?’ - ‘The closer the posttest the more’ confirmed this assumption. None of the respondents had mild panic complaints according to the PDSS-SR which means that there was no need for them to spend time with the app. More and better comments would be possible if more respondents had used the app more intense. Many of the exercises were stated as not applicable because of a lack of panic attacks. This could be a reason for not getting more accurate comments concerning those exercises.

Nearly all of the respondents were Germans, studying and living in the Netherlands, with German mobile contracts. This means that mobile internet in the Netherlands was expensive or even not available. Most of them used the app whenever Wi-Fi was available or when they were in Germany. The advantage of the app to be mobile and always available could not be used. The occurring errors ‘Test jezelf’ and the videos prevent the evaluation by some respondents.

This research faces the problems of all qualitative researches: the subjective opinion of the researchers (Lincoln and Guba, 1985). The comments were recorded, noted and

interpreted by the researcher. While difficult comments were discussed with a co-reviewer most items were considered as unambiguous. In spite of these provisions to gain more accuracy in the evaluation of the comments, misinterpretations are still possible. Furthermore it is difficult to decide in how far the interviewer presence had impact on the respondents’ assertions (Williams, 1968).

The method used in this trial has its disadvantages. Besides the big overlap of comments in the think-aloud test and the interviews, it is the intention to give insight in the usability of the app in first place. As seen in the discussion a lot of suggestions were made concerning the system quality. Thus the navigation, the layout, errors and minor things were focused. Comments about content or service quality were unfortunately rare. In respect to this it is questionable if such a complex research was necessary for these findings. A total of 662 comments were yielded during the trial, while just 76 were considered significant and were discussed in this paper. Some of them occurred more than once, in the pretest (interview and think aloud) and in the posttest. Above that it is not sure that all problems were found and if the adjustments recommended in this paper improve the experienced usability of the user at all.

Another limitation of the sample is the result of the PDSS-SR. The scores of the PDSS-SR may not be overrated. Because of the lack of panic complaints, the fact that the participation was more or less mandatory and the short test period no significant effect could be expected.

4.6. Recommendations

This research is the first usability test of the mobile app ‘Geen Paniek’. However some errors were found and suggestions contribute the improvement of the app a more extensive research is necessary to get more information over the overall use of the app. According to Matthews, Doherty, Cozle and Sharry (2008) the evaluation of an app has to be continued with a sample

suffering from panic complaints. A main result of a study like that would be in how far an affected sample would be motivated to participate, spend time with the app and which functions they use. Furthermore this could contribute more to the content and service quality of the app then the research of this paper. For such a trial pre and posttest interviews should be used similar like those of this research. The think –aloud usability test could be excluded because it can be expected that the findings are the same as in this trial.

Above that, another significant and valuable outcome will give the evaluation of the effectiveness of the app through the PDSS-SR. Therefore the affected sample has to be larger. Besides that, a longer test period will be necessary. An experimental group and a waiting list group would enable the possibility to compare the two conditions and would identify a possible effect of the app.

In respect to other health apps it can be recommended to take a sample suffering of what the app should treat. Especially while a long test period is used, a lack of motivation of the respondents can influence the time spend with the app and thereby the quality of comments they can give (Diggelen, 2011)

This research gave insight in how far the system, the content and the service quality of the ‘Geen Paniek’ app met the expectations of the respondents and gave recommendations for improvement. The prototype of the mobile version of ‘Geen Paniek’ seems to convince in content and service quality. It was expected that the prototype used has limitations and errors (system quality), but most of them should be identified by this trial. However, it is still a long way to be able to offer an app to face panic complaints. This research is the first small step in this process.

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Appendix 1 - Pretest

Bij voorbaat hartelijke bedankt voor je deelname.

De mobiele applicatie van ‘Geen Paniek’ is een cursus die inzicht geeft in het ontstaan van paniekklachten en is bedoeld om te leren ermee om te gaan. Dit onderzoek is belangrijk om de bruikbaarheid ervan te testen en indicaties voor de effectiviteit te beoordelen. Dit betekent dat jij een bijdrage kunt leveren dat mensen in Nederland minder last van paniek hebben. Paniekklachten betekenen voor de betrokkene mensen in alle gebieden van het leven beperkingen. Dagelijkse dingen zoals het openbaar vervoer, een bezoek van de bioscoop, naar het werk gaan of boodschappen doen kunnen spanningsvol zijn. Maar niet alleen de klachten van de betrokkenen zijn te noemen. Paniekklachten kosten de Nederlandse overheid elk jaar miljoenen van euro’s. Door behandeling van een ernstige paniekklacht ontstaan hoge kosten voor de gezondheidszorg. Hiernaast ontstaan hoge indirecte kosten bijvoorbeeld door werkverzuim. Dit hoeft niet zo te zijn. Het is aangetoond dat paniekstoornis in de meeste gevallen voorkomen kan worden. De cursus ‘Geen Paniek’ richt zich direct op mensen met lichte of matige paniekstoornissen en probeert onder meer met een zelfhulpprogramma effectief te helpen. In dit onderzoek ben jij gevraagd om de bruikbaarheid van de cursus te bestuderen. De mobiele versie van de cursus is bedoeld om de cursus op een smartphone beschikbaar te maken om de informatie en hulp niet maar op de pc aan te kunnen bieden maar altijd in de tas. Hierdoor zou het mogelijk zijn om de toepasbaarheid van de cursus te verhogen en de effectiviteit te vergroten.

De procedure van dit onderzoek ziet als volgt eruit, vandaag beginnen wij met een kort interview, dit zal ongeveer 15 minuten duren. Vervolgens ga je in ongeveer 10 minuten een vragenlijst invullen die betrekking heeft op je mogelijke paniekklachten. Daarna voer je een aantal scenario’s uit wat ongeveer 35 minuten zal duren. Het is belangrijk dat je hier hardop denkt omdat in dit onderdeel opgenomen wordt op beeld en geluid. Je kunt hier niets verkeerd doen. Ten slotte volgt nog een kort interview, ongeveer 10 minuten over jouw evaluatie van de eerste indruk van de applicatie. Na rond 90 minuten ben je klaar met de eerste test. Daarna volgt de testperiode van enkele weken. Hier volg je de informaties die je in de applicatie vindt. Tijdens de tweede bijeenkomst over enkele weken volgt nog een interview dat ongeveer 90 minuten zal duren. De verzamelde data worden anoniem verwerkt en niet aan derden gegeven.

Aan het begin en het eind van het onderzoek zal worden gevraagd een vragenlijst over paniekklachten in te vullen, de PDSS-SR (Panic Disorder Severity Scale-Self Report). Deze vragenlijst bestaat uit 7 vragen en is bedoeld om een indicatie te krijgen van de ernst van de paniekklachten.

Ook in de app bestaat de mogelijkheid regelmatig deze test in te vullen om de ernst van de paniekklachten kunnen volgen.

Deze vragenlijst is niet bedoeld om een diagnose te stellen.

Omdat de vragenlijst een indicatie geeft van de ernst van de paniekklachten zal bij een score die aangeeft dat er mogelijk sprake is van ernstige paniekklachten het advies worden gegeven te overleggen met een professional (bijvoorbeeld uw huisarts).

De reden hiervoor is dat de app bedoeld is voor mensen met lichte tot matige paniekklachten, voor mensen met ernstige paniekklachten is de verwachting dat de app ontoereikend is en mogelijk professionele hulp meer is aangewezen.

Wanneer dit het geval is bestaat ook de mogelijkheid te overleggen met een van de onderzoekers (Dr. Peter Meulenbeek van de Universiteit Twente).

GEÏNFORMEERDE TOESTEMMING

GW.07.130

Ik, …….. (*naam proefpersoon)*

Stem toe mee te doen aan een onderzoek dat uitgevoerd wordt door

Alexander Gieseler

Ik ben me ervan bewust dat deelname aan dit onderzoek geheel vrijwillig is. Ik kan mijn medewerking op elk tijdstip stopzetten en de gegevens verkregen uit dit onderzoek terugkrijgen, laten verwijderen uit de database, of laten vernietigen.

De volgende punten zijn aan mij uitgelegd:

1. Het doel van dit onderzoek is de bruikbaarheid van de app ‘Geen Paniek’ te testen.
   Deelname aan dit onderzoek zal meer inzicht geven in de bruikbaarheid van de mobiele versie van de cursus ‘Geen Paniek’.
2. Er zal mij gevraagd worden om de mobiele versie van de cursus ‘Geen Paniek’ en enkele scenario’s te volgen.
   De eerste bijeenkomst zal ongeveer 90 minuten duren. De testperiode loopt tot de 17-12-2012 en wordt gevolgd door de tweede bijeenkomst die in die op een dag van de 17-12-2012 tot de 21-12-2012 plaats vindt. De tweede bijeenkomst zal ook weer 90 minuten duren.
3. Er behoort geen stress of ongemak voort te vloeien uit deelname aan dit onderzoek.
4. Ik ben geïnformeerd over de bedoeling van de PDSS-SR vragenlijst en ervan bewust dat de vragenlijst niet ter diagnose van paniekstoornis bedoeld is.
5. De gegevens verkregen uit dit onderzoek zullen anoniem verwerkt worden en daarom niet bekend gemaakt worden op een individueel identificeerbare manier. De geluid/video-opnamen worden na afloop van dit onderzoek niet verder gebruikt en zijn niet voor derden beschikbaar.
6. De app is uitsluitend van je persoonlijk en alleen tijdens de testperiode (tijdens en tussen voor en nagesprek) te gebruiken. Het is een testfase. Noodzakelijke veranderingen worden daarna aangebracht.
7. De gegevens die tijdens het gebruik van de app opgeslagen worden kunnen ook voor andere zichtbaar zijn als deze van mijn toestel gebruik maken.
8. De onderzoeker zal aanvullende vragen over dit onderzoek beantwoorden, nu of gedurende het verdere verloop van het onderzoek.

9. ☐ Ik stem toe dat mijn ingevulde gegevens na afloop van de test mogen worden ingezien van de onderzoeker.

Handtekening onderzoeker: …… Datum: ……..

Handtekening proefpersoon: …… Datum: ……..

Proefpersoon nummer:

Algemeen:

1. Wat is jouw leeftijd?

2. Ben je mannelijk of vrouwelijk?

Ervaringen

3. Hoe lang heb je al ervaringen met smartphones?

4. Wat voor een toestel heb je?
    a. Android
    b. IOS
    c. Anders:

5. Hoe vaak gebruik je mobiele applicaties?

6. Zou je zeggen dat je ervaren bent met applicaties?

7. Heb je een applicatie ter gezondheidsbevordering geïnstalleerd ob je toestel?
    a. Ja
    b. Nee
    c. meerdere

8. Voor welke onderwerpen heb je gezondheidsapplicaties?
    a. Meer sporten (voorkomen)
    b. Bewuster eten/drinken (voorkomen)
    c. Geestelijke gezondheid (voorkomen)
    d. Motiveren om iets onleuk te doen (voorkomen)
    e. Voorkomt iets ongezond te doen (roken, drinken, snoepen)
    f. Herinneren van bijv. pillen te nemen
    g. Gericht op een bepaalde ziekte
    h. Gericht op psychische klachten
    i. Gericht op fysische klachten

9. Zoals ja, hoe vaak maak je gebruik ervan?

Houding tegenover gezondheidsapps/geen paniek app

10. Wat denk je hoe effectief zijn gezondheidsapplicaties?
11. Wat zijn volgens jouw criteria voor een goede gezondheidsapplicatie?
12. Wat verwacht je van een ‘paniekstoornis app’?

Ernst van paniekklacht

13. Ernst van Paniekklachten (**PDSS-SR** vragenlijst)?

Score:

Scenario’s Hardop denken

Angstapp.ipdemo.nl

Stel dat je de app voor het eerst ziet, wat zou je doen?

Als respondent niet verder weet/ als respondent bepaald punt bereikt, ingrepen:	**Onderdeel van ‘Geen Paniek’ dat bereikt wordt:**
Stel je bent geïnteresseerd in de ervaringen van anderen en wilt video’s erover zien. Hoe doe je dat?	Home ➔ Inleiding
Je hebt dit (eerste) hoofdstuk afgerond. Wat doe je?	Home ➔ Cursus ➔ Inleiding ➔ Hoofdstuk afgerond
Stel dat je van plan bent om de twee oefeningen te doen.	Home ➔ Cursus ➔ Hoofdstuk 1
	Als de respondent klaar met de oefeningen van hoofdstuk 1 volgen meer directe aanwijzingen
Stel dat je het hoofdstuk over gedachten wilt bestuderen.	Home ➔ Cursus ➔ Hoofdstuk 3
Zou je een persoonlijke gedachte willen toevoegen?	Home ➔ Mijn geen paniek ➔ Gedachten
Zou je een positieve ondersteuning willen toevoegen?	Home ➔ Mijn geen paniek ➔ Terugvalpreventie ➔ Positieve ondersteuning
Stel dat je een plan voor levensstijlverandering wilt toevoegen.	Home ➔ Mijn geen Paniek ➔ Levensstijl en stressbronnen ➔ Mijn levensstijlveranderingen
Stel dat je tips voor het omgaan met een paniekaanval wilt opzoeken.	Home ➔ Mijn geen Paniek ➔ Tips voor jet omgaan

Vragen met betrekking tot App:

14. Hoe vond je ging het?
15. Voldoet de applicatie aan uw verwachtingen?
16. Zijn er fouten opgetreden tijdens het gebruik?
17. Is er iets dat je onlogisch vindt?
18. Is iets gebeurd dat je niet verwacht had?
19. Zou je even laten zien wat logisch of juist niet logisch bij de opbouw van de app vindt?
20. Kun je even laten zien wat je handig aan de applicatie vindt?
21. Kun je even laten zien wat je nuttig aan de applicatie vindt?
22. Kun je even laten zien wat je minder handig aan de applicatie vindt?
23. Kun je even laten zien wat je minder nuttig aan de applicatie vindt?
24. Zou je het willen gaan gebruiken?
25. Heeft je nog suggesties om de applicatie te verbeteren?

Vragen scenario’s

26. Waren de dingen in de scenario’s ook dingen die je daadwerkelijk zou willen doen?

Verwachting effect

27. In hoever verwacht je dat de applicatie effectief tegenover lichte tot matige paniekstoornissen is?

Houding tegenover 5 weken

28. Lijkt het je wat om de cursus tijdens de testperiode te volgen?

Onderzoek: ‘Geen Paniek’

De volgende weken zal je bezig zijn met de app. De bedoeling is dat je tijdens de week vaker met de app bezig bent en elke week één of enkele lessen volgt. Omdat ze mobiel is, kan dit ook bijvoorbeeld tijdens het wachten op de bus. Verder zou het fijn zijn als je naast de les nog bezig bent met het

aanvullen van je profiel onder ‘Mijn geen paniek’. Ten slotte wordt je gevraagd om een klein dagboekje te voeren om voorvallen met betrekking tot de app te noteren en mee naar de posttest te brengen (Dit kan je natuurlijk ook met jouw mobieltje doen). Als er nog fouten optreden tijdens het gebruik zou het mooi zijn als je me even heel kort erover mailt. Het contact vindt je beneden.

De posttest wordt op een soortgelijk manier uitgevoerd. Let erop dat de data die je opslaat ook voor derden zichtbaar kunnen zijn als ze gebruik ervan maken.

Termijn voor de posttest:

17-12-2012 – 21-12-2012

Timeslot

Hartelijke bedankt voor de participatie.

Contact onderzoeker:

S1013270@student.utwente.nl

+491635819314

Pagina: Angstapp.ipdemo.nl

Appendix 2 – Posttest

Posttest:

5 minuten: Begroeting, introductie, PDSS-SR

84 minuten: Hoofdstukken stap voor stap, interview

1 minuut: Afsluiting

Begroeting

Dit is de Posttest, ik hoop dat je goed bezig was met de app en dat je er misschien nog iets van mee kunt nemen.

Ernst van paniekklacht

1. Ernst van Paniekklachten (PDSS-SR)

Score:

Gebruik algemeen

1. Wat vindt je van de app over het geheel?
2. Hoe veel weken heb je van de app gebruik gemaakt?
3. Waarom?
4. Hoe vaak per week heb je gebruik gemaakt van de app?
    a. Hoe veel uren in totaal?
5. Waarom?
6. In welk situaties heb je van de app het meest gebruikt gemaakt?

7. Waarom?

8. Wanneer was je het meest gemotiveerd om de app te gebruiken?

9. Waarom?

10. Hoe lang was je per sessie gemiddeld met de app bezig?

11. Waarom?

12. Wanneer heb je meer of juist minder gebruik gemaakt van de app en waarom?

Eerder gebruik

13. Wil je eens laten zien hoe je de app bijvoorbeeld hebt gebruikt?

14. Was er iets dat niet werkte?

15. Is er iets dat je onduidelijk vindt bij het onderdeel ‘cursus’?

16. Is er iets dat je onduidelijk vindt bij het onderdeel ‘mijn geen paniek’?

17. Wat vindt je logisch of juist niet logisch bij de opbouw van de app?

(Zou je even willen laten zien wat je logisch of juist niet logisch vindt bij de opbouw van de app?)

18. Wat vindt je handig aan de applicatie?

(Kun je even willen laten zien wat je handig vindt aan de applicatie?)

19. Wat vindt je nuttig aan de applicatie?

(Kun je even willen laten zien wat je nuttig vindt aan de applicatie?)

20. Wat vindt je minder handig aan de applicatie?

(Kun je even willen laten zien wat je minder handig vindt aan de applicatie?)

21. Wat vindt je minder nuttig aan de applicatie?

(Kun je even willen laten zien wat je minder nuttig vindt aan de applicatie?)

22. Van welke functies heb je meer gebruik gemaakt?

23. Van welke functies heb je minder gebruik gemaakt?

Interview:

24. Denk je een overzicht over de inhoud van de app te hebben?

25. Denk je nu in staat bent om een beeld van paniekstoornis/paniekklachten te schetsen?

Bruikbaarheid

System quality:

26. Wat vindt je van de gebruiksvriendelijkheid van de app?

27. Wat vindt je van de navigatie door de app?

28. Wat vindt je van de plaatsing van de buttons?

29. Wat vindt je van de lay-out?

Content quality:

30. Wat vindt je van de inhoud van de app?

31. Wat vindt je van de nut van de informaties in de app?

32. Wat vindt je van de overtuigingskracht van de informaties in de app?

33. Zijn er spellingsfouten opgevallen?

34. Wat vindt je van de duidelijkheid van de teksten?

Service quality:

35. Wat vind je van de functies die de app aanbiedt?

36. Voldoet de applicatie aan uw verwachtingen?

37. Zou je de applicatie willen gaan gebruiken als jezelf paniekklachten zou hebben?

38. Heb je naar jouw resultaten ontwikkeling onder ‘test jezelf’ gekeken?

39. Heb je nog suggesties om de applicatie te verbeteren?

40. Heb je nog andere opmerkingen?

41. Hoe tevreden ben je met de app?

Onderdelen

Zou je aansluitend graag een commentaar met betrekking tot de teksten, video’s, opdrachten en functies geven?

Cursus

42. Wat heb je in de inleiding gedaan?

a. Wat vindt je ervan?

43. Wat heb je in het eerste hoofdstuk gedaan?

a. Wat vindt je ervan?

44. Wat heb je in het tweede hoofdstuk gedaan?

a. Wat vindt je ervan?

45. Wat heb je in het derde hoofdstuk gedaan?

a. Wat vindt je ervan?

46. Wat heb je in het vierde hoofdstuk gedaan?

a. Wat vindt je ervan?

47. Wat heb je in het vijfde hoofdstuk gedaan?

a. Wat vindt je ervan?

48. Wat heb je onder ‘extra informatie’ gedaan?

a. Wat vindt je ervan?

Mijn geen paniek:

49. Wat heb je onder ‘Motivatie en effect’ gedaan?

a. Wat vindt je ervan?

50. Wat heb je onder ‘Levensstijl en stressbronnen’ gedaan?

a. Wat vindt je ervan?

51. Wat heb je onder ‘Ontspanning’ gedaan?

a. Wat vindt je ervan?

52. Wat heb je onder ‘Gedachten’ gedaan?

a. Wat vindt je ervan?

53. Wat heb je onder ‘Oefeningen’ gedaan?

a. Wat vindt je ervan?

54. Wat heb je onder ‘Terugvalpreventie’ gedaan?

a. Wat vindt je ervan?

55. Wat heb je onder ‘Ervaringen’ gedaan?

a. Wat vindt je ervan?

56. Heb je de tips voor het omgaan met paniekaanvallen gebruikt?

In de toekomst

57. In de toekomst wordt mogelijk het contact met een expert aangeboden worden

a. Denk je dat dit een nuttige toevoeging is?

b. Zou je het zelf gaan gebruiken?

58. In de toekomst wordt mogelijk het contact met andere app gebruiker aangeboden (forum)

a. Denk je dat dit een nuttige toevoeging is?

b. Zou het zelf gaan gebruiken?

59. In de toekomst wordt mogelijk aangeboden opnamen te kunnen maken van bijvoorbeeld bemoedigende gedachten.

a. Denk je dat dit een nuttige toevoeging is?

b. Zou je het zelf gaan gebruiken?

Cursus

c. Heb je de inleiding gelezen? Wat vindt je ervan?

i. Heb je meer informaties bestudeerd?

ii. Welke teksten heb je gelezen?

iii. Welke video’s heb je bekeken?

iv. Waarom deze?

v. Wat vindt je ervan?

vi. Welke opdrachten heb je gedan?

vii. Waarom deze?

viii. Wat vindt je van elke opdracht?

ix. Zou je ervan gebruik maken als je paniekklachten zou hebben?

x. Heb je (mijn) ervaringen bestudeerd?

xi. Welke video’s heb je bekeken?

xii. Welke teksten heb je gelezen?

xiii. Waarom deze?

xiv. Wat vindt je van de teksten en video’s?

xv. Vind je een functie hiervan overbodig?

xvi. Vind je een functie hiervan heel handig/nuttig?

xvii. Heb je suggesties?

d. Heb je hoofdstuk 1 gelezen? Wat vindt je ervan?

i. Heb je meer informaties bestudeerd?

ii. Welke teksten heb je gelezen?

iii. Welke video’s heb je bekeken?

iv. Waarom deze?

v. Wat vindt je ervan?

vi. Welke opdrachten heb je gedan?

vii. Waarom deze?

viii. Wat vindt je van elke opdracht?

ix. Zou je ervan gebruik maken als je paniekklachten zou hebben?

x. Heb je (mijn) ervaringen bestudeerd?

xi. Welke video’s heb je bekeken?

xii. Welke teksten heb je gelezen?

xiii. Waarom deze?

xiv. Wat vindt je van de teksten en video’s?

xv. Vind je een functie hiervan overbodig?

xvi. Vind je een functie hiervan heel handig/nuttig?

xvii. Heb je suggesties?

e. Heb je hoofdstuk 2 bestudeerd?

i. Heb je meer informaties bestudeerd?

ii. Welke teksten heb je gelezen?

iii. Welke video’s heb je bekeken?

iv. Waarom deze?

v. Wat vindt je ervan?

vi. Welke opdrachten heb je gedan?

vii. Waarom deze?

viii. Wat vindt je van elke opdracht?

ix. Zou je ervan gebruik maken als je paniekklachten zou hebben?

x. Heb je (mijn) ervaringen bestudeerd?

xi. Welke video’s heb je bekeken?

xii. Welke teksten heb je gelezen?

xiii. Waarom deze?

xiv. Wat vindt je van de teksten en video’s?

xv. Vind je een functie hiervan overbodig?

xvi. Vind je een functie hiervan heel handig/nuttig?

xvii. Heb je suggesties?

f. Heb je hoofdstuk 3 bestudeerd?

i. Heb je meer informatie bestudeerd?

ii. Welke teksten heb je gelezen?

iii. Welke video’s heb je bekeken?

iv. Waarom deze?

v. Wat vindt je ervan?

vi. Welke opdrachten heb je gedan?

vii. Waarom deze?

viii. Wat vindt je van elk opdrachten?

ix. Zou je ervan gebruik maken als je paniekklachten zou hebben?

x. Heb je (mijn) ervaringen bestudeerd?

xi. Welke video’s heb je bekeken?

xii. Welke teksten heb je gelezen?

xiii. Waarom deze?

xiv. Wat vindt je van de teksten en video’s?

xv. Vind je een functie hiervan overbodig?

xvi. Vind je een functie hiervan heel handig/nuttig?

xvii. Heb je suggesties?

g. Heb je hoofdstuk 4 bestudeerd?

i. Heb je meer informatie bestudeerd?

ii. Welke teksten heb je gelezen?

iii. Welke video’s heb je bekeken?

iv. Waarom deze?

v. Wat vindt je ervan?

vi. Welke opdrachten heb je gedan?

vii. Waarom deze?

viii. Wat vindt je van elk opdrachten?

ix. Zou je ervan gebruik maken als je paniekklachten zou hebben?

x. Heb je (mijn) ervaringen bestudeerd?

xi. Heb je de video bekeken?

xii. Heb je de tekst gelezen?

xiii. Waarom deze?

xiv. Wat vindt je van de tekst en video?

xv. Vind je een functie hiervan overbodig?

xvi. Vind je een functie hiervan heel handig/nuttig?

xvii. Heb je suggesties?

h. Heb je hoofdstuk 5 bestudeerd?

i. Heb je meer informatie bestudeerd?

ii. Welke teksten heb je gelezen?

iii. Welke video’s heb je bekeken?

iv. Waarom deze?

v. Wat vindt je ervan?

vi. Welke opdrachten heb je gedan?

vii. Waarom deze?

viii. Wat vindt je van elk opdrachten?

ix. Zou je ervan gebruik maken als je paniekklachten zou hebben?

x. Heb je (mijn) ervaringen bestudeerd?

xi. Heb je de video bekeken?

xii. Heb je de tekst gelezen?

xiii. Wat vindt je van de tekst en video? Waarom heb je ervoor gekozen?

xiv. Wat vind je van de tekst en de video?

xv. Heb je verder gelezen?

xvi. Heb je gebruik gemaakt van de bijlagen?

xvii. Vind je een functie hiervan overbodig?

xviii. Vind je een functie hiervan heel handig/nuttig?

xix. Heb je suggesties?

60. Mijn geen paniek

a. Motivatie en effect

i. Heb je van een functie gebruik gemaakt?

ii. Waarom?

iii. Wat vindt je hiervan?

iv. Zou je het gaan gebruiken als je betrokken zou zijn?

v. Heb je suggesties om hier iets te kunnen verbeteren?

b. Levensstijl en stressbronnen

i. Heb je van een functie gebruik gemaakt?

ii. Waarom?

iii. Wat vindt je hiervan?

iv. Zou je het gaan gebruiken als je paniekklachten zou hebben?

v. Heb je suggesties om hier iets te kunnen verbeteren?

c. Ontspanning

i. Heb je van een functie gebruik gemaakt?

ii. Waarom?

iii. Wat vindt je hiervan?

iv. Zou je het gaan gebruiken als je paniekklachten zou hebben?

v. Heb je suggesties om hier iets te kunnen verbeteren?

d. Gedachten

i. Heb je van een functie gebruik gemaakt?
ii. Waarom?
iii. Wat vindt je hiervan?
iv. Zou je het gaan gebruiken als je paniekklachten zou hebben?
v. Heb je suggesties om hier iets te kunnen verbeteren?

e. Oefeningen
    i. Heb je van een functie gebruik gemaakt?
    ii. Waarom?
    iii. Wat vindt je hiervan?
    iv. Zou je het gaan gebruiken als je paniekklachten zou hebben?
    v. Heb je suggesties om hier iets te kunnen verbeteren?

f. Terugvalpreventie
    i. Heb je van een functie gebruik gemaakt?
    ii. Waarom?
    iii. Wat vindt je hiervan?
    iv. Zou je het gaan gebruiken als je paniekklachten zou hebben?
    v. Heb je suggesties om hier iets te kunnen verbeteren?

Appendix 3 (general data)

The following table shows general data of the respondents, their smartphone type, the pre & posttest score of the PDSS-SR and the months of experience with smartphones.

Proefpersoon	Nationaliteit	Geslacht	Leeftijd	Toestel	PSDDPRE	PSDDPOS	Ervaring
1	Duits	M	23	HTC Wild	0	2	48
2	Duits	M	21	iPhone	3	1	36
3	Duits	V	20	Ipod	0	3	10
4	Duits	V	19	Sams Ace	4	2	11
5	Duits	V	21	Sams S2	0	4	24
6	Duits	V	21	HTC Wild	2	0	12
7	Duits	V	19	Iphone	1	3	18
8	Duits	V	21	Sams Ace	1	1	24
9	Duits	V	20	HTC Des	3	3	42
10	Duits	V	19	HTC Wild	1	3	12
11	Duits	V	18	SGS 2	5		18
12	NL	V	21	iPhone	9	7	36

The following table shows the usage of health apps of the respondents in general and of the app ‘Geen Paniek’. Furthermore it shows if the user had an overview over the app and an overview over panic disorder after usage.

Proefpersoon	How often	Gezondapp	GZApp soort	gzapphowoften	Hoeveelweken	Hoevaakperweek	Hoelang	Hoeveeluren	OverzichtApp	OverzichtPaniek
1	2	2	-	-	4	2	10	3	Ja	Ja
2	5	3	Lauf	nooit	1	4	20	2	Ja	Ja
3	1	2	-	-	4	1	20	1,5	Ja	Ja
4	4	1	Eten	nietmeer	2	2	10	3	Ja	Ja
5	5	1	Sport	1x/maan	4	2	30	4	Ja	Ja
6	3	2	-	-	1	2	30	1	Ja	Ja
7	3	2	-	-	2	2	30	9	Ja	Ja
8	4	2	-	-	1	2	30	1	Ja	Ja
9	5	2	-	-	3	1	30	4	Ja	Ja
10	3	2	-	-	2	2	30	4	Ja	Ja
11	3	2	-	-						
12	4	1	Eten	Nooit	2	2	20	3	Ja	Ja

Appendix 4 (Pretest Interview)

System+			
General			
	Makkelijk te gebruiken	5	1, 2, 4, 11, 12
	Opbouw logisch	5	4, 5, 6, 8, 9, 10, 12
	Mijn geen paniek handig	2	2, 7
	Cursus is nuttig	1	2
	geen technische problemen	1	3
	Hoofdstukken logisch opgebouwt	1	10
Navigation			
	Overzichtelijk	4	1, 2, 11, 12
	Navigatie handig	5	3, 4, 7, 9, 11
System +/-			
	Eerst moeilijk dan makkelijker te gebruiken	5	3, 5, 6, 7, 8
	Nog te vroeg om een oordeel te kunnen geven	7	1, 2, 3, 4, 5, 6, 10
System -			
General			
	Mijn geen paniek onduideljk	6	2, 3, 5, 6, 11, 12
	Layout	2	4, 12
	Geen overzicht over oefeningen en eigen data	2	3, 5, 6
	Home volgorde	4	6, 9, 11, 12
	Hofdstukken te verwarrend	1	7
	Te veel te lezen	5	1, 2, 5, 6, 11
	Tips op andere plek	1	1
	In toestel is toetsen lastig	1	8
	Kopjes kunnen duidelijker zijn	1	9
Errors			
	Problemen met scrollen	3	4, 5, 8
	Videos werken niet	5	1, 6, 9, 10, 11
	Duur registratie met knopjes	2	8, 9
	Test jezelf probleem	4	2, 5, 7, 12
Navigation			

Navigatielijst beneden is niet nuttig	2	8, 11
Links in de teksten zijn te klein	2	6, 9
navigatie buttons zijn onduidelijk	5	3, 4, 8, 9, 10

Content +

Videos zijn leuk	3	2, 4, 12
Tips leuk	5	1, 3, 9, 11, 12
Samenvatting belangrijk	2	4, 9
Voorbeelden nuttig	1	10
Informaties effectief	1	7
Ervaringen van anderen leuk	1	12

Content +/-

Content -

Ervaringen van anderen zijn niet nuttig	1	7
Videos zal ik niet bekeken	1	3

Service +

General			
	Ja, ik zou de app gaan gebruiken	9	1, 2, 3, 5, 6, 7, 9, 11, 12
	Ja, app voldoet aan verwachtingen	9	1, 2, 3, 7, 8, 9, 10, 11, 12
Functions			
	Functies goed	1	5
	Goed dat mobiel	1	1, 8
	Interaktief goed	1	10
	Persoonlijk profiel is leuk	8	2, 3, 4, 5, 6, 7, 10, 11, 12
	Terugvalpreventie is handig	1	8

		1	1, 2, 4, 5, 6, 7, 8, 9, 10,
	Ja, de dingen uit de scenarios zal ik gebruiken	0	12
Service +/-			
	App is anders dan verwacht, niet beter niet slechter	1	6
	Of ik de app gebruik is afhankelijk van ernst van mijn klachten	2	5, 10
	effectiviteit is afhankelijk van gebruik	4	3, 4, 9, 10
	effectiviteit is afhankelijk van mens	1	5
	effectiviteit is afhankelijk van ernst	5	2, 6, 9, 11, 12
Service -			
General			
	De app lijkt mee niet effectief	1	8
	Niet zo effectief als praten	1	8
	Paralel zou een pc versie handig zijn	1	10
	hulpt niet bij acute aanvallen	1	1, 5
Functions			
	Leefstijlverandering is overbodig	1	11

Appendix 5 (Pretest Scenarios)

System +	Comment	Amount	Respondent
Summaries			
	Ik vind het goed dat er samenvattingen zijn	3	5, 10, 11
Functions			
	Ik vind het leuk om favorieten te kiezen bij de gedachtenkaartjes	1	10
	Het is een goed dat ik kan aangeven hoe angstig ik ben/was	1	11
	Goed dat ik de duur ook kan intoetsen	1	11
	Ik vind het goed om de mate onder gedachten aan te kunnen geven	1	11
Examples			
	Ik vind de voorbeelden goed omdat ik dan weet wat precies gevraagd is	3	5, 10, 11
Navigation			
	Het hoofdstuk als gelezen te kunnen markeren vind ik handig omdat je dan weet wat je al hebt gelezen	2	2, 11
	De navigatie lijst beneden is handig	1	8
	Er is een goed overzicht over de opgegeven informaties	1	11
	Ik vind de opdrachten duidelijk te vinden	1	12
	Ik vind de app overzichtelijk	1	12
	Ik vind de tips makkelijk te vinden	1	12
Saving			
	Ik vind het makkelijk om iets op te slaan	3	1, 11, 12
Else			
	Ik vind het goed dat er altijd een inleiding is voor de opdrachten	1	11
	Ik vind de tips heel goed omdat ze kort zijn	2	11, 12
	Ik vind de tekst van de opdrachten niet te lang	1	12
System +/-			
Navigation			

	Eigenlijk is het logisch met cursus te beginnen	1	6
	Ik vind de navigatie met de overzicht van home makkelijker als de navigatie lijst	1	11
	Ik gebruik de terug button omdat ik niet precies weet waar ik naartoe kom als ik home of de navigatielijst gebruik	1	12
Excercises			
	Maar kan ik de opdrachten ook doen zonder de informaties te lezen?	2	9, 11

System -

Navigation			
	Het staartscherm is verwarrend ik weet niet hoe ik verder kom	7	3, 4, 7, 8, 9, 10, 11
	Ik heb het knopje ter markering van een hoofdstuk niet gezien	7	1, 2, 3, 4, 6, 8, 11
	Ik heb de homebutton niet herkend	3	8, 10, 11
	Niet zeker of ik met 'ga verder' of 'test jezelf' moet beginnen	2	2, 7
	Ik vind de button levensstijlveranderingen en stressbronnen onduidelijk	1	9
	Ik kan de naam van de buttons niet helemaal lezen	1	2
	Ik weet niet of dit links in de tekst zijn. Kan ik die klicken?	1	4
	Ik heb de directe link naar inleiding van de cursus niet gezien, het zou beter zijn als die beter markeert is	1	11
	Ik dacht dat de navigatielijst beneden alleen er is daarmee ik weet in welk onderdeel ik nu ben	1	11
	Mijn fingeren zijn te groot voor de links	1	6
Text			
	Er is te veel tekst	6	1, 6, 7, 8, 10, 11
Structure			
	Ik vind de levensstijlveranderingen niet	5	2, 6, 7, 9, 10

	Eigenlijk zou onder elk hoofdstuk tips voor het omgaan met paniekklachten te verwachten zijn. Misschien is het handig om de tips op de home screen te plaatsen.	4	1, 4, 10, 11
	Ik vind de positieve ondersteuning niet	4	1, 3, 7, 8
	Het is voor mij niet verstandig waarom mijn geen paniek boven staat en cursus in de midden als ik eigenlijk met de cursus zou beginnen	3	5, 6, 8
	Ik kan terugvalpreventie niet vinden	1	2
	Ik heb de ervaringen van anderen niet gezien	1	4
	Ik weet niet waar ik het hoofdstuk over gedachten kan vinden	1	7
Errors			
	Test jezelf werkt niet	4	2, 5, 7, 10
	Ik vind het lastig om de duur via aan te klikken aan te geven	3	9, 11, 12
	Als ik scrol trek ik de navigatie lijst mee	1	8
	Video’s werken niet	2	6, 10
Else			
	Volgens mij kan ik de tijd niet aangeven bij het registreren van de paniekaanval, alleen maar het datum	1	8
Saving			
	Waar is de OK button om de positieve ondersteuning op te slaan?	1	1
	Waar is de button om de paniekaanval op te slaan?	1	8

Content

+	Comment	Amount	Respondent
Examples			
	Ik kies het voorbeeld van Henk omdat ik met hem misschien kan identificeren	1	1
	Ik vind goed dat er voorbeelden zijn waarom het beter is om zelfbewust te zijn	1	5
Summaries			
	De samenvattingen zijn goed	2	1, 9
Information			
	Ik vind alles goed uitgelegd	4	8, 9, 10, 11
	Ik heb de tekst van terugvalpreventie gelezen, die vond ik duidelijk	1	1
	(Gedachten) Dat vind ik goed omdat hier probeert word dat je rustiger word en niet zo snel een paniekaanval krijgt. Ik denk dat kan de mensen echt helpen omdat ze kans niet zo groot is om een paniekaanval te krijgen	1	7
	Ik vind de positieve ondersteuning opdracht goed uitgelegd	1	10
	Ik vind persoonlijke gedachte goed beschreven. Ik weet wat ik moet opgeven	1	11
	Ik vind de inhoud van de tips goed	1	12
	Ik vind de tekst van ‘paniekaanval registreren’ duidelijk	1	12
Extra information			
	Er is een goede mogelijkheid om meer informatie te verkrijgen via de video’s	1	2

Content

+/-

Introduction			
	Is de inleiding gelijk de handleiding?	2	9, 10
Summaries			

	De samenvattingen zijn eigenlijk genoeg	1	10

Content

-

Unclear			
	Uitdagende gedachten vind ik niet duidelijk	1	1
	Motivatie en effect zijn niet duidelijk, daar zou ik eerst even kijken om te weten wat dit inhoud	1	1
	Ik snap niet helemaal wat ik onder rustgevende gedachten moet opgeven	1	11
	Wat is een bemoedigende gedachte?	1	6
	Wat is met positieve veranderingen bedoeld?	1	10
Unnecessary			
	Vele dingen zijn eigenlijk logisch en hebben geen verklaring nodig	1	10

Service +

	Comment	Amount	Respondent
Oefeningen			
	Ik zou zelf kijken welke video’s goed zijn en de opdrachten dan 2 keer per dag doen	1	1
Hoofdstukken			
	Ik denk dat als je de hoofdstukken hebt gelezen, dat je beter met angst kan omgaan omdat je zelf ideeën verzint hoe je ermee kan omgaan	1	10
Algemeen			
	De teksten geven te denken als je die leest.	1	10
	Ik denk als je echt veel met de app bezig bent, dan ben je beter voorbereid als een aanval komt	1	10
	De inleiding komt met mijn verwachtingen over de app overeen	1	11
Ervaringen			
	De ervaringen van anderen zijn goed omdat je er kunt zien dat er nog meer mensen met deze klachten zijn	1	10

Service +/-

Functies			
	Voorbeelden van ontspanningsoefeningen worden getoond. Video’s werken waarschijnlijk niet op mijn toestel, maar er zijn ook links naar Youtube	1	1
	Ik kan nu mijn motivatie opgeven, dat vind ik goed. Want dan kan ik zien wat mijn motivatie is. Maar ik denk niet dat ik dit nog eens terug zal zien. Ik weet wat mijn motivatie is. Dit is misschien overbodig	1	8

Service -

Algemeen			
	Ik twijfel dat mijn zelfbewustzijn van het lezen beter zou worden	1	5

Appendix 6 (Posttest)

Sytem

+		Amount	Respondent
Structure			
	Goed opbouw	8	1, 2, 4, 5, 7, 8, 9, 12
	Opbouw van Hoofdstukken	1	6
	Twee hoofdcategorien	1	7
	Standartiseert	8	1, 2, 3, 4, 7, 9, 10, 12
	Opdrachten apart van cursus	1	4
Navigation			
	Navigatie	1	1
	Homebutton	2	4, 7
	Navigatielijst	2	5, 6
	Terugbutton	1	9
	Makkelijke bediening	1	4
	Direct naar volgende hoofdstuk	3	1, 5, 7,
	Plaatsing van buttons goed	4	3, 5, 7, 12
	Menu	1	1
Summaries			
	Samenvattingen zijn handig	1	8
Videos			
	Videos en voorbeelden komen met hoofdstukken overeen	1	3
Lay out			
	Kleuren mooi	1	9
	Algemeen goed	2	10, 12
	Goed dat er geen overbodige effekten zijn	2	2, 3
Extra information			
	Goed dat er een extra onderpunt voor is	1	3

System

+/-

Navigation			
	Meestal homebutton gebruikt	4	1, 7, 10, 12
	Meestal navigatielijst gebruikt	3	3, 5, 10
Lay out			
	Zaai maar goed	2	6, 7

System

-

Structure			
	Samenhang tussen mijn geen paniek en cursus onduidelijk	2	4, 6
	Opdrachten via cursus en via mijn geen paniek tegelijk toegankelijk	1	4
	Cursus komt niet met mijn geen paniek overeen	3	3, 6, 12
	Twee overzichten zijn te veel. Mijn geen paniek is genoeg	1	10
	Moeillijk om iets te vinden vanwege de diepte van sommige links	4	1, 2, 6, 7
	Mijn geen paniek en cursus zouden onderscheiden in kleur	1	1
	Hoofdstukken niet overzichtelijk	1	7
	Tips op een meer central plek	4	1, 2, 6, 12
	Ervaringen van anderen punt niet gezien	3	6, 7, 9
	App vaker gebruikt om een hoofdstuk klaar te krijgen	1	7
	Volgorde van home	1	9
Navigation			
	Probleem met scrollen	4	4, 5, 8, 12
	Leesbarheid van links	2	1, 8
	Home is overbodig	1	6
	via de navigatie lijst kom je niet aan de punt terug aan die je was, maar naar de overzicht	1	9
	Home of navigatielijst is overbodig	1	8
	Homebutton minder gebruikt	1	5
	Terugbutton minder gebruikt	2	5, 7
	Kopjes niet duidelijk	1	1

	naam van het hoofdstuk in de header zou handig zijn	1	1
	Links in teksten te klein	2	6, 9
	Knop voor noodgeval	1	3
	Homebutton groter of waaranders	2	8, 10
Text			
	Samenvatting langer dan tekst	1	6
	Te vele inleidingen	1	2
	Te veel tekst	5	1, 2, 6, 10, 12
	Daarstelling van de teksten niet optimaal	1	1
Exercises			
	Opslaan onduidelijk	1	2
	Duur van paniekaanval	1	9
	Het is onduidelijk wanneer opdrachten als afgerond markeert worden	1	9
	Opgaven lijken op elkaar	1	7
	Rustgevend en bemoedigend gedachten lijken op elkaar	3	3, 6, 10
Videos			
	Videos werken niet	1	10
Technische fouten			
	Technische fouten	1	4
Test jezelf			
	Test jezelf werkt niet	1	7
	De grafiek is niet duidelijk	3	3, 5, 6
	De teksten van de vragen passen soms niet in het veld	1	8
	Test jezelf word niet groen markeert	1	3
	Agenda overzicht over paniekaanvallenzou handig zijn	1	3
Anders			
	Te vele mogelijke adressen onder extra informaties	2	2, 4
Lay Out			
	Kleuren slecht	4	3, 4, 5, 11
	Staartscherm is niet mooi	1	8
	Professionelere layout	1	4

Content +		Amount	Respondent
Credibility			
	Geloofwaardig	1	1
	Overtuigend	5	1, 4, 7, 10, 12
	Videos zijn betrouwbaar	1	3
	Bronnen zijn overtuigend	3	5, 7, 8
Introductions			
	Introducties goed	3	2, 4, 7
Chapters			
	Onderdeelen sluiten goed op elkaar aan	1	1
	Informaties goed	9	1, 2, 4, 5, 6, 7, 8, 9, 10
	Op de punt	4	1, 6, 8, 12
	Behulpzaam	2	2, 4
Else			
	Tips voor het omgaan	1	8
	Achtergrond informaties goed	3	1, 3, 5
	Informaties op goede manieren aangeboden	2	3, 9
	Tips zijn goed	8	1, 2, 3, 4, 5, 8, 9, 10
Summaries			
	Samenvattingen goed	1	3
	Samenvattingen duidelijk	1	4
Simplicity			
	geen probleem	9	2, 3, 5, 6, 7, 8, 9, 10, 12
	Duidelijk en begrijpelijk geschreven	5	1, 2, 6, 9, 10

Content

+/-

Information			
	informaties zijn ook in het internet beschikbaar	1	5

Content -

Simplicity			
	Woorden vanwege taalvaardigheden niet begrepen	1	10
Introductions			
	Plan van aanpak moeilijk te begrijpen	1	3
	Goede overzicht maar geen idee waar ik de oefening zou doen	1	3
	Moeilijkheids nieveau moeilijk te bepalen	1	9
	Wat heb ik ervan geleerd moeilijk te beantwoorden	2	3, 10
Amount			
	Informaties kunnen soms ook uitgebreider zijn	1	3
	tekst of samenvatting is genoeg	1	7
	Teksten zijn te omvangrijk	1	1

Service +

		Amount	Respondent
General			
	Een hoofdstuk per sessie is goed	5	1, 2, 4, 5, 9,
	Zonder begeleider mogelijk	1	1
	Goede idee	6	1, 2, 3, 5, 6, 8
	Interaktief	2	4, 12
	Mobiel	3	1, 8, 12
	Zelfstandig en aktief plan maken	5	1, 2, 3, 6, 10,
	Eigen data kunnen opgeven	2	6, 9
	Mobiel	1	10
	niet alleen theorie	1	3
	Functies goed	3	1, 5, 8
	Informaties op verschillende manieren aangeboden goed	2	5, 8
Videos			

	Videos goed	4	2, 3, 7, 12
Exercises			
	Opdrachten en oefeningen zijn nuttig	9	1, 2, 3, 4, 6, 7, 8, 9, 10
	Registratie heel zinvol	5	3, 4, 7, 9, 10
	Stressbronnen nuttig	6	1, 2, 5, 6, 7, 12
	Ontspanning vind ik goed	1	7
	Rustgevende gedachte zijn zinvol	3	2, 7, 12
	Bemoedigende gedachte vind ik goed	3	4, 6, 7,
	gedachtekaartjes zijn leuk	2	4, 5
	Beloning goed	5	1, 2, 3, 9, 12
	Angstthermometer zinvol	4	7, 9, 10, 12
	eigen terugvalpreventie plan bedenken is goed	3	2, 3, 9
	positieve ondersteuning goed	4	3, 9, 10, 12
Test jezelf			
	Ontwikkeling kunnen zien is leuk	1	1
	Test jezelf goed	4	3, 4, 6, 10
Content			
	Cursus informaties	3	4, 5, 6
Summaries			
	Samenvattingen goed	4	1, 6, 9, 12
Else			
	Extra informaties goed	2	3, 4
	Voorbeelden	1	12
	adressen en webpaginas handig	3	5, 8, 9
	ervaringen van anderen zijn nuttig	7	1, 3, 5, 6, 8, 9,12
Future			
	Kontakt zou ik gaan gebruiken	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12
	Forum goed om ervaringen te kunnen delen	10	2, 3, 4, 5, 6,

			7, 8, 9, 10, 12
	In een forum zou ik lezen en schrijven	5	4, 7, 8, 9, 10
	Leuke idee op opnamen te kunnen maken	4	1, 3, 10, 12

Service +/-

Exercises			
	Registratie niet van toepassing	3	4, 10, 12
	Stressbronnen neutraal	1	3
	Levensstijl neutraal	1	9
	Ontspanning niet van toepassing	2	4, 5
	oefeningen niet van toepassing	2	4, 12
	Terugvalpreventie niet van toepassing	3	4, 6, 10
	Makkelijker gezeggt dan gedaan om levensstijl te veranderen	1	12
Forum			
	alleen lezen	3	3, 5, 6

Service -

General			
	Mis een overzicht over opgegeven data	2	6, 10
	Functie ter herinnering zou handig zijn	2	3, 9
	Noodgeval functie zal handig zijn	1	1
	App geen vervanger voor menselijk kontakt	1	8
	Opdrachten	1	5
	Offlineversie zou handig zijn	2	1, 2
	Cursus niet gebruikt	2	3, 10
Videos			
	Videos niet nodig	3	1, 7, 9
	Videos heb ik minder gebruikt	6	1, 3, 5, 6, 8, 9
Exercises			
	Opdrachten minder gebruikt	1	12

	motivatie is overbodig	2	4, 5
	Stressbronnen overbodig	1	4
	Levensstijl slecht	4	2, 6, 7, 12
	Twee keer per dag ontspannen te veel	1	1
	Gedachten is overbodig	1	1
	Angstthermometer slecht	4	1, 2, 3, 4
	Beloning overbodig	1	7
Future			
	Forum kritisch vanwege foute informaties	2	1, 2
	Opnames kritisch vanwegen misbruik van persoonlijk data	2	2, 9
	opnames zou ik niet gebruiken	7	2, 4, 5, 6, 7, 8, 9
Else			
	handleidingen niet gebruikt	2	1, 3
	Ervaringen vond ik overbodig	1	4
	Samenvattingen overbodig	1	7
	Extra informatie was niet interessant	2	4, 10