

**The view of clinical psychology students on compassion and technology: a focus group study on  
blended care in mental health care**

Max Meijerink

Faculty of behavioural, management and social sciences, University of Twente

Bachelor thesis

Supervisors:

First supervisor: Charlotte van Lotringen, M.Sc

Second supervisor: Dr. Matthijs Noordzij

8-7-2022

## Abstract

**Objective:** The exploration of compassion in the context of technology in mental health is relevant, since compassion is a useful construct which could be applied across domains of interest. Compassion is used in education, the justice system and more traditional beliefs and has shown to have numerous positive benefits in healthcare and general life. For example, buffering against stress in general life. Currently, there is an absence of research involving clinical psychology students. Therefore, analyzing the attitudes of clinical psychology students regarding hypothetical situations is a novel way to explore the role of compassion and technology in mental health care. These hypothetical situations are related to the role of technology in mental health and the role of compassion related to technology in mental health. The aim of the present study was to derive attitudes from clinical psychology students on the role of compassion and technology in mental health. This population can give a fresh perspective, since they have limited clinical experience, but are also the future generation of professionals in the field of mental health. The research questions explored are research question 1: What are the expectations of clinical psychology students on the role of technology in mental healthcare? And research question 2: What are the attitudes of clinical psychology students regarding the role of compassion in technology? **Method:** The study was conducted on clinical psychology students in two separate focus groups ( $n=2$  and  $n=2$ ). A bottom-up approach was used for the technology related themes, whereas a top-down approach was used to describe the themes related to compassion. **Results:** Via thematic analysis five themes were constructed related to compassion and technology: technology in mental health, recognizing suffering, empathy, tolerating uncomfortable feelings and motivation to alleviate suffering. **Conclusion:** Overall, clinical psychology students have comparable notions of the examples, roles and integration of technology in the field of mental health, to that of professionals in the field of mental health. Clinical psychology students indicated that two of the elements of compassion, which are tolerating uncomfortable feelings and motivation to alleviate suffering, should not depend on technology. The role of compassion in technology, in particular recognizing suffering and empathy, is more ambiguous from the perspective of clinical psychology students compared to professionals in the field of mental health. This research contributes to the integration of compassion related technology for society, since it explores future generations of professionals, in the context of online-and web-based interventions and blended care.

**Keywords:** compassion, technology, mental health, online-or web-based therapeutic interventions, blended care

## **The view of clinical psychology students on compassion and technology: a focus group study on blended care in mental health care**

Compassion is considered generally to be an important construct across several disciplines, beliefs and society at large. For example, in healthcare, but compassion also has a wider role in education, the justice system and more traditional beliefs (Strauss et al., 2016). Sharp et al. (2015) also emphasize compassion to be vital within healthcare. Furthermore, compassion has numerous positive effects. Fotaki (2016) states there is evidence that clinicians who behave compassionately aid in faster recovery of patients' diseases, and conversely clinicians who feel treated compassionately by their organisation show to be more robust, creative and open. Patients and their families also consider compassion to be the most essential need, since the delivery of compassionate care positively affects perceptions of care and quality of life, as illuminated by patient reports (Sinclair et al., 2016). Moreover treating yourself and others compassionately can improve overall well-being and mental health, and compassion arguably buffers reactivity to stress in general life (Strauss et al., 2016). Hence, compassion is a useful construct which could be applied across domains of interest. In this light, compassion can be used to explore different topics. For example, compassion can be used to explore technology, in particular e-mental health and even further into blended care. E-mental health can succinctly be described as the use of technology as a mediator in mental health (Feijt, et al., 2018). BC can be defined as a mix of face-to-face (f2f) sessions and eMHIs (Dijksman et al., 2017; Feijt et al., 2020; Titzler et al., 2018).

### **E-mental health**

E-mental health has shown an increase in popularity. A plethora of reasons can be given for this increase. One of the reasons is given by Phillips et al. (2022), emphasizing the role of the previous/current COVID-19 situation. Due to lockdown and most people not having access to mental health facilities, most interventions had to proceed online. This led to new interest in the topic of e-mental health, i.e. online-or web-based therapeutic interventions (eMHIs). These eMHIs are usually short-term, self-help based and adopt most of the time a form of cognitive behavioural therapy (CBT) as the preferred therapeutic method for mild to moderate mental health conditions, although exceptions do exist (e.g. severe cases or longer treatment methods) (Phillips et al., 2022). Hence, eMHIs can be a plausible alternative to traditional therapeutic interventions.

### **Issues regarding online-or web-based therapeutic interventions**

There are currently problems with the use of eMHIs. Despite the evidence for eMHIs and e-mental health in general, adoption rates are low. Initially, uptakes among therapists and clients are high for most eMHIs, although later in most programmes dropout rates steadily increase (Dijksman et al., 2017; Feijt et al., 2020). On the one hand, therapists' reasoning for dropouts remains elusive, on the other hand patients prefer and emphasize the need of personal contact in the therapeutic process

(Dijksman et al., 2017; Phillips et al., 2020). In addition, there are barriers for adoption of eMHIs. The barriers are lack of knowledge of eMHIs, the need of psychologists to be expert in eMHIs and contextual factors, e.g. lack of time (Feijt et al., 2020). That is why perhaps eMHIs alone are not always sufficient for adequate treatment (Titzler et al., 2018). These problems with eMHIs led to proposals for ‘blended care’ (BC).

### **Blended care**

Blended care has multiple advantages over eMHIs. The first advantage is time savings for therapists: BC saves time by integrating psycho-educational content within both f2f and online sessions. For example, this psycho-educational content can be available therapy materials and pre-gathered information (Titzler et al., 2018). Second, the psycho-educational content can facilitate the therapeutic process between the therapist and patients by having content to refer back to in-between f2f and online sessions, in essence giving the patient the ability to reflect on the sessions and additionally the ability for the therapist to structure these sessions, since the therapist can refer back to the psycho-educational content (Mol et al., 2019; Titzler et al., 2018; van de Vaart, 2014). Third, the aspect of time savings can make treatment more accessible for patients, since therapists can treat more people (Mol et al., 2019). Fourth, it can be beneficial for patients who cannot adhere to pure eMHIs, therefore facilitating the adherence of patients during the treatment (Titzler et al., 2018). In addition, patients prefer BC treatment over eMHIs alone as a treatment, since it has lower risks and disadvantages (Phillips et al., 2022). Finally, BC over eMHIs arguably enhances the effectiveness of psychotherapy, although the results on psychotherapy remain inconclusive (Titzler et al., 2018).

One point of contention regarding BC is, that even if BC is preferred over eMHIs, BC still has its own problems. For example, adherence to an online programme can be troublesome, although this is not unique to BC and is ascribed to eMHIs as well. This is where support from professionals is beneficial (van de Vaart et al., 2014). Another example is that BC is not unanimously defined in the literature with definitions varying, therefore BC is defined in this thesis as a mix of f2f sessions and eMHIs (Dijksman et al., 2017; Wentzel et al., 2018). Furthermore, studies on BC remain scarce, especially regarding perceived drivers and barriers to the adoption of BC (Feijt et al., 2018; van de Vaart, 2014). Taken together, these findings show that BC is preferred over standalone eMHIs, although more research on blended care is needed. Titzler et al. (2018) argues that currently BC has a limited conceptual basis. Therefore, compassion could form the conceptual basis to integrate technology into mental health.

### **Clinical psychology students, compassion and technology**

Research elucidated in previous paragraphs mainly derived attitudes on technology in mental health from current professionals in the field. Especially, attitudes regarding eMHIs and BC. This leaves a novel subject area open, which is that of clinical psychology students. On the one hand, clinical psychology students have fresh clinical experience, which leads to possibilities for being more

open to innovative treatments and technologies. On the other hand, clinical psychology students are the future professionals in the field, which allows innovative ideas to develop over time. Therefore, attitudes derived from this population can give a unique perspective. In spite of this, there is currently an absence of research on the attitudes of clinical psychology students, in particular on technology and compassion. Additionally, compassion and its role in technology is relatively underexplored in general. A scoping review aimed at identifying existing digital technologies used by professionals and patients, on the topic of compassionate mental health care, revealed multiple areas of exploration (Kemp et al., 2020). Exploring these areas further seems promising, given the numerous positive benefits of compassion as described in the first paragraph. Due to the fact that there are currently multiple definitions of compassion with independent elements, the 5-element definition of Strauss et al. (2016) is chosen in the present study, since this definition encompasses all of the elements described in the literature. The definition is:

“1) Recognizing suffering; 2) Understanding the universality of suffering in human experience; 3) Feeling empathy for the person suffering and connecting with the distress (emotional resonance); 4) Tolerating uncomfortable feelings aroused in response to the suffering person (e.g. distress, anger, fear) so remaining open to and accepting of the person suffering; and 5) Motivation to act/acting to alleviate suffering“. (Strauss et al, 2016, p. 19)

Hence, the present study aimed at combining the topics of clinical psychology students, compassion and technology.

### **Research questions**

First of all, the aim of the present study was to derive the attitudes of clinical psychology students regarding the role of compassion on technology in MH. In particular, attitudes on compassion and its role with eMHIs and BC. Second, a bottom-up qualitative inductive approach was used for the technology related themes, whereas a top-down qualitative theoretical approach was used in the present study by exploring hypothetical situations in a focus group for the compassion related themes. Lastly, the technology related themes in the results of the focus group are structured based on the concepts of eMHIs and BC, as described in the latter paragraphs. The compassion related themes are based on the Strauss et al. (2016) 5-element definition of compassion.

The research questions are 1: What are the expectations of clinical psychology students on the role of technology in mental healthcare? Research question 2: What are the attitudes of clinical psychology students regarding the role of compassion in technology?

## **Methods**

### **Participants**

The study was conducted in 2022 on a sample in two separate focus groups ( $n=2$  and  $n=2$ ). The clinical psychology students were master students, current bachelor students or graduates of the

University of Twente 'Positive Clinical Psychology and Technology' programme. The inclusion criterium is being a bachelor/master student or graduate of the psychology of the University of Twente 'Positive Clinical Psychology and Technology' track. Demographics were acquired through questionnaires, which were: age, gender, nationality, educational background, clinical experience and current occupation. The demographics of each participant can be found in table 1 in Appendix B. Ethical consent was given by the committee of behavioural, management and social sciences (BMS) of the University of Twente.

### **Focus group**

A focus group was used to stimulate discussion among clinical psychology students to derive attitudes on the topic of technological use and compassion. In particular, the first types of questions were related to research question 1, which revolved around the expectations of technology use in mental health care, e.g. "What are in your opinion some advantages and/or disadvantages of technology incorporation in current practices within mental health?" The second part of the focus group was related to research question two, which referred to the role of compassion in technology use in the domain of mental health care, e.g. "Does technology in any way alter your ability/motivation to act in a way to help a client to relieve their suffering?" See the appendix for the whole focus group scheme. The goal of the focus groups was to explore multiple topics of two different researchers with overlapping topics, therefore the focus group schemes had questions included beyond the scope of the current thesis. The duration of the two focus groups (1 h. and 45 min.) and focus group 2 (43 min.). The setting was at the University of Twente, in the 'Ravelijn' building.

### **Procedure**

Participants were invited by e-mail to join a focus group. During the focus group participants were orally informed, with the support of a PowerPoint presentation, about the topics, aims, and procedures for the focus group. This means informed consent was established before the start of focus group discussion. Additionally, participants were asked to give informed consent for being recorded specifically, as the entire focus group was audio recorded for later analysis of the focus group.

The session was started with the introduction of each participant and the researchers. Additionally, the aim of the focus group, break and planning was specified. Afterwards, the questions such as described under 'focus group' were presented to the participants. See the script in Appendix A for the whole focus group procedure with questions. The focus group was semi-structurally executed. Participants got an opportunity for a break in the middle of the session to drink a beverage. Furthermore, the option to discontinue was provided, without any consequences.

### **Analysis**

Creating of the coding scheme was done in Atlas.ti 22 by transferring the transcription of the audiotaped focus group session. The overall method applied was 'Thematic analysis' described in Braun and Clarke (2006). At first, 10% of the data was coded by two researchers to establish a

preliminary coding scheme. ‘Percent agreement’ was used to establish intercoder reliability, the calculated estimate was 87,5%. The coding method was reading the text line by line and to also start coding per relevant segment immediately. This technique ‘focused reading’, described in Westers and Peters (2004), was used to code the first part of the focus group. This method is based on a framework of the concepts and background initially presented in the introduction or as Braun and Clarke (2006) describe two approaches, ‘bottom-up’, ‘inductive’, and ‘top-down’ or ‘theory-driven’ (Braun & Clarke, 2006). The bottom-up approach was used to describe the technology related themes, while a top-down approach was used to describe the compassion themes. For the description of compassion related themes, the Strauss et al. (2016) definition was used. Except for element 2 ‘universality of suffering’, since the focus was on the individual attitudes of the clinical psychology students. When the quote in a theme included ‘...’ it indicated that the original coded quote was longer, but for the sake of succinctness only the most important part of the full quote is described.

The coding process is defined in three steps. The first part of the coding process started with establishing initial codes. The coding was done systematically throughout the transcription (Braun & Clarke, 2006). This coding phase ended when the analysis was able to give a tentative preliminary answer to the research questions. In the second phase ‘constant comparison’ was used (Westers & Peters, 2004). This means codes would together become key concepts, if relevant. The memos described in the previous phase would be integrated to form the key concepts (i.e. ‘chunking’ of codes). This process was iterative and proceeded until central concepts or themes were formed (Braun & Clarke, 2006). The analysis is illustrated by excerpts from the focus group. In the final phase, patterns were examined by the selection of the topics and excerpts, and showing the relationship among the topics/excerpts, i.e. defining and naming themes (Braun & Clarke, 2006). Some of the themes are clustered. The reason for clustering sub-themes was the overall similarity of the subthemes. Some themes were not clustered, due to being too distinct. All of the subthemes described a specific aspect of the broader overall theme.

## **Results**

Based on the results of the two focus groups 5 themes are described (and 4 are structured based on Strauss et al. (2016) 5-element definition of compassion). The first theme answered research question 1: What are the expectations of clinical psychology students on the role of technology in mental healthcare? Theme two until five answered research question 2: What are the attitudes of clinical psychology students regarding the role of compassion in technology? An overview of the (sub)themes and the number of quotes in the (sub)themes can be found in table 2 in Appendix C.

### **Research question 1: What are the expectations of clinical psychology students on the role of technology in mental healthcare?**

#### ***Technology in mental health***

**Subtheme 1: Examples of technologies in mental health.** The participants described a wide variety of possible technologies in mental health. The described technologies were: Virtual Reality (VR), online platform(s) (e.g. ‘Mind district’), apps (e.g. text-based apps), eye-tracking, robots, artificial intelligence (AI), smart-watches, smart-weight scales connected to mobile phone and self-monitoring devices. Some of the examples were illustrated by speaker 1: *“And yeah, I think there are already useful technologies out there, for example, VR and eye-tracking, and some self-monitoring devices.”*

**Subtheme 2, 3, 4: Advantages, disadvantages and limitations of technology in mental health.** There are different **advantages** depicted by the participants. One example of this was increased accessibility: *“I think if I think about that with technology and being like having online therapy, you can reach so many more people that you otherwise would not reach ...”* (p3). Another advantage mentioned was efficiency: *“... if you use diaries in between the therapy sessions and in the therapy sessions, you can do more than you would normally do.”* (p2). Although not specifically mentioned, it seems plausible that this statement was specifically related to digitalized therapy. Participant 4 stated that by using technology, for example an app, time savings could be achieved. Participant 3 described in a similar fashion how technology can be used to save time by doing an initial assessment to already connect it to a tentative diagnosis or therapy form. An overarching advantage stated by the participants was that technology can be used supplementary, for example with intake interviews, instead of using technology as a substitution for current practices in mental health. For certain diagnoses, such as social anxiety, technology could make talking easier, via for example an online chat (participant 2). Another option is VR: *“Just basically, if a client is afraid of scenario in a situation you could recreate that scenario in that VR and for that person to experience it, and also you could practice so many times.”* (p4) Finally, participant 1 believed that the advantages outweigh the disadvantages.

The first **disadvantage** described by participant 3 was that technology is still in its infancy and that most technologies still need more time to be properly integrated into the domain of MH. Additionally, it was stated that the therapies and methods that currently are applied are unproven. Participant 4 mentioned lack of training, security and ethical problems: *“Like the main disadvantage is that a lot of times they are technical issues that people can't solve on both ends of therapy and the client end. And then therapists are not necessarily aware of the security and all the ethics behind it...”* (p3) Another disadvantage stated by participant 3 is that technology should not replace the whole therapeutic process. Additionally, there were some obstacles described. One obstacle is that not everyone can pay for technological devices, for example in the case of a wearable. Participant 4 adds: *“I do like wearables, but I think that from our current technological standpoint, using phones is easier because it can do similar things like besides the heart rate or whatever...”* Another argument made by participant 4 was that currently technology could decrease the overall treatment time, this would lead



as a result to more tasks for the therapist. Participant 2 described the possible aspect of losing the therapeutic relationship when intervening with technological devices, since there would be less personal contact or the client would be less understood. The therapeutic relationship could also be impaired by VR: “... *They would be re-experiencing the trauma when they're not ready...*” (p2). By contrast, it is also plausible that re-exposure alleviates the trauma by having a therapeutic effect. Participant 1 states on VR: “... *If you want to help, for example, people who suffered from trauma or anything and you try to kind of put them in the event they are traumatized from and try to help them. But maybe it even makes it more complicated if you kind of re-exposed them to the original event.*” A final disadvantage described is that technology arguably cannot fully grasp the importance of the therapeutic relationship: “*Again, like what kind of if you are like replacing whole parts of the therapy process, probably that's going to negatively affect the relationship with your client because like there will be less personal contact or they might feel like not understood*”.(p3)

The subtheme **limitations** described more positively framed notions, compared to disadvantages: “*Then I think you as a practitioner should of course be informed about how it works and what the limitations are and you should, before using it, also talk with the client about it and also tell them those are the limitations...*” (p2) A limitation described by participant 3, of the wearable in subtheme 1, is that most people stop using the wearable within the first 6 months. Another limitation stipulated by participant 2 is that therapy is a cooperative process and proposed that technology only ‘works’, if the patients think it works and stated that technology only works if the patients engage with it effortfully. Next, a limitation is that humans are fundamentally required for the use of technology, since participant 2 believed that, for example AI, could never replace humans fully. Therefore, a human would always need to be involved when using AI, for example to create a diagnosis. Another point made by participant 1 is that technology is easily outdated, due to the fast and dynamic change in technologies. Consequently, she argued that a therapist might start learning a form of technology, but once it is learned, there could already be a new technology. That is why participant 1 argued for regulation on technologies (what ‘regulation’ entails was not elaborated on). Individuality is stated as a limitation as well, namely the differences in age and level of skill. The example given was that technology for an 80 year old person might be complicated. This aspect of complexity was not further explained. The concluding message of this subtheme was that technology is inherently limited and that the limitations depend specifically on the technology and application.

**Subthemes 5, 6, 7: application of technology, willingness to use technology and individual aspects of technology in mental health.** A variety of **applications of technology** were given. To start, the ‘how to use’ question was important for the participants, in the sense of the application of technology and requirements, e.g. training. Additionally, different examples were given to illustrate the application of these technologies. For example, different forms of apps, such as nutritional and time-based apps were described. The other example was that an app could be used to trigger behavioural activation by reminders in individuals with depression: “...*Maybe technology*

*could be used in activating their behaviours, such as like a reminder of, you know, just stand-up for a minute or something like that.” (p2)*

**Willingness to use technology** is related to how certain the participant is on whether they would integrate technology currently, if they were practicing in a mental health facility. Participant 3 described that it depends on the scientific validity of the technology whether to implement it, specifically it needs to be safe and user friendly: “... *Like if something has proven to work and it's like very, very developed and like they run everything and like it's very safe and user friendly, then I would use it, but I wouldn't necessarily start using stuff that is brought up or you've read about like, Oh, that might be useful...*” Participant 4 held more conservative views in this regard, due to traditional therapy being sufficient enough as it is. As a result, participant 4 saw no need to implement technology *per se* and would not use it at the moment. Participant 1 claimed that technology is in many facets still underdeveloped: “...*Right now it's just in the development phase that it's going to help us to recognize and to know a person better... Currently, we are supposedly at the stage where technology is unregulated and most people tend to also be uneducated.*” However, participant 1 did not go into depth on ‘why’ technology is underdeveloped. In conclusion, this subtheme captures the hesitance among participants to use technology.

**Individual aspects of technology** are somewhat self-explanatory, since this subtheme mostly illuminates the individual aspects of technological use in mental health. Participant 3 claimed that the use of technology depends on the situation. Similarly, participant 2 stated that a bottom-up approach would be better suitable for technological use, than top-down. In this way, technology is not forced onto the person, but technology starts from the need of the individual/patient. Another individual aspect is depicted by participant 2 who emphasized the importance of how the patient perceives the technology, again the influence of age is noted as well. As illustrated by this excerpt: “*I think that also depends on the clients how he or she perceives the technology. Maybe some people find it obtrusive... I could also think of elderly people for whom those technologies might be completely alien and they just can't use it or can't identify in any part of it.*” (p2)

**Subtheme 8: Technology and future.** This subtheme was constructed based on the attitudes toward future use of technology, especially the mental health domain. First of all, participant 2 was ambivalent about the future of technology: *I'm thinking about how still I think there's I don't know if there's a possibility to make up for the lack in compassion in technology. I mean there are a lot of experiments right now with making technology more human-like and also like little robots, with faces, you know, and trying to appeal to the empathy. But this is still not the same as human conversation and it's still difficult to bring the compassion component into the technology.*” This was aligned with the more ambivalent view of technology. For example, the question of how thoroughly should we apply technology in the future? This is summarized in this quote: “*I ask myself: why do we need all that? Like for many things, I see benefits, but I ask myself: where are we going as humanity? What is the ultimate goal? Maybe there isn't a goal, maybe it's just let's see how far we can go and what we*

*can like do.*” (p2) Ultimately, there was agreement that research in the future of technology should focus on the previously described disadvantages and limitations.

## **Research question (2) What are the attitudes of clinical psychology students regarding the role of compassion in technology?**

### ***Recognizing suffering***

**The subthemes 1 and 2 are: recognizing suffering and understanding suffering.**

**Recognizing suffering** was based on the quotes which captured technology and recognizing suffering. First, technology altering the communication between therapist and client was stated multiple times. Especially, that you supposedly lose verbal cues when using online therapy, instead of traditional therapy and being more detached during a conversation. However, participant 4 stated that in the end the results should be equivocal to traditional therapy. Second, participant 1 argued that it depends on which technology you use whether it influences the ability to understand suffering and that it depends on the patients’ request for help. Patients normally try to explain their (emotional) pain when coming into therapy, therefore the opinion is that the technological medium should not matter that much. The ability of the therapist to ask questions is what matters the most. Finally, the importance of the therapeutic relationship is depicted, which should be the basis of recognizing suffering, not the technological device: *“I think you can really also use it in the positive way of recognizing more suffering when you first have, like a good client-therapist relationship and then really give them device to track them...”*

Aligned to issues in recognizing suffering is **understanding suffering**. The addition to this subtheme is the statement that technology will not alter understanding suffering. The recognition of suffering is not *per se* dependent on technology, but on the experience of the psychologist: *“I don't necessarily think that technology will change that ... But if you're like a properly trained psychologist, I feel like in the end, even if you use technology, you should be able to still understand your client. Otherwise something went wrong.”* In sum, the argument is made that technology should not alter understanding suffering.

### ***Empathy***

**Subthemes 1 and 2 are: Conveying empathy, issues with and limitations of empathy.** The subthemes describe conveying, issues and limitations encompassing empathy. The first subtheme **conveying empathy**, elucidated the role of communication. It highlighted, the earlier example in the other subtheme, diaries. By using a diary made by the client, the therapist could refer back to the diary when the client did something well in the therapeutic process. Consequently, making it easier for the patient to experience empathy. A case was also made for the use of ‘small-talk’ via technology with depressive people: *“...Then I think it would be nice for the person just, for example, in the morning, just send them a text or say good morning. How are you feeling? ...”*

The subtheme **issues and limitations of empathy** portrayed the issues revolved around conversing empathy through technology. Participant 3 claimed that it is not necessarily the case that empathy gets enhanced through technology. However, she did claim that, for example a diary, can increase empathic response through other means. This could be a system in which the therapist can make comments or another system where there is an advantage for the client of having more contact than the initial once or twice a week with the therapist. Participant 2 differentiates between cognitive and emotional dimensions of empathy: *“How can you understand suffering? This is the first thing. I don't understand suffering. Who understands suffering? I think suffering you can't understand. It's something you can make your mind up of and you can think about it. But do you feel it? Do you feel the other person? Do you feel what they are feeling? ...”* Questioned by participant 1 was: ‘how much empathy is too much?’ It was argued that too much empathy could perhaps overwhelm the client, contrarily it was also stated that reducing the amount of empathy could still show that the therapist understands the client. A final concern given by participant 3 was that empathy might get reduced through online communication, therefore needing emphasis on verbalizing and ‘over the top’ empathic responses. Once, limitations in the context of empathy were broadly mentioned: *“Also, when you ask the client about whether he or she even wants to use the technology, you can talk about how it works, what the limitations are also concerning empathy. ...”* (p2) Altogether, the subtheme converged on the gradient of empathy. How much empathy? What is too much empathy? And how to convey empathy?

### ***Tolerating uncomfortable feelings***

Tolerating uncomfortable feelings depicted the attitudes of clinical psychology students toward understanding uncomfortable feelings through a technology . In terms of **tolerating uncomfortable feelings** technology is considered as an escape to tolerating uncomfortable feelings. For example stated in this quote: *“... I think about imagine there is like the client and you bring something up which triggers you and you can't deal with it. So you say: okay, let's move on and try the VR thing and work on that, right? So you kind of use the technology to go out of the situation and yeah, it's kind of something you can use instead of talking. It's something you can use as an escape to not talk about things that triggered you in that moment, maybe.”* (p1) Participant 1 stated that traditional therapy would constantly remind the therapist to understand suffering (plausibly by nature of sitting in the room and being there experiencing the emotions of the client). On the other hand, online therapy would decrease the understanding of suffering by half as argued by participant 1, therefore the understanding of the suffering of the client could be impaired by online therapy (although no examples were given). Illustrated by this quote:

*I mean the distance between the original all the way face-to-face would be like constantly reminding you that person is suffering versus half-time it would be on technology and you don't need*

to have, let's say, cut half of the time you need to, you could be not thinking about too much about that person suffering...” Overall, there seemed to be ambivalence regarding the role of technology and tolerating uncomfortable feelings.

### ***Motivation to alleviate suffering***

In relation to the previously described recognizing suffering theme, motivation to alleviate suffering is a different theme, due to the specific motivational facet. The first important description is that of the context of suffering. During the working day of the therapist, motivation to alleviate suffering is different to that outside of work. Additionally, the urgency of the situation is also emphasized. Participant 3 depicted a situation in which context and urgency were stressed in the context of crisis care “*Like if it's not urgent, you can wait. If it is urgent, then probably should respond as quickly as possible.*” Participant 4 did also mention crisis care: “*No, I mean, I think like for the main the main technology that we use in therapy, it's not it shouldn't be used for a crisis situation, but of course, it can always come up. ...*” At last, participants stated that the motivation to alleviate suffering would not change by technology, since it should be intrinsic and technology could positively impact the therapist’s mood.

## **Discussion**

The aim of the present study was to derive attitudes of clinical psychology students regarding the role of compassion on technology in mental health (MH). Previous research on technology, in the context of online-or web-based therapeutic interventions (eMHIs) and blended care (BC), focused mainly on professionals in the field of mental health. Additionally, the role of compassion and technology has been under explored. Therefore, the present study is the first study to explore the attitudes of clinical psychology students on the role of compassion in technology in the MH domain. These attitudes were derived from hypothetical situations described by clinical psychology students. The unique contribution of this study is that it focuses on attitudes of clinical psychology students and hypothetical future situations of technology in MH.

### **Summary of the main findings**

The qualitative results of research question 1: “What are the expectations of clinical psychology students on the role of technology in mental healthcare?” revealed that clinical psychology students believe that currently a wide range of technologies can be used. Next, accessibility, efficiency, time savings and that the advantages of technology outweighed the disadvantages. Technology as supplementary in treatment was an overarching finding. The disadvantages described were: underdevelopment; claiming that the effectiveness of technology is currently unproven; lack of training; ethics/security; finances; losing the therapeutic relationship; re-traumatizing. Overall, the notion was that technology can make the client feel less understood or negatively affect the therapeutic relationship. Regarding limitations of technology, technology is

described as inherently limited and the limitations depend specifically on the type of technology and application. Individual aspects of technology are dependent on the patient. Participants believe that technology in the future should focus on the previously described disadvantages and limitations.

The qualitative results of research question 2: “What are the attitudes of clinical psychology students regarding the role of compassion in technology?” indicated that recognizing suffering should not depend on technology and technology should not alter understanding suffering. Conveying empathy showed mainly the role of communication, for example by diaries or small-talk. Issues and limitations related to empathy was the questioning of the connection between empathy and technology. Does it get reduced or enhanced through technology? How much empathy conveyed through technology is enough? This remained ambiguous according to participants. At last, motivation to alleviate suffering would not change by technology, since it should be intrinsic and technology could positively impact the therapist’s mood.

### **Attitudes on mental health technology**

The results indicate that a platitude of different *examples of technologies* can be used (e.g. VR, AI, wearables, etc.). This is comparable to previous research that most therapists prefer a wide range of technologies to use (Kemp et al., 2020; Phillips et al., 2022). Other research indicates that professionals in MH overall have a neutral or likely to use attitude toward a wide range of possibilities of online communication (e.g. exercises vs diaries) (Dijksman et al., 2017). The present study’s finding on examples deviates in the attitude toward chat/video-based communication, for the reason that it shows more positive attitudes towards this form of communication, whereas in Dijksman et al. (2017) professionals were less likely to use chat/video-based communication. Overall, general attitudes towards a wide range of technologies are concurrent, except for chat/video-based communication.

The findings on the *advantages* of technology in MH in the present study overlap neatly with previous research. First of all, participants in this research argued that technology should be seen as supplementary to traditional f2f treatment. This overlaps with BC in the literature (Dijksman et al., 2017; Titzler et al., 2018). Similarly, Feijt et al. (2018) state that professionals in their research preferred using technology in combination with f2f treatment. The aspect of efficiency in the present study’s results can be connected to participants in Feijt et al. (2018). The participants described that they had a higher commitment to the therapeutic process at home via technology. The given reason for this was that they were more stimulated at home and would motivate themselves, consequently accelerating the overall process. Likewise, in another study therapists also preferred increased contact moments, due to enhanced adherence to the therapeutic process (Mol et al., 2019).

The notion of time savings in the current results is also confirmed by previous research. Titzler et al. (2018) found that all therapists tend to experience time savings, by having online therapy material and pre-gathered information. Research into the preferences of German psychotherapists in

BC found comparable experiences of time savings (Phillips et al., 2022). Kenter et al. (2015) found similar time savings to the aforementioned studies, even so argued that this was unpredicted. On the contrary, therapists in a blended cognitive behavioural therapy (bCBT) study had alternative experiences and claimed that time savings might be achieved in the future, but at this point bCBT is not that different from CBT in terms of time savings (Mol et al., 2019). The role of time savings by any form of blended care or eMHIs remains debatable. Another view in the present study was that the advantages of using technology outweigh the disadvantages. The positive attitudes toward eMHIs and especially BC is something which has been repeatedly shown in the literature (Dijksman et al., 2017; Phillips et al. 2022; Titzler et al. 2018; Van de Vaart, 2014). Taken together, these findings indicate that the attitudes of clinical psychology students are uniform with professionals on this particular topic.

Similarly, The findings on *disadvantages* depicted in the present study of clinical psychology students align with the attitudes of professionals in MH. To start, participants had the fear that re-exposure to trauma via VR could re-traumatize a patient. This is a commonly named disadvantage or barrier by therapists who argue that BC should not be used when the disease or burden of the disease is too high, in this case indicating the re-traumatizing of patients (Titzler et al., 2018). Conversely, VR has also been positively described in previous research, for example for treating people with schizophrenia, who learn cognitive skills through simulated hallucinations (Ozelie et al., 2018). Hence, the finding that the role of VR is seen as disadvantageous is challenged by more positive accounts of VR.

One disadvantage repeatedly depicted in the current study is the lack of training among therapists/psychologists. This has been found before, for instance around eMHIs and bCBT (Feijt et al., 2018). This can perhaps be further connected to one participant stating that the current incorporation of technology in MH is unproven or has not yet been properly integrated. This notion that technology is immature was found by Titzler et al. (2018) as well, therapists in their study stated that technology was immature giving examples of slow internet connection and other hindering factors. Further adding to this notion of immaturity, Mol et al. (2019) mentioned that for some people the advantage of time savings is unclear, since adding technology to treatment seems to create an increased workload in bCBT, due to the therapist having to give online feedback. Another point was related to wearables, which were given as an example of useful technology in the current study, alternatively an insurance/government company or mental health facility could provide this wearable (Rijksoverheid, 2022). Taken together the findings on training among therapists/psychologists, results indicate that training, workload and costs are relevant problems for the current integration of technology in MH.

The next purported disadvantage in the present study is the deterioration of the therapeutic alliance. This finding overlaps with the main risk of BC described by German psychotherapists who state the main risk is the deterioration of the therapeutic alliance, notwithstanding that German

psychotherapists hold more conservative views respecting the role of technology (Phillips et al., 2022). A notion described in the subtheme limitation of technology in the present study, was that cooperation between the client and therapist is an important factor in the effectiveness of the therapeutic process. Moreover, issues with low uptake of eMHIs, internet CBT and bCBT of both therapists and clients, have been described multiple times before (Feijt et al. 2018; Kenter et al., 2015; Mol et al., 2019). In the present study, it was claimed that drop-outs are usually before 6 months, which supports this notion. In contrast, drop-out rates in the results of one of those studies differed not substantially in the iCBT vs bCBT vs CBT groups, from the perspective of the psychologist (Mol, et al., 2019). In a similar manner to advantages, the attitudes of prospective therapists on possible disadvantages and limitations regarding technology in MH, seem to map onto the attitudes of professionals in mental health care.

Regarding the *application of technology* examples of nutritional apps and other technologies were given. The nutrition app could assess nutritional values and trace these values to use these values in relation towards goals. This is similar to a nutritional app already existing, which is named ‘My Fitness Pal’ (myfitnesspal, 2022). Another finding in the current study related to *individual aspects of technology* is that therapists should use a bottom-up approach starting from the need of the client. Some therapists have indicated the need for personalization to adapt to the client’s needs before (Mol et al., 2019). Furthermore, this notion of the personal need of the client was contextualized by giving the example of a client who cannot travel physically to the therapist’s office and therefore can benefit from online therapy (Feijt et al., 2018). A reluctance to bring compassion into technology was described by one participant in the present study related to *willingness to use technology*. A scoping review on compassionate mental health care found that perceptions, in this context reluctance, do influence compassionate MH care through technology, which is considered a barrier/disadvantage (Kemp et al., 2020). Research into the *future implementation of technology* indicates that a high amount of professionals in BC would use technology in the future and hold positive attitudes (Dijksman et al., 2017; Phillips et al., 2022). This is contrary to the present thesis’ findings which reveal that overall attitudes are more conservative and ambivalent concerning the role of general technology in the future.

### **Attitudes related to compassion and technology in mental health**

The theme *recognizing suffering* described one element of the 5-element definition of compassion by Strauss et al. (2016). The finding in the present study of worry that verbal cues get diminished through technology, is also found in van de Vaart et al. (2014) and Kemp et al. (2020). However, opinions among therapists are divided on this topic and opinions change through the therapy process when following BC. To illustrate, at first therapists when using bCBT believed that it was more challenging to build therapeutic relationships, later in the process some attitudes changed, while others had initial positive attitudes and argued that bCBT was superior to normal CBT (Mol et



al., 2019). Therefore, opinions on the finding of losing verbal cues through technology are divided in the literature.

The notion in the current study that *understanding suffering* should come from within the person and then mediated by technology is new to a certain degree, in spite of compassion having been previously depicted as mainly an interpersonal process in the context of compassionate care. The difference between present study results and another study by Sinclair et al. (2016) is that their study does not include the aspect of technology (Sinclair et al., 2016). Finally, to my knowledge, the argument by participants in the current study that the chosen technological medium should not affect understanding suffering is a new addition.

The finding in the current study that *empathy* is enhanced through repetitive communication is confirmed by previous research. Feijt et al. (2018) state that participants in that study experienced a stronger therapeutic relationship and more intimacy by increasing the frequency of contact between them (the psychologist) and the client. Moreover, the issue of ‘How much is too much empathy?’ has not been explored yet. This facet of ‘too much’ seems to be aligned with the views of Bloom (2017) who argues ‘against empathy’ and claims there can be ‘too much’ empathy. For example, empathizing with one person who is conveying a sad story over the suffering of a larger group. However, Bloom (2017) also argues that compassion is distinct from empathy. A final argument made in the current study is that empathy gets reduced through mediated technology, therefore needing an ‘over the top’ verbalization of cues. This worry is usually more apparent in psychodynamic therapists, than in behavioural therapists (Phillips et al., 2022). Thus, empathy is a questionable and still ambiguous construct in the context of compassion.

There are two factors related to *tolerating uncomfortable feelings*, which are disengagement via technology and ambivalence regarding the role of technology. In the context of tolerating uncomfortable feelings, ambivalence could be dismissed, if the therapist does most of the difficult parts of therapy face-to-face and uses technology for the rest of the treatment (van de Vaart et al., 2014). Hence, the ambivalence regarding tolerating uncomfortable feelings in the context of technology, can potentially be worked around.

The two most relevant factors contributing to the *motivation to alleviate suffering* are urgency and context. Urgency and context in the present study are related to the application of technology in a crisis situation which might be difficult, if it is for example outside of scheduled time. The aspect of using technology in a crisis situation is not advocated for by one participant in the current study, which seems to be supported by a barrier described in a previous study, which states that in a crisis situation technology might not be appropriate (Kemp et al., 2020). However, there is not much research on this topic to my knowledge and also the in the current study described motivation to alleviate suffering as intrinsic property and independent of technology has not been previously depicted. In short, more research on the role of technology in motivation to alleviate suffering is needed.

## **Limitations**

The present study has several limitations. First of all, in the process of participant gathering, issues arose. This led to an initial estimated focus group of a sample of roughly 6 people to be two focus groups of 2 people, therefore weakening the methodological strength of a dynamic focus group discussion. Furthermore, as focus groups already have low generalizability, this further lowers the generalizability of the findings. The same concepts of compassion and technology (e.g. online- and web-based interventions, and blended care) do seem to be described among participants and also in relation to previous research, albeit this has not been objectively measured.

There are further limitations revolving around the choice of definition for BC, eMHIs and compassion. Most importantly, compassion is widely defined in the literature and there is only one all-encompassing proposed definition, which is the used definition in the present research by Strauss et al. (2016). However, this 5-element definition has only been tentatively confirmed, with arguably the element of 'recognizing suffering' excluded (Gu et al., 2017). Therefore, plausible alternative definitions of compassion remain to be explored. A language limitation is that both the researcher and the participants are non-native English speakers, arguably limiting the exploration of details, depth and complexity of the focus group data. The final limitation is regarding the intercoder reliability, which was manually calculated, due to issues with the use of Atlas.ti (2022). The use of percent agreement for intercoder reliability is usually rejected, since it does not account for agreement occurring by chance (O'connor & Joffe, 2020).

## **Future research**

First of all, future research should focus on further researching the clinical psychology student population in the context of compassion and technology, since clinical psychology students have a fresh clinical experience, but are also the future generation of professionals in mental health. This gives clinical psychology openness to innovative ideas on treatment, training and technology, clinical psychology students could give important input on current practices concerning the topics of treatment, training and use of technology regarding professionals in mental health care. Currently, there is no research on this topic, therefore other qualitative and quantitative methods should be explored to add to the cumulative knowledge on this topic. Adopting both quantitative and qualitative research could lead to better understand what clinical psychology students believe contributes to innovation related to treatment, training and technology. Additionally, strengthening the research foundation on this topic by making it more reliable and valid. Furthermore, future research should focus on different levels of educational experience among clinical psychology students, since currently only attitudes of professionals in the context of online- and web-based interventions, and blended care have been derived. For example, different level of educational experience could be master students who have just recently started an internship, in this way attitudes on compassion and

technology in mental health could be compared between groups. Last, future research should focus on the more ambiguous elements of compassion when related to technology to establish the generalizability of these findings, described by the present study's clinical psychology students, which are tolerating uncomfortable feelings and empathy.

## **Conclusion**

The present study elucidated attitudes in clinical psychology students on the role of compassion related to technology in mental health (MH). Clinical psychology students have comparable notions of the examples, roles and integration of technology in the field of MH, to that of professionals in the field of MH. Technology is seen as supplementary to traditional therapy and dependent on the context of the person or patient. Clinical psychology students believe that future technology should have taken all these factors into account (e.g. advantages/disadvantages, limitations, etc.) The present study from a qualitative focus group view also indicated that the elements of compassion "tolerating uncomfortable feelings" and "motivation to alleviate suffering" should not depend on technology but should be inherent qualities of the mental health care professional. Motivation to alleviate suffering is not researched, therefore this element needs more research. Research on motivation to alleviate suffering could contribute to better understanding of what is needed in current therapy practice or education regarding motivation to alleviate suffering. As a result, this could further lead to better education or therapy practice concerning compassion and technology. The other two elements of compassion investigated here, which are recognizing suffering and empathy, remain ambiguous. Ambiguous in this context means that it is unclear what the roles are of the elements recognizing suffering and empathy in relation to technology. To further explore the role of compassion related to technology in mental health it is essential to know what elements of compassion are more difficult to integrate in technology and why. The unique perspective of clinical psychology students can contribute to the cumulative research on the topic of compassion related to technology in mental health in the future, since this population is the next generation of professionals in the field of mental health care. This is also the first time, to my knowledge, that the present study's topic has been explored. Ultimately, this research contributes to the integration of compassion related to technology for society, since it explores future generations of professionals, in the context of online-and web-based interventions and blended care. As a result, this research could lead, by better understanding of online-and web-based interventions and blended care, to better education on these topics. For example, integrating the present study's results into tutor groups similar to focus groups in current education to stimulate further discussion on the topic of compassion and technology. In essence, extending the focus group discussion to practical education to further explore the present studies findings. This research could also aid in better training programmes for (starting) therapists/professionals concerning online-and web-based interventions and blended care, and this

research could at last lead to better technological design, especially regarding online-and web-based interventions and blended care, via understanding compassion and its role in technology.

## References

- Bierbooms, J. J. P. A., van Haaren, M., de Kort, Y., Feijt, M., & Bongers, I. (2020). *JMIR Formative Research—Integration of Online Treatment Into the “New Normal” in Mental Health Care in Post–COVID-19 Times: Exploratory Qualitative Study*. <https://doi.org/10.2196/21344>
- Bloom, P. (2017). Empathy and Its Discontents. *Trends in cognitive sciences*, 21(1), 24-31. <https://doi.org/10.1016/j.tics.2016.11.004>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Dijksman, I., Dinant, G.-J., & Spigt, M. (2017). The Perception and Needs of Psychologists Toward Blended Care. *Telemedicine and E-Health*, 20(23), 983-995. <https://doi.org/10.1089/tmj.2017.0031>
- Feijt, M., De Kort, Y., Bongers, I., & Ijsselsteijn, W. (2018). Perceived Drivers and Barriers to the Adoption of eMental Health by Psychologists: The Construction of the Levels of Adoption of eMental Health Model. *Journal of Medical Internet Research*, 20(4), e153. <https://doi.org/10.2196/jmir.9485>
- Folker, A. P., Mathiasen, K., Lauridsen, S. M., Stenderup, E., Dozeman, E., & Folker, M. P. (2018). Implementing internet-delivered cognitive behavior therapy for common mental health disorders: A comparative case study of implementation challenges perceived by therapists and managers in five European internet services. *Internet Interventions*, 11, 60–70. <https://doi.org/10.1016/j.invent.2018.02.001>
- Fotaki, M. (2015). Why and How Is Compassion Necessary to Provide Good Quality Healthcare? *International Journal of Health Policy and Management (IJHPM)*, 4, 1–3. <https://doi.org/10.15171/ijhpm.2015.66>
- MyFitnessPal. (n.d.). *MyFitnessPal.com*. Retrieved 7 July 2022, from [https://www.myfitnesspal.com/nl/welcome/learn\\_more](https://www.myfitnesspal.com/nl/welcome/learn_more)
- Gu, J., Cavanagh, K., Baer, R., & Strauss, C. (2017). An empirical examination of the factor structure of compassion. *PLOS ONE*, 12(2), e0172471. <https://doi.org/10.1371/journal.pone.0172471>
- Kemp, J., Zhang, T., Inglis, F., Wiljer, D., Sockalingam, S., Crawford, A., Lo, B., Charow, R., Munnery, M., Takhar, S. S., & Strudwick, G. (2020). Delivery of Compassionate Mental Health Care in a Digital Technology–Driven Age: Scoping Review. *Journal of Medical Internet Research*, 22(3), e16263. <https://doi.org/10.2196/16263>
- Kenter, R. M. F., van de Ven, P. M., Cuijpers, P., Koole, G., Niamat, S., Gerrits, R. S., Willems, M., & van Straten, A. (2015). Costs and effects of Internet cognitive behavioral treatment blended with face-to-face treatment: Results from a naturalistic study. *Internet Interventions*, 2(1), 77–83. <https://doi.org/10.1016/j.invent.2015.01.001>

- Kumar Tiwari, Pandey, R., Kumar Rai, P., Pandey, R., Verma, Y., & Parihar, P. (2020). Self-compassion as an intrapersonal resource of perceived positive mental health outcomes: A thematic analysis. *Mental health, religion & culture*, 23(7), 550–569.  
<https://www.tandfonline.com/doi/full/10.1080/13674676.2020.1774524>
- Mol, M., van Genugten, C., Dozeman, E., van Schaik, D. J. F., Draisma, S., Riper, H., & Smit, J. H. (2020). Why Uptake of Blended Internet-Based Interventions for Depression Is Challenging: A Qualitative Study on Therapists' Perspectives. *Journal of Clinical Medicine*, 9(1), 91.  
<https://doi.org/10.3390/jcm9010091>
- O'Connor, C., & Joffe, H. (2020). Intercoder Reliability in Qualitative Research: Debates and Practical Guidelines. *International Journal of Qualitative Methods*, 19, 1609406919899220.  
<https://doi.org/10.1177/1609406919899220>
- Ozelie, R., Panfil, P., Swiderski, N., & Walz, E. (2018). Hearing Voices Simulation: Impact on Occupational Therapy Students. *The Open Journal of Occupational Therapy*, 6(4).  
<https://doi.org/10.15453/2168-6408.1452>
- Phillips, E. A., Himmler, S., & Schreyögg, J. (2022). Preferences of psychotherapists for blended care in Germany: A discrete choice experiment. *BMC Psychiatry*, 22, 112.  
<https://doi.org/10.1186/s12888-022-03765-x>
- Rijksoverheid. (2022). *Wie vergoedt mijn hulp bij psychische problemen?*  
<https://www.rijksoverheid.nl/onderwerpen/geestelijke-gezondheidszorg/vraag-en-antwoord/vergoeding-ggz>
- Sharp, S., Mcallister, M., & Broadbent, M. (2015). The vital blend of clinical competence and compassion: How patients experience person-centred care. *Contemporary Nurse*, 52, 1–13.  
<https://doi.org/10.1080/10376178.2015.1020981>
- Sinclair, S., Norris, J. M., McConnell, S. J., Chochinov, H. M., Hack, T. F., Hagen, N. A., McClement, S., & Bouchal, S. R. (2016). Compassion: A scoping review of the healthcare literature. *BMC Palliative Care*, 15(1), 6. <https://doi.org/10.1186/s12904-016-0080-0>
- Strauss, C., Lever Taylor, B., Gu, J., Kuyken, W., Baer, R., Jones, F., & Cavanagh, K. (2016). What is compassion and how can we measure it? A review of definitions and measures. *Clinical Psychology Review*, 47, 15–27. <https://doi.org/10.1016/j.cpr.2016.05.004>
- Titzler, I., Saruhanjan, K., Berking, M., Riper, H., & Ebert, D. D. (2018). Barriers and facilitators for the implementation of blended psychotherapy for depression: A qualitative pilot study of therapists' perspective. *Internet Interventions*, 12, 150–164.  
<https://doi.org/10.1016/j.invent.2018.01.002>
- van der Vaart, R., Witting, M., Riper, H., Bohlmeijer, E. T., & van Gemert-Pijnen, L. J. (2014). Blending online therapy into regular face-to-face therapy for depression: Content, ratio and preconditions according to patients and therapists using a Delphi study. *BMC Psychiatry*, 14, 355. <https://doi.org/10.1186/s12888-014-0355-z>

- Wentzel, J., van der Vaart, R., Bohlmeijer, E. T., & van Gemert-Pijnen, J. E. W. C. (2016). Mixing Online and Face-to-Face Therapy: How to Benefit From Blended Care in Mental Health Care. *JMIR Mental Health*, 3(1), e9. <https://doi.org/10.2196/mental.4534>
- Wester, F., & Peters, V. (2004). Kwalitatieve analyse: Uitgangspunten en procedures. *Psychopraxis*.
- What's new in ATLAS.ti 22*. (n.d.). The Qualitative Data Analysis & Research Software. Retrieved 4 July 2022, from <https://atlasti.com/what-s-new-in-atlas-ti-22>

## Appendix

### Appendix A

#### Focus Group Script [no experience participants]

---

Introduction (15min)

*\*hand out pen and papers to fill out demographics: name, age, nationality, gender, occupation, etc., ask them to fill it out before the end of the meeting\**

Thank you all for coming today! Let us introduce ourselves one more time, we are Max and Simona, currently 3rd-year psychology students working on our bachelor thesis about using compassionate technology in mental healthcare. To learn more about that we reached out to you hoping to learn from you and inquire about your opinions on the topic. Now, you know our names, however, we don't know you that well yet, therefore, if you don't mind can we do a quick round of introductions before we move on to elaborating more on how we hope today's focus group goes? *\*insert introductions\**

So, now that introductions have been concluded, we can move on to discussing the outline for today. This meeting will last about an hour and a half during which we will also have a small break and have some snacks and recharge before we dive back into the topic. We would also like to audio-record our session so we can transcribe the information and use it for our thesis. It's important that you know that your names and personal information will be anonymized and the audio recording will be stored safely for a year after the completion of our project, and of course, you can end your participation in today's focus group at any point, for any reason, with no consequences. *\*ask verbal consent to record, note that they do understand they can stop at any time\**

Okay, so we've decided to have two focal points for today's discussion, namely using technology in mental healthcare, and the perceived levels of compassion when using technology in mental healthcare. We will be asking you a lot of open questions, as well as showing you some images, please share your thoughts and opinions or any personal experience on the matter if you have any. Feel free to ask questions if anything doesn't make sense to you as well! We just want to have a nice open discussion on the topic of technology in mental healthcare, so there are no right or wrong answers! So, any questions so far? If not, let's jump right in.

#### **Part 1: Technology in Mental Healthcare (Perceived limitations/advantages of using technology)**

- a. What technologies do you know of that can be used in mental healthcare? **10min**
  - i. examples: biofeedback, online meetings, email, take-home online assignments, online diaries, other online tools, anything non-f2f) (*follow up*)



ii. Imagine yourself in the role of a professional, would you or would you not use technology in your treatments? Why?

*iii. If you have ever been in therapy were there instances where technology was utilized? What was your experience? OPTIONAL*

b. What are in your opinion some advantages and/or disadvantages of technology incorporation in current practice within mental health care? **10min**

*c. Do you believe there is more merit or harm in using technology in mental healthcare? OPTIONAL 5min max.*

*d. What tasks and roles can or cannot technology take over? OPTIONAL 5min max.*

### **Part 2: Compassion in Technology (How can we use technology more compassionately?)**

e. Based on your current knowledge, do you believe technology in mental healthcare lacks anything? (*probe on compassion, start a conversation about how to improve the integration of technology in mental healthcare*) **5min max.**

1. Imagine you are a professional again: what changes would you observe in your work environment and client relationship if you implemented technology into your treatment process?

2. Would the use of technology alter in any way how you recognize **suffering** in a client? e.g. in an online environment? **7min max.**

1. What is the difference between traditional face-to-face sessions and online sessions/sessions utilizing technology? (*probe on micro-expressions, body language, challenges of using technology, client relationship*)

*2. Do you have ideas on how we can use technology better/more compassionately to enable a better understanding of the client's suffering? OPTIONAL*

3. Would technology alter in any way your **understanding** of the client? **7min max.**

1. What are the challenges/advantages that you may experience when utilizing technology in treatment with regards to understanding that the client's suffering? / understanding that all humans can and will at some point experience suffering? / remaining partial to their suffering while accepting and understanding it? / putting yourself in their shoes and understanding their suffering?

*2. Do you have ideas on how we can use technology better/more compassionately to understand the clients better? OPTIONAL*

4. Would technology in any way alter your ability to be **empathetic** towards the client?

**7min max.**

1. *How do online sessions compare to face-to-face sessions?*

**OPTIONAL**

2. *Do you have ideas on how we can use technology to help create a stronger connection or better bond with a patient?* **OPTIONAL**

5. Would technology in any way alter your abilities to **tolerate uncomfortable feelings** while working with a client? **7min max.**

1. Can technology protect the therapist or client in any way? [e.g. necessary barrier between client and therapist]

2. *Do you have ideas on how technology can be used better to help the therapist deal with uncomfortable feelings more effectively/easily?*

**OPTIONAL**

6. Would technology in any way alter your **ability/motivation to act** in a way to help a client to relieve their suffering? **7min max.**

1. How can technology hinder you, or how could it benefit you when dealing with a crisis?

2. *Do you have ideas on how technology could assist you better in acting towards alleviating the suffering experienced by clients?*

**OPTIONAL**

*f. How can we make up for the aspects that technology is lacking?* **OPTIONAL 5min max.**

*g. After all the discussions we've had so far, do you hold your initial opinion on whether you would implement technology into your practice or not, or have you changed your mind? Would you make use of technology in treatment in the future? Why/Why not?* **5min max.**

*h. For those who still hold the opinion against the use of technology: Is there a way to change/utilize technology better what would make you reconsider using it in the future?* **5min max.**

### **Ending (10min max.)**

Well, it seems we're approaching the end of our discussion today! You've answered all the questions we had prepared and have created a great discussion that we can use for our thesis, which we are thankful for! There are a few minutes left, of course, if you have anything more to add on the topic that was not covered by our questions, please go ahead! *\*space for any additional input\**

Well, I guess this marks the end of this focus group, we greatly appreciate your time and effort and we hope you enjoyed this session! If you have any follow up questions regarding our research or anything else related to this meeting, please feel free to contact us via email! Once again, thank you so much for today and we hope you have a great afternoon!

---

## Appendix B

**Table 1**

<b>Demographics participants</b>				
<b>Number</b>	P1.	P2.	P3.	P4.
<b>Gender</b>	female	female	female	female
<b>Age</b>	20	32	22	22
<b>Educational background</b>	BSc Psy.at the UT	Master PCPT at the UT	BSc. Psy. at the UT	Master PCPT at the UT
<b>Nationality</b>	German	Chinese	Dutch	German
<b>Clinical experience</b>	None	Autism and adolescents with global developmental delay (years unspecified)	None	Mental health (years unspecified)

*Note.* BSc Psy. refers to Bachelor in Psychology, PCPT is the Master in Positive Clinical Psychology & Technology and UT is the University of Twente.

## Appendix C

**Table 2**

	<b>RQ 1</b>	<b>RQ 2</b>			
<b>Theme</b>	Technology in mental health (109)	recognizing suffering (16)	empathy (7)	tolerating uncomfortable feelings (14)	motivation to alleviate suffering (11)
<b>Subtheme</b>	S1: Examples of technologies in mental health. (13)	S1 and 2 are: recognizing suffering (9) and understanding suffering (7)	S1 and 2 are: Issues and limitations of empathy (7), and conveying empathy (2)	x	x

---

S2, 3, 4:

Advantages (20)

disadvantages

(19) and

limitations of

technology in

mental health

(19)

S5, 6, 7:

application of

technology (16),

willingness to

use technology

(7) and

individual

aspects of

technology in

mental health

(14)

S8: Technology

and future (4)

---

*Note.* In the columns the two research questions are indicated, whereas in the rows the related themes and subthemes are found. The numbers added in brackets (...) are the amount of times a quote is included in the theme.