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Redefining the relationship in digital care: A qualitative study of the Digital Therapeutic Alliance

Redéfinir la relation dans une prise en charge numérique : étude qualitative de l'alliance thérapeutique numérique

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ABSTRACT

Digital therapeutic programs are emerging almost daily, offering the potential to reduce healthcare access inequalities by providing more flexible and accessible care options. However, as with traditional healthcare, the issue of patient engagement is fundamental, and the latest research have reported that fewer than 30% of users complete these programs in their entirety. Hence, many authors emphasize the importance of studying the role of therapeutic alliances specifically adapted to digital care. The therapeutic alliance encompasses the collaborative aspects of the relationship between the therapist and the patient. In this context there is a need to reconceptualize the alliance within the context of digital healthcare as it can enhance engagement, adherence, and the effectiveness of such treatments. The objective of this qualitative study was to identify the components of the digital therapeutic alliance. A thematic analysis has identified three major themes that appear to constitute the digital therapeutic alliance among 44 users of an online program: trust in the program, perception of interactions, and feeling of consideration. These results prompted a discussion of the challenges of digital healthcare, including the terminology to use. The term "digital therapeutic adherence" is proposed, thereby opening up a field for research and clarification of this important concept distinct from traditional alliance.

Mots clés :
Intervention en ligne
Technologie numérique
Alliance thérapeutique
Alliance thérapeutique numérique
Programme numérique
Santé numérique
Thérapie en ligne

RÉSUMÉ

Des programmes thérapeutiques numériques voient presque quotidiennement le jour, ce qui pourrait réduire les inégalités d'accès au soin en offrant des prises en charge plus flexibles et plus accessibles. Toutefois, comme avec le soin traditionnel, la question de l'adhésion est fondamentale et les dernières recherches ont rapporté que moins de 30 % des utilisateurs participent aux programmes dans sa totalité. Ainsi, de nombreux auteurs insistent sur l'importance d'étudier le rôle de l'alliance thérapeutique spécifiquement adaptée aux soins numériques. L'alliance décrit les aspects collaboratifs de la relation entre le thérapeute et le patient. Dans ce contexte, il existe un besoin de reconceptualiser l'alliance dans le cadre des prises en charge numériques notamment car cela améliore l'engagement, l'adhésion et

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l'efficacité de ce type de traitements. L'objectif de cette étude qualitative est d'identifier les composantes de l'alliance thérapeutique numérique. Une analyse thématique a permis d'identifier trois grands thèmes qui semblent constituer l'alliance thérapeutique numérique chez 44 usagers d'un programme en ligne : la confiance dans le programme, la perception des interactions et le sentiment de considération. Ces résultats impliquent une réflexion autour des enjeux des soins numériques et notamment de la terminologie à utiliser. Le terme « adhésion thérapeutique numérique » est proposé ouvrant le champ de recherche et de précision de cet important concept distinct de l'alliance traditionnelle.

1. Introduction

Digital tools have the potential to revolutionize the field of healthcare [1,2]. For instance, with over 60% of the global population having internet access, and in countries like the United States and France, where 90% of adults use the internet and 75% own smartphones [3–5], digital programs and therapeutic applications are being developed almost daily. In 2017 alone, there were more than 300,000 "health" applications available on smartphone [6]. These programs have the potential to reduce disparities in healthcare access by offering less stigmatizing, judgment-free, flexible, and financially and geographically accessible forms of care [7,8].

However, ethical and efficacy concerns have emerged. These programs demonstrate comparable effectiveness to traditional treatments when grounded in rigorous theoretical models, but less than 15% adhere to such standards [8,9]. Furthermore, as with traditional care, the issue of adherence is crucial, with fewer than 30% of users completing the entire program [10,11]. Interestingly, there exists a significant gap between the demand for and the actual usage of digital healthcare. Despite high demand, less than 9% of students (a population most likely to embrace new technologies) prefer an app to a healthcare professional [12]. Consequently, many authors emphasize the importance of studying the role of the therapeutic alliance in digital care [7,12–14].

The therapeutic alliance refers to the collaborative aspects of the relationship between the therapist and the patient and is considered a fundamental factor in various therapeutic approaches [15]. Freud already highlighted the importance of the relationship, stating that "sympathetic understanding, affection, and friendship are the vehicles of psychoanalysis" (1913, cited in [15]). The term "therapeutic alliance" was first proposed by Zetzel in 1956. Greenson in 1965 distinguished the therapeutic alliance, which relates to the ability to create a connection, from the working alliance, representing the patient's capacity to align with the tasks of analysis [16,17]. Bordin described three components of the alliance: the agreement on treatment goals, the establishment of tasks, and the development of the relationship [18]. Different theoretical orientations may have different alliance profiles depending on their relational requirements [16,18]. Alford and Beck (1997, cited in [15]) spoke of empirical collaboration and explained that the therapeutic relationship is a necessary but not sufficient condition for treatment. Additionally, Cungi [15] described the therapeutic alliance in cognitive-behavioral therapy as a "collaborative relationship" that requires active patient participation in solving the issues raised in treatment. The author also added two necessary dimensions: the affective dimension, inspired by Carl Rogers' work on unconditional acceptance of the patient's reality, requiring an empathetic, authentic, and warm relationship; and the professional dimension, encompassing the therapist's status and skills [15]. Regardless of theoretical orientation, it has been shown that the quality of the alliance positively influences treatment outcomes and change [15,17,19].

Studies have already identify this connection in interventions using new technologies, such as teleconsultations [20] or text message therapies [21]. Regarding digital interventions without direct therapist interaction, many authors are beginning to explore what the alliance could be in these new technologies, particularly because it could impact engagement and effectiveness. Terms like "Digital Therapy Alliance" or "DTA" have emerged [13,14,22,23]. Digitization is changing the very definition of communication and interactions. For instance, responses in digital exchanges are not necessarily immediate, and interactions may lack verbal or non-verbal language [24]. The digital alliance appears to influence the outcomes of a digital intervention less directly than in traditional care; one hypothesis suggests that the digital alliance influences the results of care by influencing engagement and adherence [14,25]. Some authors add criteria to the digital alliance, such as the availability of the intervention and its interactivity [14,25]. Other authors seek to conceptualize engagement in digital interventions by considering the influence of the intervention itself and its content [26]. Furthermore, some authors discuss the attachment that users develop to their phones, despite their reluctance to discuss relationships, and explain that this connection could be understood using object-relations theory, akin to a relationship with a caregiver or the human behind the online intervention [14,27]. Finally, there seems to be a consensus around the need to reconceptualize the alliance in digital interventions, especially since the "relationship" component requires redefinition [13,28,29].

Surely, digital interventions cannot be "one size fits all", and the development of an alliance based on a model different from those in face-to-face interactions – not applicable in a digital context – appears to be fundamental. Indeed, some components of the digital alliance appear similar to the traditional alliance definition, such as agreement on treatment goals and the establishment of tasks [18], but other components seem different, new, or absent, such as a redefinition of the relationship and its significance, and the addition of new components specific to digital interventions [14,25,27]. There appears to be a genuine interest in defining and better specifying the components of the Digital Therapeutic Alliance, as this could better predict the effectiveness of an intervention and influence participants' engagement and adherence. Understanding the elements that constitute a good alliance would also enable the development of digital tools that take these elements into account.

2. Method

2.1. Participants

For this qualitative study, we recruited women participating in the digital intervention called "School of Endo" by Lyv, a digital program that provides non-personalized insights and advice for managing endometriosis symptoms based on cognitive-behavioral therapy (CBT). The program offers videos, texts, and exercises created by experts from various disciplines, as well as a discussion

Table 1
Characteristics of participants: age and history of psychotherapies.

Age		History of psychotherapies		
n	42		*n*	%
Mean	38.8	No, never	5	11.9
Median	41.0	No, but I'm thinking about it	5	16.7
Standard deviation	6.92	Yes, in the past	12	28.6
Variance	47.9	Yes, currently	9	21.4
Minimum	21	Yes, in the past and currently	9	21.4
Maximum	50			

forum and weekly video conferences. These contents are progressively introduced with the goal of participants integrating them into their daily lives. The program lasts for 3 months, and the contents are accessible for up to 3 months after the program's end (T0 + 6 months).

Inclusion criteria were being a woman with endometriosis and participating in the online program for symptom/disease management. Exclusion criteria were being a minor. Each participant who agreed to take part in the study had to provide their age and indicate whether they had "previously received psychotherapy from a psychologist or psychiatrist".

2.2. Data collection tool

Participants were contacted at the end of the program via email and the program's platform to be offered the opportunity to complete a brief online questionnaire regarding their relationship with the program. Participation was voluntary, and participants were provided with an information note explaining the time required for participation, the anonymity of the data, and the option to decline participation. No personally identifiable information was collected for this study.

2.2.1. Ethical considerations

This non-interventional study aimed at contributing to knowledge in the field of human and social sciences and is part of the "RNIPH" research program–not qualifying for a RIPH research involving human subjects. The protocol was approved in advance by the internal ethics committee and the DPO delegate of Lyv Healthcare.

2.2.2. Participant engagement

Women who agreed to participate were directed to an online questionnaire containing two open-ended questions about their relationship with the program, with a free-text space for written responses. These questions focused on the collaborative aspects of the relationship with the program, such as what contributed to the feeling of a "connection with the program" and "working together" during the program:

- "do you feel a connection with the program? What are the specific aspects that have concretely contributed or could have contributed to establishing this connection within the framework of the program?";
- "did you feel a sense of working "together" during the program? What factors came into play or could have contributed to the feeling of working "together" during the program?".

This questionnaire also collected the information presented in Table 1.

2.3. Data analysis

A thematic analysis was conducted on the qualitative data collected according to the guidelines found in literature for qualitative study in human sciences [30,31]. This method involves thematic identification as the central operation and allowed for the identification of similar concepts and categorization of participants' responses to identify the components of a digital alliance.

This method aims to "systematically identify, group, and, subsidiarily, discursively examine the themes addressed in a corpus" in order to transform a corpus into a specific number of themes representative of the analyzed content and relevant to the initial research question to create a thematic tree representation [31]. A theme can be defined as a pattern or a series of short expressions within the data set that captures what is being said by the participant and the essence of the content of the data. A theme is identified according to its meaning regarding the research question and researcher judgment is often required [30,31].

For data analysis, we reviewed participants' responses multiple times in order to become familiar with the data. Continuous thematic analysis was then performed, accompanied by concurrent thematic grouping and table construction until saturation and the creation of a thematic tree. The tools used for analysis were paper-based as well as a word processing software. Themes were initially noted in the margins and later transcribed onto cards. Continuous thematic analysis is considered the most valid thematic method and is recommended for a small corpus and individual work, as was the case in this study [31].

3. Results

3.1. Sample

$n = 46$ responses were obtained, but two questionnaires were not usable. Forty-four women participated in the study ($n = 44$). Forty-two women provided their age ($n = 42$, $\mu = 38.8$, $\sigma = 6.92$) and their history of psychotherapy (Table 1).

3.2. Results of thematic analysis

The results of the thematic analysis reveal three main themes that appear to constitute the digital therapeutic alliance. Overall, participants report a sense of connection and working together, citing the program itself. We will refer to this theme as "trust in the program". Another theme is the perceived type of interactions throughout the program, which we will call "perception of interactions". Lastly, participants mention the feeling of being considered throughout the program, we will term this third theme "feeling of consideration". Each of these theme is further composed of various sub-themes identified by participants and organized, grouped, and subdivided into a thematic tree representation (Fig. 1).

3.2.1. Trust in the program

One of the theme composing the alliance seems to be the perceived trust in the program, which, in turn, depends on trust in the support and trust in the content. Several participants discuss the suitability of the support ($n = 14$, "the documents we could go back to"; "audio sessions or exercises make you feel supported"; "live video sessions with professionals"; "didn't have time to read all the documents"; "lack of time"; "what I really missed was a mobile app because I only used my computer for the website, which is not convenient for exercises"; "the technical handling of the platform was complicated") and its reliability ($n = 4$, "thanks to the regular schedule"; "regularity"; "the following week, we had the continuation"). They also address the suitability of the content ($n = 6$, "explanatory formats"; "learning more about the disease in general"; "too

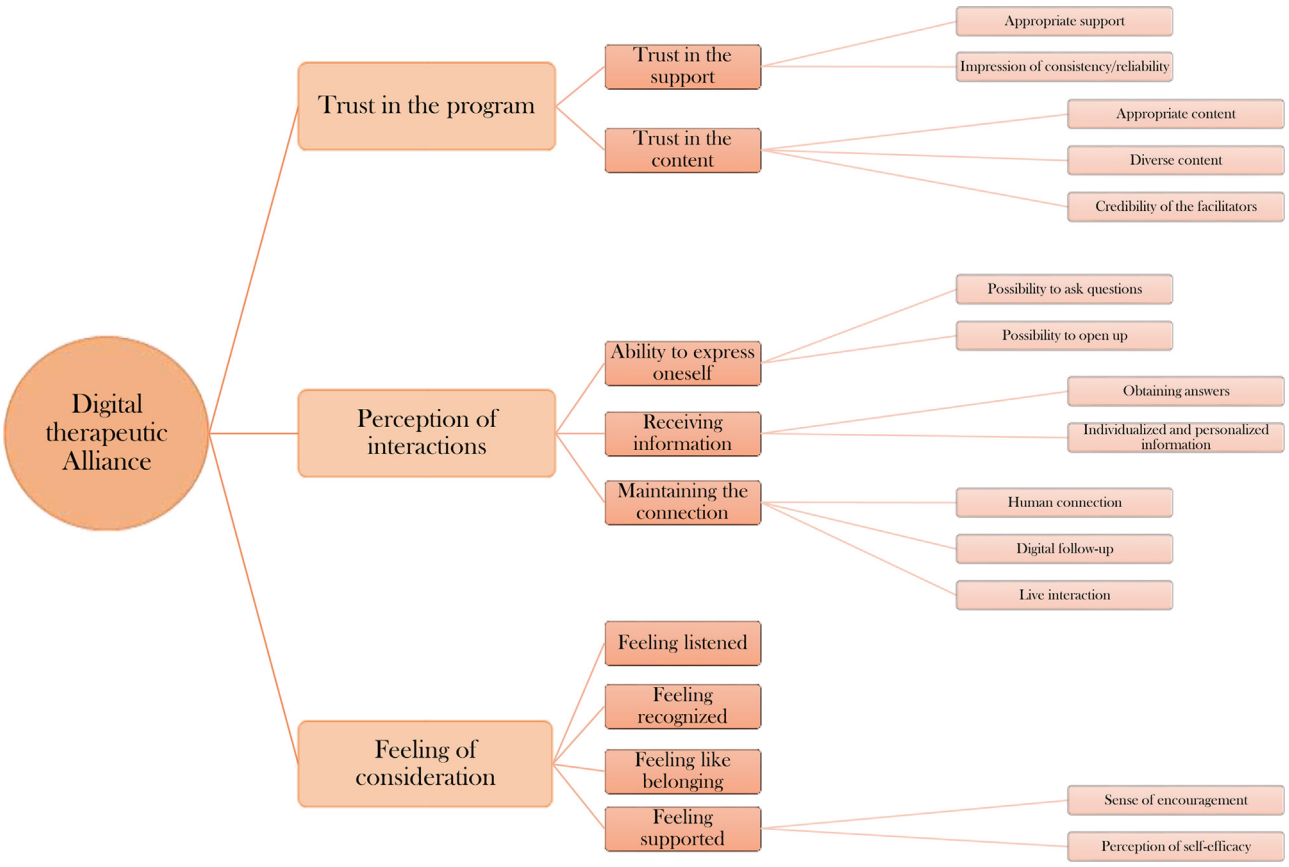

Fig. 1. Thematic tree representation of digital therapeutic alliance.

rich for me, information density"; "very dense content"; "downward content"), its diversity ($n = 2$, "thanks to the multidisciplinary approach"; "covers all areas affected by this disease"), and the credibility of the facilitators ($n = 5$, "professionals are highly qualified and respond in a caring manner"; "trust, understanding, and effectiveness").

3.2.2. *Perception of interactions*

The second theme that emerges from our analysis is the type of interaction present within the intervention. Participants discuss the importance of being able to express themselves by identifying whether they can ask questions ($n = 11$, "ability to ask questions to healthcare professionals"; "being able to ask questions to professionals"; "being able to ask questions before video conferences"; "more comfortable asking certain questions") and whether they can open up ($n = 3$, "speak freely and more easily"; "comments directly under the videos"; "filling in more of our information online could have given this feeling"). Several participants also identify how they receive information: obtaining answers ($n = 4$, "quick responses to messages"; "clear answers"; "systematic responses") and whether or not they perceive the information as individualized and personalized ($n = 17$, "feeling that they are really addressing me and my condition"; "exchanges are not individualized"; "lack of personal follow-up"; "no personalized and adapted advice for my situation"; "a large number of participants contributes to drowning out individuality"). Finally, participants discuss how the connection is maintained, with the presence or absence of a human connection ($n = 7$, "the team is present"; "interactions with the team"; "moderators"; "assigning a mentor could have improved the connection"), digital follow-up ($n = 21$, "emails and digital interaction were well maintained"; "email follow-up"; "reminder messages"; "forums"; "the screen creates distance"; "interacting behind a screen is not ideal"), and live interactions ($n = 25$, "live sessions"; "video conferences"; "videos or live sessions that created a more direct relationship"; "the feeling of having a direct connection with people"; "there is no live question-and-answer").

3.2.3. *Feeling of consideration*

Finally, the third theme that emerges from our analysis is the consideration perceived by participants. Some participants mention feeling listened to ($n = 5$, "we feel listened to"; "attentiveness"), others feeling recognized ($n = 7$, "feeling concerned"; "understood"; "considered by the program and the presenters"), and, in general, participants discuss the sense of belonging ($n = 27$, "feeling together"; "not alone"; "coming together to address this disease together, with others"; "feeling part of this group, we share the same suffering"; "group spirit"; "community"; "finding a sense of community, but it remained somewhat superficial"). Finally, support is also addressed, with participants mentioning whether they felt encouraged ($n = 4$, "feeling supported"; "I knew I had a place to return to when needed") and capable ($n = 10$, "putting it into practice with exercises and concrete data"; "being a driver of one's own care"; "advice given can be directly applied in daily life"; "encouragement to do the work myself"; "not being able to go further in concrete steps").

4. Discussion

This qualitative analysis has revealed three main themes constituting a therapeutic alliance in the digital realm, namely: trust in the program, perception of interactions, and feeling of consideration. Our study confirms specificities related to the digital therapeutic alliance and has uncovered new dimensions. Indeed, we still find elements linked to the relationship and goal-setting,

such as feeling understood or supported [15,18]. However, the new modes of communication appear to alter expectations regarding interaction. We also observe the influence of the intervention itself, which could align with the professional dimension introduced by Cungi in 2016 [14,15,24–27]. Thus, an alliance seems possible if the support and content are perceived as appropriate, reliable, and credible, if participants feel they can express themselves and receive individualized responses, if there is a digital form of follow-up with humans and live interactions, and if participants feel considered by the program through listening, recognition, support, and a sense of belonging to a group.

This initial exploration could be the beginning of future reflections aimed at better identifying the collaborative aspects of digital relationships. Eventually, this understanding should be incorporated into the creation of digital therapeutic programs and assessment of their impact on change and participant engagement. A development perspective will be to construct a questionnaire based on the dimensions identified in the thematic tree to specifically evaluate the digital therapeutic alliance.

4.1. Strengths and limitations

This study is the first, to our knowledge, to attempt to evaluate the components of the digital therapeutic alliance through qualitative exploration, without preconceptions. This approach confirms certain insights from the scientific literature, suggesting that this alliance is distinct, requiring a redefinition of the relationship in digital care. Another strength lies in the broad instructions given to participants, allowing for open and unbiased responses. Furthermore, no word or space limits were specified, giving participants the freedom to elaborate on their thoughts as they deemed relevant. Finally, the analysis involved constant back-and-forth between continuous thematization, thematic grouping, and the creation of the thematic tree, ensuring a degree of interpretative validity.

However, this study has limitations. Firstly, as with any qualitative study, the theoretical and experiential sensitivity of the analyst can introduce bias into the results and different analysts or research question could have resulted in a completely different thematic tree with the same data. Additionally, the data collection method does not allow for the same level of interaction, nuance, or depth as interviews would. Participants were offered the opportunity to engage live with the investigator during the questioning, but none chose to do so. A future study could explore the components of the digital therapeutic alliance through semi-structured interviews, for instance. It is also important to note that this program involves guided interactions, video conferencing, and forum discussions. As a result, group dynamics and live exchanges featured prominently in many responses. It would be interesting to replicate this analysis with a fully automated intervention to observe if an algorithm and the complete absence of human interaction and live exchanges modify other components such as the perception of personalized content and the ability to express oneself or feel heard. Finally, this analysis focuses on a specific disease management program and only targets women with endometriosis, most of whom are affiliated with a health insurance company that covers access to the program. The specificity of the program and its target population does not allow for the generalization of these results to other interventions or pathologies, and it is essential to replicate this study with different diseases and more diverse populations.

5. Conclusion and future research

This work represents a preliminary exploration of the components of the digital therapeutic alliance, and it seems important to continue this investigation. Future research could delve into what contributes to a sense of relational collaboration in a digital program, with qualitative methodology being well-suited since these concepts are likely to differ from what we know about face-to-face interactions. Further work could explore different populations and types of interventions.

Moreover, new questions, especially in terms of terminology, seem to arise from this work. Some components identified in this analysis appear to require direct interaction with a human (e.g., feeling heard or being able to express oneself). Without this connection, which seems significantly reduced in a fully automated program, can we still talk about a relationship or alliance? Especially in the absence of bidirectional exchanges. It appears that exchanges are more self-centered ("I feel") and descending ("the information obtained"). Similarly, can we still speak of psychotherapies? Or should we refer to digitized therapeutic programs with therapeutic effectiveness? The authors propose a new terminology, suggesting the concept of a "therapeutic adherence" indicating a more unidirectional connection than the therapeutic alliance, and "digital education and support therapeutic programs" rather than digital therapies or psychotherapies.

Disclosure of interest

ES was consulted by Lyv Healthcare regarding the creation of program content and participates in the program as an external expert, which participants were aware of when participating in the study. MA is employed by Lyv Healthcare. ZB is conducting a public-private thesis funded by the National Association for Research and Technology (ANRT) and Lyv Healthcare.

Authors' contribution

ES, MA, and CB developed the study and its methodology. ES conducted the literature review. ZB and MA led the data collection, while ES handled the data analysis, interpretation of results, and manuscript writing. All authors approved the final version of the manuscript.

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