

13^{ème} Journée Internationale
des Pathologies Émergentes
du Jeune Adulte et de l'Adolescent



Nouvelles technologies
Nouveaux parcours de soins

L'histoire de Paul

Dr. Emmanuel CHEVALLIER
Interne de psychiatrie
Service d'Addictologie du Pr. Alain DERVAUX - CHU d'Amiens
Fondateur d'ApyCare
e.chevallier@apy.care

Buts de cette présentation

- Présenter les nouvelles possibilités numériques dans l'IP
 - A new hope for early psychosis care: the evolving landscape of digital care tools. (Torous J et al. 2019)
- Appel à participation à la co-construction de nouveaux services numériques avec le RHU PsyCare
 - Pour patients / familles / soignants
 - Participation interviews / *focus group*

[Lancet Psychiatry](#). 2020 Sep; 7(9): 813–824.

PMCID: PMC7365642

Published online 2020 Jul 16. doi: [10.1016/S2215-0366\(20\)30307-2](https://doi.org/10.1016/S2215-0366(20)30307-2)

PMID: [32682460](https://pubmed.ncbi.nlm.nih.gov/32682460/)

How mental health care should change as a consequence of the COVID-19 pandemic

[Carmen Moreno](#), PhD,^{a,*} [Til Wykes](#), Prof, PhD,^{b,c} [Silvana Galderisi](#), Prof, MD,^d [Merete Nordentoft](#), Prof, DrMedSc,^e [Nicolas Crossley](#), PhD,^f [Nev Jones](#), PhD,^g [Mary Cannon](#), Prof, PhD,^h [Christoph U Correll](#), Prof, MD,^{i,j,k} [Louise Byrne](#), PhD,^{l,m,o} [Sarah Carr](#), PhD,^p [Eric Y H Chen](#), Prof, MD,^q [Philip Gorwood](#), Prof, MD,^{r,s} [Sonia Johnson](#), Prof, DM,^t [Hilkka Kärkkäinen](#), BSc,^u [John H Krystal](#), Prof, MD,^{n,v} [Jimmy Lee](#), MMed,^{w,x} [Jeffrey Lieberman](#), Prof, MD,^y [Carlos López-Jaramillo](#), Prof, MD,^z [Miia Männikkö](#), MSS,^{aa} [Michael R Phillips](#), Prof, MD,^{ab} [Hiroyuki Uchida](#), MD,^{ac} [Eduard Vieta](#), Prof, PhD,^{ad} [Antonio Vita](#), Prof, PhD,^{ae,af} and [Celso Arango](#), Prof, PhD^a

Paul 19 ans

- Chute progressive de ses résultats depuis la seconde
→ Université
- Déménagement, vit seul, beaucoup de changements et beaucoup de stress...



- Quand il est stressé, il entend des voix alors qu'il n'y a personne autour de lui et que les autres n'entendent rien
- Gêné d'en parler à quelqu'un il fait un 1^{er} pas vers les soins





60%

16:12

Google

normal d'entendre des
voix ?



16:12

Mon, 24 April

● entendre des voix
Search term



+ Compare

France ▼

Past 12 months ▼

All categories ▼

Web Search ▼

Interest over time ?



Que trouve-t-il ?

- Les résultats retardent souvent l'accès aux soins

TABLE 1. Internet search results

Search term	Source	Promotes help seeking	Delays help seeking	Undetermined impact	Unrelated to treatment
Is it normal to hear voices?	Google	0	3	2	0
	Facebook	0	3	2	0
	Twitter	1	1	0	3
How do I know if I have schizophrenia?	Google	4	0	1	0
	Facebook	2	0	3	0
	Twitter	1	0	0	4
Do I have schizophrenia?	Google	4	0	1	0
	Facebook	2	2	1	0
	Twitter	1	1	3	0
Am I psychotic?	Google	2	1	2	0
	Facebook	0	0	4	1
	Twitter	0	0	0	5
Am I crazy?	Google	1	0	0	4
	Facebook	0	0	0	5
	Twitter	0	0	0	5
Someone is controlling my body.	Google	1	1	2	1
	Facebook	1	3	1	0
	Twitter	0	0	1	4
I hear voices.	Google	0	1	0	4
	Facebook	0	0	0	5
	Twitter	0	0	0	5

Que trouve-t-il ?

- Symptomatologie vécue vs Diagnostic

TABLE 1. Internet search results

Search term	Source	Promotes help seeking	Delays help seeking	Undetermined impact	Unrelated to treatment
Is it normal to hear voices?	Google	0	3	2	0
	Facebook	0	3	2	0
	Twitter	1	1	0	3
How do I know if I have schizophrenia?	Google	4	0	1	0
	Facebook	2	0	3	0
	Twitter	1	0	0	4
Do I have schizophrenia?	Google	4	0	1	0
	Facebook	2	2	1	0
	Twitter	1	1	3	0
Am I psychotic?	Google	2	1	2	0
	Facebook	0	0	4	1
	Twitter	0	0	0	5
Am I crazy?	Google	1	0	0	4
	Facebook	0	0	0	5
	Twitter	0	0	0	5
Someone is controlling my body.	Google	1	1	2	1
	Facebook	1	3	1	0
	Twitter	0	0	1	4
I hear voices.	Google	0	1	0	4
	Facebook	0	0	0	5
	Twitter	0	0	0	5

Il pourrait trouver...

- ... des publicités sur Google
- 4 350 clics
- 671 auto-questionnaires de dépistage complétés
- 453 dépistages positifs
- 57 contacts
- $1427/57 = 38,73$ \$ par contact avec un centre d'IP

TABLE 3. Actions resulting from Google ad clicks by 4,350 users of an Internet ad campaign that used Google AdWords to reach prospective patients with early psychosis

Action	Users	
	N	%
Clicked to additional Web pages about psychosis/treatment	1,918	44
Clicked to self-report psychosis screener (PQ-B ^a)	733	17
Number of completed screeners	671	15.4
Screened as positive for early symptoms	453	10.4
Clicked to Northwell Health's ETP home page ^b	77	2
Contacted ETP by phone ^b	48	1.1
Contacted ETP by e-mail ^b	9	.2

^a Prodromal Questionnaire–Brief

^b ETP, Early Treatment Program

(Birnbaum et al. 2017)

Cela aurait pu être aussi...

- Campagne d'information à l'Université + Auto-questionnaire en ligne
- 2297 questionnaires de dépistages
- 1787 contactés pour un entretien
- 356 se présentent dont
 - 101 avec critères Ultra-Haut Risque
 - 8 avec critères de Premier épisode

Potential participants were contacted through a) email invitations send out to Universities and Colleges b) posters and flyers in NHS-clinics and public transportation and c) letters to patients identified in primary care practices



N = 2297 participants filled-out the 16-item PQ and 9-item PCA-questionnaires online 52.3% of participants met cut-off criteria for the PQ and 73.6% for PCA-items online. N = 1787 were invited for CAARMS/SPI-A Interviews and 356 interviews were conducted (response rate: 19.9%)



CHR- negative
N = 215 participants did not meet CHR-criteria (CHR-) established through CAARMS and SPI-A interviews

CHR-participants
N = 101 participants met CHR-criteria (CHR+) established through CAARMS and SPI-A interviews

Online Validation Sample
N = 27 participants were screened for UHR/BS-criteria who were below the online cut-off criteria

First Episode Psychosis Group
N = 8 participants met criteria for first-episode psychosis

“They Are Not Hard-to-Reach Clients. We Have Just Got Hard-to-Reach Services.” Staff Views of Digital Health Tools in Specialist Mental Health Services.

Sandra Bucci^{1,2}, Natalie Berry¹, Rohan Morris¹, Katherine Berry^{1,2}, Gillian Haddock^{1,2}, Shôn Lewis^{1,2} and Dawn Edge¹*

¹ Division of Psychology and Mental Health, School of Health Sciences, Manchester Academic Health Science Centre, University of Manchester, Manchester, United Kingdom, ² Greater Manchester Mental Health NHS Foundation Trust, Manchester, United Kingdom

Paul : Numérique → Physique



Après un échange par chat sur le site web de l'équipe d'IP



Paul a un RDV qu'il fixe en ligne



Pour s'y rendre il doit faire un trajet d'1h30 en voiture (il n'a pas le permis) ou de 2h en transports en commun



Ses parents, tous les deux contents de voir des soins se mettre en place, prennent une journée de congé pour l'accompagner

Paul : Au centre d'intervention précoce



Evaluations pluri-professionnelles, passage CAARMS → UHR



Bilan sanguin et génétique – PsyCare WP1



IRM cérébrale analysée par machine learning – PsyCare WP2



Analyse syntaxique de textes TAL - PsyCare WP3



Détection des signes neurologiques mineurs sur tablette - PsyCare WP3



L'ensemble lui permettant de bénéficier de soins de précisions personnalisés - PsyCare WP4

Paul : Suite de la prise en soins



Il rencontre un *case manager* qui l'accompagnera



Paul et ses parents ne pourront se déplacer que ponctuellement pour rencontrer l'équipe



Le prochain RDV est fixé en téléconsultation permettant la poursuite du parcours de soins

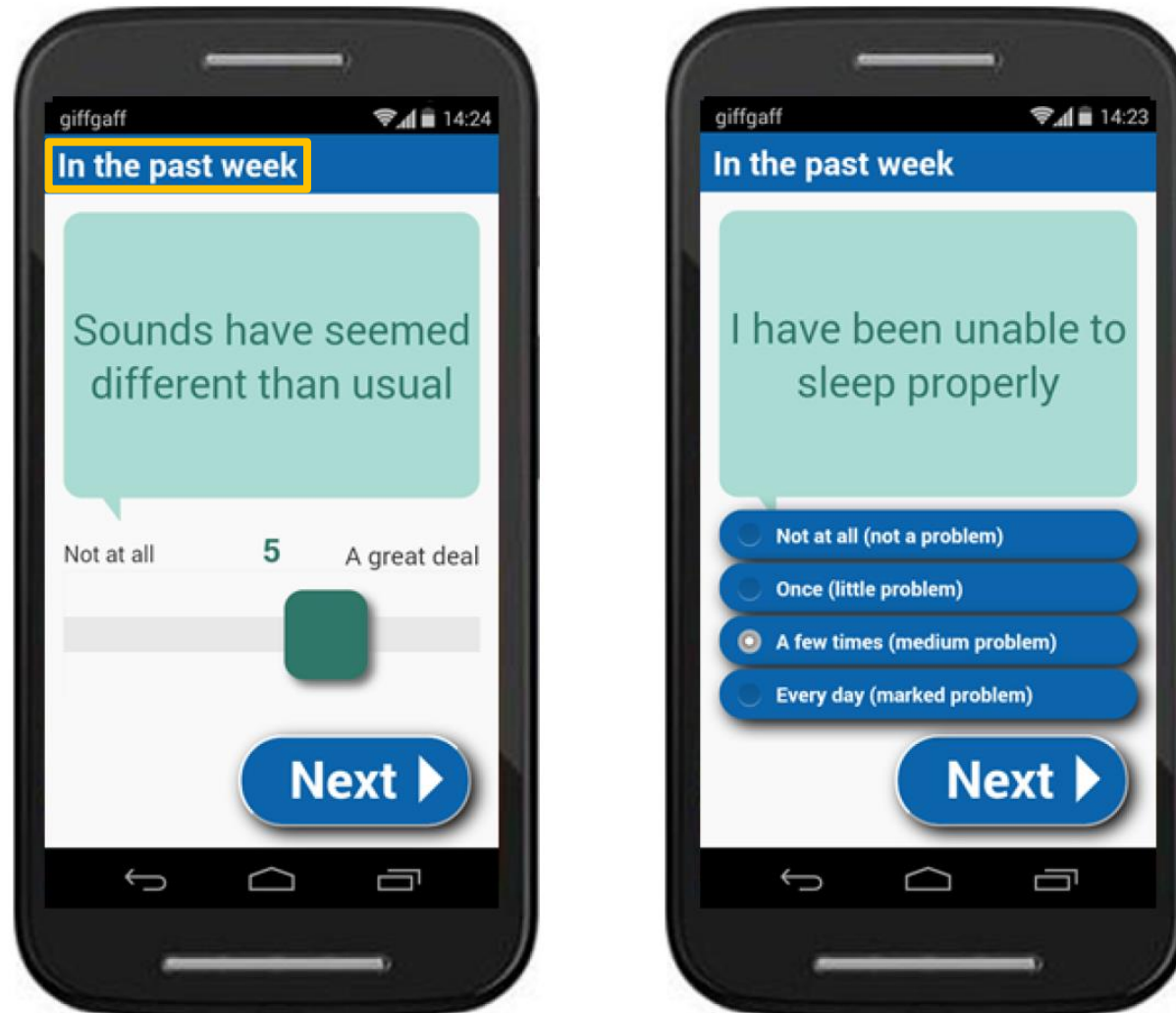


Des séances d'entraînement cognitif lui sont proposées par application mobile – PsyCare – WP6.1



Une application mobile, compagnon numérique, lui est fournie - PsyCare - WP6.2

ExPRESS, a Mobile Phone App to Monitor Basic Symptoms and Early Signs of Psychosis Relapse



UC Davis - Enhancing early psychosis treatment using smartphone technology

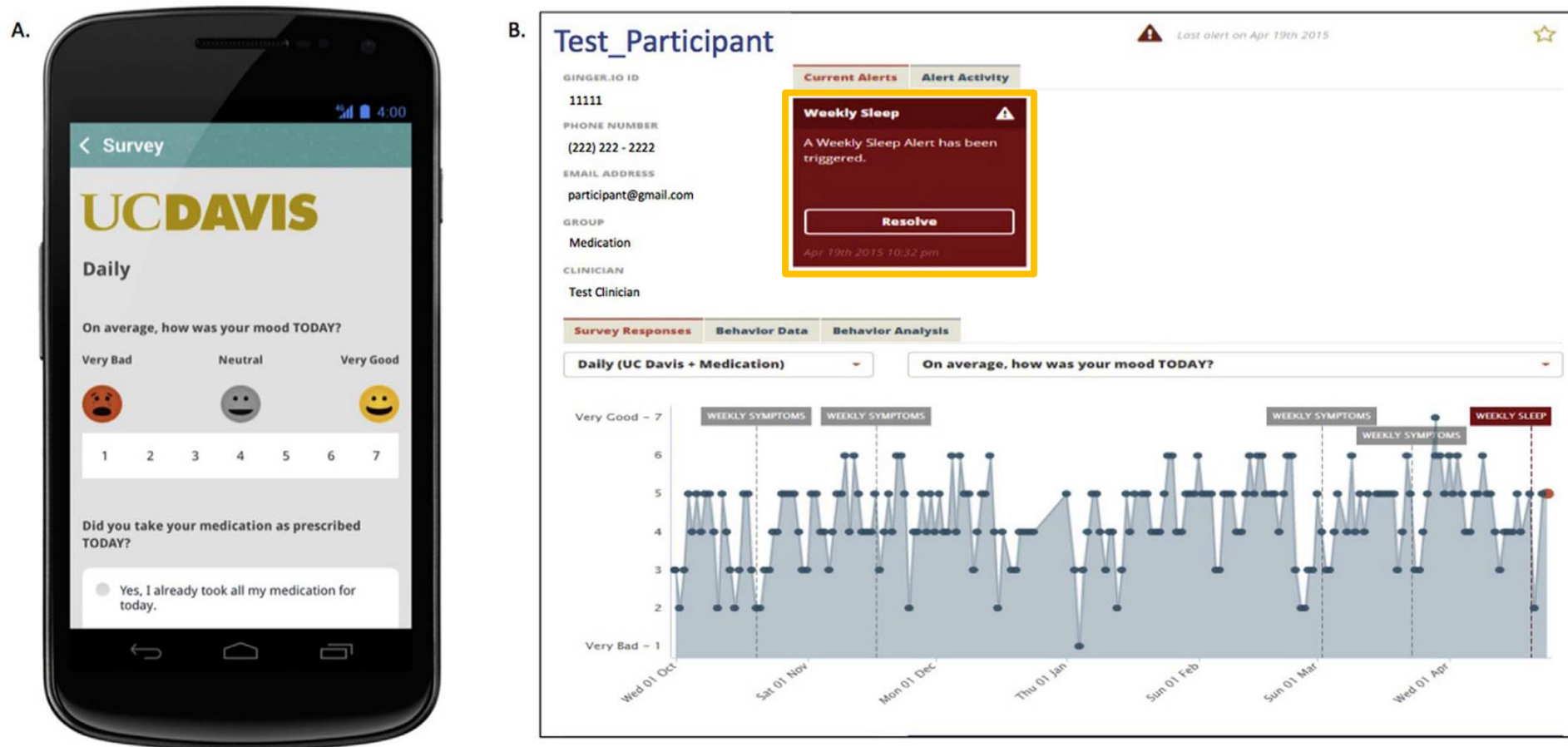


Fig. 1. A. Example App view. Participants responded to daily and weekly surveys in the app. Responses were summarized on the Dashboard and discussed with clinicians as part of regular clinic appointments. B. Example Dashboard view. Clinicians received “alerts” when responses were considered clinically significant. Alerts were resolved according to patient’s need for care. Clinicians could plot symptoms over time (daily mood shown). Alerts are flagged on the plot.

(Niendam et al. 2018)

UCDavis - Ecological Momentum Assessment

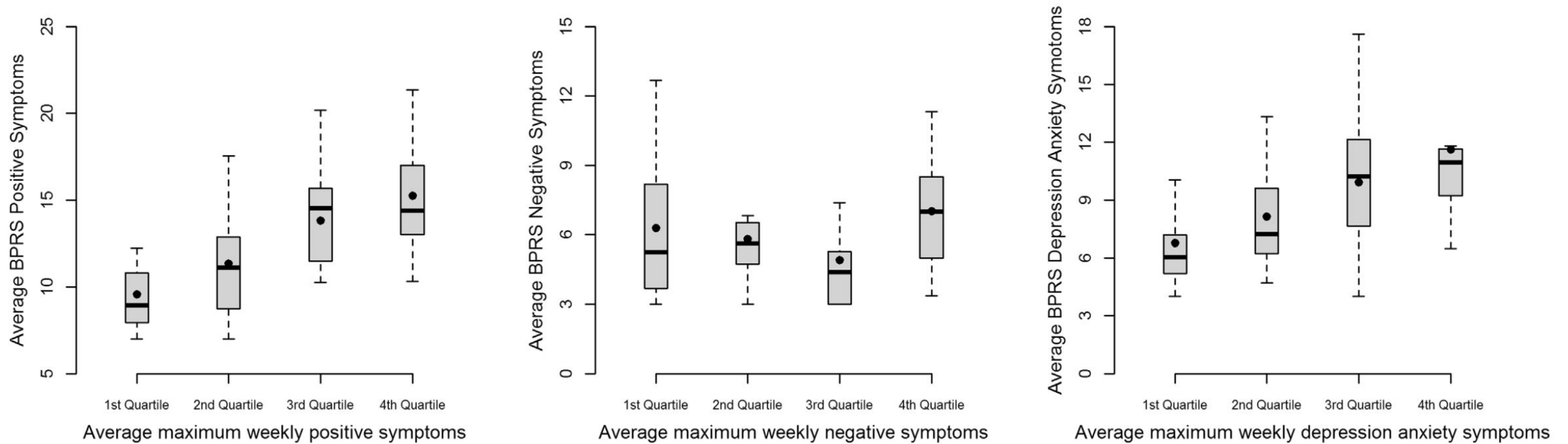
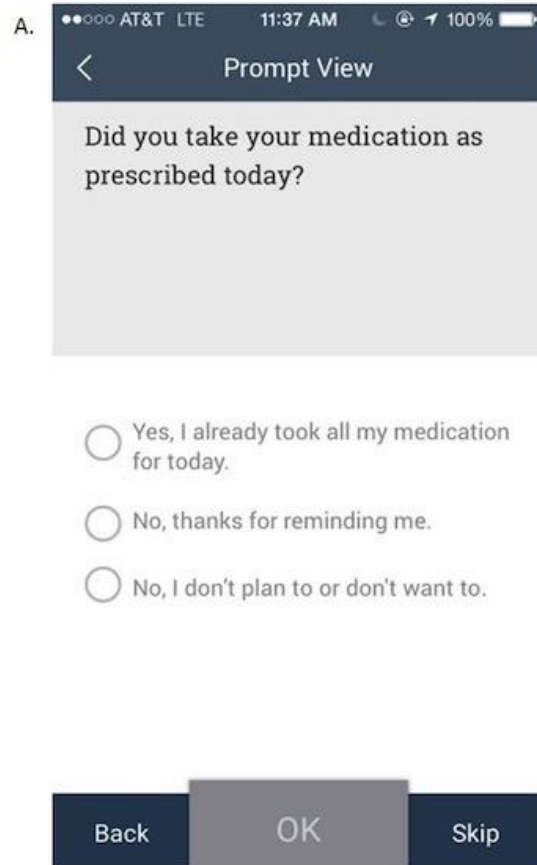


Fig. 2. Side-by-side box plots of average BPRS and weekly symptoms. Quartiles were defined based on average maximum weekly symptom severity over the study. Lines in boxplots represent medians; dots represent means. Compared to participants in the upper quartiles, participants in the lower quartiles of positive and depression/anxiety weekly symptom scores were rated lower on BPRS positive and depression/anxiety symptom scores.

RealLife Exp - Mobile Health Platform for Clinical Monitoring in Early Psychosis



RealLife Exp, a Mobile Health Platform for Clinical Monitoring in Early Psychosis

Table 3. Summary of early psychosis clients' perceived effect of the use of surveys (N=41). Due to rounding, percentages might not sum to 100.

Survey questions	A lot, n (%)	A little, n (%)	Somewhat, n (%)	Not at all, n (%)
To what extent did RealLife Exp improve the quality of your treatment services?	10 (24)	12 (29)	13 (32)	6 (15)
Did RealLife Exp improve your relationship with your treatment team?	8 (20)	13 (32)	11 (27)	9 (22)
Did RealLife Exp help you understand your symptoms?	9 (22)	7 (17)	14 (34)	11 (27)
Did RealLife Exp help you and your treatment team improve your symptoms and overall well-being?	9 (22)	8 (20)	19 (46)	5 (12)
Did RealLife Exp help you remember to take your medication?	20 (49)	11 (27)	7 (17)	3 (7)
Did RealLife Exp help you manage your symptoms?	9 (22)	10 (24)	15 (37)	7 (17)
Did RealLife Exp help you feel more in control of your symptoms?	9 (22)	10 (24)	14 (34)	8 (20)
Are you more motivated to keep up with your symptom management and medication routine?	16 (39)	16 (39)	6 (15)	3 (7)

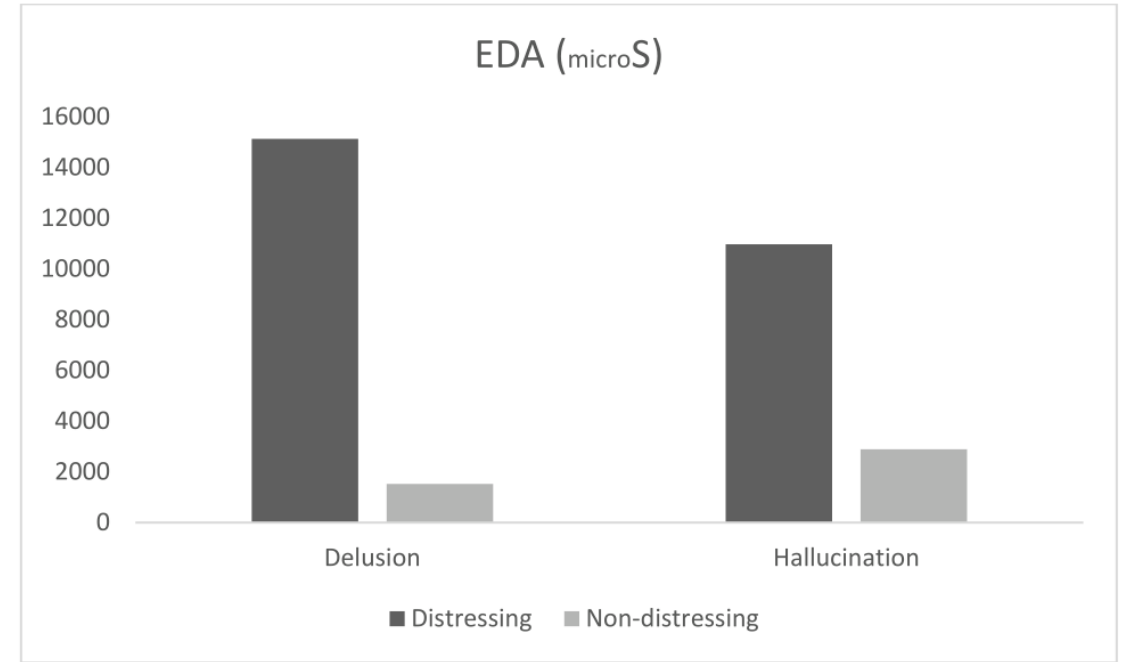
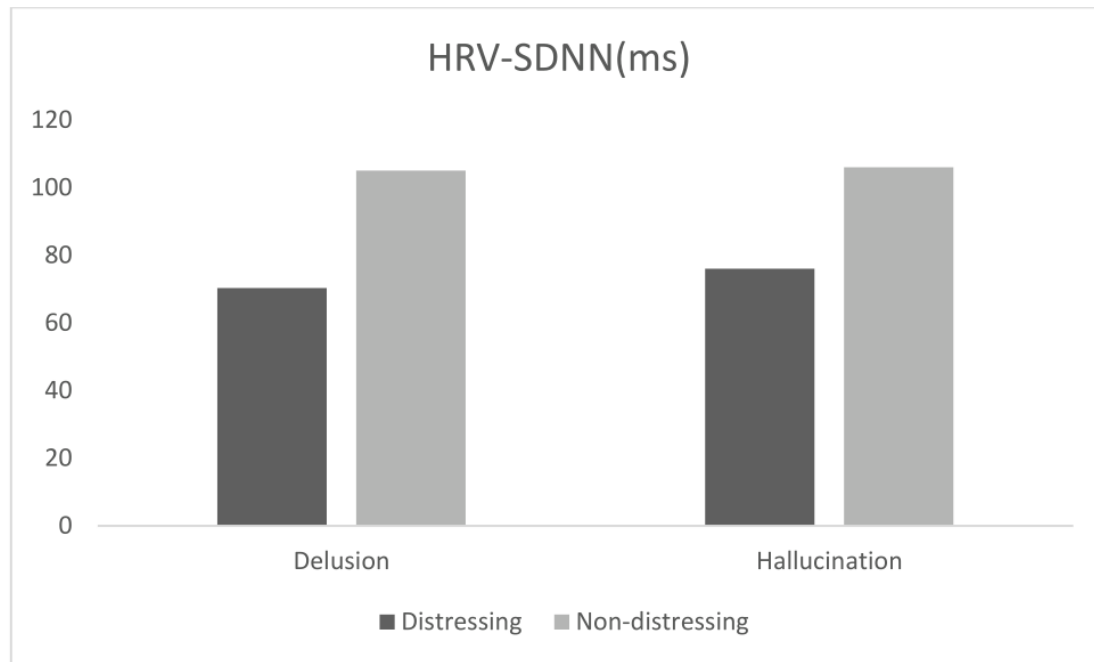
Passive Digital Technology Methods to Improve Symptom Monitoring in Early Psychosis

- Clintouch → EMA
- E4 → EDA (Activité électrodermale) / HRV
- N=15
- 80% of the participants rating the app and the wearable device as easy to use and the experience as enjoyable

(Cella et al. 2019)



Passive Digital Technology Methods to Improve Symptom Monitoring in Early Psychosis



Paul : Gestion du stress



Paul doit faire une présentation orale à l'Université qui le stresse



Il a de plus en plus de difficultés à penser et à travailler
Il pense parfois que certains camarades souhaitent qu'il échoue



Il utilise une stratégie de coping numérique avec des interventions de TCC et prend contact avec son *case manager*

Actissist, Digital Intervention for Psychosis

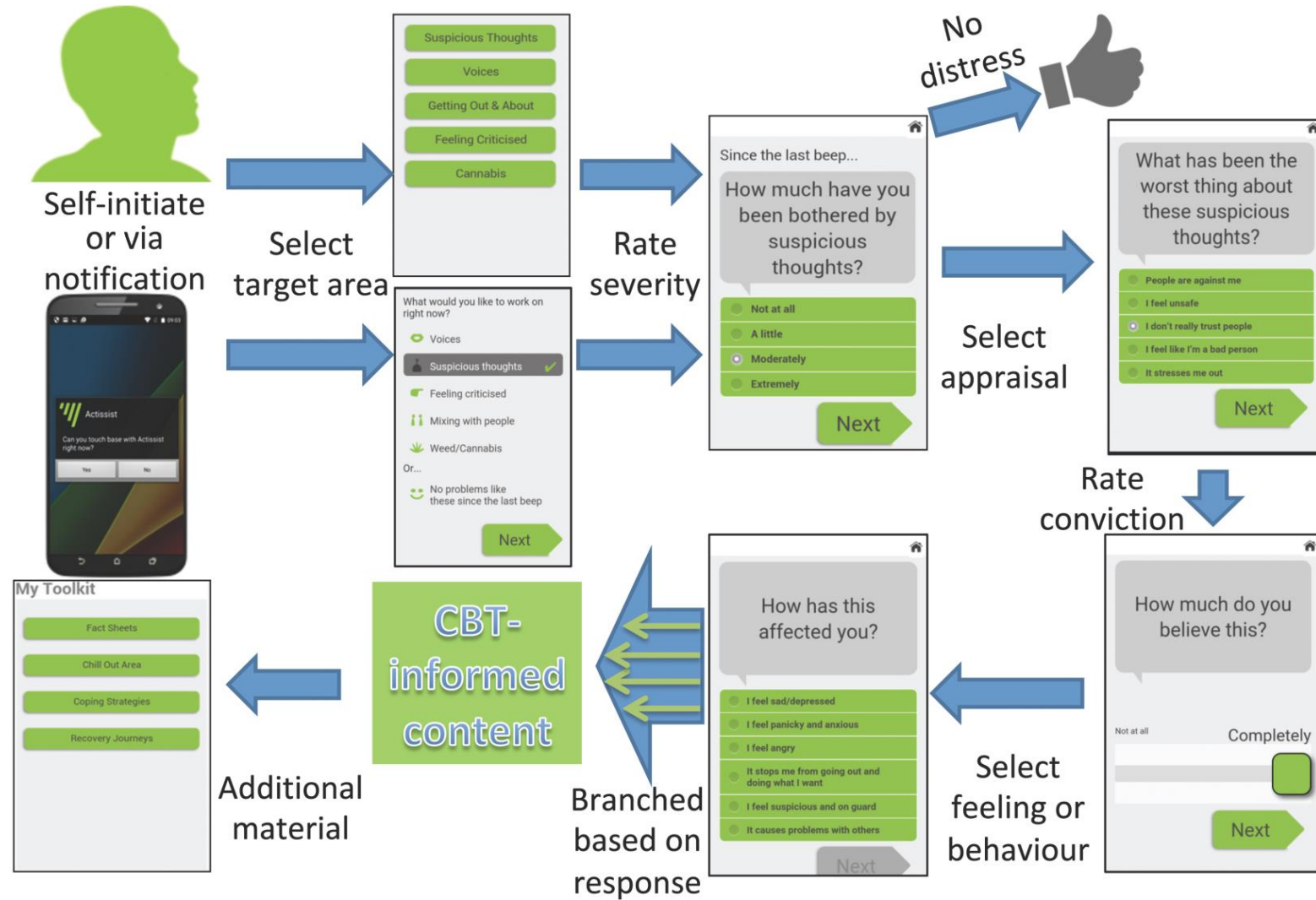



















Fig. 1. Schematic of Actissist intervention, including screen shots of the Actissist app.

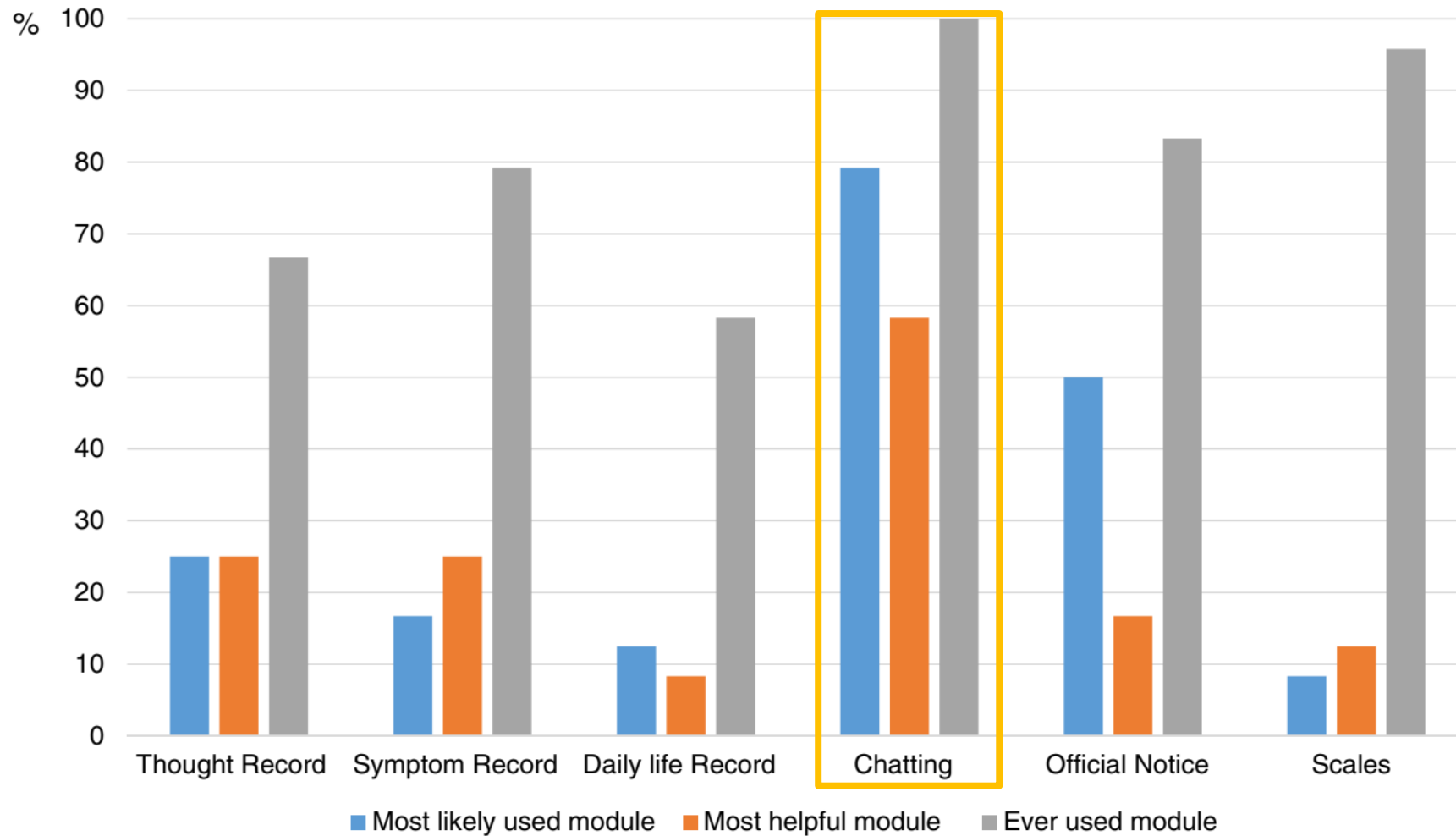
Heal Your Mind, Cognitive-behavioural case management of individuals with early psychosis

Thought Record Diary	
 Date	
Sharing	<input type="radio"/> Only Personal <input checked="" type="radio"/> With Case Manager
Situation	Someone hit me when I was sitting in the bus.
Automatic thought	Do I look dumb? He must have hit me on purpose.
Conviction score	70 % 
Result - Emotions	 Angry  Depressed  Ashamed  Sad  Anxious  Etc. 80 Point 
Evidence for the thought	It feels like I'm getting hit all the time.
Evidence against the thought	There were a lot of people in the bus. I've done it before.
Rational thoughts	He could have done it accidentally.
Re-evaluation of conviction score	20 % 
Re-evaluation of emotions	 Angry  Depressed  Ashamed  Sad  Anxious  Etc. 20 Point 
<input checked="" type="button" value="Send to case manager"/> <input type="button" value="Save data temporarily"/>	
Case manager comment Great. Trying to find evidence against the automatic thought would make you feel better.	

Heal Your Mind, une approche plus complète

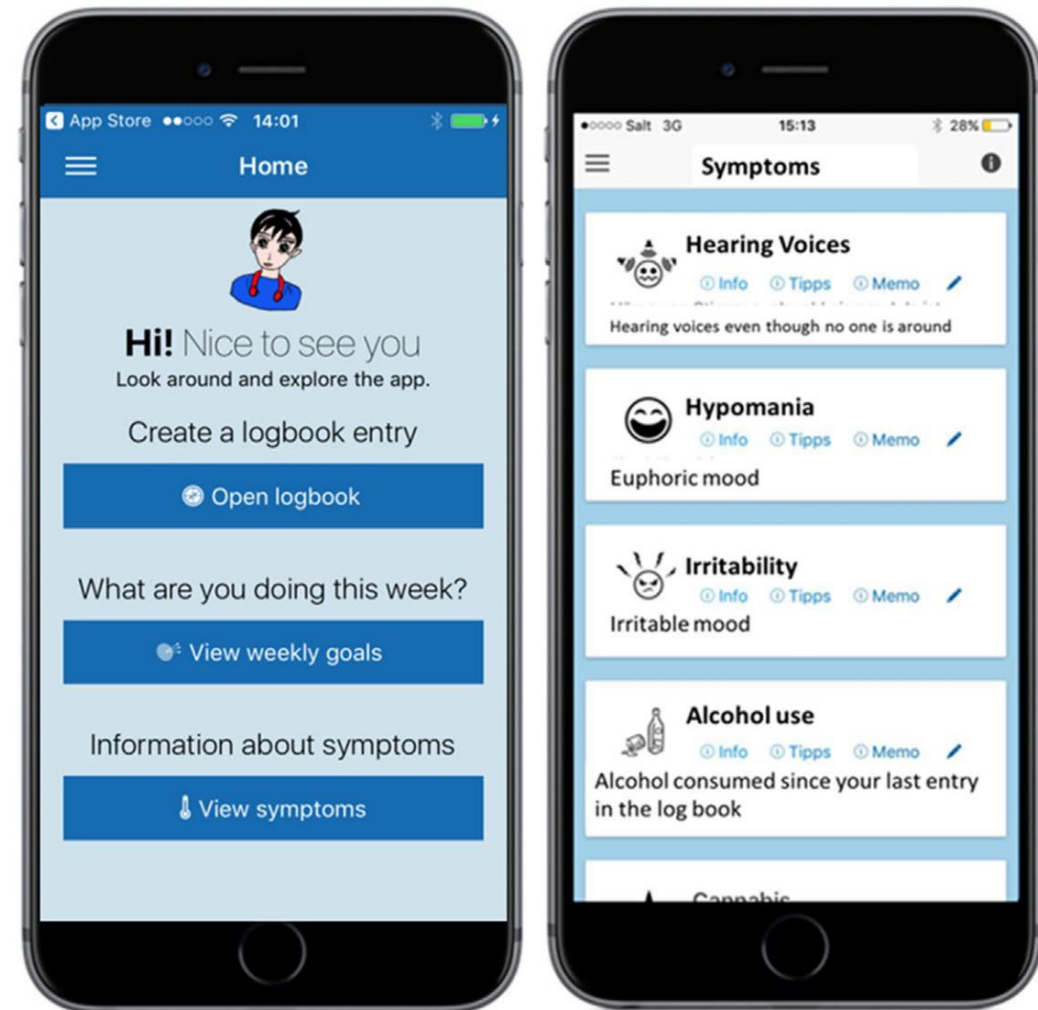
Module	Description
Thought record	This module was provided in a sheet format and was used for self-cognitive-behavioural therapy. It provides space for patients to write about their current situation, automatic thoughts and the degree to which they are convinced of the veracity of their beliefs; for rating and changing the rating of emotions; for presenting evidence to support and contradict their thoughts; and for offering examples of rational thinking (Figure 1)
Symptom record	This module allows clients to rate their psychiatric symptoms in terms of thoughts (delusions), voices, anxiety, depression and other phenomena using an 11-point (0-10) Likert scale and to provide a description of each symptom. Ratings by clients are stored in graphic form representing changes in symptom severity (Figure 2). These data are shared with case managers to help monitor clients' symptoms and signs of relapse
Daily life record	This module allows clients to record their daily life patterns with regard to social activities, exercise and medication regimens. Social activities are recorded in terms of frequency and type. Exercise is recorded in terms of type of physical exercise and amount of time. Medications are recorded in terms of when they are taken (eg, morning and evening). These data are stored in table form and shared with the case manager to help with the management of daily lives
Official notices	This module provides space for official notices. The case manager can send official notices to selected clients about the programme schedule. Clients can leave comments or messages about the posting after checking it
Communication	This module allows for personal conversations between clients and case managers. Client can send messages, and case managers can respond in real time
Scales	This module includes self-rating psychiatric scales, such as the Subjective Well-being under Neuroleptics-brief form (Kingdon & Turkington, 2004; Naber & Karow, 2001), Drug Attitude Inventory-10 item (Hogan et al., 1983; Kim et al., 2007), EuroQoL-5D (Kind, 1996; Yoon et al., 2005), Rosenberg Self-esteem Scale (Jeon, 1974; Rosenberg, 1965), Perceived Stress Scale (Cohen et al., 1983; Lee et al., 2012), Ambiguous Intentions Hostility Questionnaire (Chang et al., 2009; Combs et al., 2007), etc. Ratings by clients and changes in ratings are stored in graphic form. These data are also shared with case managers

Heal Your Mind, preference des utilisateurs



Robin a Combined Treatment Approach for Adolescents at Clinical High Risk for Psychosis

- Gestion des symptômes
 - Informations sur les symptômes
 - Personnalisation : notes et stratégies de coping
- Traitements
 - Alarme pour la prise des traitements
- Intervention de crises
 - Plan d'urgence
- But de la semaine : SMART
 - Spécifique, Mesurable, Atteignable, Réaliste, Temporellement définie
- Bibliothèque
 - Liste de forces, ressources et expériences positives pour faire face aux difficultés rencontrées
- Retravaillé chaque semaine en thérapie



(Traber-Walker et al. 2019)

Paul : Au-delà des soignants



Malgré le soutien de l'équipe soignante, Paul à l'impression qu'*ils ne le comprennent pas vraiment*



Il éprouve le besoin d'échanger



Il craint d'aller sur les groupes Facebook car il ne sait pas qui il peut rencontrer



L'équipe lui propose un accès à un réseau social sécurisé et modéré

Réseaux sociaux

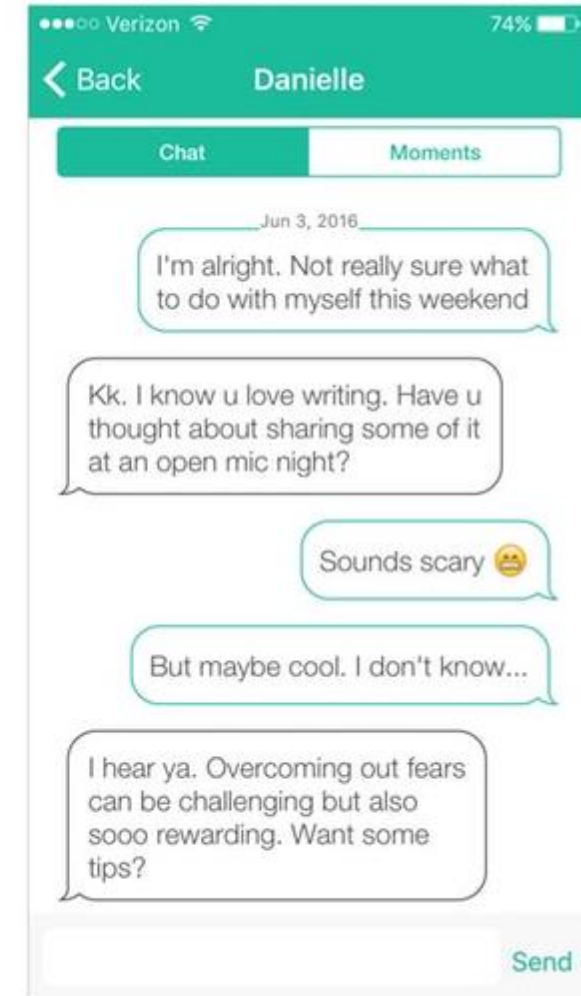
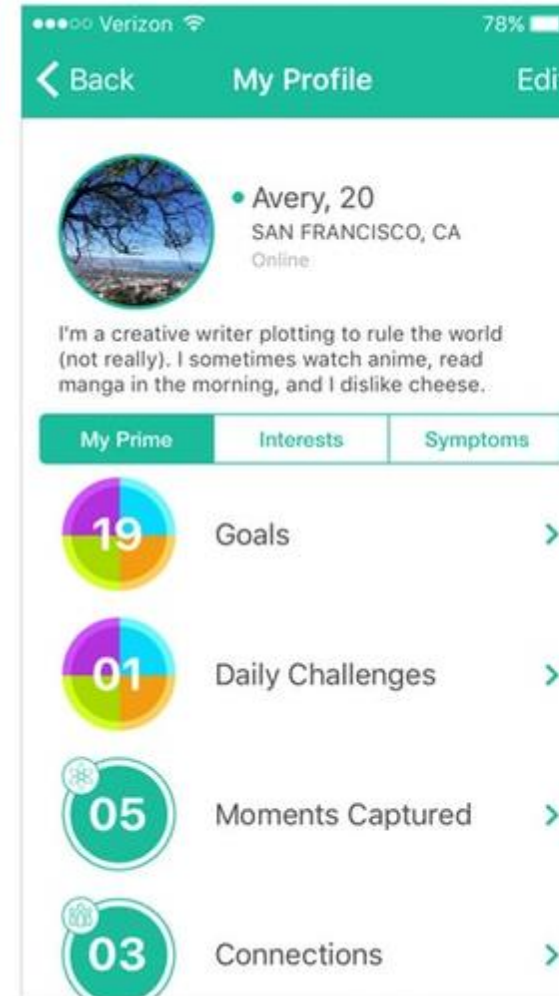
- Les réseaux sociaux sont utilisés par une très vaste majorité de jeunes pendant la période de psychose non traitée
- 23% partagent leurs expériences d'émergence des symptômes via les réseaux sociaux
- 78% sont intéressés par l'obtention d'aide / conseils / suggestions via les réseaux sociaux

(Birnbaum et al. 2017)



PRIME application réseau de soutien social

- Pour atteindre des buts avec suivi des objectifs
- Soutien via une communauté de pairs et des « coachs »
- Techniques TCC d'activation comportementale, méditation de pleine conscience et psychoéducation



HORIZONS a Moderated Online Social Therapy

- Groupe de soutien entre pairs en ligne
- Contenu attrayant et accessible
- 70% > 30 connections /mois
- 95% > 30 posts consultés / mois

The screenshot displays the HORIZONS website interface. At the top, the logo 'horyzons' is followed by '6 members and counting'. Navigation buttons include 'Strength Up', 'Your Playlist', 'Take a Step', 'Talk It Out', 'Team Up', and 'The Café'. A search bar asks 'How can Horyzons help you?'. The main content area features a post input field with the text 'went to a mental health support group for the first time in my life, would highly recommend'. Below this, there are suggested articles: 'How to flourish' and 'Being fair with your thoughts'. A featured article titled 'Mindfulness: mindful walking practice' includes a checklist icon and a 'Do It!' button. A user post from 'testuser6' shares a personal experience with medication. On the right, a sidebar lists 'Horyzons team' (developers, TheModeratorTeam) and 'Similar users' (testuser6, testuser3, testuser2, testuser5, testuser4). A 'Thinking of you' section is visible at the bottom.

HORIZONS a Moderated Online Social Therapy

Table 1
HORYZONS therapy modules.^a

Module	Description	% ^b
Snapshot	This module included an interactive evaluation of patient's goals and a number of questions assessing level of insight and recovery style, anxiety and depression symptoms and social anxiety and stigma. At the end of the module HORYZONS automatically generated a formulation letter or 'snapshot' (Ryle and Kerr, 2003) which summarised patients feedback and linked their responses to specific HORYZONS modules and social networking features.	90%
How minds work	This module provided interactive information on psychosis and the recovery process. Information was provided in a non-stigmatizing and positive manner with particular emphasis on empowerment and social recovery. Different themes were illustrated through 3 fictional characters.	70%
Strengths	In this module patients were introduced with the concept of personal strengths. An interactive online card sort game helped users identify their 'signature' strengths. Assessment of strengths was informed by positive psychology framework (Seligman et al., 2006; Rashid and Ostermann, 2009). Participants were encouraged to share their experiences using strengths in the online social networking.	60%
Early warning signs (EWS)	This module included an interactive online card sort game to identify potential EWS of relapse and categorize them into early, middle and late signs (eFig. 4). Subsequently, a relapse prevention plan (RPT) was developed interactively in which coping strategies and therapeutic techniques were linked to groups of EWS (Birchwood et al., 1989).	45%
The comfort zone	This module included interactive exercises to help patients identify their current level of activity ('comfort zone') and promote gradual exposure and increased activity ('expanding the zone').	20%
Ninja thinking skills	This module included a number of cognitive-based strategies to help patients identify unhelpful thinking patterns (i.e. ruminative thoughts, paranoia) and promote action-focussed, real, concrete thoughts. The concept of flow was also introduced to illustrate helpful thinking patterns (Csikszentmihalyi, 1990).	20%
To the HORYZONS	The final module consisted of a general overview of the key aspects of the completed modules. This module emphasized personal achievement, provided recommendations to 'stay well' and encouraged participants to use the social networking features and practice personal strengths on a regular basis.	15%

^a All modules included 'talking points' where participants were encouraged to share their own ideas and experiences and 'wrap-ups' which summarised the 'take home messages'.

^b Percentage of participants of completed the module.

Paul : Stage professionnel



Dans le cadre de son parcours à l'Université Paul doit trouver un stage



Il doit bientôt se présenter à un entretien



Il appréhende l'entretien et le déroulement du stage

Des pistes pour l'emploi

- Préparation virtuelle à l'entretien d'embauche
 - Smith, M. J. et al. Virtual reality job interview training and 6-month employment outcomes for individuals with schizophrenia seeking employment. (Schizophr. Res. 2015)

6-Month follow-up between-group differences

	N	Control Group (n=7)	N	VR-JIT Group (n=23)	p-value
Mean total weeks looking for a job (SD)		17.3 (8.5)		11.3 (10.0)	0.11
Mean total job interviews completed (SD)		1.3 (0.8)		2.3 (2.3)	0.31
% of subjects who completed job interviews	6	85.7%	19	82.6%	0.85
% of subjects who received job offer	1	14.3%	11	47.8%	0.055
% of subjects who accepted job offer	1	100.0%	9	81.8%	0.22

- Mobile job coaching
 - The WorkingWell mobile phone app for individuals with serious mental illnesses: Proof-of-concept, mixed-methods feasibility study. (Nicholson, J. et al. 2018)

Fonctionnalités fréquentes



Simplicité, convivialité, personnalisation



Confidentialité / Sécurité / Modération pour des échanges bienveillants



Gestion du parcours de soins RDV physiques, à distance avec les différents intervenants



Communication : chat / téléconsultations



Psychoéducation et informations pratiques



Suivi des symptômes écologiques



Interventions écologiques basées notamment sur les TCC

Conclusion



De multiples études pilotes prometteuses / Limites méthodologiques (reproductibilité, réfutabilité)



Des projets francophones déjà en cours à différents stades :
Pr. P. Conus (TIPP), Dr. F. Haesebaert (Plan-e-Psy), Dr. L. Pédron (Beta.gouv.fr), Dr. C. Lucet (PHOENIX)





Très bonne acceptabilité et utilisabilité



Co-construction adaptée aux différents publics et situations



Implantation et exécution opérationnelle

Conversation téléphonique ou visioconférence  
30 minutes

10 septembre

< > septembre 2020

lu	ma	me	je	ve	sa	di	15:00	16:00	17:00
	1	2	3	4	5	6	18:00		
7	8	9	10	11	12	13			
14	15	16	17	18	19	20			
21	22	23	24	25	26	27			
28	29	30							

① Toutes les heures sont au format (UTC+01:00) Brussels, Copenhagen, Madrid, Paris ▼

Ajouter vos informations

Nom

Adresse email

Numéro de téléphone

Adresse (facultatif)

Merci de nous indiquer si vous avez des demandes particulières.

Notes (facultatif)

Réserver

<https://bit.ly/2ZccPMZ> - e.chevallier@apy.care