Laboratoire de psychologie / Université de Bordeaux

SIRS Schizophrenia International Research Society

Bivwac Inria

EXPERIENCING SCHIZOPHRENIA SYMPTOMS THROUGH AUGMENTED REALITY:
FROM ASSESSING STUDENTS NEEDS TO PROTOTYPING A SIMULATION

Tison, E.[1,2], Delsuc, S.[1],Krogmeier, C.[2], Prouzeau, A.[3], Hachet, M.[2], Prouteau, A.[1]

[1]Univ. Bordeaux, LabPsy, UR 4139, Bordeaux, France [2]Centre Inria de l'Univ. Bordeaux, Bivwac Team, Bordeaux, France [3]Centre Inria Paris-Saclay, ILDA Team, Paris, France

BACKGROUND

❖The stigma of schizophrenia is both present **among mental health professionals** (for a review see Valery and Prouteau, 2020), and **students** (Sideli et al., 2021)
- ➢Negatively associated with the level of clinical experience (internship, etc) (Fernandes, 2022).

❖The effects of **technological interventions** on the **stigmatisation** of professionals are **contradictory**. (for a review see Rodriguez-Rivas et al., 2022 ; Tay et al., 2023).

❖These negative outcomes may be explained by the **focus of the interventions on symptoms** rather than **the recovery process**. Moreover, it has been suggested that they should be used with caution and **ideally in combination with educational or contact interventions** (Ando et al., 2011).

❖There is **no data on French mental health students' training needs** and their **interest** in an **augmented reality (AR)** simulation of schizophrenia.

RESULTS

288 responses / Students in psychology (n=69), medecine (n=82), nursing (n=90), etc...

❖Training needs of mental health students:
- ➢Regarding usefulness of training, two type of courses were rated as most useful to increase professional legitimacy:
  - ➢**Clinical internships** (67.36%)
  - ➢**Role plays or practical cases** (24.65%).

→ Most active training type!

- ➢**54.2%** report that there is **not enough clinical practice** in mental health in their training.
- ➢**Globally unsatisfied with schizophrenia training** (69.4%).
- ➢Two type of courses identified as helping schizophrenia training:
  - ➢**Clinical internships** (35-37%)
  - ➢**Testimonials from patients or peer caregivers** (32-31%)

→ Contact with people!

❖Expected content for AR instrument:
- ➢**Experiencing** and **visualising** (73.3%) symptoms
- ➢For both **positives** and **negatives symptoms** (88.5%).
- ➢In ecological context: **different life events** (49.7%)
- ➢**Small group training session** (80.2%)

IDEAL TIMELINE FOR AR INTERVENTION

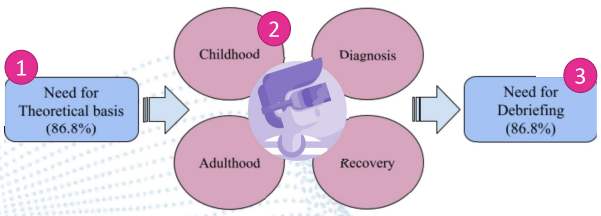

Figure 1. Augmented reality simulation methods according to our sample.

DISCUSSION

❖ According to our sample: lack of clinical practice in their training and the most useful lessons for understanding the experience of symptoms are internships or contact with patients.
- ➢ **AR could be a solution!**

❖ Students are interested in an augmented reality simulation of the symptoms of schizophrenia **outside a clinical/professional context.**

OBJECTIVES

Our objectives were:
1. Gather **students' needs** and **expectations** regarding their **training,**
2. Determine the **relevance** of a simulation in AR and its **implementation context.**

METHOD

A mixed participatory approach:
❖ Step 1: **Focus group** including N=6 psychology students
→ generating the survey

« Q: As part of your training, do you think it would be relevant and interesting to put these symptoms into practice using AR?
- Man1: « Absolutely. Especially the positive symptoms, to put ourselves in the shoes of people who experience these symptoms. »
- Woman4: « I totally agree, but I'd also like to have that for the negative symptoms. » »

❖ Step 2: **Online questionnaire** (*LimeSurvey*)
- ❖20 items to assess:
  - ❖**Mental Health Training**: satisfaction and importance of clinical practice in training curriculum
  - ❖**Feelings of legitimacy** for future professional practice
  - ❖**Schizophrenia related training**: characteristics and satisfaction
  - ❖**Augmented reality**: interest and content of an AR tool for schizophrenia training

« Q: Would you be interested in an augmented reality simulation of these symptoms as part of your training?

○ Yes, for positive symptoms ○ Yes, for negative symptoms ○ Yes, for positive and negative symptoms ○ No »

PERSPECTIVES AND IMPLICATIONS

We design a first AR prototype to simulate the symptoms of schizophrenia based on this study result and the available literature in training and destigmatisation:

DESCRIPTION OF AR PROTOTYPE

Participant:
- ➢ Equipped with headphones and keyboard
- ➢ Play the role of a drama student
- ➢ Must complete a task on a virtual computer + Virtual television screen (figures 2, 3)

Symptomatology for now:
- ➢ Auditory hallucinations
- ➢ Delusions: of reference, theft of thoughts
- ➢ Feeling of being watched

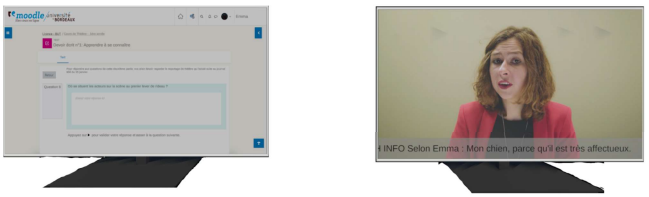

Figure 2. The two virtual screens. On the left, the computer screen with the task to be carried out; On the right, the virtual television, which broadcasts some of the participant's responses.

In progress: **Viability study** with 3 research questions
- ➢ Is the simulation able to **reliably represent symptoms** of schizophrenia?
- ➢ How effective is the AR environment in providing **an engaging user experience**?
- ➢ What is the potential of this tool to be used for **educational purposes**?

If the viability study is positive, to go further: Future research will focus on testing the simulation in terms of **training and destigmatizing** efficacy.

Figure 3. A student testing the AR device. She must complete a task on a virtual computer (homework) while experiencing symptoms of schizophrenia.

emma.tison@u-bordeaux.fr

Emma TISON