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

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## 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), medicine (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%) ➔ Most active training type!
    - **Role plays or practical cases** (24.65%).
  - **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%) ➔ Contact with people!
    - **Testimonials from patients or peer caregivers** (32-31%)
- ❖ **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

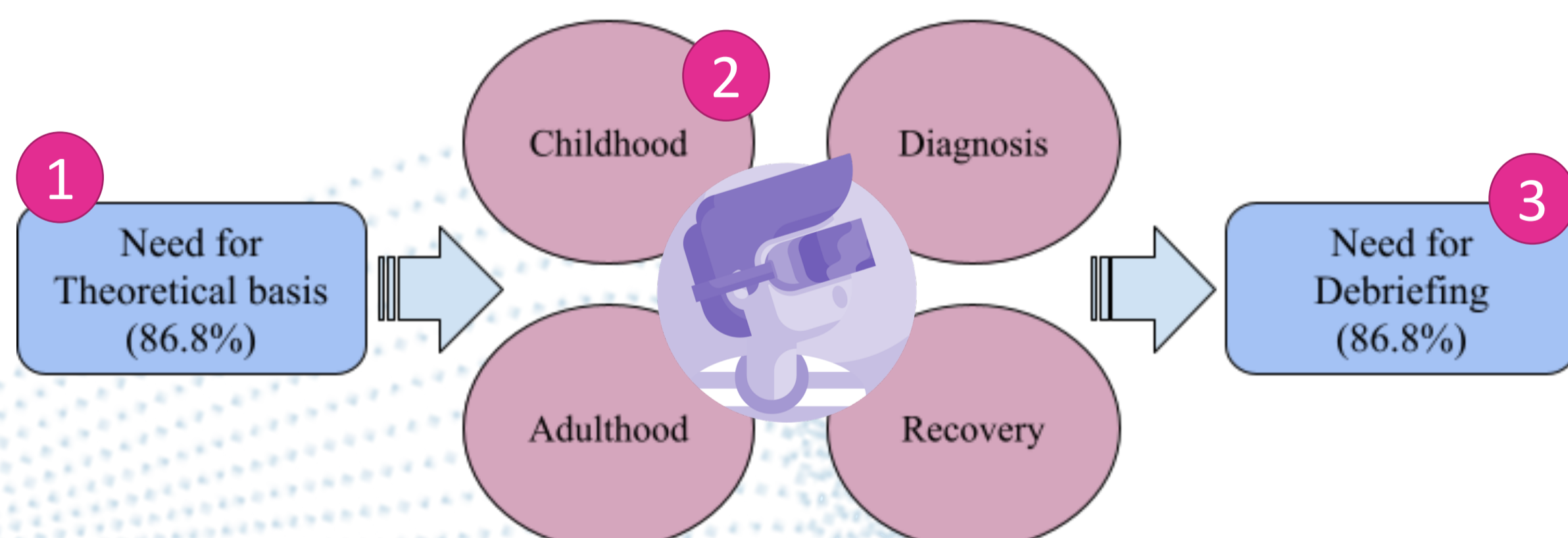


Figure 1. Augmented reality simulation methods according to our sample.



## 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.