



JOINT EFFORT

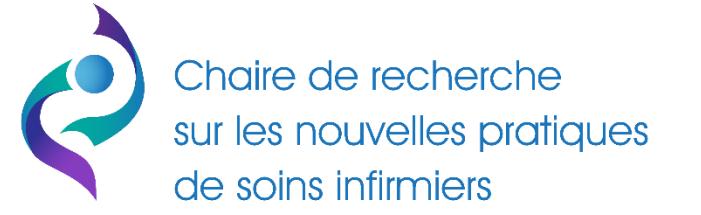
Co-design process and usability testing of a mobile application prototype to support self-management of cannabis use (Joint Effort)

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BACKGROUND

- Cannabis use (CU) for non-therapeutic purposes has been legalized in Canada.
- Legalization context offers opportunities to put forth initiatives aimed at reducing cannabis-related harms [1].
- Digital interventions can contribute to reducing CU [2,3], but must be personalized and specific to be effective [4].

OBJECTIVE

To describe the co-design process and usability testing of Joint Effort (a mobile application that supports the self-management of CU) among university students.

METHODS

Co-design process

Based on Intervention Mapping [5], co-design involved five steps:

- 1) Conducting focus groups to determine the needs and preferences of young adults in terms of CU intervention;
- 2) Creating matrices of change objectives to identify the behaviors and determinants that should be targeted;
- 3) Selecting theory-based intervention methods and practical applications;
- 4) Conducting focus groups to validate the intervention structure and examples of tailored messages;
- 5) Transposing the intervention content into a mobile application prototype.

Usability testing

Inclusion criteria: university students (aged 21-24) reporting CU at least once in the previous month were eligible.

Recruitment: the study was advertised on *Université de Montréal* students' Facebook groups.

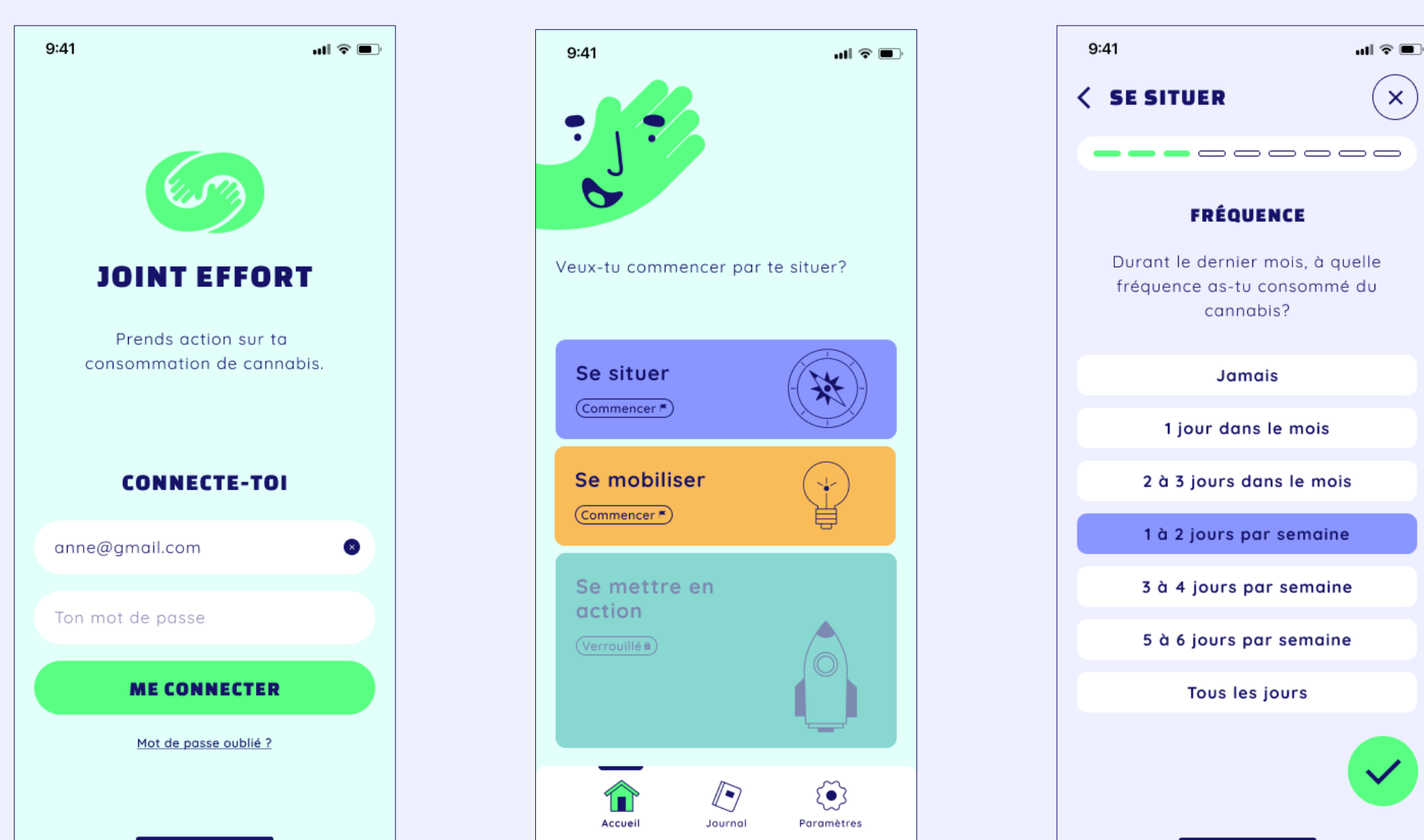
Data collection: think-aloud interviews and questionnaires (sociodemographics, User Version of the Mobile Application Rating Scale [6] were completed online (Zoom, Limesurvey).

Analysis: data was analyzed using thematic analysis and descriptive statistics.

RESULTS

Co-design process

- 1) The intervention aims to support the self-management of CU.
- 2) Based on the Theory of Planned Behaviour, the intervention focuses on intention, attitude and perceived behavioural control.
- 3) Various strategies such as personalized feedback, persuasive communication, self-observation and activation of intention are used as intervention methods.
- 4) Focus groups allowed us to finalize the intervention structure and review examples of tailored messages.
- 5) The mobile application prototype was created.



Usability testing

The usability was conducted among 21 students, with a mean age of 22 (± 1.7), mostly women (71%), and undergraduates (71%).

Think-aloud interviews

Four themes were identified and are described below.

Themes	Description
1) The app is visually pleasing and easy to use	• uncluttered layout • neutral, soft colour scheme • playful images and avatar (amusing without being childish) • intuitive navigation, easy to find the way around • non-judgmental tone
2) The app is well adapted for the target audience	• goal of the app clearly stated in the introduction • personalized feedback and comprehensive statistics helps to normalize CU without stigmatizing it • pre-established list of answer choices is relevant and appropriate
3) The customization features are appreciated	• users can choose their own goals and pace for completing the modules
4) The app is relevant to initiate behavior change	• relevant and educative information and strategies • encourages reflection on cannabis use • could facilitate access to other services

User Version of the Mobile Application Rating Scale (uMARS)

The prototype obtained an application quality mean score of 4.45/5.

Subscale	Mean Score (SD)
Engagement	4.16/5.0 (0.52)
Functionality	4.62/5.0 (0.46)
Aesthetics	4.56/5.0 (0.52)
Information	4.45/5.0 (0.60)

CONCLUSION

- A mobile application prototype was developed to support the self-management of CU.
- The usability testing showed promising results and the development of the mobile application was carried out.
- Further evaluations of the app are ongoing: a pilot randomized trial to evaluate its acceptability/feasibility and a randomized control trial to evaluate its efficacy (ClinicalTrials.gov Identifiers: NCT05099016 & NCT05620433).

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ACKNOWLEDGMENTS: Thanks to the study participants and everybody who contributed to the development.

FUNDING: This study was supported by the *Ministère de la Santé et des Services Sociaux du Québec*.

ETHICAL CONSIDERATIONS: This study was approved by Research Ethics Boards (CÉR CHUM; CERSES); all participants provided informed consent.

CONFLICT OF INTEREST: All authors have no conflicts of interest.