

KANOPEE

A Smartphone-Based Virtual Agent Screening for Alcohol and Tobacco Problems and Associated Risk Factors during COVID-19 Pandemic in General Population

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INTRODUCTION

COVID-19 and lockdown

- could intensify use of addictive substances (Koob and Kreek 2007, Koob and Schulkin 2019).
- Quarantine: main predictor of alcohol addiction 3 years later during previous SARS epidemic lockdown in 2003 (Wu, Liu et al. 2008)

Tobacco and alcohol:

- the most accessible substances (Ornell, Moura et al. 2020)
- increased use during the lockdown (Vanderbruggen, Matthys et al. 2020)

Craving: an earliest prognostic marker of addiction (Kervran, Shmulewitz et al. 2020, Fatseas, Serre et al. 2015, Serre, Fatseas et al. 2015, Fatseas, Serre et al. 2018).

New means of **identification for addiction risk** and prevention: mobile technologies :

- **KANOPEE** and the virtual agents (ECA) (Auriacombe, Moriceau et al. 2018, Philip, Dupuy et al. 2020).
- Use of a **diary**

OBJECTIVES

- To identify people at risk for alcohol and/or tobacco use disorders and to determine personalized risk factors associated with reporting problem with use,
- To determine the profile of users of the diary,
- To assess trust towards the virtual agent, acceptance of the overall system, users characteristics and attitudes towards the virtual agent

METHODS

MEASURES



Sociodemographic data
COVID-19 Healthcare worker
Period of lockdown (answering)



Reported problem use during the epidemic
Risk of Substance Use Disorder (SUD) : CAGE and CDS-5 adapted for Virtual Agent (Auriacombe, 2018)
Craving



Helpful perception of the diary
Acceptance and trust questionnaires



AES: Acceptability E-Scale (Tariman, 2011, Micoulaud-Franchi, 2016)
ETQ: Embodied Conversational Agent Trust Questionnaire (Philip, 2020)

Familiarity with technologies

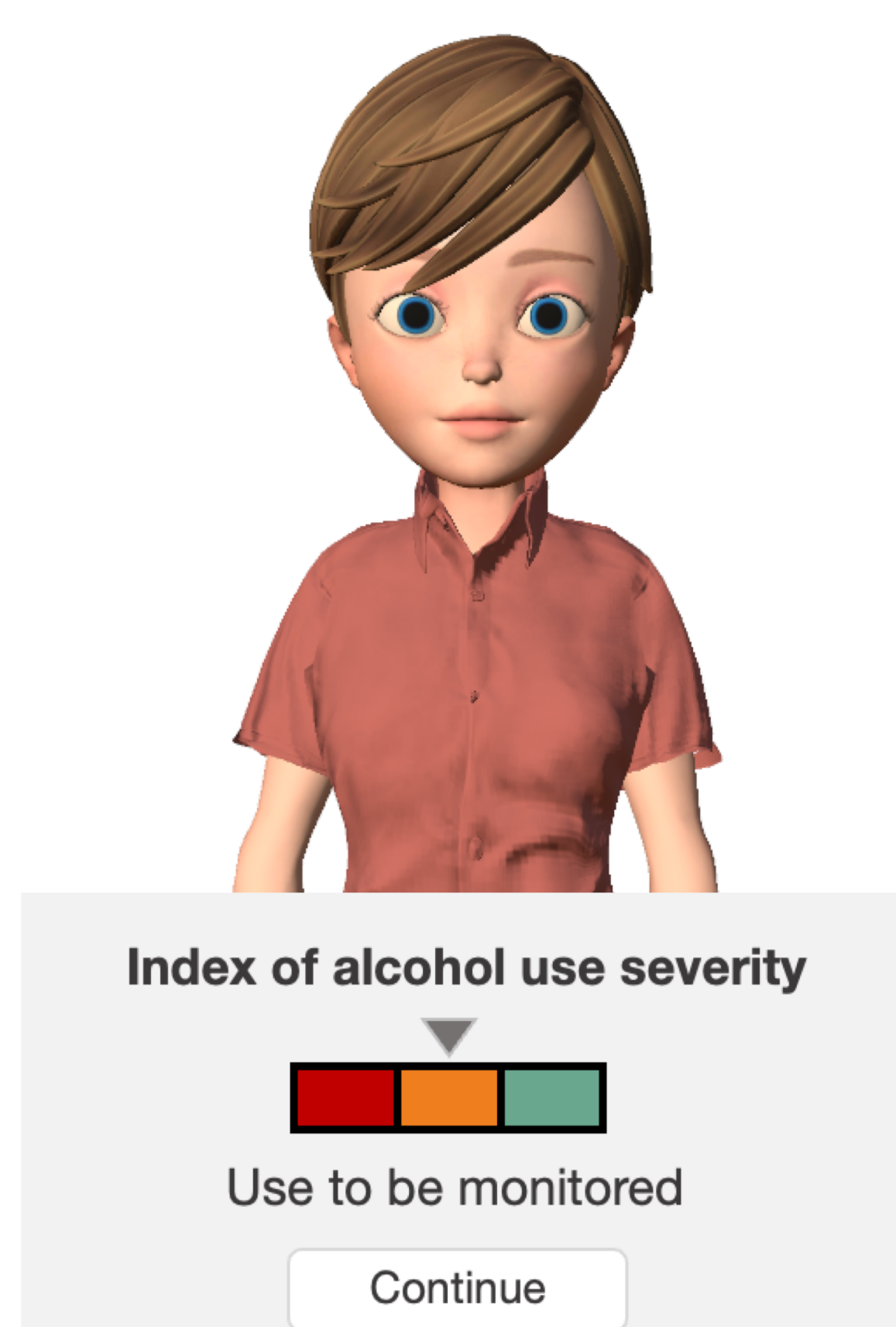


Figure 1

Jane, the Embodied Conversational Agent (ECA) of KANOPEE App

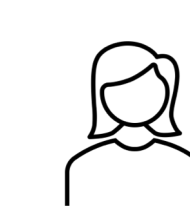
Kanopee voluntary download between April 22 and October 26, 2020

Inclusion criteria: 18 y.o. and over, used tobacco or alcohol at least once in the past 12 months, completed screening interview for tobacco and alcohol use disorder (CDS-5 and/or CAGE)

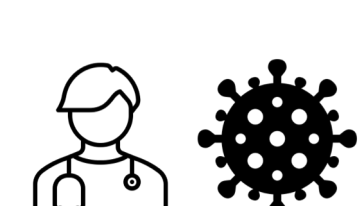
RESULTS – PROBLEMS WITH USE



N=1588
44 years (SD=14)



56.55%



8%

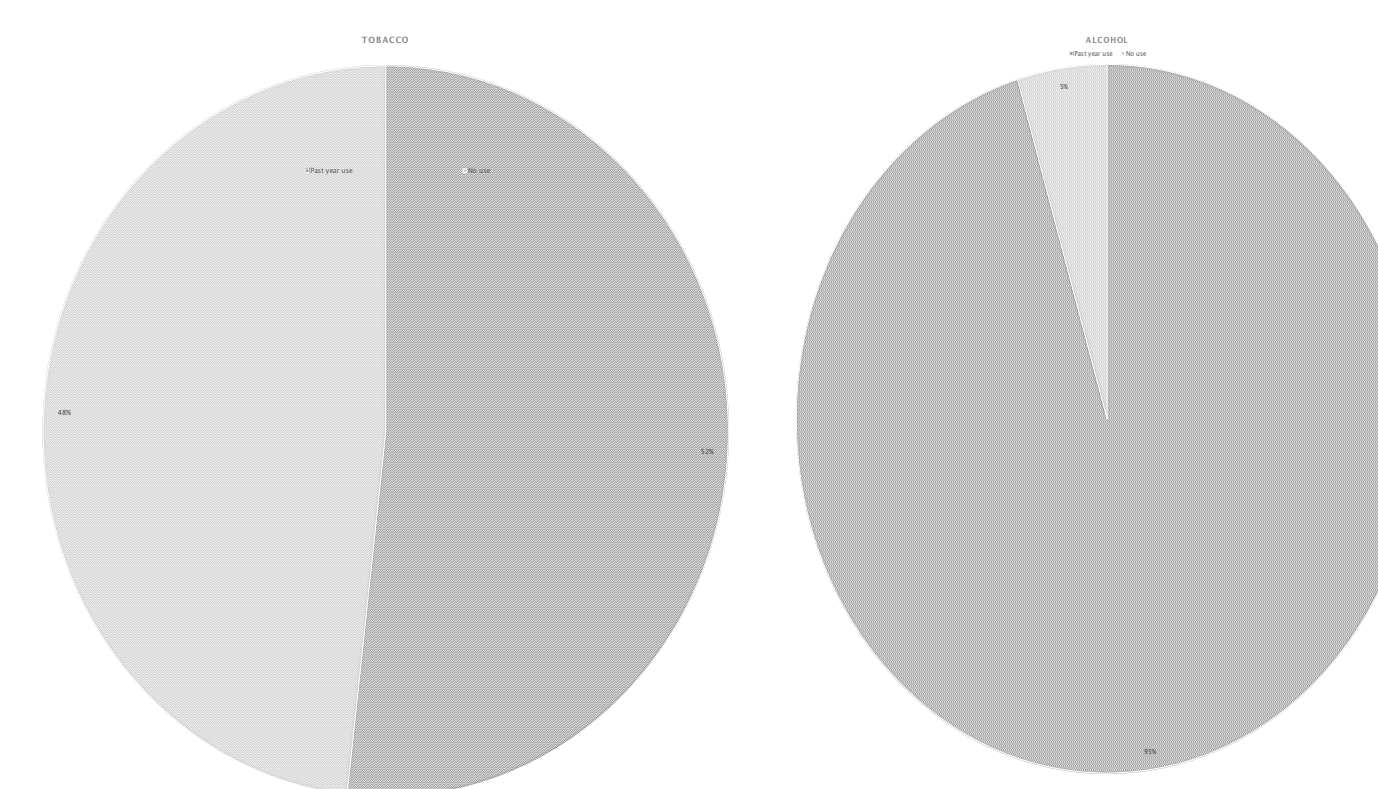


Figure 2

Use of tobacco and alcohol in the past year

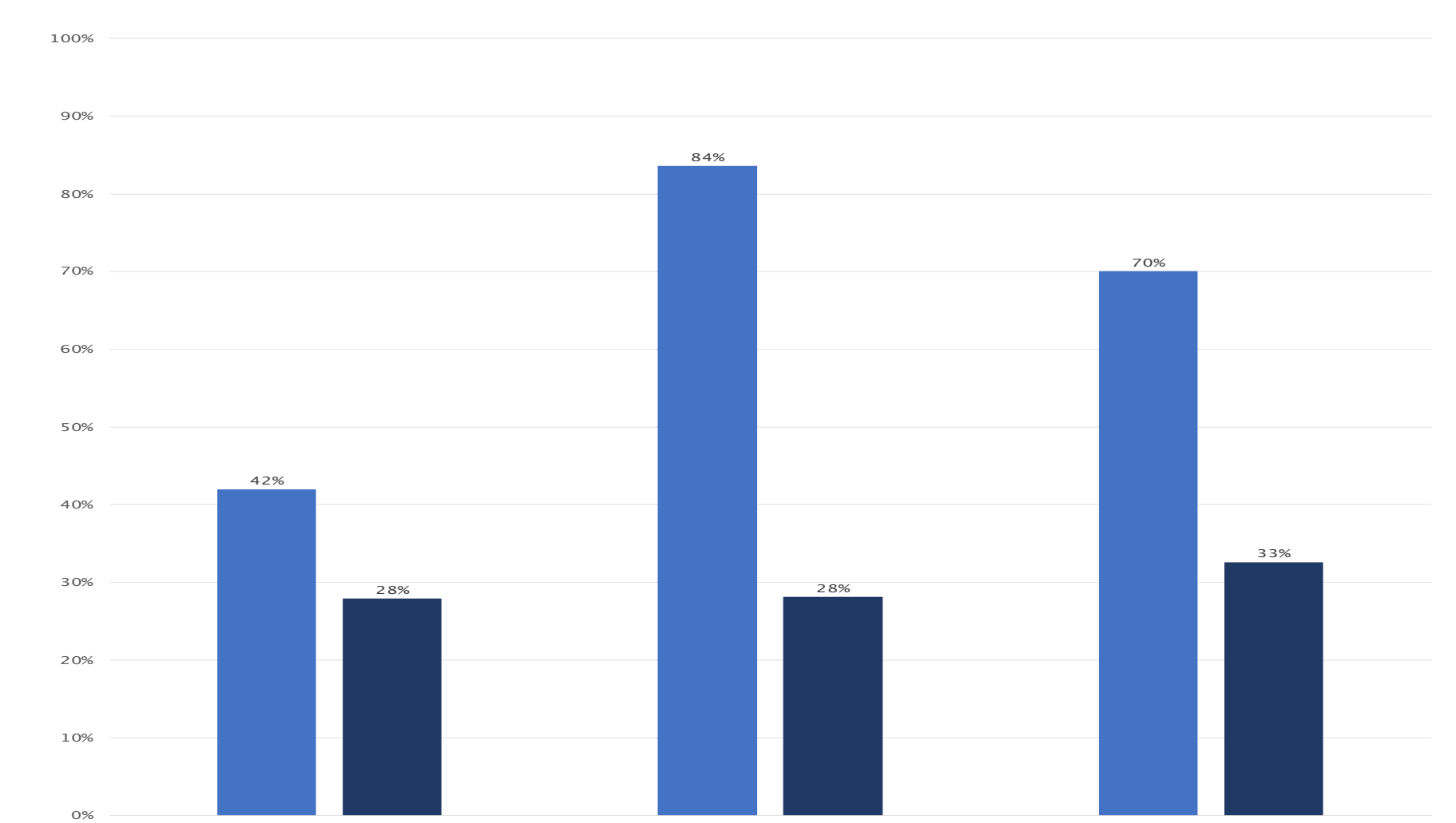


Figure 3

Substances Use characteristics data among users of tobacco or alcohol

Univariate analyses:

Alcohol and Tobacco: risk of SUD diagnosis and craving associated to more frequent reports of problem with use

Alcohol: Increased report of problem with use during the current epidemic for COVID-19 healthcare workers (not for tobacco)

Multivariate analysis:

Tobacco: reporting problem use during the pandemic associated with being at risk of tobacco use disorder and experiencing craving

Alcohol: reporting problem use associated with being at risk of alcohol use disorder, experiencing craving and being currently in period of lockdown

RESULTS – KANOPEE ASSESSMENT

N= 83 users responded to the 7-day follow-up evaluation
45.5% found the application and the diary helpful



N=83

Filling the 7-day evaluation : associated with Alcohol use disorder risk, Alcohol craving, reported Tobacco problem use

Compared to the initial sample, reporting that the application and diary were helpful was more frequent for those who reported tobacco problem

Acceptance and trust questionnaires (20% respondents) :

Acceptance (AES score) was rated very positively, (87.4% being “very satisfied” with the usability of the system, 80.0% rating the virtual agent more than 3 out of 5 for satisfaction).

Jane was perceived as trustworthy to perform medical interviews, benevolent, and credible (ETQ score).

ETQ and AES subscores positively correlated : the more Jane was perceived credible and benevolent, the more the whole application was found usable and satisfactory

KANOPEE found more usable for **Higher education level** and **Higher familiarity with technologies** ($r=.121$; $p=.031$)

CONCLUSIONS

KANOPEE provides early identification of addiction

Markers for prevention and early intervention:

Craving

Screening risk of SUD

Early monitoring with a diary

Digital technology

Good trust and acceptability

Extension to cannabis and screen uses

PARTENAIRES



DOWNLOAD KANOPEE HERE

