

# Development and effects of a mobile application for self-management of psychological distress among college students

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<b>Registration date</b> 30/06/2021	<b>Overall study status</b> Completed	<input type="checkbox"/> Protocol
<b>Last Edited</b> 12/04/2022	<b>Condition category</b> Mental and Behavioural Disorders	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

College students transitioning to adulthood are at high risk of psychological distress. Mobile health interventions can help with the self-management of stress and prevent psychological problems in this transition period. This study aims to evaluate the usability and effects of an app for managing psychological distress in college students.

### Who can participate?

Students who are aged between 19 and 25 years and currently enrolled in a full bachelor's degree program at a university in South Korea

### What does the study involve?

When using the app, named MEndorphins, participants can monitor their stress levels on a daily basis. After monitoring their stress, participants can identify management strategies suggested by the committee. Based on these, they can plan daily stress management strategies and receive feedback on the extent to which they have been implemented. Additionally, participants can share their experiences with the community of users of the same app and receive feedback on which strategies are effective. After using the app for 7 days, information about the frequency and usage time will be collected directly from the app. Additionally, students can complete online surveys to evaluate the usability and effects of the app on psychological outcomes.

### What are the possible benefits and risks of participating?

The participants will not directly benefit but they can learn self-management strategies for reducing their psychological distress by using the app. The study involves minimal risks.

### Where is the study run from?

The Catholic University of Korea (South Korea)

### When is the study starting and how long is it expected to run for?

March 2020 to June 2020

Who is funding the study?

1. National Research Foundation of Korea (NRF) (South Korea)
2. Catholic Medical Center Research Foundation (South Korea)

Who is the main contact?

Hyunjoo Na  
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## Contact information

### Type(s)

Scientific

### Contact name

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## Additional identifiers

### Protocol serial number

2017R1C1B5015986

## Study information

### Scientific Title

Development and effects of a mobile application for self-management of psychological distress among college students: a participatory co-design approach

### Study objectives

There are significant differences in psychological distress (depression, anxiety, and stress) after using a developed mobile application for 7 days among college students.

### Ethics approval required

Old ethics approval format

### Ethics approval(s)

Approved 10/03/2020, institutional review board at the Catholic University of Korea Catholic Medical Center (222, Banpodaero, Seocho-gu, Seoul, 06591, Republic of Korea; +82 (0)2-2258-8213; irbcumc@catholic.ac.kr), ref: MC19FISI0140

## **Study design**

Single-group pretest-posttest design

## **Primary study design**

Interventional

## **Study type(s)**

Prevention

## **Health condition(s) or problem(s) studied**

Prevention of psychological distress in college students

## **Interventions**

Students use the developed mHealth app for 7 days after providing written informed consent. An mHealth app for psychological distress management was developed using a participatory co-design process. A behavioral activation (BA) approach was used to develop app contents. The BA techniques were applied to the app with the following steps:

1. Monitoring of daily stress levels
2. Planning stress management strategies
3. Feedback for the completion of planned strategies
4. Sharing of users' feedback

When using an app with such components, participants can monitor their stress levels on a daily basis. After monitoring their stress, participants can identify management strategies suggested by the committee. Based on these, they can plan daily stress management strategies and receive feedback on the extent to which they have been implemented. Additionally, participants can share their experiences with the community of users of the same app, MEndorphins, and receive feedback on which strategies are effective. After use of the app is completed, information about the frequency and usage time will be collected directly from the app system. Additionally, students can complete the following online survey measures to evaluate the usability and effects of the developed app on psychological outcomes.

## **Intervention Type**

Behavioural

## **Primary outcome(s)**

Psychological distress symptoms of depression, anxiety, and stress measured using the validated Korean version of the depression anxiety stress scale (DASS) at baseline and 7 days after

## **Key secondary outcome(s)**

1. The perceived ease of use of the developed app measured using the Korean version of the system usability scale (SUS) after 7 days of app use
2. The perceived quality of the developed app measured using the Korean version of the user version of the mobile application rating scale (uMARS) after 7 days of app use

## **Completion date**

15/06/2020

## Eligibility

### Key inclusion criteria

1. Aged between 19 and 25 years
2. Currently enrolled in a full bachelor's degree program at a university
3. Using a smartphone with Android (a mobile operating system by Google)
4. Able to use a smartphone without help from others

### Participant type(s)

Healthy volunteer

### Healthy volunteers allowed

No

### Age group

Adult

### Sex

All

### Total final enrolment

35

### Key exclusion criteria

College students who were not eligible for participation and did not meet the inclusion criteria

### Date of first enrolment

04/06/2020

### Date of final enrolment

04/06/2020

## Locations

### Countries of recruitment

Korea, South

### Study participating centre

**The Catholic University of Korea**

222, Banpodaero

Seochogu

Seoul

Korea, South

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# Sponsor information

## Organisation

Catholic University of Korea

## ROR

<https://ror.org/01fpnj063>

# Funder(s)

## Funder type

Government

## Funder Name

National Research Foundation of Korea

## Alternative Name(s)

, National Research Foundation (South Korea), NRF

## Funding Body Type

Private sector organisation

## Funding Body Subtype

Trusts, charities, foundations (both public and private)

## Location

Korea, South

## Funder Name

Catholic Medical Center Research Foundation

# Results and Publications

## Individual participant data (IPD) sharing plan

All completed data are stored in a private cloud. Only the principal investigator can access and download the de-identified data. All the de-identified questionnaire data were entered and maintained on the researcher's computer, which has a security lock; these data are accessible only through the use of the principal investigator's password.

## IPD sharing plan summary

Not expected to be made available

## Study outputs

Output type

[Preprint results](#)

Details

Date created

19/05/2021

Date added

12/04/2022

Peer reviewed?

No

Patient-facing?

No