

**background:**

According to my personal experiences, the occurrence of mental health issues often comes with a change in energy level, which can be used to evaluate the physical condition related to the mental status. In busy urban lives, environmental factors can cause physical changes that impact people's mental status, and result in changes in people's energy levels.

**specify a pertinent research question:**

How do fluctuations in environmental factors (e.g. temperature, noise level) affect daily experiences (e.g. energy level) and mental status (e.g. mood, stress) among individuals living in urban environments?

**provide the rationale how data collected via your mHealth app will answer the research question**

The study aims to investigate the relationship between momentary fluctuations in environmental factors and individual factors and daily experiences among individuals living in urban environments. There are a total of 4 questions in the questionnaire, below is a screenshot of what the questionnaire looks like.



The screenshot shows a mobile app interface with a questionnaire. The status bar at the top displays the time as 11:00, signal strength, and a battery level of 97%. The questionnaire consists of four questions, each with two blue buttons for 'NO' and 'YES'.

1. Do you feel that the temperature is more comfortable than last week?
2. Do you feel that the environment is less noisy than last week?
3. Do you feel more down or depressed than last week?
4. Do you feel more energetic?

The data collected through the mHealth app will provide insights into how these factors impact energy levels and other aspects of daily experience, which are important for overall well-being in urban environments.

**specify inclusion/exclusion criteria for your study i.e. what type of participants can enter the study (e.g. children, adults, older adults, males etc.)**

The study will include adolescents and adults living in urban areas. Exclusion criteria include individuals without a mobile phone and individuals with a history of chronic medical conditions, such as heart disease, diabetes, or asthma.

**specify if you designed certain features of your app that is particularly relevant to your study population.**

The app will be designed to collect data on fluctuations in environmental factors, such as temperature and noise level, as well as individual factors, such as mood and stress.

**specify the frequency and duration of the EMA prompts and how the analysis plan of your data to answer the research question (no actual data analysis necessary just a plan).**

Participants will receive EMA prompts once a week for a year. Each prompt will assess current environmental factors and individual factors and ask participants to report their current energy level.

The data will be analyzed using multilevel modeling. Multilevel modeling is a statistical approach that allows for the examination of both within-person and between-person effects of environmental and individual factors on daily experience.

The within-person effects refer to how fluctuations in the environment affect a person over time, while the between-person effects refer to how individual differences in environmental factors are associated with differences across individuals.

**link to the app:**

<https://appery.io/app/mobile-frame?src=https://appery.io/app/view/f654e68e-39a7-48a8-9c32-a5f39f65b9df&type=mobile>