

# Project PEEL: Purpose and Engagement in Everyday Life



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## Introduction

- A sense of purpose in life is the belief that one's life and activities are goal-oriented, directed, and worthwhile. Greater purpose is associated with better cognitive outcomes across adulthood.
- People who feel more purposeful perform better on cognitive tasks, have less cognitive decline, are less likely to develop mild or severe cognitive impairments, and, even after diagnosis, have fewer behavioral and psychological symptoms of dementia.
  - The reasons why purpose leads to this is not yet known.
- Exercise improves both the physical and mental well being of adults, and decreases the likeliness of developing disease or chronic conditions
- Our research will use the data collected in this study to answer the question: **How does exercise affect life satisfaction and cognitive performance in older adults aged 65 and older?**

## Methods

- Participants that fell within one of the three following groups were recruited from Facebook and other online platforms targeted advertisements.
  - Group 1: Healthy adults aged 40-64
  - Group 2: Adults aged 65 and older with subjective cognitive decline
  - Group 3: Adults 65 and older with no subjective cognitive decline
- It is intended that the population is
  - 50% male/female gender identity
  - At least 30% people of color and
  - At least 30% from low-income households..
- Subjective cognitive impairment: Participants who report cognitive complaints but who score within **the normal range of cognitive function** and **do not have severe symptoms of depression or anxiety**
- Offered participants compensation of up to \$275 for their participation in the study

### 1. Screening by staff, which measured

Measure	Scale	Sample Items
Subjective Cognitive Decline	Criteria established by the Subjective Cognitive Decline Initiative (SCD-I) Working Group	<ul style="list-style-type: none"> <li>- Do you feel your memory and thinking has become worse over the past 2-3 years?</li> <li>- Do you feel that your ability to learn new things has become worse over the past 2-3 years?</li> </ul>
Cognitive Function	TICSm, verbal fluency	<ul style="list-style-type: none"> <li>- Immediate and delayed recall of 10 word</li> <li>- Serial 7 subtraction,</li> <li>- Backward counting</li> </ul>
Depression/Anxiety	PHQ-4	<ul style="list-style-type: none"> <li>- "Over the last 2 weeks, how often have you been bothered by the following problems?"</li> <li>- Items are rated on a scale from 0 (not at all) to 3 (nearly every day) and summed separately for depression and anxiety.</li> </ul>

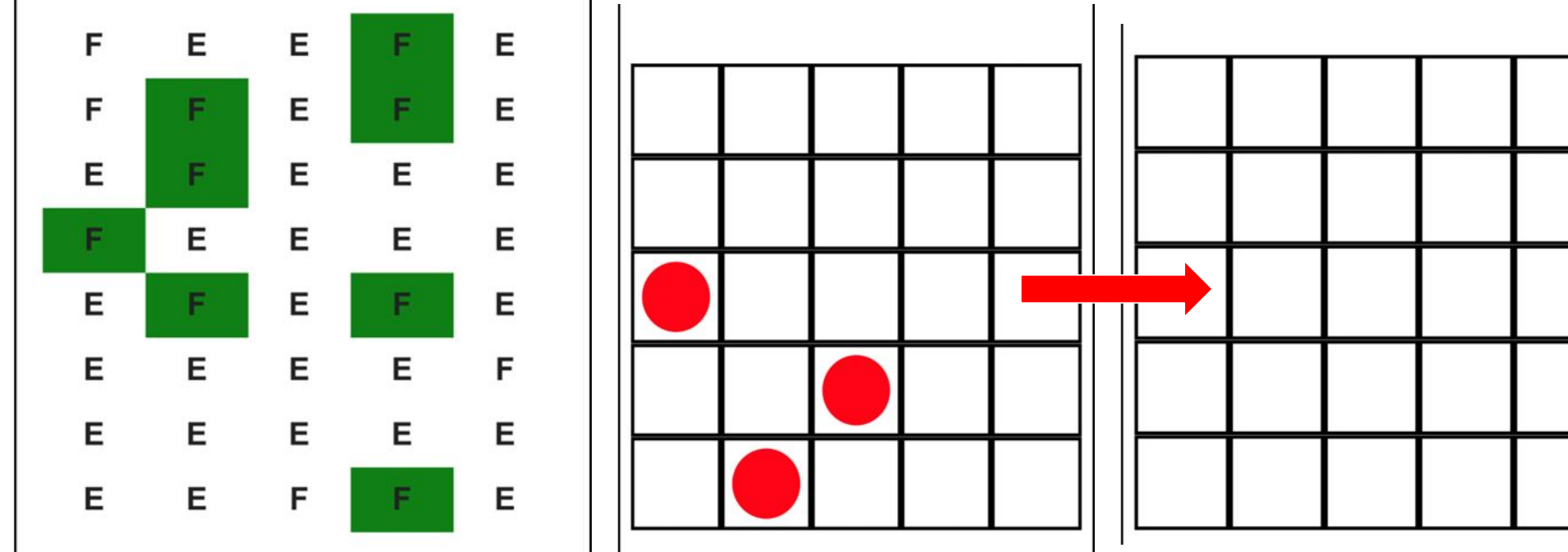
## Methods (Cont.)

### 2. Baseline survey, which measured

Measure	Scale	Sample Items
Purpose in life	Ryff Measure of Psychological Well-Being	<ul style="list-style-type: none"> <li>- "I have a sense of direction and purpose in my life."</li> <li>- Item is rated on a scale from 1 (strongly disagree) to 5 (strongly agree)</li> </ul>
Well being	Ryff Measure of Psychological Well-Being	<ul style="list-style-type: none"> <li>- I like most parts of my personality."</li> <li>- "I have confidence in my own opinions, even if they are different from the way most other people think.</li> </ul>
Personality	BFI-2	<ul style="list-style-type: none"> <li>- "I am someone who worries a lot."</li> <li>- "I am someone who has a forgiving nature."</li> </ul>
Trait engagement	Positive and Negative Affect Schedule, GRIT Scale , Adult ADHD Self-Report Scale, HRS social support measure	<ul style="list-style-type: none"> <li>- "I finish whatever I begin."</li> <li>- "How much can you open up to them if you need to talk about your worries?"</li> <li>- "How much do they let you down when you are counting on them?"</li> </ul>
Health behaviors	Smoking history, <b>physical activity</b> , sleep	<ul style="list-style-type: none"> <li>- ("How often do you take part in sports or activities that are vigorous, such as running or jogging, swimming, cycling, aerobics or gym workout?"</li> <li>- "How often do you have trouble falling asleep?"</li> </ul>
Clinical history	hypertension, diabetes (type 1 and type 2), or depression	<ul style="list-style-type: none"> <li>- Report on their medical history, including whether a physician has ever diagnosed them with a condition/illness</li> </ul>

### 3. EMA Assessments, which measured

- Momentary purpose
- Momentary engagement
  - Emotional engagement
  - Behavioral engagement
  - Cognitive engagement
    - Brain games
  - Relational engagement
- The EMA Assessments consist of 5 daily surveys for a span of 8 days
  - 1 daytime survey
  - 3 daytime surveys
  - 1 night survey



### 4. Year 4-5 Telephone Follow- Up to inquire about participant's cognition and purpose then.

## Results (preliminary)

- For the purposes of this presentation, we looked into how exercise in adults aged 65 and older relates to cognitive performance and life satisfaction
  - Data split into no exercise, moderate exercise, and high exercise
  - Used cognition tests administered to each participant as well as life satisfaction indicators to compare results between exercise groups
- Found that adults who exercise to any extent tend to score better on cognitive tasks than those who do not (memory recall, numerical problems, and resilience surveys)
- There was no clear distinction in cognitive performance between adults who exercise daily and those who do not exercise often
- There was no correlation between exercise and life satisfaction based on current results

## Discussion/Conclusion

- A substantial data analysis will have to be conducted with more participants' data to prove any statistical significance between the two groups.
- Because there is little difference in cognitive function between those who exercise sometimes and those who exercise everyday, we can assume that this retaining of cognition is caused by an increased sense of purpose from the participants.
- More research would need to be done to determine if participants' increased sense of purpose is related to either the physical and mental benefits of exercise, or if their sense of purpose allows them for more motivation to exercise compared to those who don't.

## References

- Sutin, A. R., Aschwanden, D., Luchetti, M., Stephan, Y., & Terracciano, A. (2021). Sense of purpose in life is associated with lower risk of incident dementia: A meta-analysis. *Journal of Alzheimer's Disease*, 83, 249-258. DOI: 10.3233/JAD-210364
- Sutin, A. R., Luchetti, A., Stephan, Y., Strickhouser, J. E., Terracciano, A. (2022). The association between purpose/meaning in life and verbal fluency and episodic memory: A meta-analysis of >140,000 participants from up to 32 countries. *International Psychogeriatrics*, 34, 263-273. Doi: 10.1017/S1041610220004214.
- Sutin, A. R., Luchetti, M., Aschwanden, D., Lee, J. H., Sesker, A. A., Stephan, Y., & Terracciano, A. (2022). Sense of purpose in life and concurrent loneliness and risk of incident loneliness: An individual-participant meta-analysis of 135,227 individuals from 36 cohorts. *Journal of Affective Disorders*, 309, 211-220. Doi: 10.1016/j.jad.2022.04.084
- Cunningham, C, O' Sullivan, R, Caserotti, P, Tully, MA. Consequences of physical inactivity in older adults: A systematic review of reviews and meta-analyses. *Scand J Med Sci Sports*. 2020; 30: 816-827. https://doi.org/10.1111/sms.13616