Does social media improve Saskatoon seniors' psychological and cognitive wellbeing: A pre-pandemic inquiry

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Introduction

Many **older adults** suffer from loneliness, isolation, and lack of companionship as their social networks typically decline over time.[1]

Meaningful online social interactions have been linked to reduced feelings of isolation,[2] greater feelings of overall wellbeing,[3] and increased longevity[4] in **younger adults**.

**Gap in Literature** No research has examined the impact that online social interactions may have on older adults.

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Purpose of Study
1. Evaluate potential cognitive, psychological, and social benefits of online interactions in older adults (aged 65+ years).
2. Develop a Community Engaged Learning (CEL) option for Psychology students at St. Thomas More College.

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CEL
- Classroom
- Classroom Learning & Knowledge
- Community
- Community Learning & Knowledge
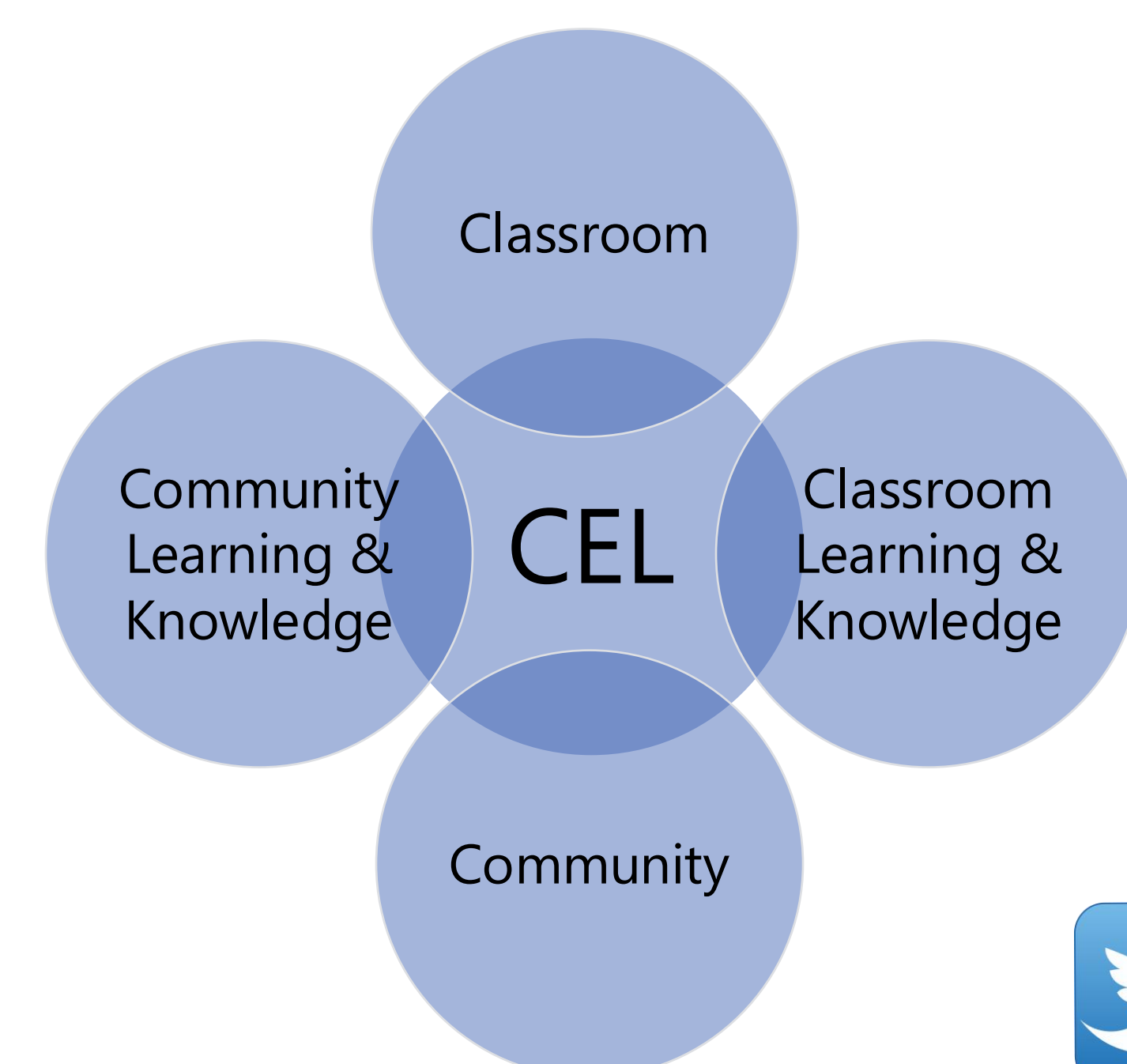
It was **hypothesized** that:
1. Having CEL students to provide older adults with training in *digital literacy* (i.e., the various digital skills and abilities needed in order to live, work, and learn in today's digital society)[5] would allow the older adults to benefit from meaningful engagement online.
2. This engagement may lead to improved memory, mood, and quality of life.

Method

Participants (Ps)

- 36 urban-dwelling older adults (M_{age} = 85.36 years, SD = 6.23, *range:* 71 – 94; 1 male)

Design

- A quasi-experimental pre-test/post-test within-subjects design.

- Digital literacy skills, cognitive measures, well-being measures were examined to evaluate the impact of training.

  - Wellbeing and memory were examined to reflect potential psychological and cognitive gains.

Method Continued

Procedure

Recruit-ment
Interested Ps (at Luther Care Communities, Saskatoon, SK) are matched with CEL students.

Pre-Test

Demographics Questionnaire:
- Age & Sex

Cognitive Measures:
- **Working memory** (WM; Backward Digit Span Task)[6]
- **Short-term memory** (STM; Forward Digit Span Task)[6]

Digital Literacy Skills:
- Self-Assessment (Technology Use Questionnaire)

Well-being Measures:
- **Perceived Stress** (Perceived Stress Scale)[7]
- **Life Satisfaction** (Life Satisfaction Index for the Third Age – Short Form)[8]
- **Loneliness** (deJong Gierveld Loneliness Scale)[9]
- **Happiness** (Oxford Happiness Questionnaire)[10]
- Various domains of **Quality of Life** (Older People's Quality of Life Questionnaire)[11]

Digital Literacy Training
Ps meet with matched CEL students to complete various online socialization training tasks for 10 sessions (two 1-hr sessions per week).
- Training covers online tools (e.g., Facebook, Skype, WhatsApp, Messenger) and online safety (e.g., phishing attempts, scams).

Post-Test
Repeat questionnaires & collect feedback about the program.

Results

A series of paired-samples *t*-tests were conducted on pre-test and post-test scores to compare Ps' digital literacy skills, WM, STM, and their psychological & emotional well-being.

- Did the digital literacy training improve Ps' ability to use online tools?

After training, Ps reported significantly higher scores on abilities to:
1. **Use social networking sites**, $t(23)$ = -2.93, p = .008.
2. **Use mobiles devices**, $t(24)$ = -3.95, p = .001.
3. **Find information online**, $t(23)$ = -3.45, p = .002.
4. **Complete everyday tasks online** (e.g., ordering food), $t(23)$ = -2.23, p = .035.
5. **Communicate with family & friends online**, $t(23)$ = -2.34, p = .028.

Results Continued

- Did the digital literacy training improve Ps' memory?

No significant differences were observed between Ps' pre- and post-test scores on **STM**, $t(24)$ = -.618, p = .543, or **WM**, $t(24)$ = -.225, p = .824. But STM and WM became more closely correlated at the post-test, $r(36)$ = .55, p = .004, compared to the pre-test, $r(36)$ = .36, p = .031.

- Did the digital literacy training improve Ps' well-being?

Ps reported significantly **lower perceived stress** after the training, $t(23)$ = 2.88, p = .008.

All other **well-being measures** remain non-significant, ps > .096

Perceived Stress
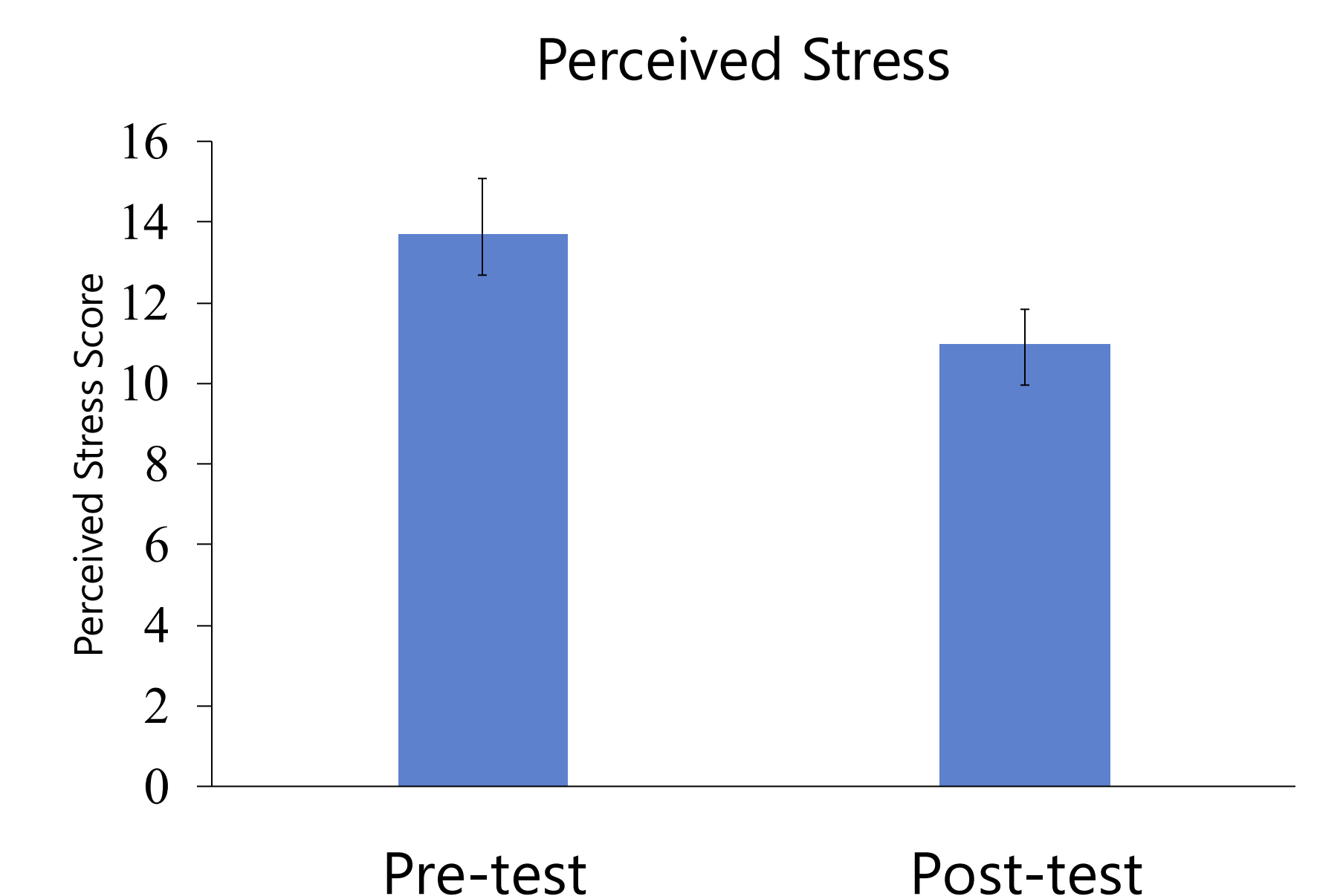
Discussion

A strong positive correlation between STM and WM is typical in aging populations. As this correlation became stronger at post-test, the online socialization training may have buffered this cognitive change.

The current sample size is too small to effectively evaluate the hypotheses. Further, data collection was slow (2-7 Ps tested by 4-14 CEL students each semester, with attrition during training phase), put on hold, and ultimate terminated due to the COVID-19 pandemic.

Rural population could potentially benefit more from social media use and meaningful connections online, this warrant future research. Future studies could also include 6 months – 1 year follow-up to see if changes are stable. A control group of face-to-face socialization should be added in the future as well.

Overall, the CEL option has provided benefits to the older adult Ps and the CEL students, while contributing to research in the area.

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