Using Social Media to recruit vulnerable populations to participate a mobile health (mHealth) interventions

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INTRODUCTION:

Social media platforms offer an alternative and effective method to recruit a diverse sample of participants within a shorter time frame (Bunge et al., 2019).

However, further research is needed to determine systematic methods for recruiting vulnerable populations.

METHODS:

Study Context
The DIAMANTE study is testing a smartphone-based intervention (a text messaging system that uses machine learning to personalize content) to increase physical activity for patients with diabetes and depression.

Population
Individuals aged 18–75 years who have been diagnosed with diabetes and documented depressive symptoms (score >5 on the PHQ-8).

Procedure
US-based individuals will be recruited using advertisements on Craigslist, Facebook, Google Ads and Twitter.

Our ads are designed by the research team to target low-income, vulnerable populations. Using a User Centered Design, we created 18 personas that mapped into the populations' demographics we are targeting for DIAMANTE sampling. A persona is a fictional characterization of a user that includes specific characteristics, demographics found in target population (Miaskiewicz & Kozar et al., 2011).

To identify eligible individuals, we will include a Qualtrics link on the social media ads to verify inclusion criteria. If eligible, individuals will be emailed the baseline survey and relevant enrollment steps via email.

Our recruitment methods were informed from lessons learned in utilizing a similar recruitment approach in a study aiming to deliver a text-messaging system to individuals struggling with social distancing during the COVID-19 pandemic.

The **StayWell at Home** study is a text-messaging, platform that was distributed to individuals aged 18+ to provide accessible support on a population wide scale.

It is possible to recruit diverse sample sets for mHealth interventions utilizing social media advertisement.

However, recruiting low-income and Spanish speaking populations is more difficult.

Designing ads that target the characteristics and demographics of **end-users** can be time-effective.

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LESSONS LEARNED FROM STAYWELL AT HOME:

Facebook
- 182 /362 of interested individuals enrolled
  - 180 English speakers
  - 2 Spanish speakers
- 50.6% conversion rate

Craigslist
- 75/191 of interested individuals enrolled
  - 51 English speakers
  - 24 Spanish speakers
- 39.3% conversion rate

Characteristics	N = 257
Age (mean, SD)	32.9 (10.2)
Female	52.2%
Spanish speakers	11.6%
Some high school or less	45.1%
Unemployed	33.9%

PRELIMANARY RESULTS OF DIAMANTE:

Craigslist
- 126 individuals interested (117 English-speakers, 9 Spanish speakers)
  - 39.3% of interested individuals are eligible
  - 42.8% conversation rate

DISCUSSION:
- The StayWell study showed that although there were demographic differences in the recruitment of of vulnerable populations it is possible to recruit large samples via Facebook and Craigslist **over** 6- month recruitment period.
- However the low amount of low-income and Spanish-speakers implies that this population may have additional barriers to pursue.
- Identifying groups that we would expect to respond to the ad and tailoring the ad campaigns accordingly can increase the recruitment of low-income Spanish-speakers for DIAMANTE .
- Asking targeted audiences about barriers and facilitators to enrolling to a study online can help up us address these issues by modifying our DIAMANTE recruitment procedures.