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The mental health impact of computer and internet training on a mainly non-white, depressed sample of non-institutionalized older adults

Submission date
17/02/2013

Recruitment status
No longer recruiting

Registration date
30/05/2013

Overall study status
Completed

Last Edited
30/05/2013

Condition category
Mental and Behavioural Disorders

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
Internet training for older adults are needed in order for them to benefit from this technology. Many older individuals and particularly those from non-White backgrounds, often are not in the position to learn how to use computer technology in order to engage in a variety of medically-related, psychological, and social activities. Unfortunately, the availability of internet training opportunities in older age remains low due to transportation, access, and cost-related issues. In order to find ways to minimize the age-related digital divide, some researchers have implemented internet training interventions. Findings of studies in this research area have shown that these kinds of interventions (administered either in a group or in a one-on-one format) can improve computer attitudes as well as some mental health problems, but results are inconsistent and do not cover ethnically diverse older adults. To contribute to the research in this area and target a population typically neglected in research, namely ethnically diverse older adults, we intend to investigate whether providing one-on-one computer technology training to non-institutionalized older adults (i.e. older adults not living in care homes, hospitals, certain institutions, etc) from a variety of ethnic backgrounds could positively impact their computer technology beliefs and well-being. Computer technology training aimed at improving computer beliefs, self-esteem, and depression in ethnically diverse older adults has the potential to be successful.

Who can participate?
Non-institutionalized older adults from any ethnic background.

What does the study involve?
Older adults will be randomly allocated to two groups. One group will undergo one-on-one computer technology training administered by research assistants (RAs). The manualized intervention comprises of simple one-on-one instructions that the trainers must follow regarding how to teach older adults to use a computer, to email, and to surf the internet. Training is administered over the course of six weeks, for one and a half hour per week. The

other group, namely the control group, will be matched in the amount of attention given to participants, as research assistants will individually visit the control subjects for one and a half hour per week without performing the weekly training. At baseline (beginning of the study) and after six weeks (corresponding to the end of training for the experimental subjects), we will assess the four outcome variables, namely computer attitudes, computer self-efficacy, self-esteem, and depression in all our participants. Additionally, at baseline, we will gather demographic and health information on each subject for descriptive purposes.

What are the possible benefits and risks of participating?
Subjects who are randomized to the control group will have an opportunity to receive the training once the study is completed if they wish to do so. By taking part in this study, there are no risks of physical injury or harm. Possibly increased levels of anxiety will be experienced by experimental subjects during the training on computer technology, but this will be comparable to what is encountered in real life learning situations. These unlikely risks are offset by the study s potential to offer a needed community service that will teach many older adults how to use the computer and the internet, enhance their level of comfort and confidence with computer technology and, most importantly, enhance their mood and self-esteem.

Where is the study run from?
The baseline and the post-intervention assessment sessions, as well as the implementation of the training, will be conducted at locations identified by the research participants as being convenient, including the Department of Psychology at California State University Northridge and several libraries in the area, where computers are freely available for the training.

When is the study starting and how long is it expected to run for?
The study started in March 2013 and will run until the required number of 500 older adults have been recruited, have been allocated to either group condition, and have completed the post-test.

Who is funding the study?
Partial funding for this study comes from The National Institute of Mental Health and the National Institute of Health.

Who is the main contact?
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Type(s)
Scientific

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Study information

Scientific Title
A randomised controlled study on the mental health impact of computer and internet training on a mainly non-white, depressed sample of non-institutionalized older adults

Study objectives
The implementation of our intervention will improve computer attitudes and self-efficacy, as well as self-esteem and mood symptomatology among older trainees by the end of the intervention. Based on the findings of prior studies, we also expect computer attitudes and computer self-efficacy to be significantly related, as well as self-esteem and depression.

Ethics approval required
Old ethics approval format

Ethics approval(s)
This study has been approved by the Institutional Review Board (IRB) of California State University Northridge. Approval will expire on 12/02/2013. Dr. Lagana` intends to renew the IRB for this study yearly.

Study design
Prospective randomized controlled trial

Primary study design
Interventional

Study type(s)
Quality of life

Health condition(s) or problem(s) studied
Reducing psychological distress as well as improving computer beliefs and self-esteem

Interventions
The one-on-one computer training programme imparted in this project was designed by the first author to enhance older adults computer technology attitudes and self-efficacy. This is the first time that our laboratory has used this manualized one-on-one training for well-being/mental health enhancement purposes. Each older adult recruited for this study signed our consent form. Every respondent was assigned a research assistant (RA) to perform the pre- and post-tests as well as to train him/her; at baseline, RAs collected data on socio-demographic attributes, physical health, and on the four outcome variables. After six weeks, all participants were re-tested on the four outcome variables, including the control subjects, who were trained following completion of the second assessment.

Control participants were visited by their RA once a week for 1.5 hours each week without engaging in training, in order to match the amount of attention given to participants in both

groups. At post-test, our experimental subjects were asked to e-mail their RA, in the presence of the trainer but without any assistance (to make sure that the trainee had indeed sent the email). All experimental subjects were able to complete this email task.

The first author trained all RAs to ensure their effectiveness as one-on-one computer trainers; the latter were asked to avoid deviating from training manual instructions and, for the purpose of quality assessment, to keep a diary of the training experience with each trainee and to document anomalies or deviations from the instructions. No substantial deviations were reported, as evidenced by weekly inspections of the diaries content by the second author and several RAs. The two assessment sessions and the training protocol (administered on desktop computers) were implemented at locations identified by the participants as being convenient, including the Department of Psychology at California State University Northridge and several libraries in the area. The first author wrote the training manual in order to standardise the training procedure. Its content is in line with cognitive ageing research findings, and its instructions address critical training issues. Generally speaking, in our training we aimed at maximizing trainees active participation in learning computer and Internet use and asked RAs to provide fast feedback to trainees on their progress during training. After using the same training manual, the RAs in a 2011 study by the first author reported that they (as well as their trainees) found the manual and the related training easy to follow and comprehend. Possibly due to all these procedures being in place, we did not experience any subject loss from pre- to post-test.

Intervention Type
Other

Phase
Not Applicable

Primary outcome(s)
Differences in the four outcome variables (namely computer attitudes, computer self-efficacy, self-esteem, and depression) between the computer technology trained and untrained older adults

Our four outcome variables were assessed twice (pre- and post-test, i.e., at baseline and after 6 weeks) while the rest of the variables were assessed only at baseline, to avoid burdening older adults. To quantify the socio-demographic and computer-related issues required for inclusion /exclusion purposes, we used a list of items that covered all the inclusion and exclusion criteria; this is the same list as the one used in the first authors 2011 study. It contains variables of interest including age, education, and household income, and ethnic background, as well as computer ownership, access to a computer, prior computer experience, and ability to e-mail.

1. To calculate computer technology attitudes, we utilized the latest version of the Older Adults' Computer Technology Attitudes Scale (OACTAS), which has achieved strong reliability results, as reported in the aforementioned 2011 study (Cronbachs α reliability = 0.92). All its 17 items are negatively worded, in an attempt to elicit candid responses to computer technology questions from computer illiterate individuals. Responses are coded on a 7-point Likert-type scale from -3 strongly disagree to +3 strongly agree; the scores are reversed before conducting data analyses, in order to have higher numbers denote better computer technology attitudes.
2. The 30-item Computer User Self-Efficacy Scale was used to assess computer-self-efficacy; according to its authors, the Cronbach's α of this measure is 0.97 and the test-retest reliability coefficient is 0.86. Items are rated on a 6-point Likert-type scale ranging from 1 strongly disagree to 6 strongly agree. The only minimal adaptation of this tool involved deleting an

irrelevant introductory item relating only to college students.
3. To quantify health status (which was done for descriptive purposes only), we used a very short version of a well-validated health measure, the 12-item SF-12 Health Survey, which is a sound measure of health status. Its multi-item scale assesses 8 health concepts: physical functioning, role limitations due to physical health problems, bodily pain, general health, vitality (energy /fatigue), social functioning, role limitations due to emotional problems, and mental health (psychological distress and psychological well-being). This measure has high test-retest reliability scores (0.76-0.89). To minimise burdening our older research participants, given that physical health was not one of our outcome variables, we asked only the first two questions: 1) self-rated health and 2) ease of engaging in moderate activities of daily living, including moving a table, pushing a vacuum cleaner, bowling, or playing golf.
4. Self-esteem was measured using the Rosenberg Self-Esteem Scale: a 10-item, 6-point Likert-type scale measuring basic feelings of self-worth. Its Cronbach's α internal consistency is 0.74 among non-institutionalized seniors. It has been previously utilized with older adults and is recognized in the literature as an appropriate scale for measuring global self-esteem in older age. Its utilization allowed the operationalisation of our respondents global self-esteem at baseline and follow-up assessments.
5. We used the Beck Depression Inventory II (BDI-II) to assess depressive symptomatology; it contains 21 sets of four statements that describe varying intensities of somatic and cognitive-affective symptoms of depression. Respondents choose the one statement from each group that best describes how they have been feeling for the past 2 weeks. This tool is appropriate for use with geriatric samples and was utilized to operationalise changes in mood symptomatology before and after our intervention. Based on findings of a study on a depressed geriatric sample, the BDI-IIs internal consistency is very high (α = 0.90), and gender, ethnicity, or age are not significantly related to the total scores on this measure. This is ideal for our sample, as it is comprised primarily by women. An appropriate BDI-IIs cut-off score for significant depression among geriatric populations is 10, as using this score in a study on cognitively intact older adults led to 96.30% sensitivity in correctly identifying depressed and non-depressed subjects.

Key secondary outcome(s))
No secondary outcome measures

Completion date
01/03/2023

Eligibility

Key inclusion criteria
Ethnically diverse older adults meeting the following criteria:
1. Being at least 50 years-old
2. Being fluent in English if this is their second language (in order to minimise confounding our findings with levels of acculturation).
3. Being willing and able to attend all six sessions of our one-on-one training (even if our control /waitlist participants will first receive six weekly visits, not the training).
4. Staying in the area for the next two months
5. Being able to access a computer at their home (a common occurrence in most homes)

Participant type(s)
Patient

Healthy volunteers allowed

No

Age group
Senior

Sex
All

Key exclusion criteria
Participants who:
1. Reside in an institutional setting
2. Are unable to grant informed consent (i.e. are not fluent in English enough to fully comprehend the content of the consent form)
3. Have more than minor computer technology experience (operationalized as having turned a computer on and off, or having viewed other people utilize computer technology to write documents or use the internet). As a result of implementing these three criteria, all our participants will be computer and internet illiterate (i.e. non-users of the technology taught in our training).

Date of first enrolment
01/03/2013

Date of final enrolment
01/03/2023

Locations

Countries of recruitment
United States of America

Study participating centre
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Sponsor information

Organisation
California State University (USA)

ROR
https://ror.org/020qm1538

Funder(s)

Funder type
Government

Funder Name
The National Institute of Mental Health (USA)

Funder Name
The National Institute of Health (USA)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration