**Protocol**

**Title**

Effects of a narrative reminiscence intervention (NRi) on improving intergenerational relationships, quality of life and subjective well-being in older adults: A Pilot Randomized Controlled Trial

**Running title**

Narrative Reminiscence Intervention in older adults: A pilot RCT

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**Abstract**

Population ageing becomes one of the most significant social transformations of the twenty-first century, affecting the demand of health services, family structures and intergenerational ties. The cost of healthcare for the older population will become a huge social burden. Non-pharmacological interventions have been advocated to alleviate the burden from the aging population.

The objectives of this proposed pilot Randomized Controlled Trial (RCT) to evaluate the feasibility of the narrative and reminiscence intervention (NRi) and its effectiveness in improving,

(i) intergenerational relationship between older adults and their children/grandchildren,

(ii) quality of life and subjective well-being

Subjects will be recruited using convenient sampling from an ongoing project known as the CHI Study ('Intergenerational Study on Ageing and Mental Health: The CHI Study' NUS IRB Ref code: H-17-047), a cohort study of 1000 elderly living in the vicinity of Toh Yi Drive, Bukit Timah, Singapore . 66 families will be recruited, one elderly (i.e. the participant) aged 60 or above and one of his/her adult children/grandchildren will be recruited in each family.

The children/grandchildren of the participants will be trained as the interviewers. One-to-one oral history interviews with the elderly will be used in the NRi. The interviews will be conducted at the participants’ homes. Those families assigned to the control group will receive the intervention after the NRi group. Proposed outcomes include Intergenerational Relationship, Family Cohesion, Quality of Life, Loneliness, and Subjective Well-being. Process evaluation will be conducted after the intervention to assess the acceptability, strengths and limitations of the NRi based on the participants’ perspectives.

Findings of this study can support the feasibility of the proposed intervention in enhancing intergenerational relationships between the elderly and their children/grandchildren, and improve the psychological outcomes of the elderly. Given the non-pharmacological nature and affordable cost of the intervention, it can be applied to various communities in Singapore to promote ageing in place and intergenerational interaction.

(311 words)

**Introduction**

Population ageing becomes one of the most significant social transformations of the twenty-first century, affecting the demand of health services, family structures and intergenerational ties. The cost of healthcare for the older population will become a huge social burden. Non-pharmacological interventions have been advocated to alleviate the burden from the aging population.

Reminiscence Therapy (Yen and Lin, 2018) was formulated from Butler’s work on ‘Life Review’; the psychotherapy involves the discussion of past activities, events and experiences with others and is usually with the aid of prompts such as photographs, familiar items or music. Reminiscence Therapy was shown to have significant impact on elderly mood, well-being and loneliness. Narrative Therapy focuses on life stories with the goal of challenging existing meaning systems, and re-constructing ones that are more functional to increase the sense of themselves. However, these two approaches were initially designed for patients with dementia/other mental health issues. Little or no evidence have tested its efficacy on healthy older adults, which in turn may shed light on factors contributing to healthy ageing.

Intergenerational studies reported that older adults enjoy engaging with younger people, and eventually benefit from the social stimulation (Dauenhauer et al., 2016). Through the intergenerational activities, the relationship between elderly and their younger family members can also be improved.

The aim of the proposed study is to develop a narrative and reminiscence intervention based on similar concepts drawn from Reminiscence Therapy and Narrative Therapy and evaluate its effectiveness in improving intergenerational relationships, quality of life, and subjective well-being of the participants. A pilot RCT is proposed and children/ grandchildren will be invited as an interviewer to interview their parents/grandparents about their life events.

Findings of this study can support the feasibility of the proposed intervention in enhancing intergenerational relationships between the elderly and their children/grandchildren, and improve the psychological outcomes of the elderly. Given the non-pharmacological nature and affordable cost of the intervention, it can be applied to various communities in Singapore to promote ageing in place and intergenerational interaction.

**METHODS**

**Study design**

 This is a parallel Randomized Controlled Trial (RCT) examining the feasibility of introducing a narrative and reminiscence intervention (NRi) to improve intergenerational relationships, subjective well-being and quality of life. A follow-up process evaluation through qualitative interview will be conducted to assess the acceptability, strengths and limitations of the intervention based on the participants’ perspectives.

**Setting**

Subjects will be recruited using convenient sampling from an ongoing project known as the CHI Study (Study on Ageing and Mental Health: The CHI Study' NUS IRB Ref code: H-17-047), a cohort study of 1000 elderly living in the Vicinity of Toh Yi Drive, Bukit Timah, Singapore.

**Participants**

66 families will be recruited from the CHI study including one elderly participant together with his or her child/ grandchild as interviewer from each family. If the elderly participant does not have child to participate, the Research Assistant will be the interviewer.

*Inclusion criteria for the elderly:*

* Aged 60 or above with child(ren) or grandchild(ren) OR Aged 60 or above without child or grandchild to participate.
* Able to understand and communicate in either English or Mandarin
* Able to provide consent to participate

*Exclusion criteria for elderly:*

* With severe cognitive or psychiatric disorders
* With severe hearing or vision impairments
* Involved in other clinical trials

*Inclusion criteria for the interviewers:*

* Elderly’s child or grandchild OR the Research Assistant
* Aged 21 or above
* Able to understand and communicate in either English or Mandarin
* Able to give consent to participate
* Willing to attend the training session

*Exclusion criteria for the interviewers:*

* With severe cognitive or psychiatric disorders
* With involvement in other clinical trials
* Involved in other clinical trials

**Sampling and Recruitment**

Convenience sampling will be used. Recruitment posters will be posted at the vicinity of Toh Yi Drive and H-17-047 subjects will be re-contacted to request their participation. The RA will screen the potential participants and interviewers for eligibility using the checklist of screening questions (as attached) when contacting potential participants to schedule the training/briefing session.

For the elderly, they will be further screened for mental capacity using Montreal Cognitive Assessment Tool (MoCA) (information is available at: <https://www.mocatest.org/>) by the RA, before obtaining informed consent. (Remark: The RA would attend the online training and get the certification before starting the recruitment).

The RA will also explain the study to the potential participants and provide the Consent Form as well as the Participant Information Sheet to the participants.

**Randomization**

Block randomization with block size 8 will be adopted to ensure the equal number in the intervention and waitlist control group (Mathews 2006).

Random numbers (i.e. 1 to 8) will be generated using the MS Excel function “Randbetween” and then put in an opaque envelop to achieve allocation concealment.

**Intervention**

*Intervention group*

One-to-one oral history interviews with the elderly will be used in the narrative reminiscence intervention (NRi). 66 families will be recruited. The children/grandchildren of the participants or the RA will be trained as the interviewers by a team of professionals comprising of psychiatrists and anthropologists. The interviews will be conducted at the participants’ homes or zoom or phone. The familiar environment and bonding between the family members can provide a safe and comfortable zone for the elderly to openly share about their life stories.

There will be a total of six 30-minute sessions in 10 weeks. The number and length of the sessions are decided based on previous studies (Wang 2004; Wang 2005). In each session, the interviewers will interview the elderly with pre-defined aims set based on previous studies (Yen and Lin, 2018). Research Assistant will contact the interviewers to remind them to proceed the interview at the start of the week before each session and the interviewer will be asked to send a message to the RA after the completion for each interview. The RA will then call the interviewer at the same day after receiving the message or the next Monday (if no message is received) to check the progress and interviewee. The contents of the 6 sessions are summarized in the below table. Proposed questions for the sessions are summarized in the file “Guidelines for conducting interview”.

|  |  |  |
| --- | --- | --- |
| Week | Task | Content |
| -1 | Baseline measurement | Complete a questionnaire |
| 0 | Preparation | Training of interviewers (i.e. the children/grandchildren) |
| 1 | Session1 | Explanation of interview purpose and identification of personal archives to jog memories. **Family history and childhood days** |
| 3 | Session 2 | **Childhood memories**, schooling years and war years (if any) |
| 5 | Session 3 | **Community Life** (in terms of culture – oral traditions, festivities, customary practices, religious life, according to ethnicity and how they have evolved over the years) |
| 6 | Interim measurement | Complete a questionnaire |
| 7 | Session 4 | **Livelihood, marriage life, personal life, domestic routine**, changing role over the passage of time |
| 9 | Session 5 | **Reflection on significant events and key milestones in life**, including aging. |
| 11 | Session 6 | **Overall reflection on life achievements and problems** related to life transitions, and recognizing own strength |
| 1213 | Posttest measurementProcess evaluation | Complete a questionnaireParticipate in the face-to-face interviews ~~focus group discussion~~ (subgroup of participants) (elderly and interviewer pair will be interviewed together) |

Interviews will be suggested to be audio-recorded and interviewers will be asked to write notes (at least one-page A4 size) on review of each completed interview based on the audio-records. The audio-records will be used by the interviewers for writing the reviews only and will not be collected by research team. Review will include identification of interviewee’s positive and negative experience of life events and also need for follow-up interview questions, if any. The interviewers will also be instructed to write synopsis for each completed interview (about 150-200 words per interview). The purpose of the review is to generate content, which will eventually be printed out into a personalized life storybook for the participants after the completion of the intervention. The quotes from the review notes will not be analyzed or used in any publications/presentations.

*Waitlist control group*

Those families assigned to the control group will be asked to complete the questionnaire at week 0, 6 and 12, Thereafter, the interviewers in the control group will receive the same training as the intervention group (at week 14 or 15) while the interviews will start from week 16. However, no evaluation will be conducted from week 16.

**Training for the interviewers**

Two weeks before the start of the intervention, a 2-hour group training session (each group with 5-8 participants) will be provided to the interviewers in the NRi group. The sessions will be conducted through Zoom and will be conducted by a team of professionals comprising of psychiatrist (Co-I) and nurses (Co-I), the training materials outline is attached in the file “Outline of training materials”.

The training, with reference to the motivational interviewing strategies for elderly (Purath et al 2014) will cover the fundamentals of conducting an one-to-one interview using a biographical adaptive oral history methodology. Specifically, the following topics will be covered during the training sessions:

* Objectives of the study (7 mins)
* An overview of Ageing and Dementia in Singapore (10 mins)
* Techniques in conducting one-to-one-interview with the elderly – crafting of interview questions, use of personal archives and artifacts (23 mins)
* Writing synopsis and reviewing interviews (14 mins)
* Methods from Narrative and Reminiscence Therapy (13 mins)
* Conducting a mock-interview (role-play) (20 mins)
* Emotional support including self-awareness, self-management and relationships (10 mins)
* Use of recording machines (e.g. audio recorder or smartphone) (10 mins)
* Reframing negative life events and ‘dos and donts’ (13 mins)

The 2-hour training session focuses mainly in the interview skills between the interviewers and their parents/grandparents. As the target population are healthy subjects and the interviewers are their family member; therefore, a 2-hour training session should be appropriate.

The Co-Is will train the interviewer in terms of how to provide support to interviewee, when the interviewee is in distress or if questions cause emotional agitation. The techniques could be providing emotional support, reassurance, and allow the interview time and space to settle down with their emotion. (Included as one of the topics for training session – Emotional support (10 mins))

The research assistant will receive the same training as the children/grandchildren before starting the intervention.

The training will be conducted by Co-I1 (Dr Vivien Wu) and Co-l3 (Dr Roger Ho). Co-I1 had undergone training in conducting interview for qualitative research and has published several papers using qualitative interview approach (Wu et al 2017; Ooi et al 2018]. She also had experiences in working with the elderly population. Co-I1 Dr Wu did not conduct research projects in NRi*.*Asso Prof Roger Ho (Co-I3) is a psychiatrist by training and has worked with elderly in his clinics and research projects. He involved in a similar study with Narrative.

Interviewers in the waitlist control group will receive the training after the completion of the NRi intervention (at week 14 or 15).

**Propose outcomes**

The following Table summarizes all the proposed outcomes and their corresponding measurement tools. Descriptions of these tools are provided thereafter.

|  |  |  |
| --- | --- | --- |
|  | Elderly | Facilitators |
| * Intergenerational Relationship
 | IRQS-AP |  |
| * Family Cohesion
 | BFRS - Cohesion | BFRS - Cohesion |
| * Quality of Life
 | WHOQOL-OLD | WHOQOL-BREF |
| * Loneliness
 | UCLA Loneliness Scale | UCLA Loneliness Scale |
| * Subjective Well-being
 | SWLS  | SWLS |

The same measures are completed at all 3 time points.

*Intergenerational Relationship*

The 13-item Intergenerational Relationship Quality Scale for Aging Parents (IRQS-AP) was developed on the basis of the solidarity, conflict, and ambivalence models and operationalized as a multidimensional concept comprising five domains: structural–associational solidarity, affectual closeness, consensual–normative solidarity, intergenerational conflict, and functional exchange. It was designed to measure the quality of intergenerational relationships from elderly’s perspective. The reliability of the scale, measured using Cronbach’s alpha, was .776. The convergent validity of the IRQS-AP was established by its significant correlation with depressive symptoms (r = −0.385), sense of loneliness (r = −0.449), and self-image (r = 0.384). (Bai, 2017) The scale had been used in adults aged 50 or above. (Bai, 2018) (Section B of the Questionnaire)

*Family Cohesion*

Family cohesion will be measured by the Brief Family Relationship Scale (BFRS) (Fok et al, 2014). The BFRS is adapted from the 27-item Relationship dimension of the Family Environment Scale (Moos & Moos, 1994), consisting of Cohesion, Expressiveness, and Conflict subscales (9 items each). The FES is a 90-item true–false measure that forms 10 subscales and we focus only on Cohesion, conceptualized as “the extent to which family members are encouraged to express their feelings directly”, in this study. The Cohesion subscale comprises nine true–false items. A score, ranging from 0 to 9, is generated by summing over the 9 items. Internal consistency of the FES scales ranged from 0.61 to 0.78 while the Cronbach’s alpha for the Cohesion subscale was 0.78. (Moos and Moos, 1994) The scale was used to measure the cohesion among adult family members (Loveland-Cherry et al 1989, Teufel-Shone et al 2005). There are 7 items for Cohesion in the BFRS and the Cronbach’s alpha was 0.83. (Fok et al, 2014) (Section C of the Questionnaire)

*Quality of Life*

World Health Organization Quality of Life (WHOQOL) Group developed a WHOQOL-OLD module for older adults to measure the quality of life for elderly. WHOQOL-OLD contain¬ing six facets (including sensory abilities; autonomy; past, present, and future activities; social participation; death and dying; and intimacy), with four items in each facet constituting a 24-item scale (Power, Quinn, Schmidt, & WHOQOL-OLD Group, 2005). Each of the facets has four items and the response format is a 5-point Likert scale (i.e., score 1 = not at all, 2 = a little, 3 = a moderate amount, 4 = very much, 5 = an extreme amount), leading a possible score ranging from 4 to 20. The sum of the facet scores results in an overall QOL score for older adults. Different language versions of WHOQOL-OLD have been evaluated and have shown good reliability and validity (Liu et al, 2013). (Section D of the Questionnaire)

WHOQOL brief (BREF) is a subjective evaluation of individuals’ perceptions of their positions in life, in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It consists of 24 items to assess perception of quality of life in four domains, including physical health, psychological, social relationships and environment, and two items on overall QOL and general health. A higher score indicated a better QOL. (Appendix 5)

Both WHOQOL-OLD and WHOQOL-BREF have been validated in Singapore (Suárez et al, 2018; Cheung et al 2017) (Section D of the Questionnaire)

*Loneliness*

Loneliness will be measured using the UCLA Loneliness Scale (Russell 1996). The scale contains 20 items; 11 of the items reflect dissatisfaction (negatively worded) with social relationships and 9 reflect satisfaction (positively worded). Higher scores indicated greater degrees of loneliness. Internal consistency was determined by an alpha coefficient of 0.87 for elderly and 0.90 for their children. (Russell, 1996) (Section E of the Questionnaire)

*Subjective Well-Being*

The Satisfaction with Life Scale (SWLS) has been used in older adult, non-clinical samples to evaluate subjective well-being (Leyland et al., 2019; Melendez et al., 2019). SWLS has been used in older adult, non-clinical samples to evaluate subjective well-being (Leyland et al., 2019; Melendez et al., 2019).

The SWLS (Diener, Emmons, Larsen, & Griffin, 1985) consists of 5 positively-worded statements that participants respond to on a 7-point Likert-type response scale ranging from (1) strongly disagree to (7) strongly agree, depending on the person’s overall judgment of his/her life. SWLS have shown good internal consistency reliability (Cronbach’s α pre/post = >0.80)

Chinese version of all the above-mentioned scales are available. Both English and Chinese version questionnaire will be provided to the participants for selection during the baseline assessment. Upon selection, same (language) version of questionnaire will be used for the follow-ups.

*Process Evaluation*

The purpose of process evaluation (Oakley et al 2006) is to assess the acceptability, strengths and limitations of the narrative and reminiscence intervention (NRi) based on the participants’ perspectives. A qualitative approach will be used. The process evaluation interview (see Semi-Structured Interview Guide attached) will be conducted via Zoom conferencing or telephone call (whichever is preferred by the participants) for 5 pairs of elderly – children/grandchildren (i.e. participant and the his/her interviewer) within 1 month after the completion of the intervention. An interview guide will be developed based on the literature review and used to guide the interview discussion. The participant and interviewer will be interviewed together. All interview discussion will be audio-recorded and conducted in either Chinese or English according to participant’s selection. If the participant or interviewer refuse to be recorded, the pair will be excluded for the interview.

It is expected the interview will take around 20-30 minutes and will be conducted by the co-investigator (Dr Vivien Wu) and RA remotely. The audio files will be transferred to the principal investigator’s computer for analysis and erased from the device immediately after the transfer. Participants’ quotes from the interviews used in publications/presentations would not have information identifying the participants. Audio-recording files would not be used in publications.

The Consent Form would seek participants’ written consent to participate in these interviews. Expressed consent would be sought again just before the interviews are conducted.

**Data collection**

A virtual briefing session will be conducted via Zoom for all the participants and interviewers, regardless the group, one week before the first interview of the intervention group (week 0) and the first questionnaire will be sent to the participants and interviewers by email (e-questionnaire) or mail (paper version). They will be advised to fill the questionnaire independently (except the RA) and submit the completed questionnaire to the RA by email or mail or leave it at collection box in the centre. It is estimated that the participants will take 15 minutes to complete the questionnaire. At week 6, RA will send the second questionnaire to the participants and interviewers by email or mail or leave it at collection box in the centre. Similarly, they will be advised to fill the questionnaire independently and submit the completed questionnaire to the RA by email or mail or leave it at collection box in the centre. Within one week after the last interview, participants will be asked to mail the notebook to the RA using the envelope and stamps provided by us. In week 12, the third questionnaire will be sent to the participants by email or mail. In week 14 or 15, the RA will send the notebook to the participants assigned to the waitlist control, as well as remind them to start the first interview in week 16.

Elderly participants and interviewees (except the RA) will be advised to fill the questionnaire independently and submit the completed questionnaire independently, to ensure confidentiality, in the event that their survey responses upset the other party/cause friction between them or even with other family members.

**Incentives**

Each participated family in either group will be given $70 for completing the whole study ($30 for completing the first follow-up questionnaire, i.e. week 6, and $40 for completing the last follow-up questionnaire, i.e. week 12). If only one participant of the pair completes the questionnaire 50% of the incentive will be given.

$15 will be given to each participant/child/grandchild completing the process evaluation.

**Data Storage**

The completed questionnaires and audio files from interviews will be stored in the PI room for 10 years, under locked storage. Only the first set of questionnaire will collect the names and telephone numbers of the participants/interviewers and will be kept separately in the PI room. The RA will make the contact with the participants/interviewers in the PI room. For the second and third set of questionnaire, we will use the participant’/interviewer’ number for identification.

**Sample size estimation**

For pilot RCT with continuous outcomes, Teare and colleagues (2013) proposed a sample size of 60. To account a 10% attrition rate, 66 pairs of subjects (i.e. 33 pairs per group) will be recruited for the proposed study.

**Data Analysis**

Descriptive statistics will be used to summarize the demographic and outcome variables collected at baseline. Independent sample t-test and Chi-square test will be used to examine the difference of the demographic and outcome variables between the intervention and control group at baseline and follow-up. Analysis of Covariance will be used to examine the difference of the outcome variables at follow-up after adjusting the covariates. The level of significance will be set at 5% and all the analyses will be conducted using IBM SPSS version 27.

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