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# Childhood activities adults utilizing for the Intervention Reminiscence-Based Screening

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**Abstract.** Ageing people is a vulnerable population, so it is a global public health concern among nations. Indonesia has tendency to be an ageing structure population on the future. At one public home care in Jakarta, there was an extremely data about decreasing number of healthy older adults in three consecutive years since 2016. Behind in this problem, the reminiscence screening about childhood activities has done in one public home care. It was utilizing by the basic principle of Intervention Reminiscence – Based Screening. the qualitative study with a mix-method design was used in this study via verbal, then data transformed for four stages namely decontextualization, recontextualization, categorization, and compilation. Data have written text and transform for content analysed by surface structure to identify meaning units follow by coding, categorize, and themes. Participants 22 with inclusion criteria such as healthy, over 60-year-old, pass on sensory and cognitive screening. There were found three themes of childhood activities, namely: physical activity, mental activation, and interactive communication relationship. Although the participants were very excited during survey, there was found one participant who has none idea. Therefore, it is a good idea to develop a media for optimizing cognitive function of elderly in Indonesia.

## 1. Introduction

Ageing people is a vulnerable population. It is a global public health concern due to some degenerative problems among nations in the world. Although the bio-phyco-social and spiritual aspects are healthy condition, the population ageing needs promote and preventive program to maintain the quality of life. This condition is very important to support Indonesia government in order preparing tendency to be an ageing structure population on the future by 2035 – 2050 (1). In the previous study at one nursing home in Jakarta about three years by 2016, 2017, 2018 (Figure 1), there has been decreasing the total number of healthy older adults; namely: from 83 by 2016, fallen to 43 by 2017, and decline to 22 by 2018 (2). Figure 1 shown the graphic about decreasing total number of healthy older adults who have been declining of cognitive function within three years at nursing home in Jakarta by 2016, 2017, 2018. Decreasing number from 83 to 34 to 22, meaning that every year, there was decreasing the number of cognitive problems up to 50% among elderly at nursing home in Jakarta. Therefore, the intervention reminiscence-based screening (IRBS) has emphasizing to trigger brain to remind childhood activities. In the IRBS, there are three screening such as sensory functions for listening and respond verbal ability, cognitive function, reminiscence function especially childhood activities. However, this paper describes only about one step of screening called reminiscence screening about the ability of childhood activities. According to

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literature review known that declining cognitive function could be happen during ageing process, but the early dementia can be prevented by a reminiscence intervention. Reminiscence is about a real-life memory to serve three tasks such as directive, self, social that predict adaptive versus maladaptive (3) in which has eight factors involved boredom reduction, death preparation, identity/problem solving, conversation, intimacy maintenance, bitterness revival, teach inform (4). It called a non-pharmacological (5) because effective treatment for healthy older adults (6), (7), illness (8) well-being (9), self-esteem (6), and quality of life (10). There advantages of reminiscence can daily use (11) trough multimedia such as photos, movies, sound, music, indirectly smell, taste, touch, and movement (3).

## 2. Methods

The qualitative study with a mix-method design was used in this study via verbal, then data transformed for four stages namely decontextualization, recontextualization, categorization, and compilation. Data have written text and transform for content analyzed by surface structure to identify meaning units follow by coding, categorize, and themes (12). There were 22 participants were involved in which have inclusion criteria such as healthy, over 60-year-old, pass on sensory and cognitive screening. However, only participants who have pass on sensory and cognitive screening allowed in this reminiscence screening. It was due to obtain a strong design as a product as a media to trigger memory to optimize the cognitive function (13). Each participant was instructed to mention and share about the childhood experience that can still be remembered today. A semi-structured interview was used in this study for exploring the thought or memory about childhood activities. Finally, this study was approved by the ethic committee with the protocol number is 04.1705173 from the Moshtar Riady Institute for Nanotechnology (MRIN).

## 3. Results and Discussion

One study described that people under 60-year-old have not been declining cognitive function yet, but declining will be started by 61-year-old with influence factors such as education and physical condition (14). Therefore declining function of molecules, cells, blood vessels, and gross morphology due to ageing process affects the function of brain (15), and these can impact for memory (16). Based on cohort cognitive study found that men were slower than women by age 60 and above in experiencing cognitive decline (17), while elderly aged less than 60-year-old only slight cognitive decline (18). However, the brain infarct history was a precipitation factor or a trigger factor for accelerating the process of dementia at the age of over 60 years (2). Based on the IRBS study, there were found zero to seven childhood activities via reminiscence screening, although all participants (n=22) have mean age 68.1 year-old and mostly have a basic level of education background. However all participants have pass on cognitive screening via MMSE with mean score 27.95 and able to listen and respond verbal without hearing aids. Those screening to avoid bias data, because the poor verbal communication associated with hearing loss (19), (20) and declining cognitive function (2), One study state that a low education level as one of predisposing factor be affected performance on movement and may contribute to impairment of cognition (21). While other studies of reminiscence described that gender (23) and age (24) may lead as predisposing factors to influencing the vulnerable people to lack of well-being (22). To prevent early dementia and maintain healthy ageing, the IRBS has found three themes of trigger reminiscence function, namely physical activity, mental activation, and interactive communication relationship (Table 1).

Although there was one study describes that the more ageing and the more decline the cognitive as well as memory function (17), it does not meant no hope for promotion program as a non-pharmacological intervention for elderly as a vulnerable people. Therefore, the three of themes was developed as a simple media in which able to trigger the past memories for slow down evidence of early dementia among health older adults in Indonesia (Figure 1).

**Table 1.** The contents analysis of reminiscence screening about the childhood activities (n=22)

Meaning Unit	Code	Sub-categories	Category	Theme
Gymnastic, chess, soccer, Ping-Pong, badminton, volley ball, weightlifting, swimming	Exercise and sports	activity require strengthen of muscle	Hard-skills	Physical Activity
Knits	Skills	activity require skills	Soft-skills	
Angklung, listening to music	Hearing and verbal	pay attention to	social and collective memory	Mental Activation
Watching television	Vision	pay attention to	social and collective memory	
<i>Congklak, ular tangga, kasti, rondes, dolls, cooks, riding bicycle, puzzle, marbles, kites, carambola, panjat pinang</i>	Traditional games	motor activities of leisure and recreation in the peer group	social interactive with person	Interactive communication: personal and interpersonal relationship
Gardening	Gardening	motor activities of leisure and recreation in self	social interactive with environment	
Spiritual act	Spiritual act	motor activities of leisure and recreation in God	social interactive with God	

### 3.1. Physical activity (PA) theme

PA theme is about an activity in which required the strengthen of muscle or skills, both hard and soft skills. In this condition, sensory and cognitive functions have coordination to receive information and perceive a perception. In the physical activity theme, there was came from nine kinds of childhood activities such as gymnastic, chess, soccer, ping-pong, badminton, volley ball, weightlifting, swimming, and knits, there is given code with exercise, sport, and skills. For code as an exercise and sports, so sub-categories has given name by the activity require strengthen of muscle, while code of skills is given sub-categorize as an activity require skills. Both of sub-categorize are categorize as hard and soft skills, so that the given theme is a physical activity. In IRBS study, PA may lead to prevent early dementia among healthy older adults instead of sleeping or being sit alone at nursing home. PA was a mild exercise about standing, clapping hands, and movements about 30 minutes. PA will fuel baseline cortisol daily in which can help control blood sugar levels, regulate metabolism, reduce inflammation, and assist with memory formulation, then it has a controlling effect on salt and water balance and help control blood pressure (20). This kind of physical activity could be appropriated as intervention reminiscence among healthy older adults either at the nursing home or in the community-based. PA has strongly relationship with cognitive impairment due to imbalance gait performance (25). All older adults are needed to encourage for

physical activity, because it necessary to invest more training, supervision, and applying skills effectively (26). Despite of people survived in functional abilities until 93-year-old, the older adults over 61 should improve daily activities (27). This kind of physical activity could be appropriated as intervention reminiscence among healthy older adults either at the nursing home or in the community-based. The most importance principle that God has created human brain organs perfectly including five dimensions of cognitive specifically namely; attention, memory capacity, executive cognitive function, language, and visual spatial abilities, therefore it must keep healthy by continuing screening. The reason that healthy older adults no change in functional abilities, but the memory capacity is declining in a mild cognitive impairment gradually. Therefore, the participants always encourage to physical exercise for improving cognitive functioning in the elderly either at nursing home or in the community.

### 3.2. *Mental activation (MA) theme*

Different with meaning unit of angklung, listening to music and watching television, the code are vision and hearing. The sub-categorize is pay attention to, so that the categorize is social and collective memory. In the MA theme, the participants should pay attention trough the sensory, especially listening to the music and watching television. Mental activation is very important for healthy ageing, it is because of episodic memory decline (28). Meaning that the memory system involves the mindful converting and recovery of contextually-specific information such as perception conceptual among older adult people. More over the authors explain that the ageing group able to change about capacity of memory especially in the contextual information, so that the older adult difficult to integrate pieces of complex memory. According to Sejdic (29) that listening to music and watching television are thought to be a sedentary activity, so that these might be effects on human gait. However, in the IRBS model was understood that angklung, listen to music, and watching television are not only effect for human gait, that influences in brain activation as well. The reason that angklung can pay attention to maintain the cognitive activation, because playing angklung requires attention to coordinate motor and auditory, then it requires every individual to enhance emotional intelligence and thinking power to interact harmoniously with others. This statement was supported (30) (8) that healthy elderly over 60-year-old ought to synchronize between eye, ear, and hand during playing angklung. Therefore, the brain activates need to give more, so that the elderly must screen sensory frequently. According to Fring (31) that watching television as memory task-brain activation, because news or movies can stimuli naturally. The mental activation affected cerebral flow velocity and (32) and it is able to assess brain response by asking 'what are you watching about?' Besides of that, television known can improve a child's ability to speak verbally and physical, emotional, emotional, and psychological development (33). Therefore, each patient should be screened for measuring cognitive function before doing mental activation (34), it is due to mental activation carried out the impulse or an object signal as optimal as a stimulation involves in brain. To stimulate mental activation, known that is not only by watching television, but listening to music effectively stimulus as well the auditory cortex and other dimensions brain to attention and memory the message. From this concern of mental activation theme, knowing that mental activation affected by sensory function such ear as a medium to stimulate the brain. Again in the model of IRBS, all participants must pass on screening not only normal state but also ability to hear without hearing aids within 50 centimeters until one meter. Therefore, the mental activation was used in the model IRBS such as watching video and postcard pictures. In to stimulate the mental activity, the participants can chose the pictures and selected video by own, because of making fun and leisure only. Most participants aged 60-69 years who needs to be optimized by performing mental activation through remembering and revealing kinds of childhood activities either pictures or video. The intervention was very importance to the participants, because the participant were not only happy but also can remind the bitterness on the pass history and ventilated already by crying. The participant was very satisfied in this session and felt free on the rest of live.

### 3.3. Interactive communication relationship (ICR) theme

Others meaning unit of *congklak*, *ular tangga*, *kasti*, *rondes*, dolls, cooks, riding bicycle, puzzle, marbles, kites, *carambola*, *panjat pinang* was code in traditional games, while gardening and spiritual act are not changing meaning in code. However, three of codes have a similar sub-categories as a motor activities of leisure and recreation in the peer group, self, and God, the category is social interactive with person, environment, and God. Finally, it was given theme as interactive communication both interpersonal and intrapersonal relationship. The meaning units collected by asking question in stage of decontextualization. For meaning units were broad and vary, so recontextualization has done by adjusted of each content in the coding list. Therefore, the contents remain only *congklak*, *ular tangga*, puzzle, marbles, *carambola* only in the coding list, the contents be a motor activity of leisure and recreation. That was different with meaning unit of gardening and spiritual act, the code list has the same things with the meaning unit. However, the sub-categories and category same with the *congklak*, *ular tangga*, puzzle, marbles, *carambola* coding. The contents of *congklak*, *ular tangga*, puzzle, marbles, *carambola* are visual games and cognitive process. Those traditional game-based communication effective learning for cognitive process dimension and social emotional, so it is important for encourage interaction with others. Moreover, the code list of contents can improve capacity of verbal communication among aged 60-85-year-old. Therefore, the sub-categories were 'motor activities of leisure and recreation' and the category is 'social interactive with' either other people, plants, and God. Finally, the traditional games, gardening, and spiritual act have concluded in the interactive communication. To prevent the declining cognitive functions progressively, aged 60-85-year-old might motivate to communicate and reminisce, because people will lead to withdraw from others due to difficulty to express feeling (35).

Theme Physical Activity



Theme Mental Activation



Theme Interactive communication: personal and interpersonal relationship



**Figure 3.** Three themes of childhood activities that derives from the reminiscence screening

## 4. Conclusion

There were found three themes of reminiscence screening such as PA, MA, and ICR. Those theme have developed in the media of IRBS called a trigger memory for preventing early dementia and maintaining cognitive function on keeping health among older adults in the community and the nursing home. The participants were very happy and enthusiastically to follow the activities in which these activities all recall past experiences and become screening-based reminiscence

interventions. Therefore, it is a good idea to develop a media for optimizing cognitive and memory function of elderly in Indonesia.

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