

Original Research Article

The Mini-Mental State Examination (MMSE) to Measure the Cognitive Status of Retired Teachers

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Article History

Received: 01.08.2023

Accepted: 02.09.2023

Published: 15.09.2023

Abstract: The purpose of this study was to describe the cognitive status of teachers who are still actively teaching and who have retired. The research method used is descriptive quantitative. The research site is SMP N 1 Bantul. Research respondents are teachers who are still teaching at SMP N 1 Bantul and who have retired from SMP N 1 Bantul. The technique of determining the sample using random. This research instrument uses the MMSE that has been provided. The result of this study is to have an overview of the distribution of teacher respondents based on cognitive status who are still actively teaching and have retired that the largest number is retired with the definitive category of cognitive impairment as many as 30 people (41%), the category of possible cognitive impairment as many as 19 people (26%) , and the normal category as many as 25 people (34%).

Keywords: Teacher, Mental Health, Cognitive Status.

INTRODUCTION

Indonesian education based on the state foundation and the 1945 Constitution of the Republic of Indonesia functions to develop capabilities and shape the character and civilization of a dignified nation in the context of educating the nation's life, aiming to develop the potential of students to become human beings who believe and fear God Almighty., have noble character, are healthy, knowledgeable, capable, creative, independent and become democratic and responsible citizens. In the plan to achieve the desired education, teachers are needed as a means of educators who can realize education. According to Law no. 14 of 2005 concerning Teachers, a teacher is a professional educator with the main task of educating, teaching, guiding, directing, training, assessing and evaluating students in early childhood education through formal primary education and secondary education. Teachers themselves in Indonesia have been nicknamed *unsung heroes* and are now turning into teachers as intellectual human builders.

Teachers are an important investment [1], in implementing the curriculum in addition to the principal and administrative staff, because teachers interact directly with students in transferring knowledge. The teacher is a professional who has special knowledge and abilities. The professional in question is that the teacher has a set of competencies (knowledge, skills, and behavior) that must be mastered by the teacher in carrying out his duties [2]. The competence possessed by the teacher in serving is an inherent characteristic of the teacher, where a teacher is not only cognitively capable (academic mastery) but also has an attitude that is able to become a role model for students.

When you stop teaching, there is a decrease in function [3], including cognitive function. Cognitive dimensions that can experience decreased function when not actively teaching are the speed and accuracy of thought processes related to the use of the five senses, attention, motor and visual memory, differentiation, comparison, and categorization functions [4]. Retired teachers will experience a decline as well in learning new things [5]. Retirees will choose information that is relevant to them, because they begin to have difficulty digesting new information, especially in large quantities [6].

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Citation: Ana Budi Rahayu & Fitri Nur Mahmudah (2023). The Mini-Mental State Examination (MMSE) to Measure the Cognitive Status of Retired Teachers. *South Asian Res J App Med Sci*, 5(5), 79-84. 79

Changes in cognitive function that will inevitably occur in retired teachers can have an impact on increasing the frequency of cognitive and mental functioning disorders in retired teachers, such as dementia and depression [7]. The prevalence and incidence of dementia and depression are quite large with large expenditures for treatment. In DKI Jakarta, the prevalence of dementia and depression in the elderly reaches 62.5% for dementia and 30.1% for depression [8]. The prevalence of dementia which is more than 50% indicates that the cognitive condition of the elderly, especially in Jakarta, tends not to be well maintained and the decline in cognitive function tends to occur more quickly in the elderly in Jakarta. This condition also indicates that it is necessary to maintain cognitive function in the elderly so that cognitive function decline can be delayed.

Retired teachers experience balance disorders by having lower MMSE (Mini Mental State Examination) scores compared to teachers who are still actively teaching [9]. Decreased cognitive function has a significant relationship with balance disorders in retired teachers, especially postural balance [10]. Retired teachers who experience decreased balance function tend to experience white matter abnormalities in the brain, where there is an increase in the volume of white matter hyperintensity which is correlated with a decrease in cognitive function [11].

Maintenance of cognitive function in retired teachers is very important for their welfare. Cognitive activities that are carried out regularly can maintain excellent cognitive function at retirement age. Therefore, this needs to be proven by examining differences in cognitive function in the group of retired teachers who perform cognitive activities routinely and non-routinely. The importance of this research is to anticipate the decline in mental health for teachers. Based on the above background, researchers are interested in conducting research to determine the description of the cognitive status of teachers who are still actively teaching and those who have retired.

MATERIALS AND METHOD

The type of research used is descriptive quantitative. Quantitative research method is a research method based on the philosophy of positivism, used to examine certain populations or samples, collect data using research instruments, analyze data, and set goals. The purpose of this study was to determine the description of the teacher's cognitive status.

The place of this research is in Bantul Yogyakarta. This research was carried out for 6 (six) months starting from pre-study to reporting the research results. The population in this study were all retired teachers from SMP N 1 Bantul. Cognitive function in retired teachers is to show that there is a strong correlation between the level of intellectual performance with the survival rate of teachers, cognitive function shows little or no decline until very old age, disease and pathological aging processes reduce cognitive function.

The data collection technique in this study was carried out using the Mini Mental State Exam (MMSE) instrument. The MMSE was originally designed as a standardized, brief mental status examination medium that allows the differentiation between organic and functional disorders in psychiatric patients [12]. The MMSE is a short and easy-to-apply mental status examination that has been proven to be a reliable [13] and valid instrument for detecting and following the development of cognitive disorders related to neurodegenerative diseases [14]. As a result, the MMSE has become the most widely used mental status examination method in the world [15]. This test has been translated into several languages and has been used as a primary cognitive screening instrument in several large-scale epidemiological studies of dementia [16].

Data Analysis Was Performed Using a Frequency Distribution. The Formula Is as Follows:

$$X = \frac{\alpha}{n} \times K$$

Description :

- X = the number of percentages of the variables studied
- a = number of respondents' answers based on the variables studied
- n = total number of questions
- K = constant (100%)

Conclusions On Data Analysis Are As Follows:

- 24 - 30 : Normal
- 17 - 23: possible cognitive impairment
- 0 - 16: Definitive cognitive impairment

RESULT

Research respondents consist of teachers who are retired from the school of SMP N 1 Bantul. The following are the results of research based on the characteristics of the respondents. The first characteristic is based on the gender of the respondent.

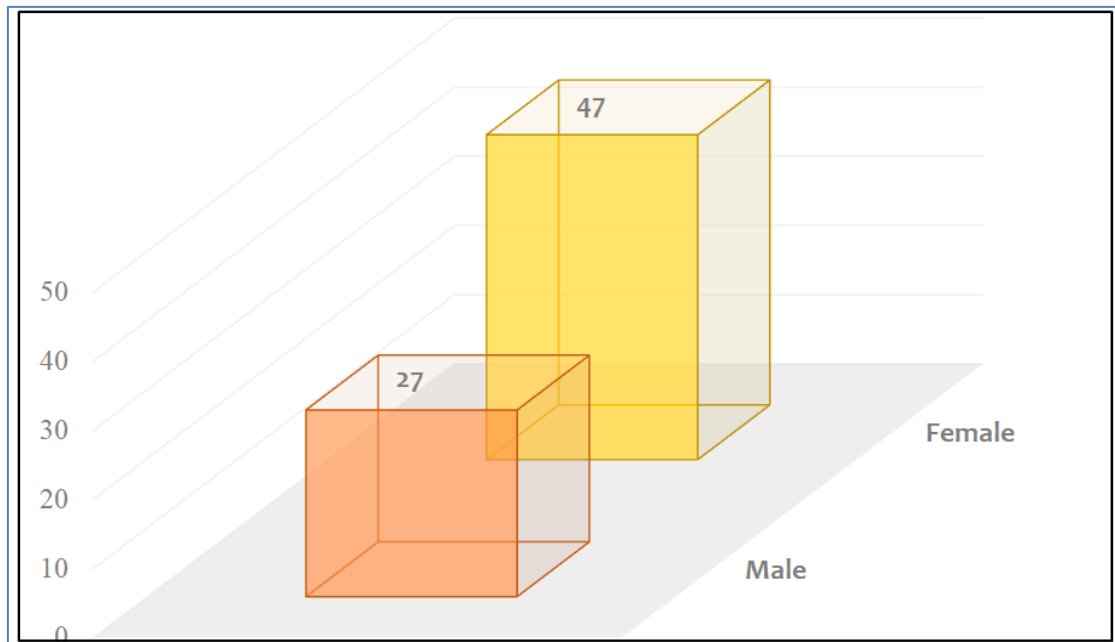


Figure 1: Respondent's Gender

The total number of respondents in this study who were male and female were 74 teachers who had retired. 27 male respondents and 47 female respondents. The number of respondents who have education levels that have been achieved varies from one respondent to another. The description of the respondent's education level can be seen in Figure 2.

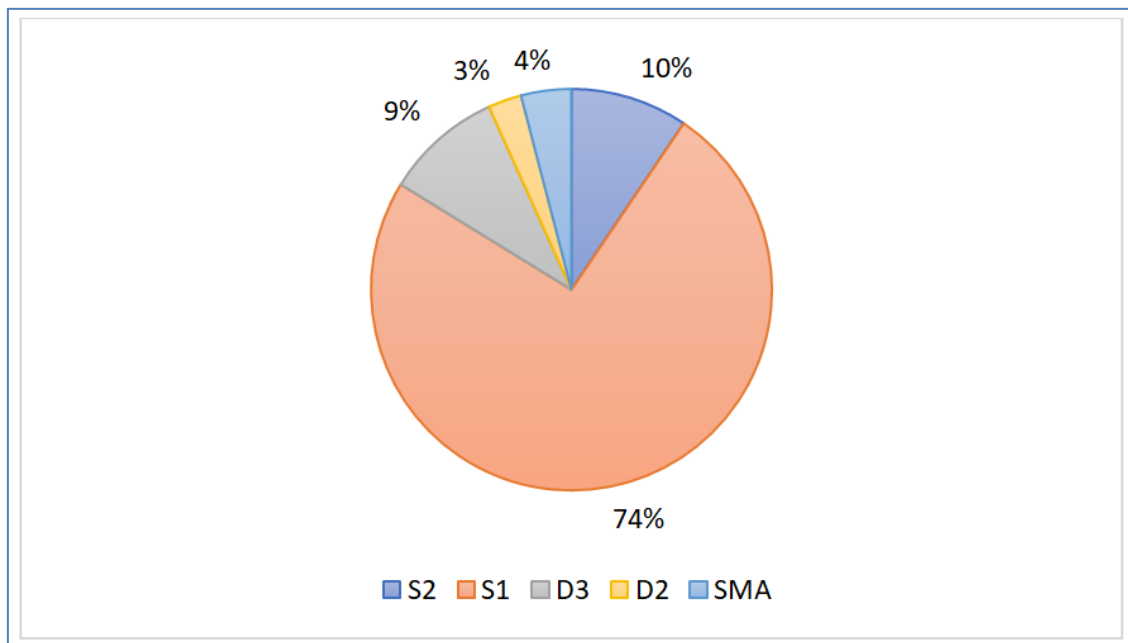


Figure 2: Respondent's Education Level

Primary source data processed in Figure 2 can be explained that respondents with SMA level are 3 people, D2 level is 2 people, D3 level is 7 people, S1 is 55 people, and S2 is 7 people. The education levels of the respondents are of different ages. The following is a description of the age of the respondents.

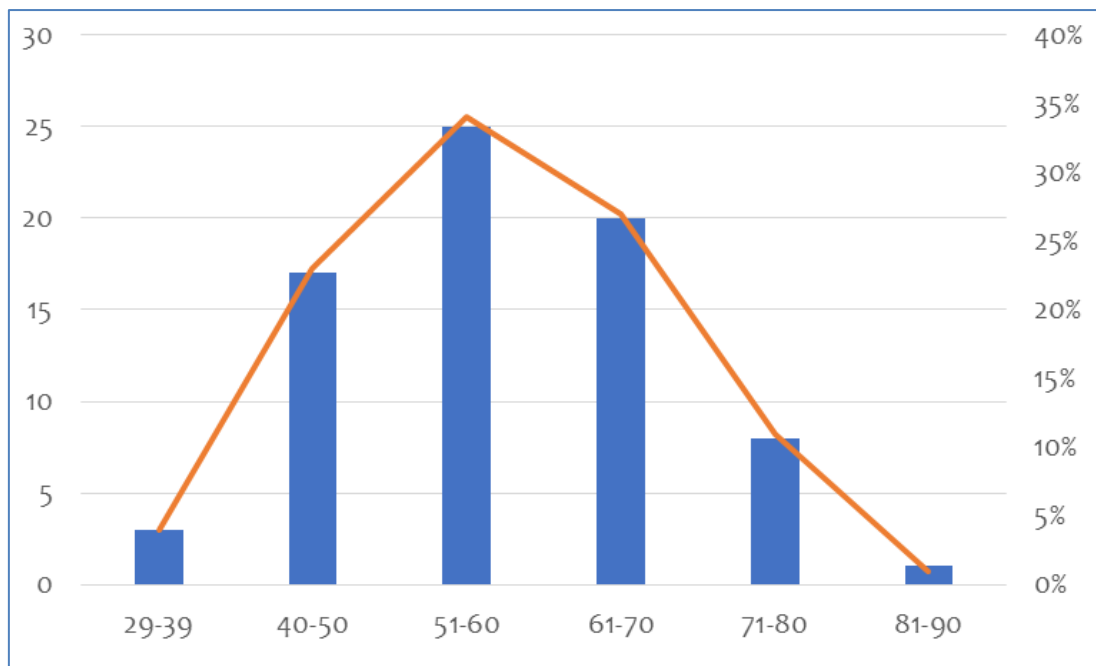


Figure 3: Respondent Age

The data in Figure 3 shows that the ages of the respondents are not the same. This means that respondents have different age groups. 3 people from 29 to 39 years old, 17 people from 40 to 50 years old, 25 people from 51 to 60 years old, 20 people from 61 to 70 years old, 8 people from 71 to 80 years old, and 1 person in the age range of 81-90 years.

Based on the data above, teachers who have retired have different cognitive statuses. Based on the measurement results using the MMSE instrument, the following are the results:

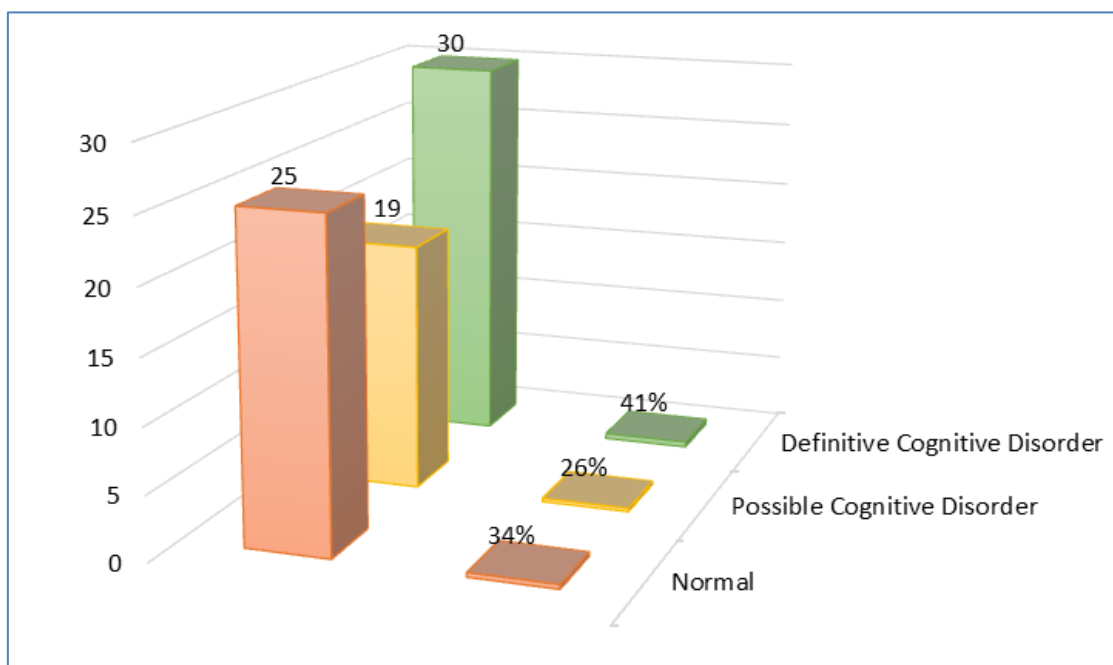


Figure 4: Cognition Status

Based on table 4, the distribution of teacher respondents based on cognitive status who is still has retired that the largest number is retired with the definitive category of cognitive impairment as many as 30 people (41%), the category of possible cognitive impairment as many as 19 people (26%), and normal category as many as 25 people (34%).

DISCUSSION

Based on the results of the analysis above, it can be discussed that the highest score in this cognitive status study was 41% of 30 respondents with a definitive categorization of cognitive disorders. This means that this number reflects an indication of cognitive impairment that requires further investigation. This research was conducted basically to complete and assess, not to diagnose the respondents. Problems related to mental and emotional are not part of normal aging. It is the same with physical problems, mental and emotional problems as well as the behavior of teachers who are still actively teaching or who have retired, of course, must be evaluated to be diagnosed and treated on an ongoing basis.

The most problematic aspect of cognitive status in this study is the orientation aspect and the attention-calculation aspect, including retired teachers who cannot mention the point of orientation, namely "what day is it?". Likewise, teachers who have retired have experienced the power of thinking so they cannot count and have difficulty when asked questions about counting [17]. Healthy aging process (normal aging) [18] Physiologically there is also a decline in some cognitive aspects such as memory decline, especially working memory [19] which plays a very important role in the activities of daily living, this explains why some elderly people become forgetful. In addition, the function of the right brain hemisphere as a basic intelligence center will decline faster than the left brain hemisphere as a crystal intelligence center that monitors knowledge.

The results of the MMSE examination of cognitive function descriptions showed that the old age group had an average percentage that was not normal. This is very much in accordance with the literature [20]- 22], that increasing age results in anatomical changes, such as the shrinking of the brain, and biochemical changes in the CNS that by itself can cause a decline in cognitive function. The maintenance of mental activity, especially the cognitive aspect, is as important as the maintenance of physical activity in the elderly, so that the elderly can achieve special aging, because the elderly often experience various mental and emotional changes as they get older [23]. So it is important to provide help, attention and support from family, friends and nursing service providers to the elderly, so that most mental problems, especially cognitive aspects, can be prevented.

CONCLUSION

The conclusion of this study is the cognitive status of teachers who have taught and who have retired have different statuses. This is due to the orientation and calculation of the respondent's mindset. The definitive category of teacher cognitive impairment was 41%, the category of possible cognitive impairment was 19 people (26%), and the normal category was 25 people (34%). The recommendations of this research are addressed to teachers who are still actively teaching or who have retired to maintain mental health patterns.

ACKNOWLEDGEMENT

We thank LPPM Ahmad Dahlan University for providing research grants with contract number: PDP-031/SP3/LPPM-UAD/2020. We also thank all teacher respondents who have participated in this research.

CONFLICT OF INTEREST: There are no conflicts of interest to declare

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