THE DIFFERENCES OF MONTREAL COGNITIVE ASSESSMENT SCORES IN INDONESIAN VERSION (MOCA-INA) BETWEEN MALE PATIENT SCHIZOPHRENIC LIGHT AND HEAVY SMOKERS

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ABSTRACT

Background: Schizophrenia is characterized as a psychiatric disorder with symptoms of complex dimension. Poor prognosis contained in several cognitive functions resulting in difficulties in social, academic, and adaptation of adequate employment. Schizophrenic patients who smoke have the highest prevalence of 70-80% among other mental disorders where it is 20-30% in the general population and schizophrenic patients tend to smoke more heavily than smokers in the general population. Reasons for smoking behavior is quite extensive in schizophrenic patients that do not understand, in some studies indicate that smoking or nicotine may improve some cognitive deficits in schizophrenic patients or nicotine serves as a form of self-medication. This observation also indicates that the dysfunction in the nicotinic acetylcholine receptor signaling may be involved in the etiology of cognitive deficits in schizophrenia.

Aim of research: To determine differences in Montreal cognitive assessment score of Indonesian version (MoCA-Ina) between male patients schizophrenic light and heavy smokers.

Methods: This study is a comparative analytical study of numerical unpaired with cross-sectional study, non-probability sampling technique sampling types consecutive sampling. Place of research: Mental Health Hospital Prof. M. Ildrem North Sumatera Province: August-September 2015. All patients who meet the criteria as male schizophrenic patients who were diagnosed based PPDGJ III, aged between 15-55 years with disease duration <10 years, smoker, has entered a phase of stabilization and treated with haloperidol 10 mg / day, the last education of at least junior high school, understand Indonesian, prepared as a respondent and can be interviewed, did not suffer koomorbid physical illness severe and does not have a history of alcohol and other substances except tobacco included in the study and assessment scores in cognitive function using MoCA-Ina.

Results: A total of 50 patients were evenly split into groups of light and heavy smokers have the characteristics of the largest age at 26-35 years (56% and 68%). Highest Education in Junior 44% and on score of MoCA-Ina average values and standard deviations 19.92 (3.08) and 18.28 (3.28). Cross-table test showed no significant differences in scores of MoCA-Ina (p > 0.05).

Conclusion: This study found most patients schizophrenic men who smoke experience cognitive impairment. There are no significant differences in scores MoCA-smokers Ina mild or severe.

Keywords: Cognitive function, the Montreal Cognitive Assessment Indonesian version (MoCA-Ina), smoker, schizophrenic patients.

1. BACKGROUND

Schizophrenia is characterized as a psychiatric disorder symptom complex with dimension. Poor prognosis contained in several cognitive functions resulting in difficulties in social, academic, and adaptation of adequate employment. Cognitive impairment refers to the loss kognitif special functions of memory, attention, and processing the information. Onset and cognitive changes walked with a slow and gradual decline very often starts before the first psychotic episode (Ramirez LRB, et al, 2014)

Patients with Schizophrenia smoked had the highest prevalence is 70-80% among other mental disorders where it is approximately 20-30% in the general population and schizophrenic patients tend to smoke more heavier than smokers in the general population. It can worsen the situation where smoking accepted as major cause
of coronary heart disease risk of patients Schizophrenia as much as twice higher, resulting in life expectancy to 20% shorter (G. Winterer, 2010).

Reasons for smoking behavior is quite spacious gaining from schizophrenic patient and it is not well understood but there are currently a few mechanism where mostly patients showing that nicotine serves as a form of treatment (self-medication) to reduce side effects of antipsychotic drugs, to improve the effect of antipsychotic therapy and other effects can reduce negative symptoms and or to improve cognitive deficits associated with Schizophrenia (Kumari V and Postma P, 2005).

Some studies have also found that schizophrenic patients smoke to take effect over the nicotine contained in cigarettes. This may be because some studies have shown that smoking or nicotine may improve some cognitive deficits in schizophrenic patients or nicotine serves as a form of self-medication. This observation also indicates that the dysfunction in the nicotinic acetylcholine receptor signaling may be involved in cognition in schizophrenia etiologi deficit (Jiang, 2005).

In a study of George et al. 2002 in Connecticut Mental Health Center, New Haven on the effects of smoking cessation on visuospatial working memory function (VSWM) in schizophrenic patients that smokers found to have beneficial effects on patients VSWM schizophrenic smokers, but not in control smokers (Zhang XY, et al, 2012)

In studies Smith and his colleagues in 2006 in Manhattan Psychiatric Center with the title of nicotin nasal spray effects on cognitive function in schizophrenic patients showed that nicotine can simply increase the attention and spatial working memory in schizophrenic patients were smokers and overnight abstinence (George TP, et al, 2005)

In studies Beck, Baker and Todd in 2014 about smoking in schizophrenic patients: cognitive effects of nicotine and the relationship to the motivator of smoking found results that smokers with schizophrenia (but not control) significantly showed a slight mistake on the task VSWM in smoke relative to overnight abstinence (AK Beck, et al, 2015)

In the study Harris and his colleagues in 2004 at the University of Colorado Health Sciences Center, Denver found by comparing the total score Reapetable Battery for the Assessment of Neuropsychological Status (RBANS) in patients with schizophrenic smokers who were given nicotine gum 80.6 (11.6) and smokers schizophrenic patients given placebo 79.7 (14.0) but in schizophrenic patients are not smokers RBANS found to score higher on placebo ie 89.2 (16.3) and were given nicotine gum 88.4 (13.0) yet from each group of schizophrenic patients smoke and no smoke was not found significant effect on the administration of nicotine gum ( Harris JG, et al, 2004)

From research Liao and his colleagues in 2002 in a psychiatric hospital in northern Taiwan found to be the result of smoking was not significantly associated with the Mini-Mental State Examination (MMSE) with a ratio of total MMSE scores of schizophrenic patients smokers 24.8 (5.5) and patients not schizophrenic smokers 25.8 (5.2) (Liao DL, et al, 2002)

In research Zhang and his colleagues in 2012 in Beijing were found in schizophrenic patients smokers found results RBANS total score was lower, 63.0 ± 13.9 of schizophrenic patients nonsmokers ie 66.2 ± 16.4 (Jiang, 2005)

While in another study by Zhang and his colleagues in 2012 in Beijing found the result was no significant relationship between cognitive function and smoking both patient First-Episode Schizophrenia (FES) or healthy controls with a comparison score RBANS in patients with schizophrenic smokers 67, 5 ± 17.0 and schizophrenic patients are not smokers of 73.3 ± 25.5 (Liao DL, et al, 2002).

According to De Leon and his colleagues from 42 studies in 20 countries and found that the current level of smoking among male schizophrenic patients is higher than the general population. In China, women smokers are also very rare, with comparisons to the general population of males 67.1% and females 7.1% while the ratio in schizophrenic patients 81% of men and 5% of women (Jiang, 2005). In Indonesia alone, from a survey conducted by the Ministry of Health in Jakarta showed that male smokers 58.9% and women smokers is 3.8%. From the research Tarin and Loebis in 2003 in Poliklinik Psychiatric Hospital Dr. Pirngadi Medan found patients with schizophrenia who smoke is 64.4% whereas in
males 61.1% and 3.3% in women (Sitepoe M., 2000).

Based on the differences in the results of previous research on the Influence of smoking and non-smoking to increased scores in cognitive function of patients schizophrenic researcher is interested in studying the influence of light smokers and heavy smokers patients with schizophrenic against scores of cognitive function using the Montreal Cognitive Assessment Indonesian version where this instrument has a sensitivity and higher specificity and easier to manage than the Mini Mental Stase Examination (MMSE). Researchers interested in choosing male schizophrenic patients where the study found Loebis Tarin and schizophrenic patients who smoke are mostly male. According to the researcher is interested to see the difference in scores Montreal Cognitive Assessment Indonesian version (MoCA-Ina) between light smokers than heavy smoker male schizophrenic patients who come for treatment to outpatient BLUDs Installation of Mental Health in North Sumatra Province, which is ultimately expected to provide information to the clinician.

1.1 Formulation of the problem

Having regard to the background of the above problems can be formulated research problem as follows:

Is there a difference score Indonesian version of the Montreal Cognitive Assessment (MoCA-Ina) between light smokers and heavy smokers into male schizophrenic patients?

1.2 Hypothesis

There are differences in scores of MoCA-Ina differences between light smokers and heavy smokers male schizophrenic patients

1.3 Research Purpose

1.3.1 General purpose :

To know the difference between the scores of MoCA-Ina light smokers and heavy smokers to male patients of schizophrenic.

1.3.2 Special purpose :

1. To determine the demographic characteristics of the study subjects.
2. To find scores of MoCA-Ina in male smokers as schizophrenic patients.
3. To find scores of MoCA-Ina in male heavy smokers as schizophrenic patients.

1.4 Benefits of research

a. Can be obtained MoCA score-Ina difference between smokers light smokers and heavy smokers male patients with schizophrenic.
b. By obtaining a score of MoCA-Ina between light smokers and heavy smokers into male patients schizophrenic male which can provide feedback to health workers and psychiatric to determine whether the effects of nicotine contained in cigarettes may improve cognitive function in patients with schizophrenic and to anticipate the factors relating to high frequency of smoking in schizophrenic patients can motivate schizophrenic patients stop smoking in order to improve their quality of life.
c. The result is expected to continue DAPT for further research or similar or other studies that use this study as a reference material.

2. LITERATURE

1. Schizophrenia

Schizophrenia is a clinical syndrome variable, but deeply damaging to the psychopathology involving cognition, emotions, perceptions, and other aspects of behavior. The effects of this disorder are always severe and usually last long. The disorder usually begins before the age of 25 and settled throughout life and affects a person from all social classes (Sadock BJ, et al, 2007). Schizophrenia affects 1% of the population, and there Dias skizofrenia acute episode more than 300,000 patients per year. Approximately 25% to 50% of patients skizofrenia trying suicide and who managed about 10%, it contributed to the death toll of eight times more greater than the general population. The life expectancy of patients with schizophrenia might be 20-30 years shorter than the general population, not only due to suicide, but also because of cardiovascular disease (Stahl SM, 2008)
The prevalence of schizophrenia among men and women alike, but differ in the onset of the first attack in which an early onset of impaired faster in men than women Peak attacks in men between the ages of 10-25 years and 25-35 years in women. 90% of patients who received treatment of schizophrenia between the ages of 15-55 years. Attack under 10 years old or over 60 years old reported infrequently. In general, women with schizophrenia have the results (outcomes) are better than men (Sadock BJ, et al, 2007).

Some studies create a sub category of the symptoms of this disease into five parts, namely: positive symptoms, negative symptoms, cognitive symptoms, aggressive and simtom efektif. Sign cognitive symptoms of schizophrenia is a disorder of attention and processing disorders as disorders information manifest by oral or verbal fluency (speaking of the ability to produce spontaneous ), problems with learning the circuit (from a list of items or sequence of events) and decreased alertness for executive function (problem with maintaining and focusing attention, concentrate, prioritize, and behavioral modulation according to social cues)(Stahl SM, 2008).

**Diagnosis.**

The diagnostic criteria for schizophrenia based PPDGJI-III are as follows: (Ministry of Health, 1993)

Schizophrenia disorder based PPDGJI-III is generally characterized by distorted thinking and perception are fundamental and distinctive, and therefore affect the unnatural (Inappropriate) or blunt (blunted). A clear consciousness and intellectual ability is maintained, although certain cognitive deficits may develop later. Although there are no pathognomonic symptoms specific, in practice there is no benefit to divide the symptoms into groups that are often found together, for example: (Ministry of Health, 1993)

- "thought echo", "thought insertion" or "withdrawal" and "thought broadcasting"

- Controlled Supposition (delusion of control), delusions were affected (delusion of influence) or "passivity", which clearly refers to the movement of the body or limb movement, or thoughts, actions or feelings (sensations), specifically; delusional perception;

- The sound hallucinations constantly commenting on the behavior of the patient, or the patient discuss the matter among themselves, or other types of hallucinatory voices coming from one part of the body;

- Supposition-delusion settling other types according to their culture is considered unnatural and altogether impossible, such as the religious identity or politics, or the power and capabilities of the "Superman" (eg being able to control the weather, or communicate with aliens from another world);

- The hallucinations that persist in any modality, when accompanied either by delusions floating / floating or half form without content affective clear, or by the ideas of excessive (over-valued ideas) that persist, or if it happens every day during weeks or months continuously;

- The current thought is interrupted or experiencing inserts (interpolation) that result in incoherence or irrelevant speech, or neologisms;

- Conduct catatonic, such as noise-agitated state (excitement), a certain body posture (posturing), or serea flexibility, negativism, mutism, and stupor;

- Symptom-symptoms "negative" as the attitude is very time bodo (apathy), the stalled talks, and emotional responses become blunt or unnatural, usually resulting in withdrawal from social interaction and decreased social performance, but it should be clear that all things is not caused by depression or medication neuroleptika;

- A consistent and meaningful change in the overall quality of some aspects of individual behavior, manifest as loss of interest, aimless, lazy attitude, reticence (self-absorbed attitude) and social withdrawal (Ministry of Health, 1993).

**Guidelines for Diagnosis.**

The normal requirements for diagnostic of schizophrenia is that there should be at least one symptom of the above is very clear (and usually two symptoms or if the symptoms was less sharp or vague) of symptoms that included one group of symptoms (a) to (d ) above, or at least two symptoms of the group (e) to (h) should always be clearly during the period of one month or more (Ministry of Health, 1993).
There are three phases of schizophrenia in terms of treatment, namely (Kane JM, et al 2009):

a. Acute phase. Treatment during this phase focuses on alleviating the most severe psychotic symptoms, lasts 4-8 weeks.

b. The stabilization phase. After the acute phase, which is usually the patient will usually enter the stabilization phase where the acute symptoms have been controlled, but patients remain at risk for recurrence if treatment is interrupted or if the patient is exposed to stress. During this phase, treatment focuses on the therapeutic benefits of consolidation, with the same care as those used in the acute stage. This stage may last for 6 months after recovery from acute symptoms.

c. Stable or maintenance phase when the disease is well in the stage of relative remission or stable symptoms. The aim at this stage is to prevent recurrence or exacerbation of psychotic and to assist patients in improving their level of functioning (Kane JM, et al 2009).

2. Cognition in schizophrenia

Cognitive impairment is common in schizophrenia, which affects up to 75% of patients and only 27% of schizophrenia that classified as neuropsychopathologically "Normal". This suggests that cognitive decline in patients. Significantly schizophrenic is normal (Fisekovic S, 2012)

Kognitive by disruption occurs before appears a diagnosis schizophrenia. Many schizophrenia functions affected especially memory, attention, motor skills, intelligence executive and function. Cognitive impairment also affects social function and functional results (Fisekovic S, 2012)

The cortex prefront playing dominant role in the life the human psyche, caused by integration information coming directly from area limbic, the neocortex, brain stem and hipotalamus and indirectly through the thalamus from almost all the regions of the brain, so disfungsional in certain parts of structural and or functional changes in part of central nerve systems (CNS) affect qualitative and quantitative, planning, action, quantitative and qualitative disturbing vision, concentration, speech, emotion and affective (Fisekovic S, 2012).

3. Smoke

Smoking is the use of dried tobacco leaves most dominant both in the form of cigarettes or pipes that talented and sucked the smoke. The raw material is only known as white cigarette tobacco and cigarette raw material that contains tobacco and clove cigarettes known as kretek (Sitepoe M, 2000)

Classification of male smokers is composed of: (Sitepoe M, 2000).

a. light smokers (1-10 cigarettes per day)

b. moderate smokers (11-20 cigarettes per day)

c. heavy smokers (> 20 cigarettes per day)

4. Neurobiology of Nicotine Addiction as comorbidities in Schizophrenia

There are three possible reasons for the high rate of comorbidity of nicotine addiction in schizophrenia: 1. Self-medication of clinical and cognitive deficits associated with schizophrenic patients by the use of tobacco. 2. Abnormalities in brain reward pathways in schizophrenic patients makes these patients susceptible to tobacco and other drug use. 3. Common Genetic and environmental factors were independently associated with smoking and schizophrenia (LF Martin, et al, 2007).

Nicotine alter the function of neurotransmitter systems involved in the pathogenesis of major psychiatric disorders including dopamine (DA), norepineprin, serotonin, glutamate, γ-aminobutyric acid and endogenous opioid peptides. The nicotine receptors in the brain is the nicotinic acetylcholine receptor (nAChR). Nicotine stimulation of presynaptic nAChRs in these neurons increase transmitter liberation and metabolism (LF Martin, et al, 2007).

Unlike most agonists, chronic nicotine administration cause desensitization and inactivation of the nAChRs, with upregulation of the nAChR sites. This may explain why the majority of smokers reported that smoking was the most delicious is the first in the morning. Mesolimbic D1 neurons (reward pathway) is very important because these neurons project from the ventral tegmental area (VTA) of the brain central to forebrains anterior limbic structures such as nucleus accumbens and cingulate cortex, and may mediate the beneficial effects of nicotine because
they have a presynaptic nAChRs. This is the same as DA pathway is involved in the expression of positive symptoms schizophrenia (LF Martin, et al, 2007).

There is also where the presynaptic nAChRs are present in the midbrain DA neurons in the project from the VTA to the prefrontal cortex (PFC), which evokes the liberation of DA and metabolism when activated nAChRs by nicotine (for smoking). PFCs are known to dysregulation in schizophrenia- findings are likely related to hypofunction of cortical DA and other transmitter systems. It is PFC DA hypofunction which to expect to mediate cognitive deficits and negative symptoms associated with schizophrenia and which can be improved by smoking. Nicotine also stimulates the liberation of glutamate and thus can change the central glutamatergic system disorders such as hypofunction associated with schizophrenia (LF Martin, et al, 2007).

Neurobiological and neurogenetic evidence for the link between alpha 7 nicotinic Acetylcholine Receptor and Schizophrenia

Sensory gating is measured by using the P50 auditory-evoked response. In schizophrenic patients are impaired sensory gating, P50 auditory-evoked response occurs 40-75 ms following the auditory stimulus. When the second auditory stimulus presented approaching 500 ms, P50 auditory-evoked response to the second stimulus is reduced, which terjadisuatu inhibitory processes. This disorder has been replicated in several independent laboratories and is referred to as the first episode of psychosis. The failure of inhibition is associated with poor attention, as measured by reduced performance on digit vigilance test and another test dysfunction (George TP, et al, 2002)

Evidence for the role of the alpha 7 nicotinic acetylcholine receptors in the auditory gating was originally established by using several animal models. auditory-evoked response of the hippocampal CA3 pyramidal neurons in rats, the potential field of P20-N40, in parallel with the properties of P50 auditory-evoked response of man. alpha 7 nicotinic receptor antagonist - bungarotoxin disrupt gating P20-N40, while nicotine receptor channel blocker and a muscarinic antagonist scopolamine mecamylamine has no effect on P20-N40 gating. DBA / 2 mouse strain is genetically lower levels of alpha 7 nicotinic receptors in the CA3 region and disrupt auditory gating. Finally, nicotine restore auditory gating in fimbria-fornix lesions of mice with impaired auditory gating for the loss of cholinergic innervation to the hippocampus (George TP, et al, 2002)

Alpha 7 nicotinic receptors mediate this inhibition to increase the release of gamma-aminobutyric acid (GABA) from GABAergic interneurons through postsynaptic calcium dependent mechanisms. The effects of nitric oxide extend through the second messenger system. This is accomplished by glutamate. This effect is thought to prevent hippocampal neurons from responding to the interaction between inhibitory and excitatory (glutamate) neurons that also play a role in shaping patterns of efficiency and function of neurons in the hippocampus and cortex (George TP, et al, 2002).

A series of parallel studies in humans are also involved in the alpha 7 nicotinic acetylcholine receptor in the physiology of auditory P50 gating. Nicotine gum and physostigmine was found to increase the gating in patients schizophrenic families who also have impaired auditory gating. The study of the kin group is very useful because it can avoid messing up additional pathological effects of schizophrenia, chronic neuroleptic treatment effects as well as effects of chronic smoking on nicotinic receptor levels (George TP, et al, 2002).

5. Montreal Cognitive Assessment (MoCA)

Montreal Cognitive Assessment (MoCA) was designed as a rapid screening instrument for mild cognitive dysfunction. It assesses kognitifikasiang different domains: attention and concentration, executive functions, memory, language, visuoconstructional skills, conceptual thinking, calculations, and orientation. Time to manage MoCA is approximately 10 minutes. The total score is 30 points; a score of 26 or above is considered normal (Nazreddin, 2004).

MoCA specificity to normal controls mengekslusir good enough that 87% and sensitivitasdari excellant Moca has been estimated that 90% to detect mild cognitive impairment, and much more sensitivility than MMSE (Ramirez LRB, et al, 2014)

In Indonesia, MoCA has been validated in Indonesian by Hussein and his colleagues in 2009 and known as MoCA-Ina (Sastroasmoro S and Ismail S, 2008).

6. Theoretical framework

7. Frame Conceptual
3. RESEARCH METHODS

1. Desain research

This research is an analytic study numeric unpaired with cross-sectional study, namely: (About MoCA, 2015)

Group I: The group of schizophrenic patients were light smokers. Group II: group of schizophrenic patients who are heavy smokers.

2. Place and Time

1. Placed research: Installation outpatient BLUDs Mental Health Hospital. Prof. Dr. M.Ildrem Province North Sumatra.

2. Research time: September 2015

3. Population and sample

1. The target population: male schizophrenic patients were light smokers and heavy smokers.

To find the value of $S_g$ (standard deviations combined) used the formula: (Dahlan MS, 2010).

$$ n_1 = n_2 = 2 \left( \frac{(z\alpha + z\beta)S_g}{x_1 - x_2} \right)^2 $$

To find the value of $S_g$ (standart deviations combined) used the formula: (Dahlan MS, 2010).

$$(S_g)^2 = \frac{(x_1^2(n_1-1) + x_2^2(n_2-1))}{n_1 + n_2 - 2}$$

INFORMATION

= The sample group 1 = Heavy Smoker in preliminary study = 10
= The sample group 2 = Light Smoker in preliminary study = 10
= Raw deviations group 1 = Smoker heavily on preliminary studies = 3.98
= Standard deviations group 2 = Heavy smokers on a preliminary study = 3.04
= Standard deviations combined =

$$(S_g)^2 = \frac{(x_1^2(n_1-1) + x_2^2(n_2-1))}{n_1 + n_2 - 2}$$

$$(S_g)^2 = \frac{(3.98^2(10-1) + 3.04^2(10-1))}{10 + 10 - 2}$$

$$S_g = \sqrt{12.54} = 3.54$$

$Z = Raw derivatives of alpha = type I error was set at 5% = 1.64 hypothesis one direction(Dahlan MS,2010).$

$Z = Derivative raw beta = a type II error is set at 10% = 1.28 (Dahlan MS,2010).$

$X_1 - X_2 = differences between the mean minimum considered significant = 3$
Based on the above formula sample size, sample size in each group totally 25 subject. Then all the samples in this study were 50 subjects.

5. Inclusion and Exclusion Criteria

Criteria for inclusion:

1. Male schizophrenic patients who were diagnosed based PPDGJ III.
2. Smoker
3. Has entered a phase of stabilization with haloperidol therapy
4. Aged between 15-55 years.
5. Minimal education as Junior High School
6. Understand Indonesian.
7. Willing as respondents and interviewees
8. Term of illness <10 years

Exclusion criteria:

1. Patients with severe physical illness komorbid
2. A history of alcohol and other substances except tobacco.

6. Informed consent / Inform Consent

All the study subjects will be asked for its approval by first briefed prior to be included as a research subject.

7. Research ethics

Implementation of this study attempted to follow the patterns and norms of scientific research standards implementation. On the side of those interviewed requested some sort of informed consent agreement with the delivery of data or information that the confidentiality of individual respondents will remain confidential guaranteed by the investigators. Researchers have been seeking approval from the Ethics Committee of research at the Faculty of Medicine, University of North Sumatra.

8. Ways of working

- This study was conducted after approval of the Research Ethics Committee of the Faculty of Medicine University of North Sumatra.
- All patients were male schizophrenic who smoke and meet the inclusion and exclusion criteria will vided an explanation and asked to sign a consent after receiving detailed and clear explanation of the researchers.
- Researchers conducted interviews with patients and families to ascertain the truth about the patient's smoking history. Then divide into groups of schizophrenic patients light smokers and heavy smokers.
- Researcher will assess scores of MoCA-Ina to patients schizophrenic male in the group of light smokers and heavy smokers group.
- Then in the two groups were assessed each score MoCA-Ina
- After all the data collected will be carried out data processing and analysis with presented in tabular form.
9. Operational framework

10. Identification of variables

1. The independent variable (*independent variable*). In this study are patients with schizophrenic male smokers

2. The dependent variable (*dependent variable*). In this study, the dependent variable is the score of MoCA-Ina

11. Analysis and Presentation of Data

Once the data is collected, the data processing performed by stages as follows: (i) Editing, is a step to investigate completeness of the data obtained through interviews, (2) coding is an attempt to classify the answer is no according to type, (3) Tabulation is an activity to enter the data into the research results table based on the variables studied, (4) Analysis of data, research data analyzed using a statistical test that unpaired t test if eligible for this test.

**RESEARCH RESULT** A total of 50 patients were male schizophrenic in outpatient hospital unit. Prof. dr. M. Ildrem, Medan enrolled in this study. Sampling was done by non-probability sampling types consecutive sampling . Conducted from May 17 to 23 September 2015.

<table>
<thead>
<tr>
<th>Table 4.1. Characteristics of the study subjects of demographic</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Demographic Characteristics</td>
<td>[Light] <em>n = 25</em></td>
<td>[Weight] <em>n = 25</em></td>
</tr>
<tr>
<td>Age, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-25 years</td>
<td>2 (8%)</td>
<td>1 (4%)</td>
</tr>
<tr>
<td>26-35 years</td>
<td>14 (56%)</td>
<td>17 (68%)</td>
</tr>
</tbody>
</table>
From 4.1 table basic data research subject is seen that the characteristics of the age in both groups were light smokers and heavy smokers are most was the age category 26-35 years with 14 subjects (56%) and 17 (68%). On the characteristics of education levels in the group of smokers light middle and high school categories just as much with 11 subjects (44%) and in the group of heavy smokers more junior category with 11 subjects (44%). On the characteristics of marital status in both groups of light and heavy smokers are most are unmarried categories namely 20 subjects (80%) and 18 subjects (72%). To work on a group characteristic light smokers more in the category of work 13 subjects (52%) and in the group of heavy smokers more does not work 13 subjects (52%). For a long illness on average in the year in both groups of light and heavy smokers is almost the same as 6 (2.4) and 5.88 (2.7).

### Table 4.2. MoCA score-Ina in male light smokers schizophrenic patients

<table>
<thead>
<tr>
<th>Category smokers</th>
<th>Mean (sd)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>light smokers</td>
<td>19.92 (3.08)</td>
<td>0.065</td>
</tr>
</tbody>
</table>

Test Shapiro-Wilk

In table 4.2 is found the average value score of MoCA-Ina on a light smoker male schizophrenic patients is 19.92 with standard deviations of 3.03 and test data normality the Shapiro-Wilk found p> 0.05, which means the normal distribution of data.

### Table 4.3. MoCA score-Ina in male heavy smokers schizophrenic patients

<table>
<thead>
<tr>
<th>Category smokers</th>
<th>Mean (sd)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>heavy smokers</td>
<td>18.28 (3.28)</td>
<td>0.151</td>
</tr>
</tbody>
</table>

Test Shapiro-Wilk

In table 4.3 is found the average value score of MoCA-Ina on a light smoker male schizophrenic patients is 18.28 by 3.28 standard deviations and test data normality the Shapiro-Wilk found p> 0.05, which means the normal distribution of data.
From table 4.4-Ina MoCA score between light and heavy smokers was 19.92 (3.08) and 18.28 (3.28) and conducted unpaired t-test was not significant difference with p> 0.05.

4. DISCUSSION

This study is a numerical analytic approach is not paired with a cross-sectional to see the difference in cognitive function score between light and heavy smokers in male schizophrenic patients. The research subject totally 50 people consisting of 25 light smokers and 25 heavy smokers male schizophrenic patients in the outpatient hospital unit. Prof. dr. M. Ildrem Medan. Sampling was done by non-probability sampling types consecutive sampling.

From this research on the characteristics of the age in both groups were light smokers and heavy smokers are most was the age category 26-35 years with 14 subjects (56%) and 17 (68%). This is not in accordance with the research Wehring and his friends in 2012 where the light smokers an average age of 41.9 (13.4) and in heavy smokers 40.4 (11.4) (Wehring HJ,2012). The discrepancy is likely caused by age of smokers in Indonesia are mostly younger (Sitepoe M,2000)

On the characteristics of education levels in the group of smokers light middle and high school categories just as much with 11 subjects (44%) and in the group of heavy smokers more junior category with 11 subjects (44%). It is consistent with research Zhang and comrades where the average level of education in light smokers group 8.8 ± 5.2 and 8.8 ± 2.6 a heavy smoker (Tanaka T,2014).

On the characteristics of marital status in both groups of light and heavy smokers are most are unmarried categories namely 20 subjects (80%) and 18 subjects (72%). To work on a group characteristic light smokers more in the category of work 13 subjects (52%) and in the group of heavy smokers more does not work 13 subjek (52%). For a long illness on average in the year in both groups of light and heavy smokers is almost the same as 6 (2.4) and 5.88 (2.7).

In this study there were no significant differences in scores of MoCA-Ina between light and heavy smokers where the light smokers 19.92 (3.08) and heavy smokers 18.28 (3.28) with p> 0.05. This is according to research Harris and his colleagues found the proportion of total score Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) in patients with schizophrenic smokers who were given nicotine gum 80.6 (11.6) which we consider to be a heavy smoker where same-get the same high levels of nicotine and smokers schizophrenic patients given placebo 79.7 (14.0) as a light smoker is considered not get high levels of nicotine to the results found no significant effect on the administration of nicotine gum (Harris JG,et al,2004).

Limitations of this study is on the study of things that affect cognitive functions such as a history of frequent hospitalizations, dose of antipsychotic, negative symptoms and medications that can induce extrapyramidal symptoms at study Tanaka and his colleagues ignored ( Tanaka T,2014).

The advantages of this research, this study is the first study that examines the differences between the scores of MoCA-Ina light smokers and heavy smokers in schizophrenic patients males so it can serve as a reference for a larger study.

5. CONCLUSIONS

1. Conclusion

From this research it was found mostly male schizophrenic patients who smoke has the cognitive. There is no significant differences in
scores. Moca-smokers in a mild or severe which found the average value of the light and heavy smokers are 19.92 (3.08) and 18.28 (3.28).

2. Suggestion

1. Because it was not found significant differences between light smokers and heavy smokers against cognitive function score then chances are no advantages gained by smoke in a larger amount.

2. Given the large number of schizophrenic patients experience cognitive impairment should be conducted periodic inspection and draw up a program of cognitive rehabilitation to patients with schizophrenia who suffered impairment.

3. Further research is needed to find the relationship of smoking on cognitive function per domain.

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