A Comparative Study Of Token Test Between Children (4-12 yrs) And Early Adulthood (19-39yrs) in Mizo-Population.

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Abstract
This paper is about the study of Token Test (i.e., to measure verbal comprehension) between the children and early adulthood. The main objectives of the study is to study the descriptive statistics of verbal comprehension of children and early adulthood; to compare the significance difference of children and early adulthood on verbal comprehension; to compare the men bar diagram and early adulthood. Trying to fulfill these objectives, the investigators randomly selected seventy three participants from the normal Mizo-population of children (37 sample) and early adulthood (36 sample). The children age range are 4-12 years and early adulthood age range are 19-39 years. Results are evaluated by mean, standard deviation, one way of analysis and mean bar diagram of both participants on verbal comprehension. The results has indicated that measures of verbal comprehension on children and early adulthood are found to be statistically significant. From the bar diagram results, early adulthood has found more mean value in verbal comprehension than children.

Keywords: Verbal comprehension; token, children, early adulthood.

Introduction:
Comprehension of speech obviously begins in the auditory system, which detects and analyzes sounds. But recognizing words is one thing. Comprehending them—understanding their meaning—is another. Recognizing a spoken word is a complex perceptual task that relies on memories of sequences of sounds. This task appears to be accomplished by neural circuits in the middle and posterior portion of the superior temporal gyrus of the left hemisphere—a region that has come to be known as Wernicke’s area. Wernicke’s area is a region of auditory association cortex on the left temporal lobe of humans, which is important in the comprehension of words and the production of meaningful speech. The primary characteristics of Wernicke’s aphasia are poor speech comprehension and production of meaningless speech. Unlike Broca’s aphasia, Wernicke’s aphasia is fluent and unlabored, the person does not strain to articulate words and does not appear to be searching for them. The patient maintains a melodic line, with the voice rising and falling normally. When you listen to this speech of a person with Wernicke’s aphasia, it appears to be grammatical. That is, the person uses function words such as ‘the’ and ‘but’ and employs, the person uses few content words, and the words that he or she strings together just don’t make sense. In the extreme, speech deteriorates into meaningless jumble. The superior temporal gyrus is a region of auditory association cortex, and because a comprehension deficit is so prominent in Wernicke’s aphasia, this disorder has been characterized as a “receptor” aphasia. Damage to the left temporal lobe can produce a disorder of auditory word recognition, uncontaminated by other problems. This syndrome is called “pure word deafness.” It is the ability to hear, to speak and (usually) to read and write without being able to comprehend the meaning of speech caused by damage to Wernicke’s area or disruption of auditory input to this region. The other symptoms of Wernicke’s aphasia—failure to comprehend the meaning of words and inability to express thoughts in meaningless speech—appear to be produced by damage that extends beyond Wernicke’s area into the region that surrounds the posterior part of the lateral fissure, near the junction of the temporal, occipital, and parietal lobes (i.e., angular gyrus).

Researchers like Malloy-Diniz LF; Bentes RC; Figueredo PM; Brandao-Bretas D; Da Costa-Abrantes S; Parizzi AM; Borges-Leite W; Salgado Jv have studied that the neuropsychological assessment of language has required instruments that evaluate its receptive and expressive aspects. They have shown that age is significantly related to performance in all tests. From the findings of Wassenbery R; Hurks PP; HendriksenJG; Feron FJ; MeljisCJ; Vies JS; Jolles have indicated that levels
of short term memory and verbal intelligence were controlled for in the evaluation of language comprehension. Their findings have shown that the accuracy of language comprehension continued to develop until the 6th grade, whereas the speed of language comprehension has continued to improve up until the 7th grade and they have concluded that the complex language comprehension of children is not fully develop until early adolescence.

Objectives of the study:
The objective of the present study is:
1. To study the descriptive statistics of verbal comprehension between children and early adulthood.
2. To compare the significance difference of children and early adulthood on verbal comprehension.
3. To compare the mean diagram of verbal comprehension between children and early adulthood.

Method:
The present study has been designed to investigate \textit{“A comparative study of token test between children (4-12) yrs and Early Adulthood (19-39) yrs In Mizo Population.”} For this study, a sample of 73 participants are randomly selected from Aizawl area. All the participants are administered token test to measure verbal comprehension.

Participants:
Sample: (N=73; children=both gender=37 and early adulthood=men and women=36) for the present study was drawn randomly from Aizawl area. The selected participants are administered token test to measure verbal comprehension. The testing is made on individual setting.

Instrument:
The following test is used for the present study:
The token test (De Renzi and Vignolo,1962) is a measure of verbal comprehension. At the name suggests, it involves tokens differing in color, size and shape. The test involves the capacity to follow spoken commands of varying complexity.

Variables:
Age of children and early adulthood can take as an independent variable. Verbal comprehension can use as a dependent variable.

Procedure:
Squares and circles of two sizes in five colors, called as tokens, are placed in front of the subject. The task of the subject is to follow the spoken instruction of the examiner. There are 6 levels of instructions, which increase gradually in difficulty as the test progresses. The order of placing token as fixed. If the level involves only large tokens, the circles are placed in a first row nearest to the tester, while the squares are placed in a second row beneath it. If the level involves both the large and the small tokens, the large circles are placed in the first row, the large squares in the second row, and the small circles in the third row and the small squares in the last row. The positions of the tokens are the same across all the levels. In each level instruction is given one for each time. If the subject does not understand it or does not follow the command correctly, the instruction is repeated. After two such repetitions the trial is considered a failure and the next trial is commenced.

Instructions:
The following instruction is given to the subject:
“you see some colored bits of cardboard in different colors and shape. These are called tokens. I will be telling you what to do with them. You have to do what i ask you to. Please listen carefully and follow my instructions.”
Scoring of the Test:
A score of one is given each time the subject follows the instructions correctly. A half mark is deducted for every repetition. If the subject fails to follow the instruction correctly even after two repetitions, the trial is considered a failure and a score of zero is given. The maximum score is 36.

Statistical Analysis:
Data can be analyzed quantitatively. The obtained data is processed to obtain the following information:
1. Mean and standard deviation of the children and early adulthood of the variable included in the present study;
2. One way of analysis for the comparison of children and early adulthood of the variable included in the present study;
3. Bar mean diagram comparison of the children and early adulthood of variable included in the present study.

Result:
The result tables for the present study are as follows:

Table-I
*Mean, Standard Deviation of children and early adulthood on Token test i.e. Verbal comprehension:*

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Token test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td>37</td>
<td>30.02</td>
<td>2.32</td>
</tr>
<tr>
<td>Early Adulthood</td>
<td>36</td>
<td>33.72</td>
<td>1.48</td>
</tr>
</tbody>
</table>

Table-II
*Summary of ANOVA of significance difference between children and early adulthood on verbal comprehension (VC):*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC</td>
<td>Between groups</td>
<td>1</td>
<td>249.147</td>
<td>65.228</td>
<td>.000</td>
</tr>
<tr>
<td>VC</td>
<td>Within groups</td>
<td>71</td>
<td>3.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VC</td>
<td>Total</td>
<td>72</td>
<td>520.342</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion:
The results are discussed in the following ways. The result Table-I shows mean, standard deviation; and Table –II shows F value of the verbal comprehension variable of children and early adulthood included in the present study. The mean value of verbal comprehension between children
and early adulthood are found 30.0270 and 33.722 respectively and F value between groups (F = 65.228) are found to be statistically significant.

The figure 1 in the result chapter indicates that early adulthood have more mean on the verbal comprehension than children.

Comprehension of speech obviously begins in the auditory system, which detects and analyzes sounds. But recognizing words is one thing. Comprehending them—understanding their meaning—is another. Recognizing a spoken word is a complex perceptual task that relies on memories of sequences of sounds. This task appears to be accomplished by neural circuits in the middle and posterior portion of the superior temporal gyrus of the left hemisphere—a region that has come to be known as Wernicke’s area. Wernicke’s area is a region of auditory association cortex on the left temporal lobe of humans, which is important in the comprehension of words and the production of meaningful speech. The primary characteristics of Wernicke’s aphasia are poor speech comprehension and production of meaningless speech. Unlike Broca’s aphasia, Wernicke’s aphasia is fluent and unlabored, the person does not strain to articulate words and does not appear to be searching for them. The patient maintains a melodic line, with the voice rising and falling normally. When you listen to this speech of a person with Wernicke’s aphasia, it appears to be grammatical. That is, the person uses function words such as “the” and “but” and employs, the person uses few content words, and the words that he or she strings getter just do not make sense. In the extreme, speech deteriorates into a meaningless jumble.

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The difference between trans cortical sensory aphasia and Wernicke’s aphasia is that patients with this disorder “can repeat what other people say to them; therefore, they can recognize words. However, they cannot comprehend the meaning of what they hear and repeat; nor can they produce meaningful speech of their own. How can those people repeat what they hear? Because the posterior language area is damaged, repetition does not involve this part of the brain. Obviously, there must be a direct connection between Wernicke’s area and Broca’s area that bypass the posterior language area.

Damage to part of the association cortex of the ‘left’ parietal lobe can produce an inability to name the body parts. The disorder is called autotopagnosia, or poor knowledge of one’s own topography. People with transcortical sensory aphasia can repeat what they hear suggests that there is a direct connection between Wernicke’s area and Broca’s area—and there is, the ‘arcuate fasciculus (arch-shaped bundle). This bundle of axons appears to convey information about the ‘sounds’ of words but not their meanings. The best evidence for this conclusion comes from a syndrome known as conduction aphasia, which is produced by damage to the inferior parietal lobe that extends into the sub cortical white matter and damages the arcuate fasciculus.

**Conclusion:**

In conclusion part, the investigator found very interesting about the verbal comprehension between the children and early adulthood and suggested to do this test with other test so that it can able to reflect more information in relation to this test.
Aknowledgement:

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