

## **COMPARISON OF PERFORMANCE-INTENSITY FUNCTION USING HEARING IN NOISE TEST BETWEEN MIDDLE AGE AND YOUNG ADULT WITH NORMAL HEARING**

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The purpose of this study was to compare the reception threshold for sentence (RTS) and performance-intensity function (PI) among young adults aged between 21 to 39 years old and middle adult aged 40 to 59 years old, using the hearing in noise test (HINT). This study also measured the correlations between RTS and three frequencies pure tone average and between RTS and recognition score at suprathreshold level. Forty subjects consisted of 20 young and 20 middle age adults with normal hearing participated in the study. RTS and PI function were measured using HINT in four conditions; in quiet, noise front, noise right and noise left. Performance intensity functions (PI) were plotted based on percentages of correctly repeated sentences and words at five SNR levels. Results of this study using ANOVA showed that young adults had significantly lower RTS than middle adult in HINT test at quiet, noise right and noise left conditions ( $p < 0.05$ ). However, there is no significant difference at noise front ( $p > 0.05$ ). Comparison of PI function based on sentence score of the two groups using ANOVA showed that young adults had significantly greater gradients than the middle age adult in noise front and noise left conditions ( $p < 0.05$ ), but not in noise right condition. On the other hand, the differences in gradient based on words scores were significant in all noise conditions ( $p < 0.05$ ). Spearman correlation also showed that there was significant negative relationship between RTS and suprathreshold in noise front and noise left conditions ( $p < 0.05$ ). Spearman correlation test result showed that there was significant positive relationship between three pure tone frequency averages with RTS in quiet ( $p < 0.05$ ). These findings suggest that age factor influence individual speech recognition and performance whereby the middle age adult showed poor performance than young adults. Better PTA is associated with better ability to recognize speech in noise, whereas, better RTS is associated with better speech recognition performance at suprathreshold level.

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