

## Correlation Between Six Minutes Walk Distance with Blood Glucose Level in Pilgrims at Saiful Anwar General Hospital Malang

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### Abstract

**Background:** Chronic, metabolic and cardiovascular diseases are still have higher incidences among elderly pilgrims. Early detection of metabolic and cardiovascular diseases on pilgrims are important to provide Hajjistitho'ah. 6 Minutes Walk Test has benefit as early screening to asses cardiopulmonary status. We aimed to find correlation between 6 minutes walk distance with blood glucose level on elderly pilgrims in order to ensure safety of Hajj session

**Methods:** A Cross-sectional study was conducted at Cardiac Prevention and Rehabilitation Saiful Anwar General Hospital Malang on July 2017. Total 61 of 92 pilgrims, age 60 years old and above was included in this study. The elderly pilgrims were instructed and made to perform a 6MWT according to ATS guidelines. The measurements included the 6-Minute Walk Distance (6MWD) for exercise capacity, fasting blood glucose and post prandial blood glucose level. Data analysis using Spearman correlation test at a significance level of 0.05.

**Results:** The participants consisted of 28 males (45.9%) & 33 females (54.1%). The mean 6MWD was 405,36 metres. The mean fasting blood glucose level was 116,60 mg/dL and post prandial blood glucose level was 145,45 mg/dL. The 6MWD correlated significantly ( $P < 0.05$ ) with fasting blood glucose [ $r = -0,546$ ], and post prandial blood glucose [ $r = -0,420$ ]. Anova regression show correlation between 6MWD with fasting blood glucose with  $p = 0,001$  [6MWD=460,694-0,483FBG], and correlation between 6MWD with post prandial blood glucose with  $p = 0,002$  [6MWD=439,749-0,243 PP]

**Conclusion:** The low exercise capacity in Hajj pilgrims was associated with higher glycemic control. These factors should be given consideration when prescribing activity for elderly Hajj pilgrims with higher blood glucose level in order to ensure safety and efficiency of the Hajj session.

**Keywords :** 6MWD; Hajj pilgrims; Blood glucose level