Prayer-Related Physical Activities for Cardiovascular Health

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INTRODUCTION

Cardiovascular Health and Physical Activity
Cardiovascular (CV) diseases (CVD) are the leading cause of death in the globe, attributed mainly to atherosclerosis (Margetts, 04). Physical activity (PA), on the other hand, is known to modify vascular function and atherosclerosis risk profile (Bouchard, 07).

Physical Activity during Muslim Prayer
Muslims pray five times daily, preferably in the Masjed (prayer place). Each prayer is completed in a number of “rakaa”. One raka: is a set of repetitive physical movements that involves standing, bowing, prostration, and setting. The total daily “rakaa” is 17-30 prayed at dawn (2-4), noon (4-8), late afternoon (4), early evening (3-5), and late evening (4-9), which could take 15-30 mints. Obviously, these physical movements can be considered PAs, especially when walking to the neighborhood Masjed is added.

Gaps and purpose
Most studies reported the benefits of recreational and occupational PAs with few examining religious-related PA (RRPA). Therefore, the current study examined the association of vascular function with PAs related to Muslim prayer.

METHODS

Design and Recruitment
The study was cross-sectional retrospective to examine the relationship of PA with CV function in apparently healthy males and females aged 18-80 years old from the local community. Individuals with diagnoses/risk of CV, metabolic, orthopedic, pulmonary, neurological, and/or psychological diseases were not accepted in the study.

Religious-related Physical Activity
Prayer activity data were collected in a 1-to-1 interview. The main outcomes of the prayer activity assessment were daily prayer and raka number performed, daily and weekly prayers performed in the Masjed, and time and distance to the Masjed.

Vascular Measurements
Blood flow, vascular resistance, and venous capacitance and outflow at rest and after occlusion were obtained using strain-gauge plethysmography. Immediately before assessments, 2 pneumatic cuffs were placed above the elbow and on the wrist. A strain-gauge, 2-3 cm less than the forearm circumference, was placed ~10 cm below the elbow (Aken, 04).

RESULTS

- Differences in Resting Vascular measures between the Individuals Praying at the Masjed versus Home
- Differences in Post-occlusion Vascular measures between the Individuals Praying at the Masjed versus Home

DISCUSSION

- The study revealed relationships between vascular function indices and religious-related physical activity, particularly the time and distance required to walk to the Masjed.
- These relationships were found in the activities involving large muscle groups (i.e. walking to the Masjed), but not small muscle groups (i.e. standing and bowing).
- Additionally, vascular function was improved in the ones frequently prayed in the Masjed versus the ones prayed at home.
- The results confirm the importance of regular PA for health, especially vascular.
- The current findings are unique, as this is the first study to reveal vascular benefits of religious-related physical activities among Muslims, or otherwise.
- Similar to participation in habitual exercise/PA (Ahmad, 12), increased blood shear stress during muscle contraction might stimulate these adaptations (Kozakova, 07).
- Additionally, exercise/PA can also modify CV risk factors, including hypertension, obesity, and diabetes (Ahmed, 07).
- Therefore, future studies should examine the relationships of religious-related physical activities with other health measures, especially CVD risk factors.