

Conference Sub-theme 1: Implementing Effective Interventions in Healthcare  
Conference Sub-theme 2: Nutrition Education

## The Effect of Observing Religious or Faith-based Fasting on Cardiovascular Disease Risk Factors: A Systematic Review and Meta-analysis.

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**Background:** Cardiovascular diseases (CVD) are the leading cause of death worldwide. CVDs are often linked to metabolic syndrome and living with obesity. Fasting is a common practice in many religions and has been associated with health-benefits.

**Objectives:** This systematic review compared the impact of different religious fasting practices, specifically dietary-restricted - Orthodox Christian and time-restricted - Ramadan practices fasting, on cardiovascular and metabolic disease risk in fasting adults compared to non-fasting individuals.

**Methodology:** The search covered four databases and followed PRISMA guidelines, to identify papers published in English from inception to the March 2023. The population of interest were adults in observational studies, and the exposure was restricted eating and fasting practices related to religious beliefs, where there were data on matched non-fasting individuals. Outcomes were cardiovascular and metabolic disease risk markers. A meta-analysis with subgroup analysis was conducted using RevMan5. The review was registered on PROSPERO(CRD42022352197).

**Results:** Fourteen studies were included with 755 adults who participated in fasting practices and 661 non-fasting controls. Religious fasting was associated with a reduction in body mass index (BMI) (-0.40 kg/m<sup>2</sup>, 95% CI [-0.70, -0.10], p<0.01). Observance of Ramadan fasting was associated with decreased systolic blood pressure (mean difference=-3.83mmHg, 95% CI [-7.44, -0.23], p = 0.04). The observance of Orthodox Christian fasting was associated a reduction in total cholesterol (-0.52 mmol/l, 95%CI [-0.64, -0.39], p<0.01). No difference was found for low-density lipoprotein Cholesterol (LDL-C), high density lipoprotein cholesterol (HDL-C), triglyceride and diastolic blood pressure.

**Conclusion:** This systematic review and meta-analysis reported potentially different metabolic effects of different religious fasting practices - Orthodox Christian and Ramadan fasting, which might be associated with a reduction risk of cardiovascular and metabolic diseases compared to non-fasting individuals indicating potential health benefits beyond spirituality. Further research on other fasting practices is needed due to limited data.