



# Evaluating 10-Year Risk of Cardiovascular Events in the DehPCS Utilizing the WHO/ISH Risk Assessment Tool

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## ABSTRACT

**Introduction:** Cardiovascular diseases continue to be the primary contributor to mortality rates worldwide, particularly in developing nations. Identifying risk factors and accurately estimating overall cardiovascular risk within a community is imperative to implement effective primary prevention strategies for individuals at elevated risk.

**Methods and Materials:** This cross-sectional study endeavored to quantify the 10-year risk of cardiovascular events among participants in the Dehgholan Prospective Cohort Study (DehPCS) through the application of the risk assessment chart developed by the World Health Organization and the International Society of Hypertension (WHO/ISH), tailored specifically for the Eastern Mediterranean Region, according to age, sex, blood pressure, smoking status, and diabetes mellitus status and total cholesterol levels. The study population encompassed 3,996 individuals aged 35 to 70 enrolled in the DehPCS cohort study between February 2018 and March 2019. Data analysis was conducted using SPSS version 23. The relationship between categorized variables and gender was evaluated through the chi-square test. Multinomial logistic regression was applied to estimate the adjusted odds ratio using STATA version 17.

**Results:** A total of 3,515 participants were eligible for the analysis after applying the inclusion and exclusion criteria. The mean age of the participants was 48.34 (8.91) years, and slightly over half (56.05%) were female. The results showed that the vast majority (95.11%) had a low 10-year risk of developing cardiovascular events. However, a small percentage had either moderate (3.02%) or high (1.88%) 10-year risk. Notably, among the high-risk group, nearly two-thirds (63.64%) were female. Furthermore, the study found that having hypertension, diabetes, or being unmarried increased the odds of being at higher cardiovascular risk, with odds ratios of 8.18 (5.95-11.25), 3.65 (2.60-5.13), and 2.62 (1.72-3.99), respectively.

**Conclusion and Discussion:** The WHO/ISH risk prediction charts have substantiated their utility as a cost-effective and accessible instrument for prognosticating the risk of incident cardiovascular events among asymptomatic individuals, facilitating timely diagnosis and preventive interventions, particularly in resource-constrained milieus. The early risk stratification through such validated tools could inform targeted interventions and enhance strategies for preventing cardiovascular diseases, emphasizing vulnerable populations.

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