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DISCORDANCE BETWEEN THE FRAX RISK SCORES WITH AND WITHOUT BMD IN IDENTIFYING HIGH RISK POPULATIONS IN IRAN: THE POCOSTEO STUDY

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Objective: Osteoporosis with a high prevalence in elderly population, will impose a significant burden on aging countries. Risk estimation tools can estimate the overall risk based on the individual profiles of risk factors. The FRAX[®] tool provide an estimation using the clinical risk factors (without-BMD) as well as BMD at the femoral neck (with-BMD). We aim to evaluate the frequency of discordance between these two versions.

Methods: The subjects were men and women aged ≥ 50 y, participating in the first stage of the PoCOsteo study. This study is a population-based cohort to develop a multidimensional fracture assessment tool. The 10-y probability of hip fracture (with and without-BMD) were estimated by the specific FRAX algorithms of Iran. Subjects were categorized based on risk scores to low and high risk, considering the risk-threshold of 3%. Concordance was defined as either low-risk/low-risk or high-risk/high-risk. Discordance was defined as being high-risk and low-risk based on the FRAX/BMD and FRAX/without-BMD, respectively. The stepwise logistic regression model was used to investigate the determinants of discordance.

Results: In all, 2000 (1138 women) participants with the mean age of 62.1 (± 8.1) y were included. The FRAX risk scores were concordant in 1717 individuals, while the discordance was reported in 187 (124 women) participants. The results of regression model showed that adjusting by the potential covariates, discordance was positively associated with age in both sexes (Table). Waist circumference was also positively associated in women [1.02 (1.003-1.04)], while a negative association was detected in men [0.96 (0.94-0.99)]. The odds of discordance in current smokers were increased by 2.83 fold compared to the nonsmokers in men.

	Men		Women	
	OR (95%CI)	P-value	OR (95%CI)	P-value
age	1.07 (1.04-1.10)	<0.001	1.08 (1.05-1.11)	<0.001
Waist circumference	0.96 (0.94-0.99)	0.004	1.02 (1.003-1.04)	0.023
Current smoking	2.83 (1.62-4.9)	<0.001	-	-

Conclusion: The results showed that discordance between the two models can be modified by age, waist circumference and smoking.