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Evidence Gap on the Prevalence of Non-conventional Risk Factors for Type 2 Diabetes in Iran

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Abstract

Objectives: Robust scientific evidence exists about the role of non-conventional risk factors in type 2 diabetes worldwide. The current epidemiological pattern of the disease in Iran suggests a precipitating role for these non-conventional risk factors. This review was performed to examine the research evidence suggesting a higher prevalence of non-conventional type 2 diabetes risk factors in Iran.

Methods: MeSH keywords were applied to search several databases, including PUBMED, MEDLINE, AMED, EMBASE, Iran DOC, and the Scientific Information Database without a time limit from inception to September 2011. The quality of the non-interventional and population-based studies on Iranians included in these databases was assessed by the authors and any disagreement was resolved with consensus.

Results: The literature search yielded 1847 publications, of which 62 were included in this study after eliminating non-relevant and overlapping papers. No study was found that verified a higher prevalence of the non-conventional type 2 diabetes risk factors in the Iranian population.

Conclusion: The identified evidence gap about the role of prominent non-conventional risk factors of type 2 diabetes in the Iranian population could be a major caveat in the application of an evidence-based approach to endorse or reject existing hypothesis about these risk factors. Studies on the prevalence of non-conventional biomarkers of type 2 diabetes among Iranians could be a promising area of research.

1. Introduction

Type 2 diabetes is a highly prevalent metabolic disorder and accounts for about 90% of all cases of diabetes in the world [1]. The global prevalence of type 2 diabetes has reached 6.4%, which could be an overwhelming burden on the health and economies of countries [2]. Although there is robust scientific evidence about the role

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of conventional risk factors and, consequently, about effective preventive strategies to halt the progress of the disease worldwide, the marked increase in type 2 diabetes in recent decades represents a failure in putting the established science into practice [3].

The prevalence of type 2 diabetes among adult Iranians aged 25−64 years is estimated to be 7.7%, excluding undiagnosed patients [4]. Lifestyle changes, especially in urban areas, low rates of physical activity, and obesity are the main recognized conventional triggers in the occurrence of type 2 diabetes across the country [5]. The onset of the disease in Iran is currently mostly observable in the 45−55 year age group, whereas in the developed world it is mainly a disease of old age,

i.e., over the age of 65 years [6]. Such a difference may be due to a higher prevalence of conventional and non-conventional type 2 diabetes risk factors in Iran.

Lower plasma creatinine [7], a high intake of total and animal protein [8], plasma apelin and visfatin levels [9,10], lower β-cell function [11], plasma preptin levels (a hormone that is co-secreted with insulin and amylin from the pancreatic β cells) [12], serum 25-hydroxyvitamin D (25OHD), and dietary calcium [13−16] are a group of non-conventional risk factors that may explain the higher incidence and prevalence of type 2 diabetes in some ethnic groups.

This study was performed to look at the empirical research evidence about the studied risk factors for type 2
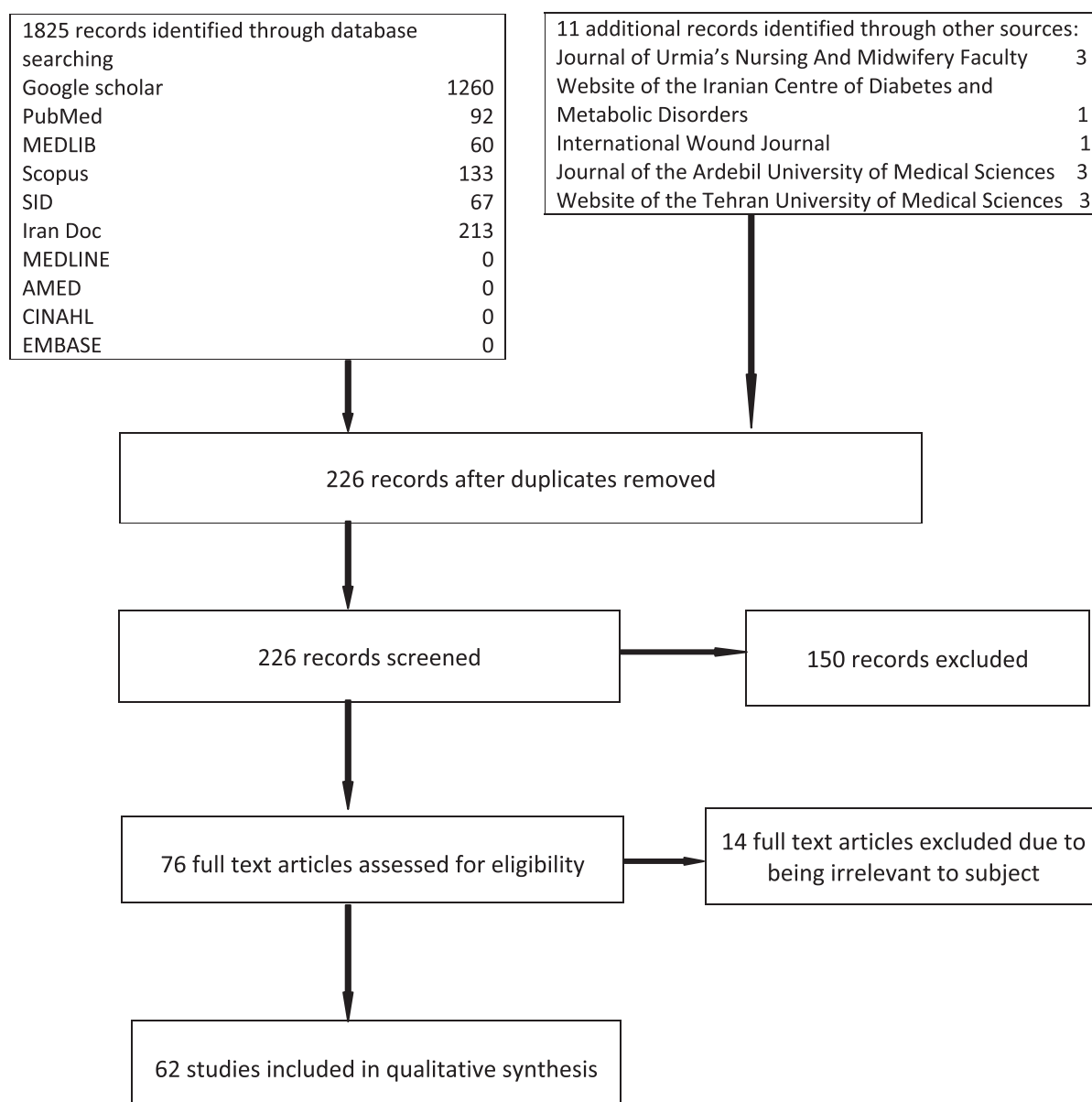
Figure 1. Flow diagram of the method of selecting publications on the risk factors of type 2 diabetes in Iran retrieved from databases.