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Knowledge and practice related to gestational diabetes among primary health care providers in Morocco: Potential for a defragmentation of care?

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ABSTRACT

Introduction: The objective of this study was to assess knowledge and practices of general practitioners, nurses and midwives working at primary health care facilities in Morocco regarding screening and management of gestational diabetes (GDM).

Methods: Structured interviews with 100 doctors, midwives and nurses at 44 randomly selected public health care centers were conducted in Marrakech and Al Haouz. All data were descriptively analyzed. Ethical approval for the study was granted by the institutional review boards in Belgium and Morocco.

Results: Public primary health care providers have a basic understanding of gestational diabetes but screening and management practices are not uniform. Although 56.8% of the doctors had some pre-service training on gestational diabetes, most nurses and midwives lack such training. After diagnosing GDM, 88.5% of providers refer patients to specialists, only 11.5% treat them as outpatients.

Discussion: Updating knowledge and skills of providers through both pre- and in-service-training needs to be supported by uniform national standards enabling first line health care workers to manage women with GDM and thus increase access and provide a continuity in care. Findings of this study will be used to pilot a model of GDM screening and initial management through the primary level of care.

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1. Introduction

The number of pregnant women affected by gestational diabetes (GDM) is increasing globally with an estimated prevalence as high as 15% according to the latest figures [1]. Previous studies from Morocco revealed that eight to ten out of 100 pregnancies are affected by GDM [2,3]. GDM is neither painful nor debilitating, but is associated with birth complications, and affected women have a seven times higher risk of developing type 2 diabetes later in life [4].

In Morocco, where antenatal care (ANC) attendance is as high as 77.1% [5], first level health care providers, particularly nurses and midwives, are usually the first point of contact for pregnant women. Fasting glucose testing in the first and the second trimester form part of the Moroccan ANC recommendations [6] and currently three national guidelines containing GDM recommendations are available [7–9]. However, their information is not always congruent. Some national guidelines suggest selective screening while others recommend universal screening. National guidelines suggest the screening of women with risk factors such as, a history of GDM, diabetes of a family member, overweight, advanced age (35 years or older), repeated urinary tract infections, macrosomia, intrauterine fetal or neonatal death, malformation or more than two abortions with a glucose challenge and/or oral glucose tolerance test at a gestational age of between 24 and 28 weeks [7–9]. According to best practice recommendations [8], insulin should be prescribed if glucose values are not stable within seven to ten days of dietary measures. Self-monitoring of glucose several times a day is the recommended testing method and a monthly follow up of affected women whose GDM is well balanced, is suggested. Cesarean section is only indicated when a birthweight of 4500 g or more is estimated at a gestational age of 39 weeks. Re-testing by fasting glucose is proposed for the third postnatal care visit which usually takes place six weeks postpartum [8].

Given the specific role of primary health care providers as the first point of contact for pregnant women, our objective was to assess the knowledge and current practices of general practitioners, nurses and midwives working at primary health care facilities. The results are anticipated to draw increased attention to their potential but also their limitations in GDM management. The findings are also expected to contribute to the development of future strategies that focus on strengthening the primary health care level, thus improving access to GDM screening, management and follow-up.

2. Methodology

As part of a broader situational analysis of gestational diabetes in Morocco, we assessed knowledge and practice of health care professionals providing maternal health services in the provinces of Marrakech and Al Haouz. This paper describes the knowledge and practices of three professional groups including general practitioners, nurses and midwives working at the health center level ($n = 100$). Six trained local data collectors approached health care providers in 44 randomly selected public health centers of which 24 were located in Marrakech

and 20 in Al Haouz. Providers who were present on the day of our visit and agreed to participate in the assessment were interviewed using a structured interview guide including a mix of 37 multiple choice and open-ended questions. The multiple choice questions were related to general knowledge about GDM and experience with affected patients. We also assessed providers' knowledge about screening (who, when and how to screen) and management practices, and asked for information about previous training on GDM. Each interview took between 15 to 25 min and respondents could freely decide to answer or not to answer a question.

Data was entered into a pre-formatted EXCEL spreadsheet and open-ended responses were transformed into categorical or continuous variables. After conversion into STATA software, Version IC13, data was descriptively analyzed with calculation of means and standard errors of normally distributed continuous variables, median and interquartile range of the non-normally distributed variables. Categorical variables were summarized as counts and percentages with their distributions between two groups being compared using Chi-square or Fisher's exact test.

The reported findings have been collected as part of a situational analysis on gestational diabetes conducted in two districts of Morocco for which ethical approval has been granted by the institutional review boards of the Institute of Tropical Medicine (ITM) and the Ethics Committee of the University of Antwerp (UZA), Belgium and the institutional review board of the Mohammed V University, Rabat, Morocco.

3. Results

3.1. Sociodemographic characteristics

All of the general practitioners, nurses and midwives approached, agreed to participate in the survey. Of the 100 health care providers interviewed, 39% of respondents were general practitioners, 32% nurses and 29% midwives. Around 80.6% (79) of interviewees were female and 19.4% (19) were male. Nearly half of the doctors (48.6%) were men whereas most of the nurses and midwives were women (98.4%). Respondents were on average 43 years old and their median length of employment in the current job was eight years. The distribution of health care providers between urban and rural health centers was balanced although most of the doctors worked in urban centers whereas more nursing professionals were located in rural centers (Table 1).

Although most respondents replied to questions related to general knowledge about GDM and screening for GDM, only a few respondents could provide answers related to the management of patients affected by GDM. The number of respondents who replied to each question is provided in the respective tables. No major differences in replies were found between doctors and nurses, except for training in GDM and medical treatment of GDM.

3.2. General knowledge and training

All providers stated they had heard about gestational diabetes (GDM) and 89% described it correctly as a form of diabetes

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