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Original research

Adherence to NICE guidelines on diabetes prevention in the UK: Effect on patient knowledge and perceived risk

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ABSTRACT

Background: NICE Guidelines for prevention of diabetes include identifying people at risk followed by cost-effective intervention if necessary. Based on assessment of risk via a questionnaire and/or blood test the intervention may comprise a brief discussion of risk factors and preventive advice or referral to intensive lifestyle intervention.

Design and setting: In this cross-sectional study 59 subjects recruited from local GP practices were invited by letter to attend a screening for a diabetes prevention study.

Method: Following a telephone screening during which subjects were asked whether they had been informed if they were at high-risk of type 2 diabetes, eligible subjects completed a Risk Perception Survey for Developing Diabetes (RPS-DD), a validated diabetes risk score and underwent an oral glucose tolerance test (OGTT) at a medical screening.

Results: As measured by the Diabetes UK Risk Score, 44.1% were at high risk, 42.4% moderate risk and 13.6% at increased risk. 42% of patients had been informed they were at high-risk by a health professional. Those who had been informed of their risk had significantly higher perceived risk scores ($p < 0.001$), higher knowledge scores ($p < 0.001$) and decreased optimism scores ($p = 0.004$), but were not more aware that diet ($p = 0.42$) and weight management ($p = 0.57$) can play a role in preventing diabetes.

Conclusions: People at high-risk of diabetes are not being informed of their risk status as recommended by NICE guidelines. There is scope for education for health professionals and the public.

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1.   Introduction

The aim of screening for disease is to "identify apparently healthy people who may be at increased risk of a disease or condition" [1]. They can then be offered appropriate treatment to reduce their risk and/or any complications. In the UK, a systematic national screening program for diabetes is not recommended; however, the National Screening Committee does recommend selective screening as part of overall vascular risk assessment [2]. Accordingly, the current NICE guidelines advise health practitioners to carry-out a two-stage strategy, involving the use of screening questionnaires in stage one, followed by a blood test at stage two if necessary [3]. For people at low risk of diabetes, the guidance recommends a 5–15 min consultation to advise the patient of their current low risk status and to offer brief risk reduction advice. For people with a high risk score, but normal blood glucose control, a discussion of the patient's particular risk factors is recommended, alongside lifestyle advice to address modifiable risk factors. People with a high-risk score should be offered a referral to a local, evidence-based intensive lifestyle-change programme (see Fig. 1) [3].

This kind of staged screening should therefore provide the patient with a more accurate assessment of their risk of diabetes [4,5], give them personalised information about their risk factors [3], and give them sufficient advice and support (where recommended) to make appropriate lifestyle changes [3]. Even brief provision of information to people at risk of diabetes may be important as the Ely study investigators who followed normoglycaemic subjects after undergoing a brief screening for diabetes and CVD risk factors demonstrated significant reductions in HbA1c and waist circumference in the screened group versus the control at the 13 year follow-up [6].

No study has specifically attempted to examine to what extent the NICE guidelines are being followed. Two studies carried out in the UK prior to the introduction of the latest guidelines found that people receive mixed-messages regarding health preventive behaviours and feel confused about their glycaemic status [7,8]. However, these were small interview-based studies, and predominantly included people with a formal diagnosis of prediabetes or diabetes.

Therefore, this study sought to examine whether a cohort of individuals at high-risk of type 2 diabetes recruited via GP Practices had been informed of their risk status by a health professional, and what impact this had on their perceived risk of diabetes and knowledge of health preventive behaviours. We also examined whether perceived risk of disease is associated with dietary intake.

2.   Method

2.1.   Participants

Data were collected from participants invited to attend a medical screening for a diabetes prevention study in a multi-ethnic UK population, aged ≥18 years. Recruitment was from local general practices carried out by searching practice lists for all participants of BMI 25–35 kg/m^2, with a reported fasting plasma glucose in the previous 18 months of 5.6–6.9 mmol/L (in order to capture those with isolated-Impaired Glucose Tolerance) without a diagnosis of diabetes. The study took place between March 2013 and November 2013.

2.2.   Data collection

During the initial telephone screening for the study, all patients were asked: "Have you been informed by a health professional that you are at high-risk of type 2 diabetes?". Other descriptions were also used including prediabetes or borderline diabetes. Following the telephone screening, participants were invited to attend the Wellcome Trust/Sir John McMichael Clinical Research Facility for a medical screening for the study during which all participants were given the Risk Perception Survey for Developing Diabetes (RPS-DD) questionnaire and underwent a 24-h dietary recall. Once these were complete the subjects underwent an oral glucose tolerance test (OGTT).

The RPS-DD [9] was used with slight alterations adapted to a UK population (Supplementary data). This survey assesses comparative perceptions of risk of developing diabetes based on different subscales including the personal control subscale, the optimistic bias subscale, and the personal disease risk subscale.

To compare perceived risk with actual risk of the participants, the Diabetes UK risk score was calculated. The Diabetes UK risk assessment was developed in conjunction with Leicester University and takes into account gender, age, ethnicity, waist circumference, family history of diabetes, exercise habits and a history of hypertension [10]. A score of 0–6 points is low risk, 7–15 points is increased risk, 16–24 points is moderate risk and 25 or more points is high risk. This risk score is recommended by NICE for health practitioners to use with their patients [3].

To assess the correlation of food intake with the perceived risk of developing diabetes a 24-h dietary recall was carried out. Data collected included time of consumption, location of consumption, identification of meal type (breakfast, lunch, dinner or snack), food item consumed, amount, preparation method, and brand name if applicable. A photographic atlas of food portion sizes was used to indicate portion size. The Goldberg cut-off was used to detect the presence or degree of misreporting [11]. Dietary intake was calculated using Dietplan6.

Diet quality of the participants was assessed using the Healthy Eating Index (HEI-2005), which was developed by the U.S Department of Agriculture (USDA) [12] and has been used in a UK population previously [13]. The HEI-2005 evaluates the overall quality of the diet through the identification of 10 dietary components. Each of the 10 dietary components has a minimum score 0 and a maximum score of 10. The total of the scores for the 10 components ranges from 0 to 100, with a higher score indicative of a healthier diet.

2.3.   Statistical analysis

Student's t-test (2-tailed) was used to determine differences in knowledge, perceived risk and HEI between those informed of their risk and those not informed. Spearman's test (rho) was used for non-parametric correlations. Data are expressed