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The relationships between illness and treatment perceptions with adherence to diabetes self-care: A comparison between Arabic-speaking migrants and Caucasian English-speaking patients

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ABSTRACT

Aims: To compare illness and treatment perceptions between Arabic-speaking immigrants and Caucasian English-speaking people with type 2 diabetes, and explore the relationships between these beliefs and adherence to self-care activities.
Methods: A cross-sectional study was conducted in healthcare settings with large Arabic populations in metropolitan and rural Victoria, Australia. Adherence to self-care activities, illness and treatment perceptions, and clinical data were recorded. Bivariate associations for continuous normally distributed variables were tested with Pearson's correlation. Non-parametric data were tested using Spearman's rank correlation coefficient.
Results: 701 participants were recruited; 392 Arabic-speaking participants (ASPs) and 309 English-speaking participants (ESPs). There were significant relationships between participants' illness and treatment perceptions and adherence to diabetes self-care activities. ASPs' negative beliefs about diabetes were strongly and significantly correlated with poorer adherence to diet recommendations, exercise, blood glucose testing and foot care. ASPs were significantly less adherent to all aspects of diabetes self-care compared with ESPs: dietary behaviours ($P = <0.01$; 95% confidence interval (CI) = −1.17, −0.84), exercise and physical activity ($P = <0.001$, 95% CI −1.14, −0.61), blood glucose testing ($P = <0.001$) and foot-care ($P = <0.001$). 52.8% of ASPs were sceptical about prescribed diabetes treatment compared with only 11.2% of the ESPs. 88.3% of ASPs were non-adherent to prescribed medication, compared with 45.1% of ESPs.

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Conclusions: Arabic-speaking migrants' illness and treatment perceptions were significantly different from the English-speaking group. There is a pressing need to develop new innovative interventions that deliver much-needed improvements in adherence to self-care activities and key health outcomes.

1. Introduction

Poor adherence to treatment recommendations among patients with type 2 diabetes (T2DM) is a global phenomenon with a considerable negative impact on health outcomes [1]. Suboptimal adherence can lead to: increased morbidity and mortality, lower quality of life, and unnecessary intensification of treatment [2,3]. A recent US study of 4926 adults with diabetes showed that, despite considerable public health efforts, the proportion achieving glycated haemoglobin (HbA1c), blood pressure, and LDL cholesterol recommendations increased only from 1.7% to 18.8% between 1988 and 2010. Non-Hispanic blacks and Mexican Americans were less likely to meet HbA1c and LDL goals compared with Caucasians [4]. Ethnic minority groups residing in upper middle and high income western countries have higher non-adherence rates, worse glycaemic control, higher diabetes-related morbidity and mortality rates, and poorer outcomes compared with the general population [5].

Assessing illness and treatment beliefs around diabetes has been suggested as a key approach to address the challenge of poor adherence and sub-optimal glycaemic control [6]. Evidence suggests that both illness perceptions and treatment beliefs drive patients' self-care behaviours, including medication adherence, and predicts glycaemic control [6]. Furthermore, intervention studies addressing patients' negative diabetes illness and treatment perceptions have demonstrated benefits in self-care behaviours and key health outcomes including glycaemic control [7–9].

For healthcare providers to elicit, understand and address patients' treatment beliefs that influence their medication-taking behaviours, the Necessity–Concerns Framework has been suggested as an effective model [10]. According to this framework, patients' beliefs about medications are categorised into two types: adherence-enhancing beliefs (perceived necessity and advantages of prescribed treatment) and adherence-reducing beliefs (perceived harms, risks, and barriers to treatment) [11]. In diabetes, numerous studies across different healthcare settings have reported significant association between patients' treatment perceptions and their medication-taking behaviours [12–14]. Illness perceptions developed from the Common Sense Model of self-regulation (CSM), have been associated with adherence to diet, exercise, blood glucose monitoring, and clinic attendance [15–17]. Previous studies demonstrate that patients who believed in their own ability to control diabetes reported better self-care behaviours (diet, exercise, and glucose testing) and had better HbA1c levels than those who did not [18–21]. The vast majority of previous studies on illness and treatment perceptions have been conducted among Caucasian populations and only a few studies have focused on specific ethnic minority groups. Compared with the general population, ethnic minority groups are known to have different illness and treatment perceptions [22–24].

No previous studies have examined either treatment and illness perceptions or their influence on adherence to self-care behaviours in Arabic-speaking immigrant populations with diabetes, despite the extremely high prevalence of diabetes in these populations [25,26]. It remains unclear how diabetes illness and treatment perceptions of Arabic-speaking communities compare with those in Caucasian society. This study extends previous research by investigating differences in diabetes illness and treatment perceptions between Arabic-speaking immigrants and Caucasian English-speaking people with T2DM. It also examines the relationships between these beliefs and adherence to diabetes self-care activities. Currently, no evidence-based intervention has yet been developed that can be used to target negative illness and treatment perceptions for this less studied ethnic minority group. This work will identify whether different treatment approaches are necessary for Arabic-speaking people and will inform the development of such a model.

2. Materials and methods

2.1. *Study design and setting:*

This cross-sectional study was conducted at various settings in the Melbourne metropolitan area and in rural Victoria, Australia. Participants in the Melbourne metropolitan area were recruited through diabetes outpatient clinics at three major hospitals, ten general medical practices and five community support groups. For the rural arm of the study, participants were recruited in Shepparton, Victoria through diabetes outpatient clinics at a major rural hospital and its affiliated satellite clinics, three general medical practices and various community support groups. Study locations were chosen because of their relatively large populations of Arabic-speaking people who had recently migrated from countries in the Middle-East.

2.2. *Ethical consideration*

Approval for this study was obtained from Monash University Human Research Ethics Committee, the Human Research Ethics Committee at Austin Health (The Non-Drug Scientific Review Committee), the Human Research Ethics Committee at Melbourne Health (covering Royal Melbourne Hospital and Western Health) and The Goulburn Valley Health Ethics and Research committee.