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# The intersection of physician wellbeing and clinical application of diabetes guidelines

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### ABSTRACT

**Objectives:** Prediabetes (preDM) and diabetes are complex conditions that place significant strain on medical providers. This can have a negative impact on providers' wellbeing and could impact clinical decisions. We investigated the interplay of caring for patients with prediabetes, physician mental wellbeing, and clinical care.

**Methods:** Using the theory of planned behavior, we conducted a secondary analysis to evaluate physicians' self-reported provision of care to patients with preDM. We evaluated the effect of mental wellbeing and perceived barriers to caring for patients with preDM.

**Results:** Among 1015 academic physicians, a greater perception of barriers to care and a higher percentage of patients seen with preDM were both significantly associated with a less positive physician state of mind. Physician state of mind was not associated with self-reported clinical behavior. Physician perception of patient barriers has a positive correlation with their likelihood of prescribing metformin for preDM.

**Conclusions:** Caring for a larger proportion of patients with preDM is associated with worse mental wellbeing. Physician attitudes and subjective norms may predict adherence to guidelines, while physician attitudes and wellbeing affect self-reported prescribing behavior.

**Practice implications:** Future research should evaluate ways to lessen the psychological burden of caring for patients with diabetes and preDM.

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## 1. Introduction

The number of patients with diabetes mellitus continues to rise in the United States and around the world [1]. In addition to 12–14% of US patients with diabetes [2], approximately one-third of US adults aged 20 and older meet clinical criteria for prediabetes (preDM) [3]. PreDM is associated with progression to Type 2 diabetes mellitus (T2DM) and is associated with an increased risk of heart disease and all-cause mortality [4].

Patients with T2DM often present with a wide range of complex clinical issues that challenge physicians to juggle competing demands within the limits of brief clinic visits [5,6]. Hwang et al. showed that primary care physicians are much more likely to categorize patients with T2DM as requiring a high level of team effort to care for [7].

The concept of preDM is not without controversy [8]. Many worry that the concept leads to overmedicalization, overdiagnosis, and overtreatment [9,10]. This can result in physician uncertainty about diagnosing and treating preDM. Primary care physicians rarely code the diagnosis of preDM, even if they are regularly screening for T2DM [11]. Other barriers to T2DM and preDM care include organizational, patient, financial, and communication factors [12–14].

Despite guidelines suggesting metformin should be offered to patients with preDM [15], only 3.7% of such patients were prescribed metformin between 2010 and 2012 [12]. The variation in physician attitudes toward preDM translates into variation in physicians' clinical decision making for patients with preDM and T2DM [16].

The combination of the physician uncertainty, barriers to quality diabetes care, the complexity of delivering that care, and some existing variation in clinical guidelines may place increased stress on physicians regarding this specific subgroup of patients and may contribute to burnout. Burnout and physician mental

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wellbeing have recently been the focus of much discussion and research. Burnout is a syndrome characterized by emotional exhaustion that results in depersonalization and decreased sense of personal accomplishment at work; it is “the final step in a progression of unsuccessful attempts to cope with a variety of negative stress conditions [17].”

Primary care physician burnout is associated with more job stress, greater time pressure during visits, and less control at work; at times, quality of care is preserved at the personal expense of physician wellbeing [18]. Physician burnout has a negative impact on both provider mental health and patient care. Specifically, physician burnout is associated with lower physician job performance, lower quality patient care, lower patient satisfaction, less ability to express empathy, and increased medical errors [19,20].

The theory of planned behavior (TPB) provides a useful framework for understanding how physician attitude, subjective norms, and perceived behavioral control affect behavioral intent [21] See Fig. 1. The theory of planned behavior connects four constructs: attitude (how much an individual favors a behavior), subjective norms (social pressures to perform a behavior), and perceived behavior control (perceived ability to alter a behavior) as they predict intention (readiness to perform a behavior). TPB has been widely applied to physician actions [22,23] and has been specifically applied to patient adherence to diabetes treatment regimens [24]. The purpose of this study, guided by TPB, was to identify how wellbeing influences the provision of guideline-based clinical care to patients.

**2. Methods**

The Council of Academic Family Medicine Educational Research Alliance (CERA) all-member survey is an omnibus survey sent to practicing physician members of the four Council of Academic Family Medicine (CAFM) organizations, to include Society of Teachers of Family Medicine, North American Primary Care Research Group, Association of Departments of Family Medicine and Association of Family Medicine Residency Directors. The majority of these members are family physicians. CERA performs this survey periodically and releases the de-identified data online

to members of the four CAFM constituent organizations. All survey items are self-reported, to include demographic information, clinical descriptors, and the variables of interest as described below. The 2016 CERA all-member survey was conducted via electronic survey between February and March 2016. The survey study was approved by the American Academy of Family Physicians IRB.

Ten potential barriers to T2DM prevention were presented to respondents who rated them on a 5-pointed Likert-type scale from 1 (not barrier at all) to 5 (extreme barrier). Identified barriers included intrinsic patient factors (such as patient medication compliance), patient economic factors (such as insurance coverage for patient education), and medical system factors (such as time needed for patient education). The question set of potential barriers was designed by Mainous et al. [16]. These scores were summed into one score that reflects an overall perceived barriers score, with a range of 10–50.

Well-being was measured using the Positive States of Mind Scale (PSOMS), a previously validated 6-item self-report scale that reflects positive emotional and physical experiences [25]. Items are reported on a 1 (not at all) to 5 (very much) Likert-type scale. All five items scores are added together to generate a total score. Higher PSOMS scores have previously been shown to modulate psychological stress and to correspond to lower rates of depression and anxiety symptoms [26]. In this TPB-guided study, we posit that, in this context, physician well-being is a factor of perceived behavioral control.

The Attitudes towards Prediabetes Index (API) was used as a measure of attitude. API is an 8-item scale that measures physicians’ overall perception of the value and importance of preDM as clinical diagnosis. Each item is a statement about preDM that respondents respond to with their level of agreement on a Likert-type scale with 1 being strongly disagree and 5 being strongly agree. The individual item scores are added together to create an overall measure of attitude about preDM as a concept. Physicians with a lower API have been shown to be less likely to prescribe metformin to patients diagnosed with preDM and less likely to follow national diabetes screening guidelines [12].

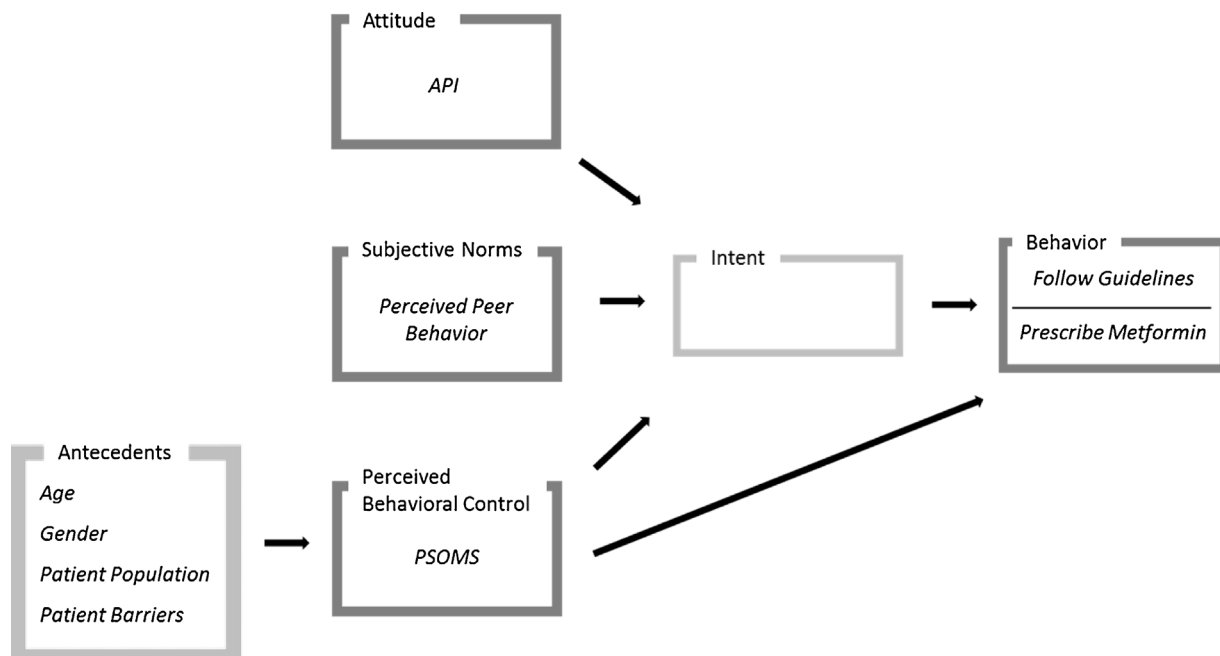


Fig. 1. Hypothesized relationships within the framework of the Theory of Planned Behavior.

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