## Research Article

# A Comparison of Theory of Planned Behavior Beliefs and Healthy Eating Between Couples Without Children and First-Time Parents

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### **ABSTRACT**

Objective: To examine the relationship between Theory of Planned Behavior (TPB) beliefs and eating behavior, explore which beliefs have the greatest association with eating behavior, and explore differences between adults without children and first-time parents.

**Design:** Longitudinal evaluation via questionnaires and food records at baseline and 6 and 12 months.

**Participants:** Couples without children (n = 72) and first-time parents (n = 100).

Main Outcome Measures: Dependent variables: fruit and vegetable consumption and fat consumption. Independent variables: TPB beliefs.

Analysis: Pearson correlations between TPB beliefs and eating behavior; exploratory data reduction via linear regression.

**Results:** Control beliefs were associated with eating behavior (r = .26-.46; P < .05). After controlling for past behavior, control beliefs were associated with eating behavior for first-time parents only. Control beliefs regarding preparation and time had the strongest associations with fruit and vegetable consumption for mothers ( $\beta = .26$ ; P < .05) and fathers ( $\beta = .38$ ; P < .01). The absence of a ceiling effect for control beliefs suggests room for improvement via intervention.

Conclusions and Implications: Interventions guided by TPB should target control beliefs to enhance healthy eating among new parents. Strategies (eg, individual, environmental, policy) to enhance control beliefs regarding healthy eating despite limited time and opportunity for preparation may be particularly valuable.

**Key Words:** Theory of Planned Behavior, beliefs, perceived behavioral control, nutrition, parenthood, fruit, vegetable (J Nutr Educ Behav. 2015; ■:1-9.)

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#### **INTRODUCTION**

A healthful diet is important for reducing the risk of obesity, diabetes, heart disease, and certain cancers.1 Fruit and vegetable consumption (FVC) and limited fat consumption are important elements of a healthful

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diet.<sup>2</sup> Unfortunately, many adults fail to meet recommended guidelines for FVC and fat consumption<sup>3</sup> and thus miss an opportunity to reduce their risk of disease and achieve overall health.<sup>4</sup> Accordingly, there is a need for research to identify determinants of healthful eating<sup>1</sup> and such research could contribute to the development of interventions to enhance healthful eating among adults.

One group of individuals that may benefit from tailored interventions to enhance healthful eating is firsttime parents. Transitioning into parenthood may affect parents' health behaviors and health-related attitudes.<sup>5</sup> Indeed, parenthood may negatively impact various behaviors such as healthful eating owing to increased demands related to time, finances, fatigue, and child care responsibilities.<sup>6,7</sup> Unfortunately, there is little research regarding the determinants of

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healthful eating behaviors among new parents. As such, there is little guidance for the development of interventions to enhance healthful eating among individuals transitioning into parenthood.

To be optimally effective, interventions must be theoretically based and target the most important determinants of healthful eating. The Theory of Planned Behavior (TPB)<sup>8</sup> can be applied as a framework for examining eating behavior and may be useful for identifying essential determinants suited for intervention. In a recent systematic review, the TPB was identified as an important model for examining FVC. According to application of the TPB, eating behavior is guided by 3 sets of beliefs: (1) behavioral beliefs (ie, beliefs about the likely outcomes and evaluations of the outcomes), (2) normative beliefs (ie, beliefs about the expectations of important others), and (3) control beliefs (ie, beliefs about the presence of barriers or facilitators). Behavioral beliefs lead to the development of one's attitude (ie, overall evaluation of healthful eating); normative beliefs lead to perceived subjective norms (ie, perceptions of significant others' preferences about healthful eating); and control beliefs lead to the development of perceived behavioral control (ie, perceptions of control over the behavior [PBC]). Each of these variables contributes to the development of intentions (ie, overall motivation), which in combination with PBC directly predict eating behavior.<sup>8,9</sup>

Previous research has examined eating behavior using the TPB framework.<sup>10</sup> A meta-analytic review of 30 studies found that attitudes are the strongest predictor of healthful eating intentions, whereas PBC is the strongest predictor of eating behavior, with higher levels of PBC being associated with healthier eating. 11 It has been recommended that TPB-based interventions target attitudes and PBC to facilitate healthful eating behaviors such as increased FVC and reduced fat consumption.<sup>5,11</sup> However, according to Ajzen,9 TPB interventions must target and change underlying accessible beliefs to ultimately change behavior. For this to happen, a relationship between beliefs and eating behavior must first be established before moving to intervention development. 12

Unfortunately, research examining the association between beliefs and eating behavior is limited, and within the existing literature the findings are mixed. For example, associations have been found among college students' FVC and behavioral, control, and normative beliefs. 13,14 Behavioral control beliefs have discriminated between adult intenders and non-intenders related to adopting a low-fat diet. 15 Alternatively, behavioral and normative beliefs, but not control beliefs, discriminated between low and high adherers to a low-fat diet among individuals with type 2 diabetes and cardiovascular disease.<sup>16</sup> Indeed, findings regarding the relationship between healthful eating and beliefs are mixed. To further complicate the findings, the specific beliefs associated with eating behaviors varied across studies. For example, behavioral beliefs related to the health benefits of healthful eating were associated with eating behavior in some samples<sup>14,16</sup> whereas behavioral beliefs related to the energizing effects of healthful eating were associated with eating behavior in another sample. 13 Control beliefs related to money, stress, and time were associated with FVC in one sample<sup>16</sup> whereas control beliefs related to access and preference were related to FVC in another. 13 It seems that specific belief-behavior relationships vary between contexts. Because TPB interventions must target and change underlying accessible beliefs to ultimately change behavior, there is a need for further examination of beliefs and their association with eating behavior.

One factor that may explain the mixed findings of previous research is the heterogeneity of the populations examined. Associations may differ among different populations. For example, control beliefs related to money and time may be particularly salient for young college students whereas behavioral beliefs may be particularly meaningful for adults whose health is compromised by chronic disease. Healthful eating interventions targeting beliefs may need to be tailored to various groups.

Because individuals transitioning into parenthood may face unique challenges to health behaviors such as healthful eating, salient beliefs associated with eating behavior may be unique for this group and require tailored intervention. Limited research has identified attitudes and PBC as important predictors of health behaviors among new parents. For example, attitudes and PBC were significant predictors of intentions to eat healthy and PBC was a predictor of FVC and fat consumption among first-time and established parents.<sup>5</sup> Unfortunately, this research does not contribute to an understanding of the specific behavioral and control beliefs that are suitable for targeted interventions. The current authors are not aware of research that has examined belief-level variables related to eating behavior among new parents.

The purpose of the current study was to examine the association between beliefs and eating behavior among adults, while comparing differences in these associations for couples without children and first-time parents. Furthermore, exploratory analyses were conducted to determine the beliefs with the greatest association with eating behavior for each cohort. Based on previous research<sup>5,13,14</sup> and meta-analytic evidence, 11 the researchers hypothesized that behavioral beliefs and control beliefs would be associated with FVC and fat consumption. Furthermore, they hypothesized that control beliefs would be more strongly related to eating behavior among parents compared with couples without children.

#### **METHODS**

#### **Participants**

Participants identified as men (n = 85;age, 31.0 years) and women (n = 87; age, 25.4 years) who were part of a married or common-law couple and agreed as partners to participate in the study. Participants included couples without children (n = 72 individuals) and firsttime parents (ie, expecting first child at baseline; n = 100 individuals). Couples were excluded if they (or their partners) experienced pregnancy-related complication or if they were part of the non-parent sample and became pregnant. Participants were recruited through in-person enlistment and recruitment advertisements (ie, posters, pamphlets, newspaper advertisements and online ads). Table 1 lists demographic data.

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