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Planning to Fill the Gap: the Efficacy of Forming Implementation Intentions in Healthy Eating

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Using meta-analysis, this paper tests the efficacy of forming implementation intentions to achieve healthy eating goals. To help resolve previous inconsistent findings and provide guidance for future research, this study clarifies the moderation role of the type of intended behavior, promoting versus decreasing, adding the mediator role of goal complexity.

[to cite]:

Irene Vilà, Isabel Carrero, and Raquel Redondo (2016) ,"Planning to Fill the Gap: the Efficacy of Forming Implementation Intentions in Healthy Eating", in NA - Advances in Consumer Research Volume 44, eds. Page Moreau and Stefano Puntoni, Duluth, MN : Association for Consumer Research, Pages: 661-662.

[url]:

<http://www.acrwebsite.org/volumes/1021707/volumes/v44/NA-44>

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EXTENDED ABSTRACT

Healthy eating is becoming an increasingly important behavior since obesity is a major public health concern and has become more widespread in the past five years (OECD, 2014). Our role as consumer researchers is to develop, test and perfect the instruments which are used to design social policies aimed at increasing healthy eating. The main goal of this research is to study the effectiveness that forming implementation intentions has on healthy eating through a meta-analytic review.

Implementation intentions are action plans subordinate to goal intentions that specify the “when, where, and how” of responses leading to goal attainment. They have the structure of “When situation x arises, I will perform response y !” and thus link anticipated scenarios with goal-directed responses. Implementation intentions delegate the control of goal-directed responses to anticipated situational cues which (when actually encountered) elicit these responses automatically. Because implementation intentions imply the selection of a suitable response applicable to a future situation (i.e., a good opportunity), it is assumed that the mental representation of this situation becomes highly activated and thus more easily accessible (Gollwitzer, 1999).

In particular, this review has two research objectives related to the type of intended behavior. Our first objective is to test the effect of using the intervention for promoting healthy behaviors versus its effect on decreasing unwanted behaviors. Past evidence shows that the effect-size seems to be lower when the intervention aims at reducing unhealthy behaviors (e.g. Adriaanse, Vinkers, De Ridder, Hox & De Wit, 2010; Verplanken & Faes, 1999) it was investigated whether the quality of the outcome measures and the quality of the control conditions that are used in these studies influence implementation intentions’ effectiveness. Methods: Twenty three empirical studies investigating the effect of implementation intentions on eating behavior were included. In assessing the empirical evidence, a distinction was made between studies that aim to increase healthy eating (i.e., eating more fruits, but the results are still inconclusive due to limited sample sizes of previous meta-analyses. Second, it will test the efficacy of implementation intentions in different eating domains since past evidence is not conclusive in this respect. In healthy eating, the average effect of forming implementation intentions is small to medium (Adriaanse, van Oosten, de Ridder, de Wit & Evers, 2011). However, in recent years there has been a substantial increase in research focused on specific healthy eating domains with mixed results (Hagger & Luszczynska, 2014).

The literature search and data extraction were performed in February 2015. We searched for studies published in the Web of Science (Core Collection) and MEDLINE (1990 - December 2014). Application of the inclusion criteria resulted in 71 relevant articles describing 80 empirical studies, involving 15,944 participants. This study represents the largest meta-analysis performed in the healthy diet domain pertaining to the efficacy of forming implementation intentions.

Our findings show that the overall effect of the intervention is small to medium ($d = .34$). Compared with other behaviors, the effect that implementation intentions have on achieving a healthy-diet goal is lower (Gollwitzer & Sheeran, 2006). These differences confirm the hypothesis, “the effect of implementation intentions varies across

different types of health-related behaviors” (Bélanger-Gravel, Godin, & Amireault, 2013: 45). Coherent with previous research, this meta-analysis shows significant differences between reducing ($d = .23$) or promoting ($d = .42$) a certain behavior. Therefore, it could act as a moderator variable.

However, the study of other moderator variables resulted in unexpected findings. When testing the efficacy of implementation intentions in different eating domains, values of d were calculated for different healthy eating behaviors in order to search for moderator effects. The meta-analysis showed that the efficacy of the interventions is similar when it is used to reduce fat intake ($d = .36$), increase fruit consumption ($d = .45$) or promote healthy snacking ($d = .44$). However, when the individual forms implementation intentions to diminish unhealthy snacking, the effect-size is .14, significantly smaller than the effect found for fat intake. Being that both are unwanted behaviors, the efficacy of implementation intentions should be similar. It leads us to conclude that future researchers cannot assume that forming implementation intentions in all cases is more efficient at promoting healthy behaviors than at decreasing unwanted behaviors.

Our results suggest the possible moderating effect of a new variable unused in previous meta-analysis, goal complexity. Although some authors had pointed out their possible influence on the intervention (e. g. Luszczynska, Scholz, & Sutton, 2007). We define complex goals as those in which the course of action to achieve the goal is unclear due to there being more than one alternative and each course of action having a different degree of effectiveness (De Vet, 2007).

The contribution of this work to the theory of implementation intentions is that it clarifies the moderation role of the type of intended behavior, promoting versus decreasing, adding the mediator role of a new variable, goal complexity. Although by itself goal complexity does not have a moderating role, it seems that along with the type of intended behavior, it sheds light on the actual role of implementation intentions in different types of healthy eating behaviors. The effect-sizes show that on one hand, the intervention is significantly more efficient when used for complex goals, aims to decrease a behavior ($d = .35$), and is also more efficient in simple goals that promote behaviors ($d = .45$). On the other hand, implementation intentions are less efficient for complex goals promoting a behavior ($d = .17$) and simple goals decreasing a behavior ($d = .14$).

Our findings imply that future researchers cannot assume that forming implementation intentions in all cases is more efficient at promoting healthy behaviors than at decreasing unwanted behaviors. This opens up a new line of research to help understand and improve the performance of implementation intentions since there is literature which discusses the role of each variable separately, but not jointly.

From the Transformative Consumer Research perspective, it is important to do practical research that can be used to increase the wellbeing of consumer citizens (Mick, 2006; Ozanne et al., 2011). In this vein, the ultimate purpose of our research is to help policy makers design interventions intended to help people achieve their goals of healthy eating. Implementation intentions will be reasonably helpful when used for reducing fat intake or increasing the consumption of fruit, vegetables or healthy snacks. However, for other behaviors, such as diminishing unhealthy snacking or promoting a global healthy diet, the intervention would not be suitable.

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