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The role of self-identity in predicting fruit and vegetable intake

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Abstract

This research investigated whether the Theory of Planned Behavior (TPB) with the addition of self-identity could predict fruit and vegetable intake when controlling for past behavior. Previous research had demonstrated the efficacy of TPB to predict intention and behavior in relation to food choice and the additional power of self-identity, but had failed assess the effects of self-identity while controlling for past behavior. At baseline (N = 210) TPB components and past behavior in relation to fruit and vegetable consumption plus self-identity as a healthy eater were measured by questionnaire in a sample of university students. At time 1, 4 weeks later, self-reported fruit and vegetable consumption was measured. Structural Equation Modelling (SEM) indicated attitude, PBC and self-identity to be significant predictors of intention (subjective norm and past behavior were not significant). Intention, self-identity and past behavior were direct predictors of behavior. The current findings support the independent effect of self-identity as a healthy eater on both intentions and future behaviour when controlling for TPB variables and also past behavior. The discussion considers the importance of self-identity in changing intentions and behavior for behaviors such as fruit and vegetable consumption.

Keywords:
Fruit and vegetable
Intake
Theory of planned behavior
Self-identity

Introduction

The current research is an application of an extended model of the Theory of Planned Behavior (TPB; Ajzen, 1991) to understanding fruit and vegetable consumption in a sample of students from South Italy. Healthy eating is an important determinant of various health outcomes. Guidelines for healthy eating (Cialfa et al., 2003; USDA/USDHHS, 2010) recommend the daily consumption of at least five servings of fruits and vegetables and also for any fresh vegetables consumed to be as varied as possible. This behavior can promote health by providing the necessary vitamins and antioxidants (CDC, 2012) and contributes to physical health by helping preventing cancers and chronic illnesses (e.g., Dauchet, Amouyel, & Dallongeville, 2006; He, Nowson, & MacGregor, 2006; WHO, 2003), and weight gain (e.g., Alinia, Hels, & Tetens, 2009; Sartorelli, Franco, & Cardoso, 2008). The World Health Organization (WHO, 2003) reported that low fruit and vegetable intake was responsible for 11% of strokes, 19% of gastrointestinal cancers and 31% of ischemic heart disease. European levels of daily fruit and vegetables intake in 2013 amounted to 342 grams per capita (Freshfel, 2015). This is below the recommended minimum of 400 grams of fruit and vegetables per day recommended by the World Health Organization (2003). Although Italians are traditionally

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viewed as consuming a healthy ‘Mediterranean diet’ that includes plenty of fruits and vegetables (e.g., Turati et al., 2015), the National Institute of Statistics (Multiscopo ISTAT, 2014) reported that only 18.1% of the Italian population consumes at least four daily servings of fruits, vegetables and fresh vegetables. Disadvantaged consumers in the South of Italy report even lower rates of fruit and vegetable consumption (14.2% in South versus 21.1% in the North of Italy consumed at least 4 portions; Multiscopo ISTAT, 2013). Therefore, the understanding of factors involved in regular fruit and vegetable consumption in Italians could be used to inform interventions designed to increase this behavior.

Theoretical Background

The present study adopted the theory of planned behavior (TPB; Ajzen, 1991) as a theoretical framework to predict fruit and vegetable consumption, since TPB constructs have been found to be strong predictors of various dietary behaviors (Armitage & Conner, 2001a; Conner & Norman, 2005; McEachan et al., 2011; Mullan, Wong & Kothe, 2013). In a meta-analytic review across various behaviors, Armitage and Conner (2001a) indicated that the TPB model reliably explained between 40 and 50% of the variance in intention, and between 20 and 40% of the variance in behavior. More recently, the review of McEachan et al. (2011), which considered the efficacy of TPB for different health behaviors showed that the TPB predicted 21.2% of the variance in dietary behavior (mainly based on intentions) and 52.4% of dietary intentions. In this review, attitude emerged as the most important predictor of intention ($\beta = 0.39$), followed by perceived behavioral control ($\beta = 0.27$), subjective norm ($\beta = 0.22$) and past behavior ($\beta = 0.16$).

Studies have applied the TPB model to predict a variety of specific eating behaviors including fruit and vegetable intake (e.g., Blanchard et al. 2009a; Blanchard et al., 2009b; Conner, Norman, & Bell, 2002; De Bruijn et al., 2007; Elliott & Armitage, 2009; Godin et al., 2010; Kothe, Amaratunga & Mullan, 2011; Kothe & Mullan, 2014; Povey et al., 2000). In a review of 23 such studies (specifically, 15 studies on the determinants of fruit and vegetable intake, 7 on the determinants of intention and fruit and vegetable intake and one on the determinants of intention), Guillaumie, Godin, and Vézina-Im (2010) reported that 30% to 57% of the variance in intentions were accounted for by attitudes, perceived norms, and perceived behavioral control, while 6% to 32% of the variance in fruit and vegetable consumption was accounted for by intentions and perceived behavioral control. Therefore there exists ample empirical evidence that TPB is a useful way to understand fruit and vegetable intake.

The present research further analyzes how well the TPB predicts intentions and action for this behavior in an Italian population. Importantly, additional predictors (self-identity and past behavior) were included in the present research to increase the predictive validity of the TPB in relation to fruit and vegetable consumption (Figure 1).
Self-identity appears to be a motivational construct that adds to predictions within the TPB (Conner & Armitage, 2002). This concept can be described as a salient aspect of one’s self-perception (e.g., “I think of myself as a green consumer”; Sparks, 2000). Several authors have suggested self-identity as a useful additional variable in the TPB (e.g., Bissonnette & Contento, 2001; Charng, Piliavin, & Callero, 1988; Cook, Kerr, & Moore, 2002; Nigbur, Lyons & Uzzell, 2010; Terry, Hogg, & White, 1991). The basis of the assumed relationship between self-identity and behavioral intentions relies on identity theory (Stryker, 1968, 1980, 1987), where the self is regarded as a social construct, a set of identities related to the different roles that everyone occupies in the social settings. A role can be considered as a collection of expectations about role-appropriate behavior (Simon, 1992); it is assumed that the pattern of behaviors have been internalized as a role identity and the more salient the identity, the more it will increase the intention to implement the related behaviors (Charng, Piliavin, & Callero, 1988). This is because acting a role-congruent behavior helps to confirm a person’s status as a role member (Callero, 1985).

Consistent with this view, Terry, Hogg and Duck (1999) argued that self-identity influences intentions because the performance of a certain behavior allows the individual to validate the self-concept that originates from role identities and helps the person to develop a positive and significant self-evaluation. Therefore, people intend to perform a behavior consistent with their personal beliefs, norms and their social roles (e.g., self-identity). The predictive power of self-identity has been found over and above the effects of other TPB variables (e.g., Charng, Piliavin, & Callero, 1988; Conner & Armitage, 1998; Ries et al., 2012), especially in the domain of food choice (Sparks & Guthrie, 1998; Sparks & Shepherd 1992; Sparks et al., 1995). This is particularly the case for self-identity as a predictor of intention (Sparks & Guthrie, 1998, Sparks & Shepherd 1992). For example, Sparks et al. (1995), examining five dietary changes linked to fat consumption, included a measure of self-identity. This was defined as the “identification as someone who is concerned about the health consequences of diet”. They reported that this construct significantly predicted the expectations of making dietary changes independently of attitudes. Conner and Armitage’s (1988) review of six similar studies, indicated that self-identity accounted for 1% of the variance in intention over and above TPB variables (attitude, subjective norm, perceived behavioral control). More recent work has shown similar effects for self-identity on intentions over and above TPB
variables (Armitage & Conner, 2001b; Arnold et al., 2006; Evans & Norman, 2003; Hagger & Chatzisarantis, 2006; Manetti, Pierro & Livi, 2004).

Some studies have also examined the effects of self-identity on behavior whilst controlling for TPB variables. The suggestion is that self-identity may influence behavior independently of intentions (and perceived behavioral control). This occurs for two reasons. On one side, implicit aspects of identity could emerge through unconscious processes beyond the awareness (Devos & Banaji, 2003 for review). On the other side, identity could involve experiences of reflexive consciousness through its regulating function (Baumeister, 1998). In fact, identities produce a standard for behavior (Stryker & Burke, 2000), allowing individuals’ to evaluate the congruency between behavior meanings and their identities. Negative or positive emotions could arise from this evaluation and individuals could change their behaviors if they are not consistent with identity expectations (Burke, 2006).

Biddle, Bank, and Slavings (1987) showed that self-identity had an effect on a social behavior over and above the effect of intentions and PBC. Theodorakis (1994) showed that role-identity about physical activity explained intention and behavior. More pertinently, Strachan and Brawley (2009), in a study on healthy-eater identity and self-efficacy as determinants of healthy eating behavior demonstrated that these variables increased the explained variance in healthy eating behavior. Similarly, Dunn et al. (2011), in a study of fast food consumption, reported intention was predicted by attitude, subjective norms, self-efficacy and self-identification as a healthy eater, although self-identification did not influence behavior. Ries et al. (2012), in a study on prediction of intention to perform physical activity, showed that self-identity significant determined intention and behavior, independently of other TPB variables. Brouwer (2012) reported that self-identity as a healthy eater predicted intention and healthy eating independent of other TPB variables. More recently, Brouwer and Mosack (2015) showed that identity as a healthy eater was a significant determinant of healthy eating intentions over and above the TPB components and a significant determinant of overall healthy eating behaviors, fruit and low-fat dairy intake over and above intentions and PBC.

A limitation of a number of the above studies is that in examining the effect of self-identity they failed to consider the effect of controlling for past behavior. Although the role of past behavior in the TPB has prompted considerable debate (see Eagly & Chaiken, 1993: 178-182; Ajzen, 1991, 2002 for reviews), a number of studies shown past behavior to be a strong predictor of intentions and behavior (e.g., Conner et al., 1999; Hagger, Chatzisarantis, & Biddle, 2002; Mullen et al. 1987; Norman & Conner, 2006; Norman & Smith, 1995) that remains when controlling for TPB variables (e.g., Conner & Armitage, 1998; Ouellette & Wood, 1998). Relatedly, Fishbein (1997) claimed that measures of self-identity could be a measure of past behavior, since people possibly could infer their self-identities by examining their past behavior (Sparks & Guthrie, 1998). This would point to the need to examine the effects of self-identity within the TPB whilst controlling for past behavior in order to show their independent effects. Sparks and Guthrie (1998) showed that self-identity as a “health-conscious consumer” predicted intention to avoid meat independently of other TPB variables and also controlling for past behavior. Armitage and Conner (1999a, 1999b, 1999c) in three studies with different samples (students, hospital workers and general population) showed that self-identity independently predicted intentions to follow a low-fat diet, also controlling for past behavior (see also Astrom & Rise, 2001 on healthy eating). Similarly, Dean, Raats and Shepperd (2012), in relation to fresh and processed organic food purchase, confirmed that self-identity and past behavior independently predict intention, over and above the effect of the traditional TPB constructs. Granberg and Holmberg (1990), in a study on U.S. and Swedish Voters, showed that self-identity, controlling for past behavior, impacted not only on intention, but also on behavior. Conner et al. (1999), applying the TPB to alcohol consumption, showed that self-identity as a “drinker” and past behavior contributed to predict intentions over and above the effects of the traditional three components of the TPB (attitudes, subjective norms, and PBC). Moreover, alcohol consumption was predicted by past behavior but not by self-identity over and above the effects of
intentions and PBC. More recently, a meta-analysis (Rise, Sheeran & Hukkelberg, 2010) showed that self-identity was a significant predictor of intentions and also behavior. In this meta-analysis, the addition of self-identity explained an additional 6% (p < .001) of variance in intentions and an additional 2% variance in behavior.

In summary, the present research builds on previous research by examining the impact of self-identity as a healthy eater on intentions and fruit and vegetable consumption in the context of TPB variables and past behavior. We predicted that self-identity would add to predictions of intentions and behavior over and above the TPB variables whilst controlling for past behavior.

Material and Method

Participants and procedures

In March 2014, a total of 250 online questionnaires were sent to a convenience sample of university students on two occasions separated by 4 weeks. A total of 210 returned completed questionnaires at time 1 and 206 at time 2 (58 male; 146 female; mean age = 22.91; SD = 8.33). Only those participants who responded at both time 1 and time 2, were selected for the analyses (N = 206). Students were recruited from second-year psychology undergraduates of South Italy. Participants had the study explained to them, provided written consent and then completed the first questionnaire. A link to the second questionnaire was sent by email allowing completion on-line. The low sample attrition rate between time points can probably be attributed to the fact that data at each time point was collected during classroom time.

Measures

The questionnaire at time 1 included measures of components of TPB and past behavior in relation to the consumption of fruit and vegetable, self-identity as a healthy eater and also gender and age. Intentions (INT) to eat 5 portion of fruit and vegetable per day in the next month were measured using three items on a 7-point Likert scale (Armitage & Conner, 1999a; e.g., “I intend to eat a diet based on the consumption of at least five portions of fruit and vegetables per day over the next month...definitely do not – definitely do”; all scored 1–7, with higher scores indicating greater intention to eat five portions of fruit and vegetables per day). Composite reliability was 0.79.

Three items were used to assess students' general attitudes (ATT) towards consumption of 5 portions of fruit and vegetable per day. Each adjective pair was rated on a 7-point response format (Armitage & Conner, 1999a; e.g., “The consumption of at least five portion of fruit and vegetable per day in the next month is bad – good, negative – positive, unfavorable- favorable”; all scored 1–7, with higher scores indicating positive attitude to eat five portions of fruit and vegetables per day). Composite reliability was 0.79.

To assess subjective norm (SN) three items on a 7-point Likert scale were used (Armitage & Conner, 1999a; e.g., “People who are important to me want me to eat at least five portions of fruit and vegetables per day over the next month...strongly disagree- strongly agree”; all scored 1–7, with higher scores indicating greater level of subjective norm about eat five portions of fruit and vegetables per day). Composite reliability was 0.77.

Perceived behavioral control (PBC) was measured by three items (Armitage & Conner, 1999a; e.g., “Whether or not I eat at least five portions of fruit and vegetables per day over the next month is entirely up to me... strongly disagree-strongly agree”; all scored 1–7, with higher scores indicating
greater control over eating five portions of fruit and vegetables per day). Composite reliability was 0.81.

Self-identity (SI) was measured by three items on a 7-point Likert scale (Sparks et al., 1995; “I think of myself as a healthy eater”; “I think of myself as a person who is interested in eating healthy”; “I think of myself as someone who is concerned about the health consequences of what I eat…strongly agree - strongly disagree”; all scored 1–7, with higher scores indicating greater values of self-identity as healthy eater). Composite reliability was 0.86.

Self-reported (PB) past behavior was assessed with one item. Response format were formed by 6-points ranging from 1 to more than 5 portions of fruit and vegetable per day (“How many portion of fruit and vegetable did you eat a day in the last month?”).

At time 2, after one month, self-reported future behavior (FVI) was measured with the same item used at time 1 to tap past behavior.

Tested Model

The present study aimed to verify whether self-identity played a decisive role in the prediction of intention and behavior, about the daily consumption of fruit and vegetable, in a sample of Italian students, controlling their past behavior. According to the TPB (Ajzen, 1991), we hypothesized that intention mediated the impact of attitude, PBC, subjective norm, past behavior and self-identity on behavior, and behavior was also predicted by a direct effect of self-identity and past behavior on it. Figure 1 showed the hypothesized structural model for the study. Larger ovals indicate latent variables, smaller ovals indicate error variance, and rectangles depict observed measures.

Statistical analysis

All descriptive analyses were performed using PASW 17. Mplus 7 statistical software was used to conduct structural equation modeling (SEM). Adequacy of fit of the SEM models was estimated by using Chi-Square and recommended incremental goodness-of-fit indexes: the root mean square error of approximation (RMSEA), the comparative fit index (CFI), the Tucker-Lewis Index (TLI) and the Standardized Root Mean Square Residual (SRMR; Iacobucci, 2010). A non-significant Chi-Square would indicate that the model fits the data well (Iacobucci, 2010). CFI and TLI cut-off values of at least 0.90 are generally considered to represent acceptable fit (Bentler, 1990; Tucker & Lewis, 1973). Browne and Cudeck (1992) suggest that a RMSEA value of 0.05 or less indicates good fit, and that values up to 0.08 represent errors that approximate to those expected in the population. Values of the SRMR less than 0.08 are generally considered acceptable (Hu & Bentler, 1999).

Results

Table 1 reports the correlations among constructs and their mean and SD. The items generally showed reasonable variation and were not unduly skewed. The attitude measure tended to have a high mean and slightly reduced variance. Examination of the correlations (Table 1) indicated that PBC and self-identity were the strongest correlates of intentions, while self-identity, intention and past behavior were the strongest correlates of behavior.
Table 1
Descriptive finding and correlations between study variables

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Intention</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.39</td>
<td>1.71</td>
</tr>
<tr>
<td>2. Future behavior</td>
<td>.33**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.35</td>
<td>1.30</td>
</tr>
<tr>
<td>3. PBC</td>
<td>.65**</td>
<td>.35**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.93</td>
<td>1.44</td>
</tr>
<tr>
<td>4. Attitude</td>
<td>.36**</td>
<td>.13**</td>
<td>.28**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>6.31</td>
<td>0.98</td>
</tr>
<tr>
<td>5. Subjective norm</td>
<td>.20**</td>
<td>.08**</td>
<td>.20**</td>
<td>.36**</td>
<td>1</td>
<td></td>
<td></td>
<td>5.28</td>
<td>1.38</td>
</tr>
<tr>
<td>6. Self-identity</td>
<td>.45**</td>
<td>.39**</td>
<td>.45**</td>
<td>.42**</td>
<td>.06**</td>
<td>1</td>
<td></td>
<td>2.50</td>
<td>1.50</td>
</tr>
<tr>
<td>7. Past behavior</td>
<td>.24**</td>
<td>.32**</td>
<td>.21*</td>
<td>-.02</td>
<td>-.11</td>
<td>.31**</td>
<td>1</td>
<td>4.83</td>
<td>1.30</td>
</tr>
</tbody>
</table>

Note: ** p < 0.001; *p< 0.05

To test the construct validity, the measurement or confirmatory factor analysis model including five latent factors indicating attitude, PBC, subjective norm, intention and self-identity, while past behavior was incorporated as an observed variable. Goodness-of-fit statistics for the measurement model were acceptable. The chi-square was significant ($\chi^2 = 65.58, df = 38, p < 0.001$), but all the other indices pointed to a very good fit (RMSEA = 0.06; CFI = 0.96; TLI = 0.95; SRMR = 0.04).

The parameter estimates were all significant and presented higher values (from 0.64 to 0.96). When the sample is small as is the case here, the Chi-Square statistic might not differentiate between good or poor fitting models (Barbaranelli, 2007). Therefore since all other indices indicated a good fit, the measurement model was accepted as a model with acceptable fit. No model modification was made and throughout a conservative strategy of not freeing cross-loadings was followed due to potential impacts on construct validity (Hair et al., 2006). Given the good fit of the confirmatory factor analysis, hypothesized paths among variables were verified.

The traditional TPB model was good fit to the data ($\chi^2 = 6.59, df = 3; p = not significant; RMSEA = 0.07; CFI = 0.98; TLI = 0.94; SRMR = 0.03$) PBC, attitude and past behavior were significant predictors of intention (respectively $\beta = 0.57; \beta = 0.19; \beta = 0.12$), future behavior was significantly predicted by intention ($\beta = 0.27$) and past behavior ($\beta = 0.26$). Intention mediated the impact of attitude, PBC and past behavior on future behavior. Levels of explained variance were significant for intention and behavior (respectively $R^2 = 0.47, 0.18$).

Adding self-identity to the TPB model also produced a good fitting model. Chi-square was not significant ($\chi^2 = 3.80, df = 3$) and all fit indices were optimal (RMSEA = 0.04; CFI = 0.99; TLI = 0.99; SRMR = 0.02). Intention was significantly determined by PBC ($\beta = 0.51$), attitude ($\beta = 0.17$) and self-identity ($\beta = 0.16$), but not by subjective norm and past behavior. In this case, fruit and vegetable consumption was determined more by self-identity ($\beta = 0.24$) and past behavior ($\beta = 0.21$) than by intention ($\beta = 0.18$). The final model accounted for 49% of the variance in intentions and 22% in behavior. Standardized estimates of paths results are shown in Figure 2.
Discussion

Theory of planned behavior, self-identity and fruit and vegetable intake

The present study aimed to test the validity of an extended TPB model, including past behavior and self-identity for predicting and understanding intentions and behavior for fruit and vegetable intake. The findings showed that the TPB is a useful framework to understand the fruit and vegetable intake. Attitude and self-identity (as a healthy eater) had a moderate impact on intention, while the PBC had a large effect on it, all constructs explained 49% of the variance of intention, controlling for past behavior, which was not a significant predictor of intention. Also subjective norm was shown to have no effect on intention. Considering the fruit and vegetable intake, intention, self-identity and past behavior had direct effects on behavior explaining 22% of the variance. Intention mediated the effects of attitudes and PBC on behavior, past behavior had only a direct effect on behavior, while self-identity showed both a direct effect and an indirect effect through intentions on behavior.

These findings are generally consistent with the literature, which report that attitude and perceived behavioral control are the more important predictors of healthy eating (Povey et al., 2000; Sjoberg et al., 2004), that subjective norms show low or not significant relationship to healthy eating (Blanchard et al., 2009; Lien, Lylte, & Komro, 2002; Louis, Chan, & Greenbaum, 2009; Paisley & Sparks, 1998) and that self-identity (e.g., Strachan & Brawley, 2009; Brouwer & Mosack, 2015) explains additional variance in intention. Congruent with Armitage and Conner (1999a, 1999b, 1999c), self-identity as healthy eater was shown to be an important predictor of an individual’s intention to eat 5 fruit and vegetables per day. In summary, the results of the present study suggested that intentions to eat 5 fruit and vegetables per day are driven in part by a desire to confirm a perception of the self as a healthy eater.

The predictive effect of past behavior on future behavior found here is also coherent with the review of Conner and Armitage (1998), which showed across seven tests that past behavior, after taking account intentions and PBC, explained 13% of behavior’s variance. Consistent with the results of a review of Sparks (2000) and the studies of Astrom and Rise (2001) and more recently of Rise, Sheeran and Hukkelberg (2010), self-identity was here found to be a strong predictor of fruit and vegetable intake even when controlling for past behavior and TPB variables; therefore people who perceived themselves as healthy eaters were more likely to actually eat fruit and vegetables 1 month later. This finding that self-identity predicts behavior when controlling for past behavior is congruent with the review of Rise, Sheeran, and Hukkelberg (2010), but contrasts slightly with
Allom and Mullan (2012) who showed that fruit and vegetable intake was predicted by intention and a healthy-eater self-schema (similar to self-identity), but not by past behavior.

Fishbein and Ajzen (2010) criticized the inclusion of self-identity in the TPB framework starting from the way in which self-identity is assessed. They discussed the fact that some measure of self-identity overlap with the attitude (i.e., if items consider a person values performance of the behavior), with subjective norm (i.e., if items refer to a person’s identification with a social group or with a social rule), and with past behavior (i.e., if items represent self-report of current behavior). The present research showed independent effects of a self-identity measure and measures of attitude, subjective norm and past behavior and the correlation with these constructs was modest.

Limitation and methodological issues

A number of potential limitations of the present study should be noted. First, the sample was limited to young adults in higher education and contained a limited number of males potentially limiting the generalizability of the findings. Second, a reliance on self-reported measures of past and future behavior is a limitation, although a common one in studies on the TPB and various eating behaviors. This is particularly the case because reviews of the TPB indicate it to be less predictive of objective compared to self-reported behavior (Armitage & Conner, 2001). The reliance on self-reported behavior, although common in TPB studies of eating behavior, means the impact on objectively measured behavior is unknown. An more accurate way to measure self-report behavior could be the use of a food diary (e.g. Brouwer & Mosack, 2015; Conner et al., 2001) or more specific scale, as the seven-item food frequency questionnaire presented by the National Cancer Institute to measure fruit and vegetable consumption over the past 30 days (Thompson, Byers, Kohlmeier, 1994) or the Food Frequency Questionnaire (Willett & Lenart, 1998).

However, all these methods remain self-report and open to similar criticisms. Third, it should be noted that we employed a brief measure of self-identity measure (Sparks et al., 1995). Although reliable a longer measure such as the scale of Strachan and Brawley (2008), which uses nine-item to assesses it, or the Eating Identity Type Inventory, developed by Balke et al. (2013) could of provided more precise estimates of the effects of self-identity.

Future direction and practical implications

Following the findings of Brouwer and Mosack (2015), which showed that healthy eater identity predicted fruit consumption but not vegetable intake, in the future it could be interesting to explore the power of self-identity to separately predict fruit consumption or fruit consumption while controlling for the different relevant TPB variables. This might provide useful insights into how to change each. For example, fruit consumption might be more determined by attitude and self-identity while vegetable consumption is more determined by PBC and subjective norms, suggesting the value of different intervention approaches.

In addition, as suggested by Conner and Norman (2005) and by Sparks and Shepherd (1992) further investigation to define the precise nature of self-identity would be valuable. For example, overlap with other constructs such as moral or personal norm, which are related to individuals’ feelings of obligation to act or not a particular behavior, would be useful. Moreover, the current findings suggest that promoting the self-identity as a healthy eater as a useful way to promote both intentions and behavior in relation to fruit and vegetable intake in young adults need further exploration. In particular, we need to test if changing such identities can be a useful way to change intentions and behavior in this population. However, instilling such identities may be difficult. Nevertheless promoting various forms of positive reactions to healthy eating may be a more productive way to promote increased fruit and vegetable consumption than the more usual focus on tackling risk factors. For example, public health campaigns and educational programs could try to instill a healthy eating identity by associating fruit and vegetable intake with positive identity characteristics of people that eat them.
Conclusion
The current study provides a useful contribution to the literature on the TPB and fruit and vegetable intake in showing that self-identity is a significant predictor of intentions and behavior, even when controlling for past behavior. The fact that self-identity influences behavior both directly and indirectly (through intentions) suggests it might be a useful basis for attempting to change fruit and vegetable consumption, at least in young people from the south of Italy.

References


Povey, R., Conner, M., Sparks, P., James, R., & Shepherd, R. (2000). The theory of planned behavior and healthy eating: Examining additive and moderating effects of social influence variables. Psychology & Health, 14, 991-1006. http://dx.doi.org/10.1080/0887044080407363


http://dx.doi.org/10.1093/acprof:oso/9780195122978.003.06