Mediating relationship between body mass index and the direct measures of the Theory of Planned Behaviour on physical activity intention

Cristina M. Caperchione a; Mitch J. Duncan a; Kerry Mummery a; Rebekah Steele b; Grant Schofield c

a Centre for Social Science Research, Central Queensland University, Australia
b Medical Research Centre Cambridge, United Kingdom
c Auckland University of Technology, New Zealand

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Mediating relationship between body mass index and the direct measures of the Theory of Planned Behaviour on physical activity intention

CRISTINA M. CAPERHIONE 1, MITCH J. DUNCAN 1, KERRY MUMMERY 1, REBEKAH STEELE 2, & GRANT SCHOFIELD 3

1 Centre for Social Science Research, Central Queensland University, Australia, 2 Medical Research Centre Cambridge, United Kingdom, and 3 Auckland University of Technology, New Zealand

Abstract
This research examines (a) the interrelationships between body mass index (BMI), the direct measures of the Theory of Planned Behaviour (TPB) and physical activity intention and (b) the potential mediation effects of the direct measures of the TPB in the relationship between BMI and physical activity intention in a sample of Australian adults. A total sample of 1,062 respondents participated in a computer-assisted telephone-interview (CATI) survey comprised of a standardised introduction; questions regarding TPB and physical activity; and standard demographic questions. BMI for each participant was calculated from self-reported height and weight. Separate regression analyses were performed to examine the mediating effects of each of the direct measures of the TPB on the predictive relationship between the BMI and physical activity intention, as proposed by Baron and Kenny (Journal of Personality and Social Psychology, 51(6), 1173–1182, 1986). Findings indicated that the direct measure of attitude and perceived behavioural control mediated the relationship between BMI and physical activity intention. However, the direct measure of subjective norm failed to act as a mediating mechanism. To date there has been no research that has examined the mechanism by which body mass may affect physical activity behaviour. Given the current focus for health promotion specialists on promoting physical activity as a strategy for reducing overweight and obesity, a theoretical understanding of weight-related barriers to physical activity may aid in the development of future interventions and community physical activity programs, particularly those targeting overweight and obese populations.

Keywords: Intervention strategies, obesity, overweight, physical activity, Theory of Planned Behaviour

Introduction
Throughout many industrialised nations, physical activity is decreasing (Owen & Bauman, 1992; Sallis & Owen, 1999; United States Department of Health and Human Services, 1996). Engaging in regular moderate intensity physical activity assists in the prevention of many chronic diseases such as cardiovascular disease, colon cancer, diabetes and also in weight maintenance (Bauman, 2004) and in light of decreased physical activity, physical inactivity is now recognised as a public health concern worldwide (World Health Organization, 2005). Therefore, it is important to identify new determinants of physical
inactivity and understand how they interact with previously identified determinants of physical activity. Frequently examined barriers to physical activity participation include age, gender, socio-economic status, attitudes and normative beliefs. However, overweight and obesity have recently been hypothesised as barriers to physical activity participation (Ball, Crawford, & Owen, 2000; Jones, 2003). Currently it is estimated that 1.1 billion people worldwide are overweight or obese (World Health Organisation, 2004) specifically, approximately 60%, 65% and 59.1% of Australian, US and Canadian adults, respectively are considered overweight or obese (Cameron et al., 2003; Hedley et al., 2004; Tjepkema, 2004).

In addition to being a potential barrier to physical activity, excessive adipose tissue is associated with the development of some forms of cancer, type 2 diabetes, coronary heart disease (Kopelman, 2000), and independently associated with all-cause morality (Manson et al., 1995). Recent data also suggest that being overweight or obese is associated with increased medication use and number of doctor visits compared to healthy weight people (Reidpath, Crawford, Tilgner, & Gibbons, 2002), directly increasing the health care costs associated with overweight and obesity. Given that physical activity can reduce excessive weight gain over the lifetime and excessive weight gain increases many health risks, it is important to consider how excessive weight gain influences people’s decision to engage in physical activity.

Previous research examining how overweight and obesity influences the decision to engage in activity has suggested that being overweight or obese is a barrier to being physically active (Ball, Crawford, & Owen, 2000; Jones, 2003). Ball et al. (2000) found that 22% of obese respondents reported that being “too fat” as a barrier to being physically active compared to 5.3% of those who were classified as overweight and only 0.7% of those who were classified as acceptable or underweight. Similarly to this, Jones (2003) suggested that being overweight or obese is a barrier to physical activity and in particular, acts as a deterrent to engaging in physical activity that occurs in public places, such as walking. However, these are the only perceptions drawn from the limited research addressing weight-related barriers to physical activity. To date there has been no research that has examined the mechanism by which body mass may affect physical activity behaviour. Given the current focus for health promotion specialists on promoting physical activity as a strategy for reducing overweight and obesity, a theoretical understanding of weight-related barriers to physical activity may aid in the development of future interventions and community physical activity programs (Rothman, 2004), particularly those targeting overweight and obese populations.

Theories and models help to understand the process of adopting and later maintaining physical activity behaviours, and give health promotion specialists a way to study this process. Despite the abundance of psychological theories available, including the health belief model (Becker & Maiman, 1975), the transtheoretical model (DiClemente & Prochaska, 1982), social cognitive theory (Bandura, 1986) and the Theory of Planned Behaviour (TPB) (Ajzen, 1985), no consensus exists regarding which is the best model for studying physical activity or exercise behaviour. However, given that the TPB has been reliably utilised in previous weight management research (Ajzen, 1985; Ajzen & Fishbein, 1980), it was chosen as the theoretical framework for the current study. The TPB is robust with considerable empirical support for its validity and reliability (Hausenblas, Carron, & Mack, 1997). Moreover, the constructs operationalised in the TPB—attitude, subjective norm, perceived behaviour control (PBC) and intention—have been acknowledged to have considerable utility in predicting and explaining exercise behaviour (Hausenblas et al., 1997).

The TPB is a belief-based social cognitive model that was developed as an extension of the theory of reasoned action (TRA; Fishbein & Ajzen, 1975). The TPB suggests that
people’s expectations and values about engaging in a behaviour form from behavioural, normative and control beliefs. In turn, these beliefs influence peoples attitude, subjective norm, and PBC toward their intention, and ultimately their behaviour (Symons Downs & Hausenblas, 2005). Behavioural intention is regarded as the most proximal predictor of behaviour, such that intentions reflect the relative strength of an individual to engage in a particular behaviour. There is substantial evidence to support the association between behavioural intention and behaviour (Ajzen, 1991; Ajzen & Fishbein, 1980; Armitage & Conner, 2001; Hagger, Chatzisarantis, & Biddle, 2002a; Sheeran, 2002; Symons Downs & Hausenblas, 2005), and it is hypothesised that intentions mediate the influence of the direct measures of attitude, subjective norm and PBC (Chatzisarantis, Hagger, Biddle, & Smith, 2005; Hagger, Chatzisarantis, & Biddle, 2002b). The direct measures of attitude, is defined by Ajzen and Fishbein (1980) as the positive and negative evaluations of behaviour. For instance, a person who believes that participating in a physical activity will lead to health benefits (positive outcome) will hold a favourable attitude toward performing the behaviour.

Subjective norm, the second direct measure, has been defined as a person’s perception that important others desire the performance or non-performance of the behaviour (Ajzen & Driver, 1992; Ajzen & Fishbein, 1980). Thus, subjective norm is formulated by the influence of important others (family, friends, co-workers) and by the individuals motivation to comply with the wishes and desires of these important others (Ajzen & Driver, 1992; Ajzen & Fishbein, 1980). For example, an overweight or obese adult who is encouraged and supported by his/her family to be physically active may be more inclined to participate in an activity program. If this person is not supported or encouraged by important others (family members) to become physically active he/she may perceive social pressure in the opposite direction and may hesitate or back down from becoming physically active.

PBC is the third direct measure of the theory and is defined as the generalised belief that one’s outcomes are under the control of one’s own behaviour versus under the control of such external factors as powerful others or chance (Ajzen, 1988; Ajzen & Driver, 1992). Thus, control beliefs are developed from an individual’s evaluation of whether adopting a behaviour will be easy or difficult, and from the individual’s perceived power over the control beliefs facilitating or inhibiting the behaviour (Ajzen, 1991). PBC may also be an immediate determinant of behaviour if the behaviour is not completely volitional (Ajzen, 1991).

The TPB is widely supported in its capabilities to predict physical activity intention and behaviour (Ajzen & Driver, 1992; Armitage & Conner, 2001; Rhodes & Courneya, 2003; Symons Downs & Hausenblas, 2005). Previous research has indicated that the direct measures of attitude, subjective norm and PBC have accounted for a substantial portion of the variance in physical activity intention and behaviour (Armitage, Norman, & Conner, 2002; Hagger et al., 2002b; Hausenblas et al., 1997; Symons Downs & Hausenblas, 2005). This previous research stems from Ajzen’s (1988) argument that the TPB is a complete model of social behaviour, and it would be expected that external variables would be mediated through the direct measures of the TPB.

The TPB is a theoretical model explaining informational and motivational influences on physical activity intentions and behaviour (Ajzen & Fishbein, 1980; Hagger et al., 2002a; Symons Downs & Hausenblas, 2005). With this in mind, the overarching goal of this research was to utilise a theoretical framework to help explain weight-related barriers to physical activity. Specifically, this research examines (a) the interrelationships between body mass index (BMI), the direct measures of the TPB and physical activity intention and (b) the potential mediation effects of the direct measures of the TPB in the relationship between BMI and physical activity intention in a sample of Australian adults. Given that there has
been an established relationship between physical activity intention and behaviour (Ajzen, 1985), the researchers chose only to examine the influence of mediation on intention.

**Methods**

*Participants and sampling procedures*

Participants consisted of a random, representative sample of the general adult population of Queensland, Australia who were contacted as part of a large-scale Computer-Assisted Telephone-Interview (CATI) survey conducted by the Population Research Laboratory at Central Queensland University. The target population designated for telephone interviewing was all persons 18 years of age or older who, at the time of the survey, were living in a dwelling unit in Queensland that could be contacted by direct-dialled, land-based telephone service. From this population, two samples were drawn to cover Queensland: South-East Queensland, and the Rest of Queensland.

Within each household, one eligible person was selected as the respondent for the 20-min interview. A respondent within each household was selected to ensure an equal selection of male and female participants. The overall response rate for the survey was 43.9%. Despite the large and random sample, it should be noted that sampling bias could possibly still exist.

The survey instrument comprised of three components: a standardised introduction; questions that reflected the specific interests of the researchers; and a set of standard demographic questions. The survey received ethical approval from the Human Ethics Research Review Panel at Central Queensland University before administration to the general public.

The total sample consisted of 1062 respondents who completed the telephone survey. Of these, 536 (50.5%) were males and 526 (49.5%) were females. The sample had an age range of 18–84 and a mean age of 47.14 years. In terms of employment, 60.4% were employed, while 38.7% of participants reported being retired or pensioners, on home duties or students. Residential location was evenly distributed between city (52.7%) and town/rural (47.3%) settings. The demographic characteristics of the participants are shown in Table I.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N = 1062</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean age ± SD, years</strong></td>
<td>47.14 ± 15.67</td>
</tr>
<tr>
<td><strong>Gender, %</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>49.5</td>
</tr>
<tr>
<td>Female</td>
<td>50.5</td>
</tr>
<tr>
<td><strong>Mean body mass index, kg/m²</strong></td>
<td>26.17 ± 5.37</td>
</tr>
<tr>
<td><strong>Employment status, %</strong></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>60.4</td>
</tr>
<tr>
<td>Unemployed</td>
<td>39.6</td>
</tr>
<tr>
<td>Retired</td>
<td>21.8</td>
</tr>
<tr>
<td>Home duties</td>
<td>8.2</td>
</tr>
<tr>
<td>Student</td>
<td>7.4</td>
</tr>
<tr>
<td>Other</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Residential status, %</strong></td>
<td></td>
</tr>
<tr>
<td>City</td>
<td>52.7</td>
</tr>
<tr>
<td>Town/rural</td>
<td>47.3</td>
</tr>
</tbody>
</table>
Measures

Theory of Planned Behaviour. Physical activity intention and the direct determinants of the TPB (attitude, subjective norm and PBC) were measured by self-report. Physical activity intention was assessed by two items. The following is an example of the items used to measure intention: “I intend to be physically active for 30 minutes on most days, if not all days of the week”. The questions were formulated in a manner to reflect current national physical activity guidelines (Bauman, Ford, & Armstrong, 2001). Both intention items were rated on a 7-point Likert scale from 1 (extremely likely; definitely true) to 7 (extremely unlikely; definitely false).

Attitude was assessed by four items, two reflecting an instrumental tone and two an affective tone. An example of an instrumental tone statement included “For me to be physically active for 30 minutes on most days, if not all days of the week, is valuable”. An example of an affective tone statement included “For me to be physically active for 30 minutes on most days, if not all days of the week, is pleasant”. All four items were rated on a 7-point Likert scale from 1 (strongly agree) to 7 (strongly disagree).

Two items assessed subjective norm. “Most of the people who are important in my life would think I should be physically active for 30 minutes on most days, if not all days of the week” is an example of the items used to measure subjective norm. Again, both were rated on a 7-point Likert scale from 1 (strongly agree) to 7 (strongly disagree).

PBC was also assessed by two items. An example of an item used to measure PBC consisted of: “All things considered, if I wanted too I could easily be physically active for 30 minutes on most days, if not all days of the week”. Both items related to PBC were rated on a 7-point Likert scale from 1 (strongly agree) to 7 (strongly disagree).

Body mass index. BMI for each participant was calculated from self-reported height and weight (weight[kg]/height[m]²), using Statistical Package for Social Science (SPSS) Version 13.0.

Analyses

Descriptive statistics, means, standard deviations and internal consistency were calculated for all measures. Pearson Product Moment Correlation Coefficient was used to examine the relationship between physical activity intention, the direct measures TPB (attitude, subjective norm, PBC) and BMI.

Separate regression analyses were performed to examine the mediating effects of each of the direct measures of the TPB on the predictive relationship between the BMI and the physical activity intention, as proposed by Baron and Kenny (1986). All analysis was conducted using Statistical Package for Social Science (SPSS) Version 13.0.

Results

Descriptive statistics

A total of five variables were included in this study. These variables included physical activity intention, the three direct measures of the TPB (attitude, subjective norm, and PBC), and BMI. Table II outlines these descriptive measures and the correlational relationships between these variables.
In order to test the mediation effects, the statistical analysis framework proposed by Baron and Kenny (1986) was employed. According to Baron and Kenny to establish mediation, the independent variables must affect the mediators in the first regression equation (Step 1); the independent variables must affect the dependent variable in the second regression equation (Step 2) and the mediator must affect the dependent variable in the third regression equation (Step 3). If all of these conditions hold, mediation would occur if the effect of the independent variables on intention were less in the third equation than in the second. Perfect mediation holds if the independent variables have no effect when the mediators are controlled. If these conditions were not met for each equation, the variable was eliminated from the statistical framework, as proposed by Baron and Kenny.

In a series of three regression equations (Step 1), the direct measures of the TPB were regressed separately on BMI. It was found that BMI made a significant contribution to the prediction of attitude, \( R^2 = .07, F(1,1060) = 4.50, p < .05 \) (\( \beta = -.07, p < .05 \)), accounting for less than half a percent of the variance. BMI, \( R^2 = .09, F(1,1060) = 7.76, p < .01 \), (\( \beta = .09, p < .01 \)) also significantly predicted subjective norm and accounted for 1% of the variance. Lastly, BMI was a significant predictor of PBC, \( R^2 = .11, F(1,1060) = 12.80, p < .001 \) (\( \beta = -.11, p < .05 \)) and also accounted for 1% of the variance. Table III outlines the regression equations conducted for step 1.

In second step, physical activity intention (dependent variable) was regressed on BMI, given that BMI affected all the mediators in the first step. Table III outlines the regression equations conducted for step 2. Results indicated that BMI significantly predicted physical activity intention, \( R^2 = .12, F(1,1060) = 14.55, p < .001 \) (\( \beta = -.12, p < .001 \)).

In the third set of regression equations (Step 3) physical activity intention was regressed (dependent variable) on each of the direct measures of the TPB (mediators) and BMI (independent variable) given that the conditions of steps one and two were met by all mediators. Table III outlines the regression equations conducted for step 3.

The overall equation examining the effects of BMI and attitude on intention was significant \( R^2 = .59, F(1,1059) = 9.50, p < .01 \) and accounted for 35% of the total variance. Examination of the beta weights showed that attitude (\( \beta = .58, p < .001 \)) made the largest independent contribution to the prediction of intention, while BMI (\( \beta = -.08, p > .01 \)) was also a significant predictor of physical activity intention. The fact that BMI was less in the third equation (\( \beta = -.08, p > .01 \)) than in the second equation (\( \beta = -.12, p < .05 \)) suggests that attitude served to mediate the relationship between BMI and physical activity intention.
The overall equation examining the effects of BMI and subjective norm on intention was significant $R = .49$, $F(1,1059) = 34.09$, $p < .001$ and accounted for 24% of the total variance. Examination of the beta weights showed that subjective norm ($\beta = .48$, $p < .001$) and BMI ($\beta = -.16$, $p < .001$) were significant predictors of physical activity intention. However, BMI was not less in the third equation and thus did not satisfy the third condition, suggesting that subjective norm did not mediate the relationship between BMI and physical activity intention.

The overall equation examining the effects of BMI and PBC on intention was significant $R = .51$, $F(1,1059) = 5.37$, $p < .05$ and accounted for 26% of the total variance. Examination of the beta weights showed that PBC ($\beta = .50$, $p < .001$) was the most important predictor of intention, while BMI ($\beta = -.06$, $p > .05$) was also a significant predictor of physical activity intention. The fact that BMI was less in the third equation ($\beta = -.06$, $p > .05$) than in the second equation ($\beta = -.12$, $p < .001$) suggests that PBC served to mediate the relationship between BMI and physical activity intention.

**Discussion**

The purpose of this study was to examine the mediating relationship between BMI and the TPB in predicting intention to participate in physical activity in a sample of adults. This study is the first to provide evidence of the mediation effects of the direct measures of the TPB in the relationship between BMI and physical activity intention in a sample of the adult population. Study findings and future research directions are discussed below.

Current public health campaigns appear to be ineffective at increasing energy expenditure through physical activity in light of increases in overweight and obesity. Regular physical activity may reduce the accumulation of excess weight across the lifetime (DiPietro, 1999); however, there is evidence that being overweight or obese is a barrier to physical activity, a behaviour that is important in weight loss and maintenance (Ball et al., 2000; Jones, 2003). The current study is theory based and, while providing theoretical support for the work completed by Ball et al. (2000) and Jones (2003), this project extends their work by...
identifying potential mechanisms by which BMI may affect an individual’s intention to participate in regular physical activity.

The TPB offers a credible framework to study the relationships between BMI and physical activity intention as it is one of the most widely applied models to explain health behaviours (Ajzen, 1991; Ajzen & Driver, 1992; Baranowski, Cullen, Nicklas, Thompson, & Baranowski, 2003; Godin & Kok, 1996; Wammes, Kremers, Breedveld, & Brug, 2005). By utilising the TPB, developed by Ajzen (1991), and meeting the statistical conditions of mediation as proposed by Baron and Kenny (1986), the results of this study found that the direct measures of attitude and PBC mediated the relationships between BMI and physical activity intention, while subjective norm failed to act as a mediating mechanism.

The effects of attitude and BMI provided the strongest prediction of physical activity intention, accounting for 35% of the total variance. This result is consistent with earlier research suggesting that attitudes related to weight related issues are the strongest predictors of intention (Wammes, Kremers, Breedveld, & Brug, 2005). On the basis of our results and the findings of previous work, research attention should focus on attitudinal change as mechanism for behavioural change. Eagley and Chaiken (1993) proposed that attitudes are formed and modified as people gain new information about attitude objects. As information is gained and an attitude is developed, a conscious decision to act or an intention to act will follow (Ajzen, 1988; Eagly & Chaiken, 1993; Promerantz, Chaiken, & Tordesillas, 1995). If the knowledge and/or attitude gained is positive it is suggested that people will intend to act or engage in behaviours that approach, support or enhance the attitude object (Baranowski, Cullen, Nicklas, Thompson, & Baranowski, 2003; Eagly & Chaiken, 1993).

With respect to our study, communicating information about the risks of weight gain associated with the lack of physical activity could influence attitude change. For those who specifically have weight management issues, information outlining the health benefits associated with weight management and regular physical activity may aid in changing negative attitudes about being active to more positive ones. As a result of this attitude change and supported by Wammes et al. (2005), Baranowski et al. (2003) and Eagly and Chaiken (1993), once a positive attitude towards being active exists, then the intention to engage in regular physical activity is more likely to occur.

The combination of PBC and BMI also provided a significant prediction for physical activity intention accounting for 26% of the variance. The fact that PBC acted as a mediator in the predictive relationship between BMI and physical activity intention emphasised the need to enhance perceptions of control in this population. Our findings are supported by previous research which has also suggested the need to enhance PBC in specific populations (e.g., overweight/obese population) to aid in motivating these individuals to act on their intentions (Payne, Jones, & Harris, 2004; Wammes, Kremers, Breedveld, & Brug, 2005). With respect to our study, this may be done by focusing on easier ways to be physically active. For instance, Murphy, Nevill, Neville, Biddle, and Hardman (2002) and Hardman (2001) proposed that sedentary individuals may find it easier to maintain or control a program including several smaller bouts of activity (3 × 10-min bouts) throughout the day rather than a single 30-min session, while still eliciting similar improvements in health. Thus, if overweight/obese individuals perceive that they are able to maintain an activity program by controlling certain aspects of it, as described above, they may be more likely to act on their intentions to be more physically active.

The results of this study indicated that the direct measure of subjective norm did not act as a mechanism of mediation for the relationship between BMI and physical activity intention. This finding is not unusual given that the construct of subjective norm has not performed well in explaining physical activity intentions across various studies, typically
being insignificant or of small magnitude (Courneya, Plotnikoff, Hotz, & Birkett, 2000; Hagger et al., 2002b; Rhodes, Jones, & Courneya, 2002).

The major strength of this study was that it is the first to examine the interrelationships between BMI, the direct measures of the TPB and physical activity intention. Furthermore, a methodological, statistically sound approach to examining the mediation effects of the direct measures of the TPB in the relationship between BMI and physical activity intention in a large random sample of adults. Despite the strengths of conducting a theoretically based study, there are limitations of this study that should be considered when interpreting the findings. First, measures of height and weight were self-reported. Validity studies show that self-reported measures of weight are often underestimated in large-scale survey data (Flood, Webb, Lazarus, & Pang, 2000); this suggests that future studies need to be conducted in this area using objective measures of BMI. It should be noted that although there are more accurate alternatives to BMI for measuring areas of regional fat, BMI is a good and reliable predictor of total fat and is relatively inexpensive to measure (Bray, 1998; Henderson, 2005).

Second, this study did not measure actual physical activity behaviour. An avenue for future research is to therefore examine the mediating relationship between the TPB constructs as reported in this paper and actual physical activity behaviour. Moreover, a combination of self-report and objective measures of physical activity (energy expenditure, heart rate, accelerometers) would lead to more accurate assessment of actual physical activity behaviour in overweight and obese people, and therefore enable more precise examination of the mediating influence of BMI on physical activity intention and behaviour.

Third, this study did not conduct gender comparisons. An avenue for future research is to conduct gender comparisons when testing the predictive ability of the TPB and the mediating relationship between BMI, intention and actual physical activity behaviour. Previous research found that being “too fat to exercise” was more frequently reported by women, and suggests the need for gender specific campaigns to increase physical activity (Ball et al., 2000) to help reduce the prevalence of overweight and obesity. In light of the associations in the current study, it may also be worthwhile for public health campaigns designed to increase physical activity to simultaneously attempt modifications of interpersonal factors like PBC and attitudes towards physical activity. PBC and attitudes demonstrated a mediating effect on the influence of BMI on the intention to be active; therefore, if campaigns can increase PBC and attitudes in heavier individuals, it may accelerate their transition from a sedentary lifestyle to an active lifestyle.

Conclusions

The aim of the current study was to utilise a theoretical framework to help explain weight-related influences to physical activity. As such, this research provided us with a greater understanding of the mechanism by which BMI may affect physical activity intention by investigating the ability of the direct measures of the TPB to act as a mediating mechanism between the concepts of BMI and physical activity intention. The findings of this study may assist health professionals and researchers with the development and subsequent implementation of physical activity health promotion strategies. Further research examining the underlying beliefs, attitudes, subjective norm and PBC also is recommended. By identifying the thoughts and beliefs about intention and actual physical activity behaviour in overweight and obese populations, interventions can be tailored to meet the specific needs of this population group.
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**Appendix A: Items used to assess the direct measure of the Theory of Planned Behaviour**

Items used to assess intention:

1. I intend to be physically active for 30 minutes on most days, if not all days of the week, for the next month.
2. I will try to be physically active for 30 minutes on most days, if not all days of the week, for the next month.
Items used to assess attitude:

(1) For me to be physically active for 30 minutes on most days, if not all days of the week, for the next month is valuable.
(2) For me to be physically active for 30 minutes on most days, if not all days of the week, for the next month is pleasant.
(3) For me to be physically active for 30 minutes on most days, if not all days of the week, for the next month is beneficial.
(4) For me to be physically active for 30 minutes on most days, if not all days of the week, for the next month is fun.

Items used to assess subjective norm:

(1) Most of the people who are important in my life would think I should be physically active for 30 minutes on most days, if not all days of the week, for the next month.
(2) I receive a great deal of support from the people closest to me in my efforts to be physically active for 30 minutes on most days, if not all days of the week, for the next month.

Items used to assess PBC:

(1) All things considered, if I wanted to I could easily be physically active for 30 minutes on most days, if not all days of the week, for the next month.
(2) I have very little power over my ability to be physically active for 30 minutes on most days, if not all days of the week, for the next month.