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Gender differences in condom use prediction with Theory of Reasoned Action and Planned Behaviour: the role of self-efficacy and control

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AIDS, which continues to be a problem of undeniable importance, is the consequence of behaviour, it does not come from what one is, but from what one does (Fishbein, 2000). Therefore, the objective of the research in this field must be to prevent or change that risk behaviour. To design and implement effective intervention programmes we need to know which variables determine risk or prevention behaviour with respect to the HIV transmission. Most research is based on the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975) and its development, the Theory of Planned Behaviour (TPB) (Ajzen, 1985, 1991).

The TRA model maintains that most human behaviour may be forecast from the behavioural intention. The TPB maintains that behaviour is determined by both behavioural intention and Perceived Behavioural Control (PBC: the perception that the subject has about the ease or difficulty of performing behaviour). As for the weight that PBC may have as a direct predictor of behaviour, Ajzen (2002) maintains that the closer the reality is to the perception that subjects have about their possibilities or difficulties that may arise in the performance of the behaviour, the closer will be the perception of control with the real control and consequently the prediction of the behaviour will be better.

For the TPB, behavioural intention depends directly on attitude, subjective norm and PBC, while for the TRA intention depends only on attitude and subjective norm. The question is whether this new, more complex, model (TPB) does really improve the

predictive capacity of the previous model (TRA). In the literature we find results in favour (see, e.g., Godin & Kok, 1996; Sheeran & Taylor, 1999) or against this theory (Albarracín, Johnson, Fishbein & Muellerleile, 2001; Pulerwitz, Amaro, De Jong, Gortmaker & Rudd, 2002). Possibly the main cause for this variability in data is that PBC does not seem to have the same meaning for all authors (Trafimow, Sheeran, Conner, & Finlay, 2002). Several authors use PBC like a two-dimensional construct and distinguish between control and self-efficacy (Ajzen, 2002; Giles, Liddell, & Bydowell, 2005; Povey, Conner, Sparks, James, & Shepherd, 2000).

In this study we analyse to what extent gender may influence the different weights of the variables of the studied models in the prediction of intention and behaviour. On the other hand, we compare the usefulness of the theoretical models of the TRA and TPB for predicting both intention of condom use and the actual behavioural outcome. In addition, within the TPB models, we try to discover whether it is more appropriate to use one single PBC construct or work with two separate dimensions which we have called “Control” and “Communication and persuasion skills”.

Methods

The sample consists of 603 university students from Portugal (University of Algarve, 290) and Spain (University of Huelva, 313), with a mean age of 21.6 years. 57% were female.

The following table describes the variables measured, and a sample of the items used, together with the value of the alpha coefficient of reliability. The score for each subject in a variable is the mean score in all the items that are used to measure it. All the items were recoded so that a high score would indicate a favourable attitude, high intention ...

[Insert table 1 around here]

The students' *Attitude* towards condom use was measured using four bipolar 7 point scales (from 1 to 7) based on the semantic differential.

To measure the *Perceived Behavioural Control* construct we take the following steps: firstly we measure two different, but related, dimensions ($r = 0.40$ in all our sample): *Communication skills* and *Control*. The first dimension aims to measure the perception that subjects have about their communication and persuasion skills to achieve condom use when the partner does not want to use one. We use this aspect of self-efficacy because it has been identified as one of the most important in the study of sexual transmission of AIDS (e.g., Pulerwitz et al., 2002; Somlai et al., 1998) and, furthermore, it highlights the dyadic nature of condom use behaviour (Giles et al., 2005). The *Control* dimension reflects how sure participants can use the condom in their sexual relations even in adverse circumstances such as having drunk alcohol, taken drugs or when highly sexually excited (adapted from Godin, Fortin, Michaud, Bradet, & Kok, 1997). Finally we calculated a single measure of Global-PBC which is the mean score for all participants in the five items described in this paragraph.

Results

As can be seen in Table 2, the means for our variables are generally fairly high, with the lowest mean corresponding to attitudes (mean of 4.38) and the highest to behavioural intention (5.71).

[Insert table 2 around here]

In our sample, the young women perceive themselves as having a greater capacity for control and persuasion skills than their male counterparts, and they also have more favourable attitudes towards condom use. However, the young males use condoms more often in their sexual relations. No significant differences are seen in intention or subjective norm.

To test the models of reasoned action and planned behaviour we will use a hierarchical lineal regression model: 1st) TRA, 2nd) TPB.1 (we introduce the *Global-PBC* as the new predictor variable) and 3rd) TPB.2 (instead of *Global-PBC* we will introduce *Communication skills* and *Control*). This will allow us to verify which model is more appropriate or, if appropriate, which of the two components is more determinant.

[Insert table 3 around here]

The increase in variance explained from TRA (30% - 29%) to TPB (35% -38%) is statistically significant ($p < 0.001$) in both sub-samples, although it is greater for the

males. However, no differences are appreciated in terms of the percentage of variance explained between TPB.1 and TPB.2.

We must highlight the differences in the weights of attitudes, subjective norm and PBC in the intention between males and females. In the TRA model, subjective norm has a greater weight than attitude in the male sample, but both have the same effect for the females. In the TPB.1 model, for young women, attitudes have the greatest influence. For the men Global-PBC and subjective norm, in this order, are the most determinant variables. Finally, in TPB.2, the Control variable does not have any significant effect on behavioural intention for women, while it appears as a more influential variable than attitude for men. The Communication skills dimension is always more determinant than the Control dimension.

For the prediction of behaviour, intention is the only relevant variable for both groups (see Table 4). The negative sign of the regression parameter of *Control* and its statistical significance in the female sub-sample is a product of the multi-collineality existing among the independent variables and the low correlation existing between the dimensions of Control and behaviour.

[Insert table 4 around here]

Discussion

One of the objectives of this paper was to establish whether the TPB model significantly increases the percentage of variance explained of both intention and

behaviour of condom use in relation to the TRA. Our data suggest that this is the case for behavioural intention, but not for the actual behaviour.

In relation to gender differences, we should point out that for young women the better predictor of condom use intention is their attitude, while for men are the subjective norm and the perception of communication and persuasion skills. So, behavioural intention depends more on individual factors for women while for men social variables are more decisive. However, condom use behaviour always involves social interaction. This fact might explain that although women have more intention nevertheless they use condom less frequently than men.

Our results highlight the importance of PBC as a predictor of intention of condom use. The TPB model significantly increases the percentage of variance explained of intention with respect to TRA. This increase falls within the parameters provided by other authors (e.g. Armitage & Conner, 2001; Godin & Kok, 1996; Sheeran & Taylor, 1999). Self-efficacy is a better predictor of behavioural intention than the control dimension as has been found in other works (Ajzen, 2002; Giles et al., 2005; Povey et al., 2000).

In the prediction models of *condom use behaviour*, no significant increase was appreciated in the predictive capacity of the TPB model. Possibly, as both Ajzen (2002) and Trafimow et al. (2002) state, the null effect of PBC is due to the high level of optimism shown by subjects in relation to their possibilities of control (reflected in our study in high means in PBC), when actual control is significantly lower (scarce correlation between condom use and perceptions of control).

The differences found between the two theories in the prediction of the intention of condom use and the absence of these differences when we try to predict the behaviour, are easily understandable. Ajzen (2002) argued that a high perception of control, even if it is not very realistic, increases the desires, intentions and efforts to perform the behaviour; but the direct effect on that behaviour is only effective if the perception of control is not an illusion but corresponds to real control. Our subjects perceive themselves as controllers but they are far from controlling their situation, especially the young women who have a high perception of control that is not directly related to their behaviour.

These differences between perceived control and real control are especially worrying. First of all, communication and persuasion skills have been identified in several studies as an important factor that requires further attention (e.g., Pulerwitz et al., 2002; Ross, Timpson, Williams, & Bowen, 2003). De Visser and Smith (1999) emphasised how important it is to reach an agreement with the sexual partner as a necessary step to be able to use the condom; and this requires interpersonal skills to achieve the partner's collaboration. The interventions developed in this area should not just try to make young people see the need for this prevention behaviour, but also provide them with the skills and means necessary to carry out the behaviour. As shown by the work of Lo Conte, O'Leary and Labouvie (1997) or Pulerwitz et al. (2002), these skills are especially determinant for women as they have greater difficulties to carry out protection behaviour if their sexual partners do not want it.

The second point is related to the perception of control in situations of risk such as the consumption of alcohol. This variable is closely associated to the non-use of the condom (see, e.g., Abdullah et al., 2006). This circumstance is particularly worrying in certain groups, such as young women, in which the perception of control of behaviour of condom use having consumed alcohol or other drugs is very high. However, this perception is not related either to real use or intention of condom use. It is important to make young people realise how easily good intentions can fade away in these situations.

Finally, in relation to the distinction between the two dimensions identified of the PBC, seems more useful from the applied point of view than from a theoretical perspective. In the last case, there are no differences in explained variance using one single global measure Global-PBC or the two differentiated dimensions. However, from an applied perspective we believe that it is important to identify the dimensions most influential on the behaviour. Due to the importance of the perception of self-efficacy in communication we have to improve these young's skills.

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Table 1. Variables used

Variables	Number of items	Sample items	Alpha Coefficient
<i>Attitude</i>	4	For me, using a condom in my sexual relations, even if we use another contraceptive method, is (or would be): Very exciting /Not at all exciting- ; Agreeable/Disagreeable; Useful/Useless; Comfortable/Uncomfortable	.75
<i>Subjective Norm</i>	3	Most of my friends think that if someone of our age has sexual relations s/he should always use a condom, even if they use another contraceptive method. [From 1 (Totally disagree) to 7 (Totally agree)]	.77
<i>Intention</i>	1	I will always try to use a condom when having sexual relations, even if we use another contraceptive method. [From 1 (Totally disagree) to 7 (Totally agree)]	--
<i>Condom use</i>	1	In general, in your sexual relations and, even if you use another contraceptive method, How often do you use a condom? [From 1 (Never) to 7 (Always)]	--
<i>Global- PBC</i>	5	Items of <i>Communication skills</i> and <i>Control</i>	.80
<i>Communication skills</i>	2	If I want to use a condom in my sexual relations, I will be able to convince the other person to use one, even if we use another contraceptive method. [From 1 (Totally disagree) to 7 (Totally agree)]	.65
<i>Control</i>	3	Even if we use another contraceptive method, if I am going to have a sexual relation, I would be capable of using a condom even if I had drunk alcohol. [From 1 (Totally disagree) to 7 (Totally agree)]	.85

Table 2. Means (and standard deviations) of variables and comparison between groups
-t test-

Variables	Sample (N = 603)	Female vs. Male	
		Female (N = 345)	Male (N = 258)
<i>Condom Use</i>	5.34 (1.99)	5.14 (2.11)	5.58* (1.80)
<i>Intention</i>	5.71 (1.50)	5.78 (1.50)	5.61 (1.51)
<i>Attitude</i>	4.38 (1.08)	4.53 (1.06)	4.19*** (1.08)
<i>Subjective Norm</i>	5.26 (1.38)	5.29 (1.38)	5.20 (1.38)
<i>Global – PBC</i>	5.58 (1.17)	5.80 (1.08)	5.27*** (1.20)
<i>Communication skills</i>	5.55 (1.29)	5.78 (1.25)	5.23*** (1.27)
<i>Control</i>	5.60 (1.43)	5.81 (1.34)	5.30*** (1.50)

* = $p < .05$; *** = $p < .001$.

Table 3. Hierarchical prediction models of the intention of condom use

Models	Female (N = 345)				Male (N = 258)			
	r	β	R ²	ΔR^2	r	β	R ²	ΔR^2
Step 1. TRA			.30	.30***			.29	.29***
Attitudes	.45***	.34***			.39***	.24***		
Subjective Norm	.45***	.34***			.49***	.40***		
Step 2. TPB.1			.35	.05***			.38	.09***
Attitudes		.30***				.18**		
Subjective Norm		.26***				.27***		
Global PBC	.42***	.23***			.53***	.35***		
Step 3. TPB.2			.35	.05*** ¹			.38	.09*** ¹
Attitudes		.29***				.18**		
Subjective Norm		.25***				.26***		
Communication skills	.43***	.22***			.49***	.23***		
Control	.28***	.07			.42***	.19**		

** = $p < .01$; *** = $p < .001$. ¹ Change in R² in relation to the TRA model

Table 4. Hierarchical models for the prediction of condom use behaviour

Models	Female (N = 269)				Male (N = 220)			
	r	β	R ²	ΔR^2	r	β	R ²	ΔR^2
Step 1. TRA			.21	.21***			.24	.24***
Intention	.46***	.46***			.49***	.49***		
Step 2. TPB.1			.21	.00			.25	.01
Intention		.48***				.44***		
Global PBC	.19**	-.07			.35***	.10		
Step 3. TPB.2			.21	.00 ¹			.25	.01 ¹
Intention		.46***				.42***		
Communication skills	.28***	.13			.28***	.08		
Control	.05	-.16**			.31***	.05		

** = $p < .01$; *** = $p < .001$. ¹ Change in R² in relation to the TRA model