

## Use of condoms: intention and behaviour of adolescents living in juvenile rehabilitation centres

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### Abstract

The aim of the present study was to identify the psychosocial factors explaining intention and behaviour regarding condom use among a sample of 152 adolescents (44 F; 108 M) living in juvenile rehabilitation centres. At baseline, the variables derived from psychosocial theories were assessed by questionnaire. The self-report of condom use was obtained 3 months later. The variability in intention ( $R^2 = 0.76$ ;  $P < 0.001$ ) was explained by personal principles guiding adoption of the behaviour ( $\beta = 0.44$ ,  $P < 0.001$ ), perceived control in adopting the behaviour ( $\beta = 0.36$ ,  $P < 0.001$ ) and habit of using condoms in the previous 3 months ( $\beta = 0.15$ ,  $P < 0.01$ ). Prediction of condom use yielded an  $R^2$  of 0.49 ( $P < 0.001$ ), the interaction terms formed by intention and perceived behavioural control ( $P < 0.01$ ) and habit of using condoms by perceived behavioural control ( $P < 0.001$ ) being the significant predictors. MANOVA analyses revealed important differences between high and low intenders on each of the items of the personal principle scale and the perceived control sub-scales. The results suggest that the promotion of condom use among adolescents experiencing social adaptation difficulties should focus on developing the personal social responsibility that each individual has regarding

the adoption of a responsible sexual behaviour, as well as developing the personal skills and resources necessary to overcome the psychological and physical barriers of using condoms.

### Introduction

Adolescents have emerged as a group at risk for contracting the human immunodeficiency virus (HIV) (Hein, 1989; DiClemente, 1990). The number of HIV seropositive adolescents is unknown, but recent statistics suggest that it is doubling each year (Rotheram-Borus and Koopman, 1991). In the US, one-fifth of reported AIDS cases have been in the 20–29 year age group (Hein, 1989). However, given the incubation period of the virus, this means that the people were infected during their high school years or shortly there after (Hingson *et al.*, 1989; DiClemente, 1992).

A primary source of risk for HIV transmission is unprotected sexual activity. By the time they are 18 years old, most individuals are sexually active, although exact estimates vary according to the population examined. Studies about adolescent sexual behaviour have reported high levels of sexual activity, irregular or non-use of condoms and many instances of multiple partnering (DiClemente, 1990; Rosenthal and Moore, 1991). Distressed youths are more likely to engage in high-risk sex than adolescents from the general population and use of drugs as well as certain developmental characteristics enhance the risk for HIV infection (Rotheram-Borus and Koopman, 1991).

Recent surveys have identified high prevalences of risk behaviours among incarcerated adolescents

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(Bell *et al.*, 1985; Alexander-Rodriguez and Vermund, 1987; Lanier and McMarthy, 1989; Council on Scientific Affairs, 1990; DiClemente *et al.*, 1991; Lanier *et al.*, 1991). Comparative studies have shown that, relative to a school-based sample, incarcerated adolescents present higher prevalences of HIV-related sexual risk behaviours. For instance, DiClemente *et al.* (1991) reported that almost all incarcerated youths were sexually experienced compared with approximately 28% of the public school sample; 73% of incarcerated youths reported two or more sex partners within the past year compared with approximately 8% in the public school sample; 52 and 26% of the incarcerated and the school samples, respectively, reported sexual onset at 12 years of age or younger, and 28.6% of the incarcerated and 37.3% of the school sample used condoms consistently.

For sexually experienced adolescents, the best prevention strategy remains the use of condoms for every high-risk sexual activity (Stone *et al.*, 1986; Goldsmith, 1987). A number of studies have investigated the factors associated with condom use among adolescents (Hingson *et al.*, 1990; Brown *et al.*, 1991, 1992; DiClemente, 1991; DiClemente *et al.*, 1991; Lavoie and Godin, 1991; Boldero *et al.*, 1992; Jemmot *et al.*, 1992; Schaalma *et al.*, 1993; Rosenthal and Shepherd, 1993). Overall, these studies have reported that knowledge about AIDS and HIV transmission alone is not sufficient to induce adoption of appropriate preventive behaviours. Attitude towards condoms seems to be an important determinant for its use or non-use as well as perceived social norms and self-efficacy expectations (Lavoie and Godin, 1991; Schaalma *et al.*, 1993). Intention to use condoms was also found to be a direct and positive predictor of condom use (Barling and Moore, 1990; Hingson *et al.*, 1990; Boldero *et al.*, 1992).

However, as indicated by DiClemente (1992), most of these studies have focused on school-based or clinic samples. Although informative, the relevance of these findings for incarcerated adolescents is limited. Moreover, a large proportion of the studies are atheoretical, use a cross-sectional design and rely on poor design instruments. A few

studies have applied the Health Belief Model (HBM) to predict changes in HIV-preventive behaviours (Joseph *et al.*, 1987; Catania *et al.*, 1990), but generally this model has performed considerably less adequately than previously observed in studies of other health-related behaviours (Brown *et al.*, 1991). Boldero and co-workers (1992) have suggested that other theories, such as Ajzen and Fishbein's theory (1980), present an interesting integration of factors with potential applications to the study of HIV prevention behaviours.

For incarcerated adolescents, the number of studies is quite limited. DiClemente (1991) observed that HIV knowledge was not sufficient to motivate incarcerated adolescents to adopt and maintain HIV-preventive behaviours. In his study, conducted among 112 sexually experienced adolescents incarcerated in a juvenile detention facility, he found that, being a non-Black adolescent, ability to communicate with sex partners about AIDS and perception that peers are supporting condom use were the factors associated with consistent condom use.

According to the Theory of Planned Behaviour, intention represents a person's motivation to adopt a behaviour. Intention is defined by three factors: attitude towards the behaviour, perceived subjective social norm (SN) regarding the adoption of the behaviour and the perceived behavioural control (PBC) over the adoption of the behaviour. Attitude towards the behaviour is an expression of one's positive or negative evaluation of performing a given behaviour. Perceived subjective social norm reflects personal perception of the social pressures that are exerted on us to adopt a given behaviour. Perceived behavioural control represents the individual's perception of the presence or absence of necessary resources and opportunities, as well as anticipated obstacles or impediments.

Thus, the aim of the present study was to apply the Theory of Planned Behaviour formulated by Ajzen (1985, 1988, 1991; Ajzen and Madden, 1986) to explain and predict condom use among adolescents experiencing social adaptation difficulties and temporarily living in juvenile rehabilitation centres. In addition, several aspects of the

theory of interpersonal behaviour proposed by Triandis (1977) were retained, because previous studies have indicated that specific characteristics of this theory are important predictors of intention and behaviour (Valois *et al.*, 1988; Godin *et al.*, 1989; Baumann *et al.*, 1993; Chan and Fishbein, 1993).

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## Methods

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### Population and sample

The targeted population was adolescents experiencing social adaptation difficulties and living in seven juvenile rehabilitation centres of the Quebec Metropolitan urban area. Adolescents are placed in these rehabilitation centres following a decision by a judge of the juvenile court. Although freedom is limited, most of these adolescents have occasional delimited free periods outside the centres. Considering the aim of this study and the targeted age groups, five rehabilitation centres were included in the study. All agreed to participate and, at the onset of the study, 387 adolescents (boys: 275; girls: 112) were accommodated in these rehabilitation centres. Each adolescent was eligible for this study and could be recruited to participate in only one of the various phases of the study. The full study is composed of three preparation phases and two main phases (Figure 1).

### Preparation of the main study

A total of 125 adolescents participated in either one of the three preliminary phases needed to carry out the main study.

#### *Phase 1*

This phase consisted of reviewing the literature regarding the risk behaviours of adolescents with social adaptation difficulties and to complete this information by conducting 29 interviews with adolescents (boys: 19; girls: 10) recruited in the centres. The aim of this phase was to identify the behaviours placing these adolescents at risk for HIV. The results indicated that more than 90% of these adolescents were sexually experienced before they were 14 years of age. Also, at this point in

their life, 50% of them have had five or more sexual partners. Finally, about 40% of these adolescents will report consuming alcohol or illicit drugs when they have sex. Thus, it was decided to select sexual activity with a new partner in the context of alcohol and drug use as the primary risk behaviour.

#### *Phase 2*

This phase was the qualitative part of the study. Thus, 47 interviews (boys: 25; girls: 22) were conducted in order to identify the advantages and disadvantages of using a condom during sexual intercourse with a new partner in the context of alcohol and drugs. Also identified were the persons or group of persons who might approve or disapprove of using a condom and the perceived barriers to using condoms in these contexts. Content analysis based upon Ajzen's Theory of Planned Behaviour was performed by two independent research assistants. Consensus was reached and a pilot questionnaire was developed; no distinction was made for contexts of alcohol or drug use because the analysis indicated that the listed items were similar in the two contexts. An additional eight adolescents as well as six educators were asked to comment on the questionnaire for readability and comprehension, and necessary adjustments were made.

#### *Phase 3*

This phase was a 2 week test-re-test reliability of the pilot questionnaire. A total of 41 adolescents (boys: 21; girls: 20) were recruited to test the questionnaire. Cronbach's  $\alpha$  coefficients were computed for the variables formed with multiple items and stability of these variables was verified by mean of the coefficient of agreement (values are presented below).

### The main study

The main study contains two phases. Data collected at baseline (time 1) is the first phase whereas assessment of behaviour 3 months later (time 2) is the second phase. Of the total number of 387 adolescents, 262 remained eligible, not having participated in any of the previous phases. Of

Five rehabilitation centres (387 adolescents)					
Preparation of the main study				Main study	
Phase 1	Phase 2		Phase 3	Baseline	3-month follow-up
( <i>n</i> = 29)	( <i>n</i> = 47)	( <i>n</i> = 8)	( <i>n</i> = 41)	( <i>n</i> = 158)	( <i>n</i> = 109)
Interview	Interview	Interview	Questionnaire	Questionnaire	Questionnaire
Sexual experience and behaviours at risk for HIV.	Qualitative information on the advantages, disadvantages, people in favor, and perceived barriers to condom use. Development of the questionnaire.	Readability and comprehension of the questionnaire.	Two week test-re-test (reliability).	Intention, attitude, subjective social norm, perceived behavioural control, personal normative belief, perceived social support available, self-esteem, sexual experience, etc.	Sexual behaviour, relationship status, habit of condom use.
Note: Each adolescent could participate in only one of the three preparation phases; those who participated could not be recruited for the main study.					

Fig. 1. The study design.

these, 158 volunteered to participate at time 1; six questionnaires had to be discarded because they were poorly completed. Thus, 152 (108 boys; 44 girls) were retained in the study. Of these, 109 were still in the study 3 months later, but because of missing data on key variables three questionnaires were discarded, thus leaving 106 subjects (66 boys; 40 girls) at time 2.

#### Data collection

At time 1, the study was explained to each subject. The protocol to ensure confidentiality of the information collected was explained and a consent form was signed. Then, in small groups of two to six subjects, each one completed the baseline questionnaire. One of the three research assistants stayed in the room and assistance was available if necessary. At time 2, 3 months later, each subject was contacted by the assigned research assistant and asked to complete a brief questionnaire concerning behaviour.

#### The questionnaire

*Variables measured at time 1 (at baseline).* At the top of each page, the expressions 'sexual intercourse' and 'new partner' were defined. Sexual intercourse means that there is penetration of the penis into the vagina (vaginal penetration) or the anus (anal penetration). A new partner was: a person with whom one has been having sexual intercourse for less than 2 months (a new boy or girl friend), a past partner with whom one has sexual intercourse once again and/or a person with whom one has sexual intercourse for the first time.

Three questions were used to assess *intention*, each being answered on a five-point scale. These were: 'I have the intention of using a condom each time that I might have sexual intercourse with a new partner during the next 3 months' (very likely/very unlikely), 'During the next 3 months, if the occasion presents itself, I will use a condom each time that I may have sexual intercourse with a new partner' (strongly disagree/strongly agree) and

'I evaluate my chances of using a condom every time that I might have sexual intercourse with a new partner during the next 3 months as...' (very low/very high). A Cronbach's  $\alpha$  coefficient of 0.92 was found for this construct with a 2 week test-re-test reliability coefficient of agreement of 0.87.

Two measures of attitude were obtained. *Attitude towards the behaviour* was assessed by mean of a semantic differential scale. The respondents were asked: 'For me, if I were to use condoms each time that I might have sexual intercourse with a new partner, during the next 3 months, this would be...'. Six pairs of adjectives were rated each on a five-point scale: useless/useful; unpleasant/pleasant; shameful/honourable; unhealthy/healthy; disagreeable/agreeable; careless/sensible. This construct had a Cronbach's  $\alpha$  coefficient of 0.82 and a 2 week test-re-test reliability coefficient of agreement of 0.90. *Belief-based attitude* was assessed as follows: beliefs (b) and the corresponding evaluation of the outcomes (e) were covered by six items. Subjects were asked to indicate on a five-point bipolar scale, with unlikely (-2) and likely (+2) at opposite ends, to what extent they believed that using condoms every time they might have sexual intercourse with a new partner during the next 3 months would lead to the presented positive and negative outcomes. The corresponding outcome items were evaluated on five-point (undesirable/desirable) scales. Thus, the score is quantified as the summed product of 'belief  $\times$  evaluation' ( $\Sigma b \times e$ ). The internal consistency of this construct was 0.62, as shown by its  $\alpha$  coefficient and 2 week test-re-test reliability coefficient of agreement was 0.86.

Two measures of social norms were obtained. Three questions were used to assess *Global perceived subjective social norm*, one being answered on a four-point scale and the two others on a five-point scale. These were: 'If I used a condom each time that I might have sexual intercourse with a new partner during the next 3 months, most of the people important to me would...' (four-point scale: strongly approve/be indifferent), 'Within my environment, the people important to me think that it is right to use a condom when having sexual

intercourse with a new partner' (strongly disagree/strongly agree) and 'Most people important to me would recommend that I use a condom when having sexual intercourse with a new partner' (very unlikely/very likely). Cronbach's  $\alpha$  coefficient was 0.69 and the 2 week test-re-test reliability coefficient of agreement was 0.99. For the *belief-based perceived subjective social norm* six normative beliefs (NB) were assessed on a four-point scale. Subjects were asked to indicate to what extent they believed that each of the listed referents 'would approve that they use a condom each time that they might have sexual intercourse with a new partner during the next 3 months' (strongly approve/be indifferent). Motivation to comply (MC) was evaluated by agreement with the corresponding propositions such as, 'Usually, I tend to act according to the opinions of the following individuals or groups of people...'. For each item, a five-point scale was used (never/always). Thus, the score is quantified as the summed product of 'normative belief  $\times$  motivation to comply' ( $\Sigma NB \times MC$ ). The  $\alpha$  coefficient for this construct was 0.80 and the 2 week test-re-test reliability coefficient of agreement was 0.93.

Two measures of *perceived behavioural control* were obtained. According to Ajzen (1985), *global perceived behavioural control* integrates the concept of 'facilitating conditions' proposed by Triandis (1977), as well as the concept of self-efficacy formulated by Bandura (1977). *Global perceived behavioural control* was assessed by mean of three questions answered on a five-point scale: 'For me, using a condom each time that I might have sexual intercourse with a new partner, during the next 3 months, would be...' (very difficult/very easy), 'If I wanted to, I would use a condom each time that I might have sexual intercourse with a new partner during the next 3 months' (very unlikely/very likely) and 'I feel I am capable of convincing my new partner to use a condom each time that we might have sexual intercourse during the next 3 months' (strongly disagree/strongly agree). The Cronbach's  $\alpha$  coefficient was 0.77 and the coefficient of agreement for test-re-test reliability was 0.82. The second



one, *belief-based perceived behavioural control*, also reflects Bandura's self-efficacy constructs. It is formed by the summed product of 10 control beliefs (c) and the corresponding perceived powers (p). For the measure of control beliefs subjects were asked on five-point scales if it was likely or unlikely that either potential barriers or facilitating conditions will happen or prevail during the next 3 months (see the list of items in Table IV). Similarly, each perceived power (p) was assessed by having the subjects rate if they will still use a condom (very unlikely/very likely) if these potential barriers or facilitating conditions were present during the next 3 months. A Cronbach's  $\alpha$  coefficient of 0.91 was found and the 2 week test-re-test reliability coefficient of agreement was 0.86.

Three questions were used to measure *personal normative belief*, a construct proposed by Triandis (1977); it has a moral connotation as it represents a measure of the personal feelings of moral obligation or responsibility to perform or refuse to perform a given behaviour. These questions were: 'It is within my principles to use a condom each time that I might have sexual intercourse with a new partner during the next 3 months', 'I would feel guilty about not using a condom each time that I might have sexual intercourse with a new partner during the next 3 months' and 'I think it is morally unacceptable not to use a condom each time that I might have sexual intercourse with a new partner during the next 3 months'. Each of these questions was assessed on a five-point scale varying from strongly disagree to strongly agree. Internal consistency of this construct was 0.85 and test-re-test reliability coefficient of agreement was 0.72.

*Perceived social support available* was assessed by asking the subjects to indicate if they could talk to... (best girl friends, boy friends, parents, other members of the family, educator and other people in their own social environment) if they had problems. Each of these six responses were summed and a global construct was formed. Cronbach's  $\alpha$  coefficient was 0.66, with a test-re-test reliability coefficient of agreement of 0.78.

The Rosenberg (1965) *self-esteem* personality

dimension was assessed. This personality construct presented an  $\alpha$  coefficient of 0.79 and a test-re-test reliability coefficient of agreement of 0.95.

Other variables considered in the present analysis were: current relationship status (regular partner or not), sexual experience (sexually active or not), age at first sexual intercourse (in years), number of sexual partners (0, 1, 2-5, 6-10, 11 or more) and habit of using condoms in the past (never, about 25% of the time, about 50% of the time, about 75% of the time, always). Also, health habits, gender and age were recorded. Each of these variables were tested for 2 week test-re-test reliability values; they ranged from 0.66 to 0.94.

*Variables measured at time 2 (at 3 month follow-up)*. The variables assessed at this time concerned sexual behaviour (intercourse or not) and relationship status (regular partner or not) during the previous 3 months, as well as habit of using condoms over this period of time (never, about 25% of the time, about 50% of the time, about 75% of the time, always).

## Results

The mean age of the sample was 16.05 years (boys: 16.3; girls: 15.5). The proportions of boys and girls who had experienced sexual intercourse were 92.6 and 93.2%, respectively. The mean age at first sexual intercourse was 13.25 years, both boys and girls sharing the same mean. For the sexually active adolescents, a large majority had had more than one partner in the past (boys: 93.1%; girls: 91.2%), but only 20.8% of the boys and 7.3% of the girls reported always using condoms.

A correlation matrix of the variables is depicted in Table I. Personal normative belief (PNB) and perceived behavioural control (PBC) were the two main variables exhibiting the highest correlation coefficients with intention (I), the respective values were 0.82 ( $P < 0.0001$ ) and 0.80 ( $P < 0.0001$ ). Regarding behaviour, excluding habit, the strongest associations were observed with perceived behavioural control ( $r = 0.57$ ,  $P < 0.0001$ ) and its indirect measure, that is the belief-based construct  $\Sigma c \times p$  ( $r = 0.53$ ,  $P < 0.0001$ ) (Table I).

**Table I.** Correlation matrix of behaviour, intention and related variables

Variables ( <i>n</i> = 152)	B ( <i>n</i> = 58)	I	Aact	SN	PBC	Σb×e	ΣNB× MC	Σc×p	PNB	SS	Self- esteem	Age	Sex	H
Behaviour (B)	—													
Intention (I)	0.48	—												
Attitude (Aact)	0.32	0.65	—											
Subjective norm (SN)	0.33	0.45	0.47	—										
Perceived behavioural control (PBC)	0.57	0.80	0.67	0.52	—									
Σb×e	0.31	0.43	0.48	0.28	0.40	—								
ΣNB×MC	0.15	0.24	0.17	0.39	0.24	0.06	—							
Σc×p	0.53	0.80	0.64	0.45	0.74	0.41	0.26	—						
Perceived normative belief (PNB)	0.41	0.82	0.64	0.37	0.72	0.41	0.19	0.69	—					
Social support (SS)	0.18	0.35	0.33	0.33	0.44	0.19	0.14	0.29	0.29	—				
Self-esteem	0.28	0.05	0.16	0.12	0.14	0.15	-0.08	0.05	0.02	0.13	—			
Age	0.09	-0.21	-0.12	-0.01	-0.14	-0.03	-0.08	-0.19	-0.15	-0.01	0.20	—		
Sex	0.28	-0.07	-0.09	-0.12	-0.04	-0.11	0.06	-0.00	-0.04	-0.03	0.20	0.28	—	
Habit <sup>a</sup> (H)	0.72 <sup>b</sup>	0.64	0.50	0.35	0.59	0.35	0.20	0.67	0.58	0.25	0.21	-0.04	0.17	—

<sup>a</sup>*n* = 142 sexually experienced adolescents.

<sup>b</sup>*n* = 58 sexually active adolescents.

Σb×e = belief-based attitude.

ΣNB×MC = belief-based subjective norm.

Σc×p = belief-based perceived behavioural control.

Based on the variables assessed at baseline, a large proportion of variance in intention was explained ( $R^2 = 0.76, P < 0.001$ ) by personal normative belief ( $\beta = 0.44, P < 0.001$ ), perceived behavioural control ( $\beta = 0.36, P < 0.001$ ) and frequency of condom use in the past ( $\beta = 0.15, P < 0.01$ ). All other variables did not contribute to explain additional portions of variance. Nonetheless, models for boys and girls were verified; the models were almost identical. Among the boys sub-sample (*n* = 101), the  $R^2$  was 0.74; personal normative belief ( $\beta = 0.42, P < 0.001$ ), perceived behavioural control ( $\beta = 0.34, P < 0.001$ ) and frequency of condom use in the past ( $\beta = 0.21, P < 0.01$ ) explained this portion of variation. The  $R^2$  for the girls sub-sample (*n* = 41) was 0.81, personal normative belief ( $\beta = 0.40, P < 0.005$ ) and perceived behavioral control ( $\beta = 0.41, P < 0.005$ ) sharing the explained variation; frequency of condom use in the past did not reach significance.

Among the subjects who completed the study satisfactorily, 58 reported having had sexual inter-

course with a new partner during the 3 month follow-up period. For these subjects, prediction of behaviour yielded an  $R^2$  of 0.49. The variables explaining this portion of variance were two interaction terms, corresponding to the formulation of Triandis' theory: intention by perceived behavioural control ( $P < 0.01$ ); and habit of using condoms during the 3 month follow-up period by perceived behavioural control ( $P < 0.0001$ ). Gender differences were not explored—the number of subjects was too low (boys: *n* = 38; girls: *n* = 19).

MANOVA analyses were performed to identify the items differentiating high and low intenders regarding personal normative beliefs (Table II), perceived behavioural control (Table III) and each of the two belief-based components of the perceived behavioural control construct (control beliefs: Table IV; perceived power: Table V). The results presented in Table II suggest that not only low intenders differed from high intenders, but they hold negative values on each of the personal

**Table II.** Means for each item of the perceived normative beliefs construct for high and low intenders

Perceived normative belief regarding using condoms...	Low intention ( <i>n</i> = 69)		High intention ( <i>n</i> = 83)	
	Mean	SD	Mean	SD
1. It is within my principles to use condoms...	-0.62	1.13	1.51***	0.67
2. I would feel guilty about not using condoms...	-0.39	1.30	1.20***	1.01
3. I think it is morally unacceptable not to use condoms...	-0.46	1.24	1.06***	1.09

Possible scores range from -2 to +2.  $F_{3,148} = 72.90$ ,  $P < 0.0001$ ; Wilks  $\lambda$  of 0.40. \*\*\* $P < 0.0001$ .

**Table III.** Mean for each item of the perceived behavioural control construct for high and low intenders

During each sexual intercourse I may have with a new partner during the next 3 months...	Low intention ( <i>n</i> = 69)		High intention ( <i>n</i> = 82)	
	Mean	± SD	Mean	± SD
1. ... it would be easy to use condoms	0.29	1.25	1.23***	0.88
2. ... if I wanted, I would use condoms	0.23	1.29	1.54***	0.23
3. ... I feel I am capable of convincing my new partner to use condoms	0.20	1.32	1.55***	0.69

Possible scores range from -2 to +2.  $F_{3,147} = 41.19$ ,  $P < 0.0001$ ; Wilks  $\lambda$  of 0.54. \*\*\* $P < 0.0001$

**Table IV.** Means of each control belief for high and low intenders

During the next 3 months...	Low intention ( <i>n</i> = 67)		High intention ( <i>n</i> = 81)	
	Mean	± SD	Mean	± SD
1. I will not have condoms at hand	2.88	1.31	1.78***	1.14
2. There will be occasions when I will drink a lot of alcohol	3.49	1.62	3.32	1.46
3. There will be occasions when I will take a fair amount of drugs	2.60	1.57	2.28	1.56
4. I think condoms will not be 100% safe	2.73	1.23	2.05***	1.06
5. I will become very excited during sexual intercourse to the point of losing control	2.77	1.25	2.14**	1.00
6. Girl: I will be taking the pill; Boy: The girl will be taking the pill	3.22	1.37	3.25	1.40
7a. Girl <sup>a</sup> : I will be afraid of this new partner's reaction	1.79	1.23	1.96	1.24
7b. Boy <sup>b</sup> : I will lose my hard on	1.90	1.01	1.90	1.04
8. I will be shy to ask using a condom	2.48	1.36	1.75**	1.10
9. I will not have enough money to buy condoms	2.08	1.31	1.48*	0.99
10. My new partner will refuse to use condoms	2.79	1.16	1.91***	1.03

Possible scores range from 1 (unlikely) to 5 (likely).  $F_{10,137} = 8.60$ ,  $P < 0.0001$ ; Wilks  $\lambda$  of 0.61. (excluding item 7).

\* $P < 0.01$ ; \*\* $P < 0.001$ ; \*\*\* $P < 0.0001$ .

<sup>a</sup>For girls (low intenders,  $n = 19$ ; high intenders,  $n = 25$ ).

<sup>b</sup>For boys (low intenders,  $n = 49$ ; high intenders,  $n = 58$ ).



**Table V.** Means for each perceived power of control factors for high and low intenders

If I have sexual intercourse ... (see 1–10 below), I will use condoms	Low intention ( <i>n</i> = 69)		High intention ( <i>n</i> = 82)	
	Mean	± SD	Mean	± SD
1. and have condoms close at hand	0.09	1.27	1.60***	0.78
2. after having consumed a lot of alcohol	-0.48	1.32	1.12***	1.16
3. after having taken drugs	-0.57	1.31	0.84***	1.29
4. and I was certain that condoms were 100% safe	-0.03	1.28	1.48***	0.95
5. and I become very excited to the point of losing control	0.44	1.24	1.35***	0.97
6. Girl: and I take the pill; Boys: and the girl takes the pill	-0.73	1.34	1.01***	1.23
7a. Girl <sup>a</sup> : and I am afraid of his reactions (threats, violence)	-0.26 <sup>c</sup>	1.10	1.04**	1.43
7b. Boy <sup>b</sup> : and I am afraid to lose my hard on	-0.12 <sup>c</sup>	1.30	1.33***	0.96
8. and my new partner makes me shy	-0.12	1.33	1.34***	1.00
9. and I have enough money to buy myself condoms	-0.20	1.28	1.55***	0.82
10. and my partner refuses to use a condom <sup>d</sup>	-0.99	1.14	0.31***	1.55

Possible scores range from -2 (unlikely) to +2 (likely).  $F_{10,140} = 14.89$ ,  $P < 0.0001$ ; Wilks  $\lambda$  of 0.49.(excluding item 7). \*\* $P < 0.001$ ; \*\*\* $P < 0.0001$ .

<sup>a</sup>For girls (low intenders,  $n = 19$ ; high intenders,  $n = 25$ ).

<sup>b</sup>For boys (low intenders,  $n = 49$ ; high intenders,  $n = 58$ ).

<sup>c</sup> $t$ -test.

<sup>d</sup>I will refuse to have sexual intercourse.

normative beliefs. With respect to perceived behavioural control, high intenders rated each of the items very positively, whereas low intenders were neutral on the scales (Table III). Compared to high intenders, low intenders thought that it was more likely that they would face six potential barriers to condom use in the next 3 month (Table IV); they also evaluated the impact of the presence of each of the 10 potential barriers as very detrimental to condom use (Table V).

## Discussion

The results of the present study suggest that, for adolescents experiencing social adaptation difficulties and living in juvenile rehabilitation centres, the decision to use or not to use a condom during sexual intercourse with a new partner is strongly related to their personal normative belief and perceived control towards adoption of this behaviour. This observation applies for both boys and girls. The lack of gender differences is not surprising because boys and girls sharing a common environment are exposed to the same information as circulated by the media, the same social pres-

ures and any deliberate promotion program (whether mass media, interpersonal or organizational). Thus, as postulated by Ajzen and Fishbein's, the influence of gender is mediated through the constructs of the model.

Low intenders have reported negative instead of neutral values on the personal normative belief (personal feelings of moral obligation) scale. Although no comparison can be made with conventional adolescents (personal normative belief not being reported in the literature), the present observation suggests that they hold non-conventional socio-moral norms regarding their personal responsibility to use condoms. According to Jurkovic (1980), the concept of moral values has played a critical role in the theories of adolescent conduct and juvenile delinquency. It has frequently been reported that not only do juvenile delinquents display more pre-conventional reasoning than the non-delinquents, but that they also hold biopsychosocial characteristics that may limit their ability to role-take and to enter into affectional relationships with others (e.g. sexual relationship), thus excluding them from interpersonal experiences that might lead to their movement from a lower to a higher moral level. It is, thus,

possible that low intenders to use condoms have moral judgments that are less developmentally advanced. Consequently, according to Kohlberg's contention (1971), they would tend to behave in a less ethical fashion than those who have attained more advanced cognitive structures.

Perceived behavioural control, a variable similar to the self-efficacy concept (Ajzen, 1988), reflects personal resources, skill and opportunities to perform a given behaviour. It was reported by DiClemente (1992) that one of the main factors affecting incarcerated adolescents' consistent use of condoms was communication skill with sex partners about AIDS. In this respect, the present findings are congruent with this observation. Low intenders anticipated several barriers (psychological and physical) to condom use and the presence of these barriers seriously hampered their use of condoms.

The role of past behaviour to predict future behaviour is congruent with Triandis' (1977) theoretical framework. Since that time, a number of studies in the health domain have reported results supporting this contribution of past behaviour (Landis *et al.*, 1978; Godin *et al.*, 1987, 1992; Mittal, 1988; Valois *et al.*, 1988). Unfortunately, past behaviour is a non-alterable variable and cannot be changed. Also, it is difficult to give meaning to the contribution of past behaviour in the prediction of behaviour. According to Ajzen (1991, p. 202), 'it would suggest the presence of other factors that have not been accounted for' by the predictor variables contained in the theoretical framework adopted. This might be the case and it is likely that other variables, not selected at the onset of this study, exert an important influence on condom use in this adolescent population.

Attitude did not contribute to explaining a significant portion of the variance in intention. This suggests that interventions aimed at increasing knowledge about the advantages of using condoms, including the control of risk, would not influence the decision-making regarding use of condoms. This is in agreement with DiClemente and co-workers (1991) who have also reached a similar

conclusion in their study conducted in a juvenile detention facility.

It is interesting to note that perceived subjective social norm did not influence the formation of intention. Again the interpretation of this finding leads us to think that adolescents living in juvenile rehabilitation centres are not influenced by the opinion of the people in their social environment regarding their use of condoms. In agreement with this observation is the fact that perceived social support available from friends, parents or educators was not associated with either intention or behaviour. This finding does not, however, accord with the observation of DiClemente (1991). Among a sample of 112 adolescents incarcerated in a juvenile detention facility, he found that adolescents' perceptions of peer norms as supporting condom use was one of the significant predictors of consistent condom use. Possible explanations for these differences could be found in the fact that DiClemente's study was not based upon an integrated social cognitive theory and that different operational definitions of the perceived social norm were adopted. More research will be needed to clarify the importance of peer norms on condom use.

Finally, *interindividual* variations in condom use appear to be unrelated to the self-esteem level. One might suggest that this psychological trait, as defined by Rosenberg (1965), is too global to contribute to predict a specific behaviour. In this regard, Ajzen (1988) pointed out that 'correlations between global personality characteristics and narrowly defined behaviors relevant to the trait in question are often non-significant...' (p. 39).

From a practical point of view, the present findings give rise to the following recommendations. First, the prevention of HIV transmission among adolescents living in juvenile rehabilitation centres should pay attention to the development of moral judgments. The development of moral judgment appears to be a necessary condition for enhancing intention and behaviour towards using condoms with a new partner. In this regard, with the assistance of a competent educator, small group discussions of moral dilemma could initiate thoughts on personal values and norms toward

sexuality. This could be an appropriate means to support the development of a personal moral norm (Rosenkoetter *et al.*, 1980).

Second, it is important to stimulate the development of perceived behavioural control. There is a need to develop personal skills (self-efficacy) to overcome psychological and physical barriers. It has been reported that role-playing is a very good method to change beliefs (Eagly and Chaiken, 1993), especially improvisational role-playing because it can have particularly enduring persuasive effects (Mann and Janis, 1968). It also has the advantage of being an active form of intervention in contrast to a mere passive exposure to information in a lecture format. This is in agreement with Kirby and DiClemente (1994) who have observed that effective school-based programmes to reduce sexual risk-taking behaviors make use of active learning methods of instruction, as opposed to didactic instruction. In particular, they stressed the need to use a number of experiential activities such as small group discussion, games or simulations, brainstorming and role-playing.

In summary, the results of the present study suggest that condom use intentions and behaviour of adolescents experiencing social adaptation difficulties and living in juvenile rehabilitation centres differ slightly from the factors observed in the general adolescent population. In particular, the personal moral norm (personal principles guiding one's behaviour) should be given further consideration.

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