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Factors associated with condom use in vaginal intercourse among Spanish adults with intellectual disability: Proposal for an explanatory model

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ABSTRACT

Background: The prevention of HIV or other STIs in people with intellectual disabilities (ID) is a rarely studied subject even though this population group is at the same risk of infection as the general population.

Aims: The present study aims to conduct a descriptive analysis of sexual behaviours and condom use frequency in Spanish men and women with intellectual disabilities and identify the combination of variables that best explain condom use in vaginal intercourse.

Methods and procedures: The sample consisted of 253 people (56.1 % male and 43.9 % female) aged between 20 and 64 years ($M = 38.52$; $SD = 10.48$). Participants completed the Sexuality Questionnaire for People with Intellectual Disabilities and the Sexual Abuse Risk Screening Scale.

Outcomes and results: The percentage of consistent condom use is 27.7 % for vaginal intercourse. Lack of knowledge about body boundaries constitutes a risk factor contributing to risky sexual behaviour. Knowledge of HIV-transmitting fluids and perceived self-efficacy are protective factors. The proposed model explains between 35.5 % and 46.6 % of the variance.

Conclusions and implications: The results highlight the importance of considering the judgements people make about their ability to perform preventive behaviour and the provision of information on sexuality adapted to cognitive abilities to minimise the engagement in risky behaviours.

1. Introduction

People with intellectual disability (ID) have historically had their right to sexual expression limited, and they often do not have access to sexual health education that meets their needs. The United Nations Convention on the Rights of Persons with Disabilities (United Nations, 2006) established that disabled people have the right to enjoy the highest attainable standard of health, including sexual and reproductive health, without discrimination based on disability. However, the prevailing medical model has resulted in their sexuality being surrounded by numerous myths and stereotypes that, despite lacking empirical evidence, have fostered negative attitudes towards this population group (Gil-Llario, Fernández-García et al., 2021; Lam et al., 2021), restricting their right to achieve a

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free expression of their sexuality (Alexander & Gomez, 2017). In recent years, numerous studies have shown that these people have the same needs and interests as those without disabilities. Along these lines, several studies have shown that a high percentage of people with ID are sexually active (Brkić-Jovanović et al., 2021; Medina-Rico et al., 2017). A study by Gil-Llario et al. (2018) analysing various aspects of sexuality in a large sample of adult Spanish men and women with ID concludes that 93.2 % have had a steady partner with an average of 3.42 partners in boys and 3.06 partners in girls. Regarding sexual behaviour, 84.2 % have had sexual relations with another person. The most frequently reported sexual practices were kissing and fondling (99.2 %), vaginal intercourse (84.4 %) and oral sex (80.3 %).

Despite the growing interest in the study of sexuality in this population group, some specific issues, such as HIV/AIDS prevention, have been relatively neglected (Brown & Jemcott, 2002). While Eastgate (2008) stresses that this population has the same or even higher risk of becoming infected with HIV or other STIs than the rest of the general population, there are hardly any specific data on prevalence and incidence, and no rigorous and systematised epidemiological studies have been found (Wells et al., 2014). The limited data that exist are highly inconsistent due to the data sources used and the difficulty in accessing representative samples (Servais, 2006). As a result, it is not possible to establish an approximate prevalence figure for this population group. Recently, Jung et al. (2019) conducted a systematic review establishing a prevalence of up to 0.16 %. On the other hand, a comparative study by Lunsy et al. (2017) concludes that HIV rates in people with and without intellectual disabilities are very similar.

Condoms are among the simplest and most effective prevention methods but numerous studies show relatively low rates of use (Schaafsma et al., 2017), and that other prevention methods (such as Pre-exposure prophylaxis and Post-Exposure Prophylaxis) may not be as easily accessible to people with ID. The lack of an HIV epidemiological surveillance system specifically for this population fosters a false sense of invulnerability, leading to greater interest in preventing unwanted pregnancies than in STI prevention (Plan Nacional sobre Sida & Centro Nacional de Epidemiología, 2020; Retznik et al., 2021). According to a recent Spanish study carried out with adults, while 96 % use some form of contraception, condom use is reported by only 54 % (Gil-Llario et al., 2018). Similar U.S. research reveals that only 26 % of men with ID reported using a condom during their last penetrative sexual intercourse (Wells et al., 2014).

Several theories have been proposed in health psychology that attempt to explain why people adopt risky behaviours. For instance, the Information, Motivation and Behavioural Skills Model (IMB), proposed by Fisher and Fisher (1992), is one of the most recent and recognised models. According to this model, three factors influence condom use: information, referring to the routes of HIV transmission and existing prevention methods; motivation, understood as attitudes towards condom use; and behavioural skills, which are the actions taken to acquire, negotiate and use condoms.

Information is a key determinant of condom use. Although the vast majority of people with ID claim to have information about contraceptive methods, it is unclear what specific information they possess and whether this information is accurate (Medina-Rico et al., 2017). Accordingly, a study conducted with 133 Polish young adults with mild ID found that only 10 % understand the concept of contraception (Kijak, 2013). Furthermore, there are still significant percentages of people with ID who believe that condoms are unnecessary for oral sex or if the person with whom they have sex is “clean” and seems “healthy”, unprotected sex can occur (Gil-Llario, Castro-Calvo et al., 2021). However, information is related to transmission routes and preventive methods and the understanding of privacy rules and body boundaries (Liou, 2014). A recent Spanish study analysing different risk factors for sexual abuse in adults with ID concludes that, for example, 35 % believe that it is acceptable if someone they know touches their bottom and 48 % think that if they like someone, they can allow them to touch their private parts (Gil-Llario et al., 2020). As such, lack of knowledge about what sexual practices are appropriate and with whom they can be carried out may partly explain why rates of sexual abuse in people with ID are significantly higher than those in the general population (Byrne, 2018), with the consequent risk that this experience may have for HIV infection or other STIs. However, sexual abuse is not an easy matter because there are often large power dynamics at play. In many cases, most of the perpetrators are close people or caregivers (Mitra et al., 2016).

Motivation is another central determinant of the model. Thus, attitudes towards adopting preventive behaviours are a crucial influence on condom use. Perceptions of HIV severity in this population group are very high, with the majority recognising that HIV is a severe and potentially life-threatening problem (Dawood et al., 2006). However, the available data also indicate the existence of biased risk perception from the perceived invulnerability perspective, with a high percentage of people with ID who believe that STIs only happen to other people who are not clean, but never to themselves (Gil-Llario, Castro-Calvo et al., 2021). Behavioural skills constitute the final determinant of preventive behaviour. This component focuses on the level of self-efficacy and assertiveness regarding condom acquisition and use. Studies on this variable in people with ID are scarce; however, there is evidence that this population has low levels of self-efficacy with sexual negotiation and decision-making, especially concerning condom use (Brkić-Jovanović et al., 2021; Dawood et al., 2006).

There are very few studies in the scientific literature that have attempted to explain inconsistent condom use in people with intellectual disabilities by analysing the variables involved (Dawood et al., 2006). In order to design and implement specific preventive strategies, it is necessary to have solid scientific findings (Gil-Llario et al., 2018). Therefore, the objectives of this study are: to conduct a descriptive analysis of the frequency of condom use; to examine the influence of the variables collected in the Information, Motivation and Behavioural Skills Model on condom use in vaginal intercourse; and to identify the combination of variables that best contribute to condom use. For this purpose, the following hypotheses are established:

- (1) More than 50 % of men and women with intellectual disabilities do not use condoms for vaginal sex.
- (2) People who do not use condoms will have lower scores on knowledge, perceived fear of HIV, condom reliability and self-efficacy.
- (3) Combining the variables described above will allow the prediction of a high percentage of men and women using condoms.

2. Methods

2.1. Participants

The sample consists of 142 men and 111 women with mild intellectual disabilities who attend an occupational centre. The age range is between 20 and 64 years ($M = 38.52$; $SD = 10.48$). Most of them identified themselves as heterosexual (85.3%; $n = 216$), and some of them identified themselves as bisexual (12.3%; $n = 31$) and homosexual (2.4%; $n = 6$). Regarding the relationship status, 32 % reported being single, and 68 % reported being in a stable relationship at the time of the evaluation. All participants live in the Valencian Community, Spain. Of these, 75.2 % live in the province of Valencia ($n = 190$) and 24.8 % live in the province of Castellón ($n = 63$) (see Table 1).

2.2. Instruments

2.2.1. CUSEXDI. Questionnaire about sexuality for people with intellectual disability (Gil-Llario et al., 2018)

This unidimensional scale consists of 20 items that evaluate sexual behaviour, preventive behaviour, knowledge and attitudes. Concerning behaviours, five dichotomous items explore sexual practices (e.g. «have you ever practiced vaginal intercourse?»). Three items with dichotomous responses deal with preventive behaviour and evaluate the frequency of condom use (e.g. «how often do you use condoms for vaginal sex with your casual partners?»). Within the area of knowledge, ten dichotomous questions explore HIV/AIDS transmission routes (e.g. «can blood transmit HIV?»). Finally, the questionnaire explores attitudes towards condoms and perceived fear of HIV utilising two continuous 0–10 questions (e.g. «what fear do you perceive to get HIV?»). The Cronbach's alpha of the instrument is .73.

2.2.2. EBAP. Brief Condom Use Self-Efficacy Scale (Gil-Llario et al., 2019)

This is a 5-item questionnaire (e.g. «I feel comfortable when buying condoms» or «I feel uncomfortable when I put the condom») that assesses three different skills related to the use of condoms, such as, fear of rejection, impulse control, and condom acquisition and negotiation. All items were responded to on a three-point Likert-type scale ranging from one (disagree) to five (agree). The total score ranges from 0 to 25 points. The internal consistency of the original version is .71.

2.2.3. DSARss. Detection of Sexual Abuse Risk Screening Scale (Gil-Llario et al., 2020)

This instrument consists of 19 items (e.g. «It is impossible to be sexually abused in my home» or «It is okay if someone I know touches my butt») that evaluate knowledge about sexual abuse and offer information about four areas: acceptance of the abuse due to affection (AA), denial of the risk associated with places (RP), risk factors and self-protection skills (SS), and lack of awareness of intimacy rules (IR). The items are answered by using true-false answers. The score ranges from 0 to 4 on the AA and IR scales, from 0 to 3 on the RP scale, and from 0 to 8 on the SS scale. Internal consistency of the original version, tested with omega coefficient, showed good reliability for each scale, ranging from .74 to .93.

2.3. Procedure

Participants were selected through the caregiving network for people with ID in the Valencian Community (Spain). From the 54 day

Table 1
Sample Characteristics.

	Total (n = 253)	Men (n = 142)	Women (n = 111)
Age			
Between 20 and 30 years old	31.2 % (n = 79)	29.6 % (n = 42)	33.3 % (n = 37)
Between 31 and 40 years old	27.7 % (n = 70)	31.7 % (n = 45)	22.5 % (n = 25)
Between 41 and 50 years old	25.3 % (n = 64)	24.6 % (n = 35)	26.1 % (n = 29)
Between 51 and 60 years old	12.2 % (n = 31)	11.3 % (n = 16)	13.6 % (n = 15)
Older than 61 years old	3.6 % (n = 9)	2.8 % (n = 4)	4.5 % (n = 5)
Sexual orientation			
Heterosexual	85.3 % (n = 216)	86.6 % (n = 123)	83.8 % (n = 93)
Bisexual	12.3 % (n = 31)	11.3 % (n = 16)	13.5 % (n = 15)
Homosexual	2.4 % (n = 6)	2.1 % (n = 3)	2.7 % (n = 3)
Province of residence			
Valencia	75.1 % (n = 190)	71.8 % (n = 102)	79.3 % (n = 88)
Castellón	24.9 % (n = 63)	28.2 % (n = 40)	20.7 % (n = 23)
Steady partner			
Yes	32 % (n = 81)	34.5 % (n = 49)	28.8 % (n = 32)
No	68 % (n = 172)	65.5 % (n = 93)	71.2 % (n = 79)

care centres managed by these institutions, 23 were selected. The selection of the centres followed a stratified random sampling procedure based on population density (Lohr, 2021). Priority was given to centres located in urban centres with an average population density, and the evaluation was subsequently complemented with other centres located in centres with higher and lower population densities. An average of 11 users were evaluated in each centre. In order to be eligible for the study, the following inclusion criteria had to be met: (1) they had to meet the DSM-5, Diagnostic and statistical manual of mental disorders (American Psychiatric Association, 2013) and (2) they had to have adequate communication and reading skills. Users whose legal guardians did not authorise their participation were excluded. Participants were assessed individually in a private room by a highly experienced researcher in the field of intellectual disability. The researcher read each statement together with the user and marked the response given. The guidelines for the Spanish data protection law, and the Declaration of Helsinki, were applied.

2.4. Data analysis

First, descriptive analyses were conducted to determine sexual behaviour and frequency of condom use. To establish the differential profile according to the frequency of condom use, Student's *t*-tests were used. The effect size was calculated using Cohen's *d* coefficient, considering values of 0.20 as "small", those close to 0.50 as "medium", and those above 0.80 as "large" (Cohen, 1988). The variable used to form the groups was the frequency of condom use in vaginal intercourse. This was selected because condom use is one of the most commonly reported sexual behaviours and presents a high biological risk for HIV infection. The frequency of condom use was assessed using an item from the Sexuality Questionnaire for People with Disabilities (Gil-Llario et al., 2018), with the response options: "I do not use condoms at all", "never", "sometimes", "quite often" or "always". Although consistent condom use is the only safe practice against HIV infection, due to the differential characteristics of people with ID (American Psychiatric Association, 2013), using condoms frequently or sometimes were considered significantly different options than those who chose never to use condoms. Accordingly, the groups were formed as follows: people who use condoms (CU), consisting of those who report condom use (55.4 %) and people who do not use condoms (NCU), consisting of those who never use condoms (44.6 %). Finally, a binary logistic regression was performed to integrate the results obtained in the previous analyses into a single model. A dichotomous variable was generated to do this, assigning 0 to preventive behaviour (i.e. reporting condom use) and 1 to risk behaviour (i.e. never using a condom).

3. Results

3.1. Sexual behaviour and condom use

The most common sexual practice is masturbation, reported by 66.4 % of the men and women with intellectual disabilities evaluated. This is followed by oral sex with a percentage of 38.3 % and vaginal intercourse with 36.4 %. Conversely, the least mentioned behaviours are mutual masturbation and anal intercourse with percentages of 29.2 % and 18.9 %, respectively. It is worth noting that 7.8 % reported engaging in sexual practices other than those described above, such as kissing, hugging, caressing or vaginal touching. Regarding the frequency of condom use, the data indicate that there is still a high percentage of men and women with ID who do not systematically use condoms, especially in sexual practices involving greater risk. The least frequent practice is oral sex with a percentage of systematic use of 9.7 %, followed by vaginal intercourse with 27.2 % and anal intercourse with 29.2 %. Table 2 shows the different percentages according to gender.

3.2. Differential analysis of men and women with consistent or inconsistent condom use

Regarding the level of information (see Table 3), condom users (CU) have a higher level of knowledge about bodily fluids that can transmit HIV than non-users (NCU), and these differences are statistically significant ($t_{75} = -2.095$; $p = .040$). In contrast, there were no significant differences in the level of knowledge about objects that can transmit HIV ($t_{75} = -.948$; $p = .346$). In addition, individuals who NCU are less able to detect risks associated with sexual abuse than individuals who CU, but these differences are only significant in the factor of lack of awareness of intimacy rules ($t_{80} = 2.730$; $p = .008$) but not in the factors of acceptance of the abuse due to affection

Table 2
Sexual behaviour and condom use.

	Total (n = 253)	Men (n = 142)	Women (n = 111)
Sexual behavior			
Masturbation (Yes)	66.4 % (n = 168)	77.5 % (n = 110)	52.3 % (n = 58)
Mutual masturbation (yes)	29.2 % (n = 74)	31 % (n = 44)	27.1 % (n = 30)
Oral sex (Yes)	38.3 % (n = 97)	39.4 % (n = 56)	36.9 % (n = 41)
Vaginal sex (Yes)	36.4 % (n = 92)	34.5 % (n = 49)	38.7 % (n = 43)
Anal sex (Yes)	18.9 % (n = 48)	18.3 % (n = 26)	19.8 % (n = 22)
Condom use			
Oral sex (Yes)	9.7 % (n = 10)	12.5 % (n = 7)	7.3 % (n = 3)
Vaginal sex (Yes)	27.2 % (n = 25)	30.6 % (n = 15)	23.3 % (n = 10)
Anal sex (Yes)	29.2 % (n = 14)	30.8 % (n = 8)	27.3 % (n = 6)

Table 3

Scores in the different variables according to condom use frequency.

	No condom use		Condom use		t	d
	M	DT	M	DT		
Information about objects (CUSEXDI)	1.81	0.82	2.01	0.88	-.948	0.24
Information about body fluids (CUSEXDI)	3.02	0.88	3.51	1.11	-2.095*	0.49
Acceptance of the abuse due to affection (DSARss)	0.45	0.69	0.42	0.78	.226	0.04
Denial of the risk associated with places (DSARss)	1.48	1.21	1.15	1.17	1.301	0.28
Risk factors and self-protection skills (DSARss)	1.69	1.91	1.63	1.58	.143	0.03
Lack of awareness of intimacy rules (DSARss)	1.72	1.06	1.09	1.03	2.740**	0.60
Perceived fear of HIV (CUSEXDI)	6.68	4.09	6.93	3.77	-.292	0.06
Reliability attributed to the condom (CUSEXDI)	2.09	1.12	2.56	.88	-2.084*	0.47
Self-efficacy (EBAP)	12.02	4.23	16.19	3.58	-4.412***	1.07

Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

($t_{80} = .226$; $p = .822$); denial of the risk associated with places ($t_{80} = 1.301$; $p = .197$); and risk factors and self-protection skills ($t_{79} = .143$; $p = .887$).

Finally, in terms of attitudes and behavioural skills, individuals who CU report a greater perceived fear of HIV infection ($t_{78} = -.292$; $p = .771$), greater perceived condom effectiveness as an HIV prevention method ($t_{76} = -2.084$; $p = .041$), and higher levels of self-efficacy related to condom acquisition and use ($t_{70} = -4.412$; $p = .001$).

3.3. Explanatory variables for sexual risk behavior

Finally, a logistic regression analysis is performed with the previously used variables in the comparative analyses through the forward method (Wald). The omnibus test of model coefficients is statistically significant ($\chi^2 = 25.340$; $p = .001$), indicating that the independent variables analysed explain the dependent variable, i.e. that the proposed model helps to explain inconsistent condom use. The Cox and Snell (.331) and Naglekerke (.446) R-squared values indicate that the model explains between 33.1 % and 44.6 % of the variance of the dependent variable. As shown in Table 4, lack of knowledge of intimate norms (DSARss subscale) is a risk factor. On the other hand, knowledge of HIV-transmitting fluids (CUSEXDI subscale) and perceived self-efficacy (EBAP) are protective factors. It should be noted that, gender and age did not reach statistical significance in the regression analysis. Of all the variables analysed, it is worth noting that the absence of knowledge about actions or situations that constitute a potential threat to personal space increases the probability of not using a condom during vaginal intercourse by 113 %.

The Hosmer and Lemeshow test does not reach statistical significance ($\chi^2 = 4.713$; $p = .788$), indicating the goodness of fit of the proposed model. Overall, a good classification result is obtained, with a mean of 74.6 % correctly performed classifications. Results are better for specificity, correctly classifying 81.1 % of people who use condoms consistently and slightly lower for sensitivity, correctly classifying only 65.4 % of people who report inconsistent use.

4. Discussion

The aim of this study was to identify what percentage of men and women with intellectual disabilities use condoms and analyse the combination of variables that best explain this behaviour. It is essential to conduct this type of research for two reasons: on the one hand, sexuality in people with intellectual disabilities has been a very controversial topic surrounded by numerous myths and stereotypes (Borawska-Charko et al., 2017) and, on the other hand, there is little research focused on the prevention of HIV and other STIs in this population group (Groce et al., 2013; Jung et al., 2019; Lunsby et al., 2017).

The findings of our study show that the most frequently reported sexual practices by people with intellectual disabilities are masturbation and oral sex. These results are consistent with those obtained in similar research conducted with various samples of people with mild and moderate ID (Gil-Llario et al., 2018). Furthermore, the frequency of anal intercourse in this population is very similar to that of the population without intellectual disabilities (Meuwly et al., 2021). Consequently, it can be affirmed that this group has an interest in self-exploration of their sexuality and sexual experiences that are very equivalent to those of the general population (Medina-Rico et al., 2017; Schaafsma et al., 2017).

The frequency of condom use in vaginal intercourse observed in our study is consistent with figures reported by other international research with usage rates ranging from 22 % to 26 % (Aderemi et al., 2013; Wells et al., 2014). In Spain, Gil-Llario et al. (2018) find

Table 4

Multiple regression logistic analysis.

	β	ET	Wald	gl	Sig	Exp (β)	IC95 % para Exp (β)	
							Inf.	Sup.
Information about body fluids (CUSEXDI)	-.778	.370	4.434	1	.035	0.459	0.223	0.948
Self-efficacy (EBAP)	-.349	.099	12.415	1	.001	0.706	0.581	0.857
Lack of awareness of intimacy rules (DSARss)	.760	.309	6.040	1	.014	2.137	1.166	3.917

slightly higher overall usage rates of 87.5 % in males and 22 % in females. This inconsistency in the results may be explained by the time period to which condom use is circumscribed, such as last sexual intercourse, last three months, etc. (Retznik et al., 2021); the type of partner, stable or sporadic (Aderemi et al., 2013); or gender, as women have a greater variety of contraceptive methods than men who only have condoms (Nunes et al., 2017; Retznik et al., 2021). Condom use may be motivated by the greater interest in preventing unintended pregnancy than preventing HIV or other STIs (Schaafsma et al., 2017). The low HIV risk perception is a consequence of the lack of studies that have analysed this health issue in people with intellectual disabilities (Jung et al., 2019). As a result, many guardians and caregivers of people with ID choose long-acting contraceptive methods, such as the transdermal patch or the subdermal implant, assuming that their cognitive and adaptive deficits will not allow them to acquire and negotiate condom use (Höglund & Larsson, 2019).

Condom users are more aware of both the bodily fluids that can transmit HIV and sexually abusive behaviours and body boundaries. These results are consistent with findings from similar research, as information is a key determinant of condom use (Wells et al., 2014). Men and women who use condoms would be expected to have received information about HIV prevention methods adjusted to their adaptive and cognitive capacities (Kijak, 2013), differentiating between contraceptive-only methods and methods that also prevent STIs. Furthermore, since sexual victimisation is a key determinant of sexual risk behaviour (Aderemi & Pillay, 2013; Jung et al., 2019), having a good knowledge of body boundaries could potentially help people communicate with partners about safer sex practices, such as condom use (Gil-Llario et al., 2020; Swango-Wilson, 2009). Additionally, knowledge of boundaries could help people with ID to identify when sexual abuse has occurred (e.g., when someone takes off the condom without partner's knowledge).

The study results also indicate that people who adopt preventive behaviours have positive attitudes towards condom use (Wells et al., 2014). These individuals likely attribute high trustworthiness to condoms because they have experienced their effectiveness as a method of protecting themselves from HIV and thereby avoiding the health consequences of the virus (Dawood et al., 2006). Finally, as evidenced by numerous studies, self-efficacy is an essential variable for condom use (Bernert & Ogletree, 2013). Men and women who use condoms perceive themselves as able to propose and negotiate condom use and refuse sex when their partner prefers not to use condoms (Dawood et al., 2006). However, the development of this cognitive ability must consider the limitations in intellectual functioning inherent to intellectual disability (American Psychiatric Association, 2013).

Finally, logistic regression analysis established a high degree of congruence between the variables analysed and the variables included in the Information, Motivation and Behavioural Skills Model (Fisher & Fisher, 1992). Thus, information about different aspects of sexuality and behavioural skills related to the acquisition, negotiation and use of condoms are predictors of preventive behaviour. Knowledge regarding unwanted or abusive sexual behaviour is the main protective factor (Liou, 2014). People aware of body boundaries are more likely to know that they can refuse sex when a condom is not used, or a practice is unwanted or consensual (Eastgate et al., 2011). A study by Eastgate et al. (2011) found that, concerning the ability to decline any unprotected sexual behaviour, people with sufficient knowledge understand that it is appropriate to refuse such sexual activity. Conversely, low levels of knowledge about HIV transmission routes and lack of assertive communication tools are risk factors. People with ID have relatively low levels of knowledge (Jung et al., 2019). Generally, people with ID have significant difficulties accessing information, and if available, it may not be adapted to their capacities (Frawley & Wilson, 2016). The presence of low self-efficacy is also associated with the non-use of condoms. Despite having the relevant information, the perceived inability to carry out a specific behaviour may affect the decision-making process and, consequently, this may interfere with the ability to acquire and use a condom (Brkić-Jovanović et al., 2021; Dawood et al., 2006). Our model does not place gender or age as a predictors of condom use, unlike studies that do establish a relationship between these variables. This finding is consistent with the results obtained by Gil-Llario et al. (2018) that analyse knowledge and use of contraceptives in a sample of Spanish adults with intellectual disability.

This study also presents some limitations. Knowledge questions were limited to HIV transmission routes. Future studies should introduce questions about other preventive methods, like Pre-exposure prophylaxis (PrEP) and Post-Exposure Prophylaxis (PEP). It is possible that people who participated in the study had a greater knowledge or interest in sexual health. Thus, it is possible that condom use identified in our sample could be higher compared to people with intellectual disabilities who did not participate. In addition, the assessment of condom use frequency was in general, not at last intercourse. This type of assessment could hinder recall. Further, there may be key factors that contribute to condom use not included in the Information, Motivation and Behavioural Skills Model. In the future, it will be necessary to analyse other variables from other theoretical models, such as Health Belief Model (HBM) or Theory of Planned Behavior (TPB). In addition, the groups for analysis were formed based on both biological risk and the number of people who reported engaging in each behaviour. Thus, although anal intercourse presents a much higher risk of HIV infection than vaginal intercourse, this practice was reported by a very small number of people. In future studies, it would be advisable to increase the study sample and analyse whether the factors associated with condom use in vaginal and anal intercourse are consistent or if there are significant changes.

5. Implications and contribution

This study provides information in the field of HIV prevention in people with intellectual disabilities, a rarely addressed topic in the scientific literature. The most frequently reported sexual behaviours are masturbation and oral sex. An important implication of this finding is that people with ID are engaging in sexual behaviours have low risk for HIV. However, for those people who do engage in behaviours that have a higher chance of HIV transmission (e.g., vaginal sex or anal sex), condom use, especially consistent condom use, is low. The main contribution is the proposal of an explanatory model of condom use in vaginal intercourse in people with intellectual disabilities. It is determined that a high level of self-efficacy and information about HIV transmission routes are linked to higher levels of reported condom use, while poor knowledge of body boundaries are linked to lower levels of condom use. In terms of clinical and

practical implications, our results would be a useful resource to design health promotion strategies with empirical support. This is very important because affective-sexual education programs, carried out in Spanish context, are not usually supported by a theoretical model. This is due to the limited number of studies that have conducted rigorous and methodologically reliable analyses of variables contributing to condom use, and thus help people with intellectual disabilities to protect and improve their sexual health. Thus, preventive actions should consider the judgements people make about their ability to perform preventive behaviour and the availability of information about HIV adapted to cognitive abilities. Information on sexual abuse and respect for bodily integrity should also be provided.

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Data availability

Data will be made available on request.

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