

Predictors of Condom Use in Men of Badi Community of Sahere Village Development Committee, Surkhet District, Nepal: Health Belief Model Perspective

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Abstract

In a non-experimental analytical study 70 male respondents from Badi community, from western Nepal, where women prostitute themselves, were interviewed using structured questionnaire adapted from Health Belief Model (HBM) to collect data on knowledge of condom and its benefits on transmission of Sexually Transmitted Infection (STI) and Human Immune Deficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS). Logistic regression analysis model was used to analyze data. Prevalence of condom use among respondents was very low (29%). Only two third had knowledge on condom before first sexual contact. 10.5 percent used condom always/consistently. 43.1% respondents intended to use condom. Respondents with knowledge on condom were 5 times more likely to use condom. Based on HBM final predictor, condom use was related to its High susceptibility (OR=1.416, 95% CI=1.2-2.034), high benefits (OR=1.086, 95% CI=.730-1.615) low barrier (OR=0.891, 95% CI=.696-1.139), high cues to action (OR=1.785, 95% CI=1.049-3.035) and younger age (OR=6.213). The main reason behind low condom was perceived high barrier. Preventions strategies based on increasing perceived risk, perceived severity or adequate knowledge about HIV/AIDS should be promoted to increase condom use.

Keywords: Condom use; Badi community; HIV; STD; Nepal

Introduction

Human-Immune Deficiency Virus (HIV) is one of the world's leading infectious killers, claiming more than 20 million lives over the past three decades since it was discovered and 36 million more are suffering from the disease [1]. Prevalence of HIV/AIDS has been found more among the sex workers and their clients. HIV infected commercial sex workers has robust effect on the prevalence of the disease [2]. Condoms are an integral part of Sexually Transmitted Disease (STD) and Human-Immune Deficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) prevention. The fact that condoms can save lives is indisputable. It is also fact that many people in every country have no alternative to condom use of protecting themselves or their sexual partners. Condom effectiveness over STD and HIV prevention has been demonstrated by various epidemiologic studies. In addition, epidemiologic studies have also shown that condom use reduces the risk of many other STDs [3-9]. Promoting use of condoms and encouraging commercial sex workers for safe sex practices have been effective in preventing HIV transmission [10].

Badi are an untouchable Hindu caste, with a total population of approximately 7,000 who inhabit scattered settlements in the Salyan, Rolpa, Rukum, Dailekh, Jajarkot, Dang, Banke, Bardiya and Surkhet Districts of west Nepal. Badi men fish and make drums and pipes, which they sell to Nepalese in neighboring communities. Badi women prostitute themselves, beginning at puberty and continuing until they become too old to attract any more customers, or get married [11].

A study conducted among the Badi women showed prevalence of VDRL to be around 70% [12]. Their husbands are at high risk of having HIV infection. Although the same study showed no positive HIV cases, they are at high risk for HIV. Condom use can reduce the transmission of STI and HIV/AIDS among this population. But, unfortunately condom use is too low in men of Badi community [13]. Knowledge on mode of transmission of HIV also associated with condom use but the knowledge on HIV among Badi community is low [12].

Consistent use of condom is associated with people's perception of susceptibility, severity to a HIV and STI and perception of benefit greater than barrier to condom use. With this thought, it is therefore essential to get the baseline information of condom use and it's frequency among Badi community. Secondly, it would be beneficial to identify factors associated with condom use by using Health Belief Model (HBM) framework. The HBM postulates that an individual's actions are based on beliefs. It underlines main factors for decision making such as perceived susceptibility, perceived severity of the outcome or conditions, perceived efficacy or benefit of control measure and perceived barriers to prevention. It has been extensively used in behavioral sciences to predict behaviors and to design behavioral prevention programs [13].

Methods

A cross-sectional study was carried out among 70 badi men of age more than 15 years in Sahere Village Development Committee (VDC) of Surkhet District in Mid-western Nepal after obtaining informed consent. Sample size was calculated using single proportion test formula. The list of the samples was obtained from the VDC of Sahere village of the district. Simple random sampling technique was applied to select the samples. Structured questionnaire was used to collect the information. The questionnaire consisted of close and open ended questions. First part of questionnaire consisted of demographic

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information. Second part comprised information about sexual activities and condom use, third part included knowledge on mode of transmission of HIV and the last part consisted of HBM domain.

Five domains were included in HBM namely perceived susceptibility, perceived severity, perceived benefit, perceived barriers and cues to action. Perceived susceptibility included the perception of likelihood of experiencing a condition that would adversely affect one's health. Perceived severity refers to the beliefs a person hold concerning the effects a given disease or condition would have on one's state of affairs. Perceived benefit of taking action toward the prevention of disease or toward dealing with an illness represents how well people have accepted the susceptibility of a disease and recognized its seriousness. Perceived barriers to taking action relate to the characteristics of a treatment or preventive measure which may be inconvenient, expensive, unpleasant, painful or upsetting. Finally, a cue to action is an individual's perception of the levels of susceptibility and seriousness that provide the force to act. Perceived susceptibility, perceived severity, perceived benefit, perceived barrier, and cues to action consisted of 6, 6, 4, 10 and 4 items respectively. All responses were summarized in to index scores ranging from minimum to maximum, with a higher score indicating higher perception of the five constructs.

For descriptive analysis, mean, median and frequency was calculated. Demographic and other variables associated with condom use were identified using chi-square test. Logistic regression was used to determine the significant predictors of condom use. A 95% confidence interval was presented, Odds Ratio (OR) was calculated and P-value was presented with 5% level of significance. Epidata was used to enter the data and R 2.10 software was used to analyze the data.

Results

Demographic characteristics

Out of all respondents, mean standard deviation of age was 33.66 ± 14.14 ranging from 16 to 60 years. Nearly half of them (44%) were between 20-40 years of age. Majority of the respondents (92.2%) were Hindu followed by Christian. Nuclear family was predominant in more than half of the respondents (57%) others being from joint family. About half of the respondents (51.4%) were engaged in labor, a quarter of them had agriculture as their main occupation, about 18.6% went for foreign employment and very few of 4.3% had their own business. Turning to educational status, most of them (58.6%) were literate. Among them, two third of them had primary education. Only 7% of the respondents had at least secondary level of education.

Sexual characteristics and condom use

Most of the respondents had good knowledge about condom and its use as shown in Table 1. Regarding history of sexual activities of the respondents, 96.9% of them were engaged in sexual activities. Forty six percent respondents were involved in sexual activities with their wife and 50.8 percent were involved with both (wife and extra marital affairs) sexual partner.

Most (70.8%) of the respondents did not use condom during sexual contact. Among those respondents who used condom during sexual contact, 57.9% used it sometimes, 31.6% used frequently and very few of 10.5% used it always. More than half of the respondents used condom with other women (extra marital sexual partner). Only a quarter of them used condom with wife while 21.1% used condom with both partner. To know about the people's future intention to use condom, it was found that majority of the respondents (43.1%)

intended to use condom, 38.5 percent had not decided about condom use in future and 18.5 percent never intend to use condom in future.

Regarding knowledge on mode of transmission of HIV/AIDS, almost all had heard about HIV/AIDS. Majority of them explained that it was transmitted from sexual intercourse followed by unprotected sex, multiple sex partners, infected blood transfusion, and infected mother and intra venous drug users respectively.

Socio-demographic factors affecting condom use

Middle age group, having business occupation, being literate and getting secondary education and having knowledge on condom use increased the odds of condom use as shown in Table 2.

Final predictors of condom use

For ease of interpretation of the results, the independent scale scores of HBM constructs were divided by median splits. The independent variables were entered into the model. In step 1, demographic variables that were significant in bivariate analysis were entered into the model. In step 2, insignificant demographic variables ($p < 0.05$) were removed from the model. The third step fitted a model composed of only the significant variables identified in step 2.

Of the eight variables found significant in bivariate test, six variables were significant predictors of ever-use of condom in the regression analysis as shown in Table 3. Younger respondents were six times more likely use a condom than adolescent ($OR = 6.213$). Respondents who perceived a high level of susceptibility to HIV/AIDS were more likely

Sexual Activities and condom use	Number (%)
Ever heard about condom (n=70)	
Yes	65 (92.9)
No	5 (7.1)
Yes	42 (64.6)
No	23 (35.4)
Yes	28(66.7)
No	14 (33.3)
Sexual contact within 3 months (n=65)	
Yes	63 (96.9)
No	2 (3.1)
If yes then with whom (n=65)	
Wife	30 (46.2)
Other women	2 (3.1)
Both	33 (50.8)
Condom use during sexual contact (n=65)	
Yes	19 (29.2)
No	46 (70.8)
If yes how often (n=19)	
Always	2 (10.5)
Mostly	6 (31.6)
Sometimes	11 (57.9)
With whom used condom during sexual contact (n=19)	
Wife	5 (26.3)
Other women	10 (52.6)
Both	4 (21.1)
Intention to condom use (n=65)	
Intended	28 (43.1)
Don't know	25 (38.5)
Not intended	12 (18.5)

Table 1: Sexual activities and condom use practices.

Characteristics	Crude OR	condom use		P value
		95% CI		
		Upper	Lower	
Age group				
<20	1	(Ref.)	(Ref.)	
20-40	7.111	1.234	40.984	0.028
>40	3.429	0.649	18.113	0.147
Religion				
Hindu	1	(Ref.)	(Ref.)	
Christian	0.583	0.061	5.589	0.64
Occupation				
Agriculture	1	(Ref.)	(Ref.)	
Business	8.667	0.577	130.111	0.1
Labour	1.625	0.373	7.072	0.518
Foreign employment	2.708	0.504	14.541	0.245
Education status				
Illiterate	1	(Ref.)	(Ref.)	
Literate	4.48	1.147	17.503	0.031
Education level				
Primary	1	(Ref.)	(Ref.)	
Lower secondary	2.2	0.27	17.924	0.461
Secondary	8.8	0.869	89.125	0.046
Heard about condom before 1st intercourse				
No	1	(Ref.)	(Ref.)	
Yes	2.639	0.757	9.205	0.01
Knowledge on condom before 1st intercourse				
No	1	(Ref.)	(Ref.)	
Yes	5.2	0.978	27.653	0.053
Sexual contact with whom				
Wife	1	(Ref.)	(Ref.)	
Other women	0	0	.	0.999
Both	2.6	0.836	8.088	0.052

Table 2: Socio-demographic factors affecting condom use.

to use condom than those who perceived a low level of susceptibility (OR=1.416, 95% CI=1.2, 2.034). Respondents who perceived a high level of severity to HIV/AIDS were unlikely to use condom than those who perceived a low level of severity (OR=0.730, 95% CI=0.555, 1). Respondents who perceived a high level of benefits to condom use were likely to use condom (OR=1.086, 95% CI=0.730, 1.615). Likely, those who perceived high level of barrier were unlikely to use (OR=0.891, 95% CI=0.696, 1.139). Moreover, the respondents who had high perceived cues to action were likely to use condom (OR=1.785, 95% CI=1.049, 3.035).

Discussion

Socio demographic characteristics

In this study, younger respondents were found to be more likely to use a condom than adolescent and older. Studies conducted in adolescent in Ghana and America also found that adolescents were less likely to use condom than younger [14-16]. The possible exploration for this observation was that in Zimbabwe, South Africa and Nigeria reported that adolescent people had low use of condom that the main reasons were included difficulty to obtaining them, lack of sexual pleasure and embarrassing to buy condom [17-20]. In addition, those who had a higher literacy status were more likely to use condom as suggested by other study [21].

Perceived susceptibility

This study showed that respondents who perceived higher

susceptibility (1.06) was associated with higher condom use similar to research conducted in US college students and Zimbabwean [22,23].

Perceived severity

Participants scored very high on AIDS Health Belief subscale 'perceived severity' indicating greater concern with HIV and high condom use but in this research, findings showed that the respondents who perceived high severity were unlikely to use a condom. Other studies have found the same reverse condition [18,20]. This might be because of the peoples had high perceived on AIDS causes death, if HIV infected, family relation would be strained, AIDS is a worst disease.

Perceived benefits

Respondents who perceived a high level of benefits to condom use were one times more likely to have used a condom than those who perceived a low level of benefits (OR=1.086, 95% CI=0.730, 1.615) which was similar to study conducted in US among reproductive age group of men and women. A possible explanation for this observation is that in U.S, high perceived benefits were to prevent from unwanted pregnancy, and safer sex.

Perceived barrier

Consistent with other studies, respondents who perceived a high level of barrier were more unlikely ever to have used a condom than low barrier (OR=0.891, 95% CI=.696, 1.139). There was a negative association between perceived barrier and condom use. The respondents whose perceived barrier was low were positively associated with condom use in other studies conducted in U.S., Nepal, Kenya, East Africa and South Africa [24-29].

Cues to action

The respondents who had high perceived cues to action was likely

Characteristics	Crude OR (95% CI)	Adjusted OR (95% CI)	P- value
Age group			
<20	1.000 (Ref.)	1.000 (Ref.)	
20-40	7.111(.000, .99)	6.213	0.04
>40	3.429 (.000, .99)	1.748	0.99
Education status			
Illiterate	1.000 (Ref.)	1.000 (Ref.)	
Literate	5.200 (.103, 19.059)	14.621	0.651
Perceived susceptibility			
No	1.000 (Ref.)	1.000 (Ref.)	
Yes	5.200 (.103, 19.059)	1.402	0.75
Perceived severity			
Low	1.000 (Ref.)	1.000 (Ref.)	
High	0.712 (0.551, 1)	0.730 (.555, 1)	0.037
Perceived barrier			
Low	1.000 (Ref.)	1.000 (Ref.)	
High	1.472 (1.472, 1.89)	1.086 (.730, 1.615)	0.042
Perceived susceptibility			
Low	1.000 (Ref.)	1.000 (Ref.)	
High	1.068 (0.884, 1.29)	1.416 (1.2, 2.034)	0.049
Perceived severity			
Low	1.000 (Ref.)	1.000 (Ref.)	
High	0.712 (0.551, 1)	0.730 (.555, 1)	0.037
Perceived barrier			
Low	1.000 (Ref.)	1.000 (Ref.)	
High	0.786 (0.656, 0.942)	0.891 (.696, 1.139)	0.356
Cues to action			
Low	1.000 (Ref.)	1.000 (Ref.)	
High	2.003 (1.351, 2.969)	1.785 (1.049, 3.035)	0.033

Note: Ref. =Reference category

Table 3: Final predictors of condom use.

to use condom than those who had low perceived cues to action (OR=1.785, 95% CI=1.049, 3.035) which was similar to the study conducted in Ghana [30-38].

Conclusion and Recommendation

Majority of the respondents were engaged in high risk of sexual activities. Despite of having good knowledge on condom and its use, they used it less frequently in practice. Extra marital sexual intercourse in male of Badi community was quite high. The prevalence of condom use in male of Badi Community was low in comparison to National figures. Among those who used condom, the consistence of condom use was too low. The reasons behind low use of condom were age group, education status and knowledge on mode of transmission of HIV/AIDS, perceived susceptibility, perceived benefits, perceived barrier and cues to action.

HBM predicted condom use was associated with four domains i.e. perceived susceptibility, perceived severity, perceived benefits, perceived barrier and cues to action. In addition, demographic factors and literacy status were also significantly associated with condom use.

Findings from this study highlight important psychosocial and behavioral factors that affect condom use.

There have not been any studies in the past done in order to address the awareness of condom use and transmission of HIV among the people in high risk communities in the western Nepal. The scope of this study is high as this is the first study using Health Belief Model to identify the factors affecting use of condom in men of Badi community. This study helps the stake holders working in raising awareness on prevention of HIV/AIDS in the country. These findings must be incorporated in HIV preventive programs for youth in Badi community. Program should focus on reducing barriers of condom use to increase its use as the use of condom among this high risk group was low.

References

1. Piot P, Bartos M, Ghys PD, Walker N, Schwartländer B (2001) The global impact of HIV/AIDS. *Nature* 410: 968-973.
2. Talbot JR (2007) Size matters: the number of prostitutes and the global HIV/AIDS pandemic. *PLoS One* 2: e543.
3. Kudo Y (2013) Effectiveness of a condom use educational program developed on the basis of the Information-Motivation-Behavioral Skills model. *Jpn J Nurs Sci* 10: 24-40.
4. Crosby R, Bounse S (2012) Condom effectiveness: where are we now? *Sex Health* 9: 10-17.
5. Warner L, Macaluso M, Newman D, Austin H, Kleinbaum D, et al. (2006) Condom effectiveness for prevention of *C trachomatis* infection. *Sex Transm Infect* 82: 265.
6. Niccolai LM, Rowhani-Rahbar A, Jenkins H, Green S, Dunne DW (2005) Condom effectiveness for prevention of *Chlamydia trachomatis* infection. *Sex Transm Infect* 81: 323-325.
7. Warner L, Newman DR, Austin HD, Kamb ML, Douglas JM Jr, et al. (2004) Condom effectiveness for reducing transmission of gonorrhea and chlamydia: the importance of assessing partner infection status. *Am J Epidemiol* 159: 242-251.
8. Crosby R, Sanders S, Yarber WL, Graham CA (2003) Condom-use errors and problems: a neglected aspect of studies assessing condom effectiveness. *Am J Prev Med* 24: 367-370.
9. Fitch JT, Stine C, Hager WD, Mann J, Adam MB, et al. (2002) Condom effectiveness: factors that influence risk reduction. *Sex Transm Dis* 29: 811-817.
10. Nagelkerke NJ, Jha P, de Vlas SJ, Korenromp EL, Moses S, et al. (2002) Modelling HIV/AIDS epidemics in Botswana and India: impact of interventions to prevent transmission. *Bull World Health Organ* 80: 89-96.
11. Reinfeld MR (1993) Nepal: a cultural prostitution. *Child Worldw* 20: 45-46.
12. Hearst N, Chen S (2004) Condom promotion for AIDS prevention in the developing world: is it working? *Stud Fam Plann* 35: 39-47.
13. Hounton SH, Carabin H, Henderson NJ (2005) Towards an understanding of barriers to condom use in rural Benin using the Health Belief Model: a cross sectional survey. *BMC Public Health* 5: 8.
14. Kegeles SM, Adler NE, Irwin CE Jr (1989) Adolescents and condoms. Associations of beliefs with intentions to use. *Am J Dis Child* 143: 911-915.
15. Kegeles SM, Adler NE, Irwin CE Jr (1988) Sexually active adolescents and condoms: changes over one year in knowledge, attitudes and use. *Am J Public Health* 78: 460-461.
16. Pendergrast RA Jr, DuRant RH, Gaillard GL (1992) Attitudinal and behavioral correlates of condom use in urban adolescent males. *J Adolesc Health* 13: 133-139.
17. Wilson D, Dubley I, Msimanga S, Lavelle L (1991) Psychosocial predictors of reported HIV-preventive behaviour change among adults in Bulawayo, Zimbabwe. *Cent Afr J Med* 37: 196-202.
18. Ajayi AA, Marangu LT, Miller J, Paxman JM (1991) Adolescent sexuality and fertility in Kenya: a survey of knowledge, perceptions, and practices. *Stud Fam Plann* 22: 205-216.
19. Nichols D, Woods ET, Gates DS, Sherman J (1987) Sexual behavior, contraceptive practice, and reproductive health among Liberian adolescents. *Stud Fam Plann* 18: 169-176.
20. Nichols D, Ladipo OA, Paxman JM, Otolurin EO (1986) Sexual behavior, contraceptive practice, and reproductive health among Nigerian adolescents. *Stud Fam Plann* 17: 100-106.
21. Prata N, Morris L, Mazive E, Vahidnia F, Stehr M (2006) Relationship between HIV risk perception and condom use: Evidence from a population-based survey in Mozambique. *Int Fam Plan Perspect* 32: 192-200.
22. Carvajal SC, Parcel GS, Banspach SW, Basen-Engquist K, Coyle KK, et al. (1999) Psychosocial predictors of delay of first sexual intercourse by adolescents. *Health Psychol* 18: 443-452.
23. Basen-Engquist K (1992) Psychosocial predictors of "safer sex" behaviors in young adults. *AIDS Educ Prev* 4: 120-134.
24. Teitelman AM, Tennille J, Bohinski JM, Jemmott LS, Jemmott JB 3rd (2011) Unwanted unprotected sex: condom coercion by male partners and self-silencing of condom negotiation among adolescent girls. *ANS Adv Nurs Sci* 34: 243-259.
25. Jemmott JB 3rd, Jemmott LS, Braverman PK, Fong GT (2005) HIV/STD risk reduction interventions for African American and Latino adolescent girls at an adolescent medicine clinic: a randomized controlled trial. *Arch Pediatr Adolesc Med* 159: 440-449.
26. Jemmott LS, Jemmott JB 3rd (1992) Increasing condom-use intentions among sexually active black adolescent women. *Nurs Res* 41: 273-279.
27. Jemmott JB 3rd, Jemmott LW, Spears H, Hewitt N, Cruz-Collins M (1992) Self-efficacy, hedonistic expectancies, and condom-use intentions among inner-city black adolescent women: a social cognitive approach to AIDS risk behavior. *J Adolesc Health* 13: 512-519.
28. Peltzer K (2004) Health beliefs and prescription medication compliance among diagnosed hypertension clinic attenders in a rural South African Hospital. *Curationis* 27: 15-23.
29. Peltzer K (2000) Factors affecting condom use among South African university students. *East Afr Med J* 77: 46-52.
30. Weaver MA, Joanis C, Toroitich-Ruto C, Parker W, Gyamenah NA, et al. (2011) The effects of condom choice on self-reported condom use among men in Ghana, Kenya and South Africa: a randomized trial. *Contraception* 84: 291-298.
31. Baiden P, Rajulton F (2011) Factors influencing condom use among women in Ghana: an HIV/AIDS perspective. *SAHARA J* 8: 46-54.
32. Asante KO, Doku PN (2010) Cultural adaptation of the condom use self efficacy scale (CUSES) in Ghana. *BMC Public Health* 10: 227.
33. Adu-Oppong A, Grimes RM, Ross MW, Risser J, Kessie G (2007) Social and behavioral determinants of consistent condom use among female commercial sex workers in Ghana. *AIDS Educ Prev* 19: 160-172.

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34. Gray B, Morgan GT, Shirer R (2001) Condom use and partner characteristics among young adult males in urban Ghana, aged 15-24. *Soc Biol* 48: 234-255.
35. Bosompra K (2001) Determinants of condom use intentions of university students in Ghana: an application of the theory of reasoned action. *Soc Sci Med* 52: 1057-1069.
36. Adih WK, Alexander CS (1999) Determinants of condom use to prevent HIV infection among youth in Ghana. *J Adolesc Health* 24: 63-72.
37. Ankomah A (1998) Condom use in sexual exchange relationships among young single adults in Ghana. *AIDS Educ Prev* 10: 303-316.
38. Asamoah-Adu A, Weir S, Pappoe M, Kanlisi N, Neequaye A, et al. (1994) Evaluation of a targeted AIDS prevention intervention to increase condom use among prostitutes in Ghana. *AIDS* 8: 239-246.