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Original article

Impact of a behaviour change intervention model for promotion of condoms amongst young adult males in an occupational setting

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ARTICLE INFO

Article history:

Received 4 June 2011

Accepted 29 June 2012

Available online 24 August 2012

Keywords:

Condom

Promotion

HIV

Adults

ABSTRACT

Background: Studies have justified that social and cultural factors influence young people not to use condoms. Sexually active people associate condoms with lack of trust, while others believe carrying them could imply sexual inexperience. The aim of this study was to provide an intervention model based on this social perception and assess the impact of the intervention in improving condom use.

Methods: 2083 personnel in the intervention group were subjected to behaviour change intervention based on perception and use of condoms. Using a cluster design, we randomly assigned 40 departments to department-based intervention (20) or assessment (20) groups. Around 100 persons in the same age group of 18–45 years were again randomly assigned to each group. Chi Square test was used to assess the effectiveness of the intervention.

Results: Over 6% individuals in the control group (Table 2) had non-regular partners and out of them 23.5% had used a condom. Again, in the same group (Fig. 1), 45.36% individuals thought it is acceptable for single men to use condoms with their partners and 8.15% agreed that it is alright for married women to use condoms with their husbands. The perception significantly increased in the intervention group ($p < 0.001$).

Conclusion: This study thus highlights the importance of continued behavioural intervention in filling certain gaps in the social and structural perception to improve condom use for effective HIV prevention in the community.

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Introduction

Experience from Thailand demonstrated that structural approaches of intervention of increasing condom use in sex

work settings, such as 100% condom use policies (CUP), can lead to rapid increases in condom use (from 21% in early 90s to more than 95% in late nineties) and reduction in the incidence of HIV.¹ Unprotected sex remains the greatest risk factor

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<http://dx.doi.org/10.1016/j.mjafi.2012.06.005>

identified for HIV transmission and behavioural prevention remains central to the effort to reduce HIV transmission. Since nearly half of new HIV infections worldwide occur among young people aged 15–24 years, changing sexual behaviour in this group is crucial in tackling the pandemic.² Reductions in HIV transmission need widespread and sustained efforts, and a mix of communication channels to disseminate messages to motivate people to engage in a range of options to reduce risk of unprotected sex. An inclination for engaging in risk-related sex, non-use of condoms or ineffective condom practices, multiple sex partners, high rates of sexually transmitted diseases, and an apparent lack of HIV/AIDS knowledge thus place these adolescents at a particularly high risk of contracting and transmitting HIV.^{3,4} Qualitative research is starting to reveal how social and cultural forces shape young people's sexual behaviour and can help explain why information campaigns and condom distribution programmes alone are often not enough to change it.²

Both fewer children (who account for about 15% of the total) and fewer adults are becoming infected, and fewer people are dying of HIV than in previous years. Highly active antiretroviral therapy (HAART) is remarkably effective. Indeed, many people with HIV infection can now look forward to achieving relatively normal lives and life spans—developments that were once hard to imagine. Yet the millions of new infections and deaths each year are sobering reminders of the daunting challenges ahead. Unfortunately, poverty, stigma, myths and discriminations, inadequate health care systems, and other social problems remain powerful barriers to treatment and prevention programs.⁵ In the late 1980s and early 1990s, researchers began designing and rigorously testing HIV interventions to reduce behavioural risk of acquiring HIV infection. Hundreds of randomized controlled trials conducted till date have demonstrated that small group and community-level interventions can generate safer behaviour. On the basis of peer-reviewed publications through 2004, the U.S. Centers for Disease Control identified 42 prevention interventions that were demonstrated by well-designed studies to be efficacious.⁴ But 25 years into the epidemic, we still do not consistently apply these proven prevention strategies.

The consistent and correct use of condoms coupled with risk reduction strategies, continue to play an important role in the reduction and prevention of HIV/AIDS transmission.⁶ Therefore understanding and incorporating strategies to overcome barriers to condom use in such education and prevention efforts are critical. This is particularly necessary in countries such as India, where HIV/AIDS has become a serious public health crisis.⁷ Adolescents appear to make decisions about sexual activity and contraceptive use in an idiosyncratic manner. High-risk behaviour, peer pressure, metropolitan culture and use of alcohol are key factors that place young adolescents in a behavioural jeopardy.⁸ This study explored condom use behaviour, specifically the extent to which beliefs, risk perception and perceived social support act as predictors of use or non-use of condoms among sexually active young people aged 18–45 years.

This study was thus carried out with the aim of assessing the knowledge and awareness of HIV/AIDS by using a structured, skill based, intervention model on behavioural

perception with special emphasis on condom use in young adult males. The outcomes studied were the impact of the intervention on the knowledge, behaviour and perception of HIV transmission and myths, and correct knowledge of use of condoms.

Material and methods

The place of the study comprised of approximately 70 departments, each comprising of 300–1200 personnel in a total population of 15,000. A controlled intervention study using a two stage cluster design was conducted amongst young adult males of 18–30 years age in an organized sector. We randomly assigned 40 departments to either a department-based intervention (20 departments) or assessment only (20 departments) groups. Sample size was calculated as 784 assuming 50% of the population being aware of the risk factors, with 5% deviation, assuming confidence interval of 95% and design effect, calculated to be 2. From each department, approximately 100 persons in the age group of 18–45 years were then assigned in the second stage by systematic random sampling. Oversampling was due to convenience, as we had to take at least 100 individuals each time we carried out the health education intervention. Finally, we had 2083 individuals in the intervention group. The departments were the unit for intervention and intervention sessions were conducted on each of the 20 departments for a period of 2 years. Confidentiality was ensured by maintaining anonymity and assigning numbers to the format sheet and not name. Informed consent was taken. 20 assessment departments were similarly chosen randomly from rest of the departments. Around 100 persons in the same age group of 18–45 years were again randomly assigned to each group. A similar number of 2134 individuals were assigned in the assessment group. The baseline characteristics and knowledge of the intervention group were assumed to be similar to that of the assessment group as individuals from both the groups were homogenous in sociodemographic characteristics. Also there was no inter-cluster difference in knowledge amongst the departments. Both the groups received some kind of HIV health education talks from different sources in the past. Subjects were chosen in the two rank categories of officers and other ranks according to their socioeconomic status as per previous study.⁹ All individuals in each department participated and only personnel known to be suffering from HIV/AIDS or any Sexually Transmitted Diseases were excluded from the study as number of such cases was quite less and any data from such small sample would have given a skewed result.

Intervention

The intervention consisted of a specially designed behaviour change intervention model consisting of four integrated components: an introductory PowerPoint presentation; group discussion on the strategies of prevention and treatment; a 15 min video depicting the myth prevailing the illness and followed by a training cum demonstration module on familiarity with condoms and skills of using condoms properly and how to effectively initiate and maintain safe sexual practice.

	Officers		Other ranks		Total	
	A	I	A	I	A	I
Single (within column)	24 (77.41)	24 (69)	654 (31.85)	651 (31.71)	678 (31.77)	675 (32.40)
Married (within column)	07 (22.5)	11 (31)	1449 (68.14)	1397 (68.22)	1456 (68.23)	1408 (67.59)
Age (years)	28.37	28.17	26.07	26.39	27.22	27.28
Total (within row)	31 (01.45)	35 (01.68)	2103 (98.55)	2048 (98.32)	2134	2083

A – Assessment group.
I – Intervention group.

Table 2 – Baseline sexual practices in the assessment and intervention group.

	Assesment group		Intervention group	
	Yes	No response	Yes	No response
Are you sexually Active	2031 (95.17)		1969 (94.52)	
If yes, do you have non-regular sexual partners?	136 (6.37)	23 (1.07)	109 (5.23)	–
Did you use a condom the last two times you had sex with non-regular partners or person(s) other than your marital or live-in partner?	32 (23.50)	2098 (98.31)	21 (19.26)	7 (0.33)

adopted in our study and have made an effort to understand this social dynamics of the population before formulating the intervention model for effective use and perception of condoms for prevention of HIV/AIDS.

A review of literature to find the effect of different 'behaviour change intervention studies related to HIV/AIDS in young adults' was carried out. Fischer et al used the Information-Motivation-Behavioural Skills (IMB) model of AIDS risk behaviour change to reduce AIDS risk behaviour in college students¹³ and at a long-term follow-up, the intervention resulted in significant increases in preventive

behaviour. The CDC, Atlanta has also identified behaviour change interventions to be effective.⁴ In India, a study conducted amongst school children in an Army Cantonment, a Health Education Programme (HEP) intervention was found to be very effective in improving the knowledge, the difference being highly significant as compared to control group.¹⁴ In our study too, we found the baseline variables of transmission, myths and risk assumptions of HIV improved significantly ($p < 0.001$) in the intervention group (Fig. 1).

Several studies have shown varied results regarding the use of condoms in non-regular partners worldwide. In a study

Fig. 1 – HIV transmission, myths, misconceptions and risk assumption.

Table 3 – Condom use and related attitude.

Question	Yes		p (Chi Square)	No response	
	A n1 = 2134	I n2 = 2083		A	I
Reducing chance of HIV infection by using condoms correctly & consistently during sex	1894 (88.75)	2079 (99.8)	0.001	–	–
Correct use of condoms	1829 (85.7)	2080 (99.85)	<0.001	12 (0.56)	–
Suitable for married men to use condoms with their wives	1557 (72.96)	1932 (92.75)	<0.001	28 (01.31)	–
Acceptable for single men to use condoms with their partners	968 (45.36)	2042 (98.03)	<0.001	28 (01.31)	–
Alright for married women to use condoms with their husbands	174 (08.15)	2064 (99.08)	<0.001	05 (0.23)	–
Condom should only be used in case of sex with a person other than regular partner	1500 (70.29)	1272 (61.06)	0.18	81 (3.79)	–
A = Assessment group. I = Intervention group. p = Chi Square.					

conducted by Tilak et al found that 5.5% of the recruits and 1.7% of regular soldiers reported having non-regular sexual partners and among those who had casual sex, 46.3% reported using condoms.¹⁴ According to the update from the National Survey Data of sexual behaviour of young adults from the US, the prevalence of condom use at last intercourse was estimated to be 20.2%. Use of condom was significantly higher for sex outside ongoing relationships and its use increased significantly from 1996 to 2008.¹⁵ In our study (Table 2), 6.37% in the assessment group and 5.23% from the intervention group admitted to have non-regular sexual partners. Approximately 77% from the assessment group and 80% from the intervention group did not use a condom with the non-regular partner in the last two times. However, condom use in the intervention group after the behaviour change communication has not been assessed. A follow-up survey may be required at a later date on the same population to assess the condom use.

In our study, the correct method of using condoms, change in knowledge that single men should use condoms and that married women may also use condoms with their husbands improved considerably after the intervention ($p < 0.001$) (Table 3).

Also the number of people giving no response significantly decreased in the intervention group than the assessment group. We also found that 70.2% from the assessment group and 61.06% from the intervention group believed that a condom should only be used if you have sex with a person other than your regular partner. The reasons for not using condoms with different relationships seem to be varied as observed by different studies. Marston C et al in their systematic review of 268 qualitative studies noted that one of the key reasons for not using condoms during sex was associated with lack of trust.² In another study conducted by Nyameka Mankayi et al, condoms were seen to signify distrust, less love and less commitment.¹⁶ Thus it is observed that misconceptions and stigmatization of condom use still exist in different partnerships and are needed to be addressed.

Conclusion

The study has shown that providing people with information on how they should behave (“teaching” them) is not enough to

bring about behaviour change. The study reinforces the need for a range of prevention options for young people, covering the full spectrum of sexual behaviour. This combination behavioural change approach, labelled as ABC—i.e., Abstinence, including delay of sexual initiation or debut, Being safer by being faithful to one’s partner or reducing the number of sexual partners, and correct and consistent Condom use¹⁷ may be practised. Providing information and education on a range of safer sexual behaviours is consistent with current empirical evidence of the diversity of young people’s sexual behaviours. The data, when compared to other studies in the past, suggests that efforts to promote the use of condoms in sexually active individuals should remain a public health priority. Imparting knowledge to the young population where majority is yet to start their sexual activity will provide a supportive environment which will enable the young adults to initiate and sustain positive behaviours.

The limitation of the study was that it could not highlight the perception of the population on testing issues and policies regarding personnel living with HIV/AIDS which obviously need more emphasis for a holistic prevention model. Non-participation by enough number of officers remains the other major limitation. The study did not follow up on the subjects to measure the long-term effects of this intervention model on condom use. Future studies needs be conducted to evaluate the effectiveness of this approach over a long period of time. Using this ‘Visibility, Accessibility, Touchability’ model as a theoretical framework, health care providers can guide the adolescents to make realistic risk assessments and identify positive ways of incorporating condoms into their sexual lives.

Intellectual contribution of authors

Study concept: Surg Cdr Sougat Ray, Surg Cdr C Kodange.

Drafting & Manuscript revision: Surg Cdr Sougat Ray, Surg Lt Cdr V Bhaskar.

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Conflicts of interest

All authors have none to declare.

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