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How vulnerable are automobile repair workers to HIV/AIDS? A quantitative and qualitative assessment in a slum of Kolkata, India

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ABSTRACT

Background: Automobile repair workers may run high risk of acquiring HIV/AIDS infection owing to their socio-cultural background. A cross-sectional study was conducted among them in Chetla, Kolkata to assess knowledge, attitude and practices related to HIV/AIDS and to find out difference in knowledge status based on different socio-demographic variables. **Materials and Methods:** Both qualitative and quantitative methods were adopted. A total of 114 male workers were interviewed from randomly selected 12 automobile garages using pre-designed, pre-tested schedule. A uniform scoring system for knowledge was adopted. Chi-square test was applied to find out difference in knowledge score based on different socio-demographic variables. Qualitative analysis was performed after conducting in-depth interview with 24 participants. **Results:** About 84% belonged to 15-35 years age group with mean age 26.3(± 2.7) years. Overall, 63.2% had poor knowledge score. Higher difference in knowledge score was obtained with higher literacy status and age ($p < 0.05$). About 29% of the respondents opined that People Living with HIV/AIDS (PLHAs) should not continue their work and 47.4% commented that PLHAs should not reveal their HIV status. One of the three participants who had commercial sex in last 12 months did not use condom. Two participants complained about symptom of genital discharge in last 12 months and none underwent any treatment. Qualitative analysis revealed low awareness level and discriminatory attitude towards PLHAs. **Conclusions:** Poor level of knowledge and unfavourable attitude of the participants were observed from both quantitative and qualitative analyses though they could not be considered high risk group. Appropriate communication for behavioural change both by group approach and by interpersonal communication was required.

KEY WORDS: HIV/AIDS, Automobile repair workers, Knowledge score, Attitude towards PLHA, In depth interview

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Introduction: India now caters 2.39 million people living with HIV/AIDS (PLHAs) and HIV prevalence is 0.31% among adult population (>15 years).¹ India continues to be in the category of concentrated epidemic owing to very high HIV prevalence among the high risk groups (HRG) compared to that among the general population.²

Behavioural Surveillance helps policy makers in planning, implementation and monitoring of the interventions to tackle the HIV epidemic. In National

Behavioural Surveillance Study (BSS), 2006 on general population, low level of awareness was observed in West Bengal group. Only 37% knew about two important methods of prevention of transmission i.e. consistent condom use and sexual relationships with faithful and uninfected partners and only 30% respondents had no misconception of HIV/AIDS.³ Automobile repair workers are one such group of workers who are young and have high earning potentials and therefore prone to pre-marital sexual behaviour.⁴ In West Bengal, most of the repair

workers of automobile garages come from poor socio economic background with little education. They have to stay away from their families for a prolonged period. Moreover, many of them are migratory workers. As a result, most of them indulge in heavy drinking and are at higher risk of visiting Commercial Sex Workers (CSWs).⁵ Therefore, automobile repair workers as an occupational cohort, though not included in the HRG, may run high risk of acquiring infection. However; few studies have been conducted among them in India and especially in West Bengal.

Therefore, the present study was conducted among them in automobile garages at Chetla, Kolkata. The objectives of the present study were:

1. To assess knowledge, attitude and practices of the study population regarding HIV/AIDS
2. To find out difference in knowledge status of the study population based on different socio-demographic variables

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Materials and Methods: The present cross-sectional study was conducted for a period of three months (October –December 2011) in urban field practice area of Urban Health Centre (UHC), Chetla, Kolkata under All India Institute of Hygiene & Public Health (AIIPH), Kolkata. There are 24 garages in the urban field practice area and 50% of them, i.e. 12 garages were selected randomly by lottery method. Verbal informed consent was taken from owners of each garage and written informed consent was taken from the respondents prior to interview. There were total 130 workers, all men, among which 114 consented for participation. Participants were interviewed using a pre-designed, pre-tested questionnaire based on BSS, 2006 questionnaire.

The questionnaire was pretested among 20 workers in a garage of Kalighat, a nearby area and was modified accordingly. Questions on sexual practices of wives/partners were excluded from the final version of the questionnaire as the issue was found to be too sensitive. Languages of some of the questions on knowledge and attitude were to be changed in vernacular to avoid ambiguity in meaning of those questions. Enquiries were made regarding whether they have heard of HIV/AIDS, modes of transmission, prevention and cure of HIV/AIDS, knowledge about sexually transmitted infections (STIs), awareness and availability of condoms. To find out overall knowledge of HIV /AIDS of the participants a uniform scoring system was adopted which was validated by three public health experts. Each question was closed and one of the pre fixed

responses [Yes/No/Do not Know] was the answer. For every 'correct answer' score=1 was allotted and for every 'incorrect answer'/'Do not know' response, score=0 was allotted.⁶ There were 16 such questions, with highest attainable score of 16 and lowest score 0. The respondents were classified into 'poor', 'moderate', 'good' and 'excellent' according to <25%, 25-50%, 50-75% and > 75% of highest attainable knowledge score respectively. For using it in Bengali vernacular, at first, one forward and one backward translations were done parallel by one medical and one language expert so that the meaning, content and grammatical correctness of the items remained unaltered. The internal consistency of the scale was assessed with Cronbach's alpha, which was 0.82 for the scale.

Statistical analyses were performed using SPSS 19.0 version and differences between the groups of respondents based on socio-demographic variables were tested with Chi-square test and presented as proportions.

Qualitative assessment was performed in the form of in-depth interviews of 24 participants including those who revealed high risk sexual behaviour during quantitative assessment. All the in-depth interviews were recorded by sound recorder, transcribed verbatim in Bengali, and then translated into English. To validate the recordings, the translated texts were checked for any inaccuracy and analyzed by the researchers with assistance from two public health experts. Themes were identified according to the objectives of the study and quotes from the individual participants were listed. Themes that represented the most salient ideas were reported; outliers that seemed important by the researchers were also reported.

Results:

Quantitative Analysis: The study population was relatively young as 84.2% of them belonged to 15-35 year age group with mean age 26.3(SD± 2.7) years. Majority was unmarried (89.5%) and rest of them was currently married. About 47% had middle and above level of education whereas 21% were illiterates. About 89.5% were Hindus and 68.4% had per capita monthly family income below Rs 500/-. Although 94.7% of respondents ever heard of AIDS, only 47.4%, 39.5%, 10.5% and 10.5% reported about heterosexual route, needle sharing route, mother to child transmission and blood transfusion route respectively. Only 26.3% and 25.4% knew about consistent condom use and one faithful uninfected partner respectively to prevent HIV/AIDS. Only 22.3% reported both methods of prevention. About 42% had heard about other STIs and about 74% had ever seen a condom (Table 1). The major source of knowledge was health workers (63.2%) from nearby UHC

followed by TV (50.5%) while peer group played a little role as a source of knowledge (24.6%).

Table 1: Knowledge and Practices of the study population related to HIV/AIDS

Item	Number (%)
Ever heard of HIV/AIDS	108 (94.7)
HIV/AIDS can be transmitted through sexual contact	54 (47.4)
HIV/AIDS can be transmitted through needle sharing	45 (39.5)
HIV/AIDS can be transmitted through blood transfusion	12 (10.5)
HIV/AIDS can be transmitted from mother to child	12 (10.5)
Consistent condom use can prevent HIV/AIDS	30 (26.3)
HIV/AIDS can be prevented by having one faithful uninfected sex partner	29 (25.4)
No incorrect knowledge on transmission of HIV/AIDS	0
Ever heard of STD other than HIV/AIDS	48 (42.1)
Ever seen a condom	84 (73.9)
Sex with a non-regular partner in last 12 months	3 (2.6)
Genital discharge in last 12 months	2 (1.7)

Table 2: Distribution of Population according to Knowledge Score & Socio Demographic Variables (n=114)

Socio Demographic Variables	*KNOWLEDGE SCORE		χ^2 , p value
	Poor Number (%)	Moderate and Good Number (%)	
Age Group (Years)			8.41, d.f.: 1, p=0.004, Significant
15-25 (n ₁ =60)	48 (80)	12 (20)	
25-35 (n ₂ =36)	18 (50)	18 (50)	
>35 (n ₃ =18)	6 (33.3)	12 (66.7)	
Literacy Status			12.41, d.f.: 2, p=0.002, Significant
Illiterate (n ₁ =24)	22 (91.7)	2 (8.3)	
Primary (n ₂ =36)	23 (63.9)	13 (36.1)	
Middle & above (n ₃ =54)	27 (50.0)	27 (50.0)	
Religion			

Hindu (n ₁ =102)	60 (58.8)	42 (41.2)	
Muslim (n ₂ =12)	12 (100.0)	0	
Per Capita Monthly Family Income (Rs/-)			0.53, d.f.: 1, p= 0.468, not significant
>500 (n ₁ =36)	21 (58.3)	15 (41.7)	
≤500 (n ₂ =78)	51 (65.4)	27 (34.6)	

* None scored excellent

Table 3: Attitude of the Participants towards People Living with HIV/AIDS (n= 114)

Statements	Agreed Number (%)	Disagreed Number (%)	Could not Say Number (%)
1. Persons infected with HIV/AIDS who work with other people, such as in a factory or an office should be allowed to continue their work	51 (44.7%)	33 (28.9%)	30 (26.3%)
2. Persons who know that they are infected with HIV/AIDS should keep the fact secret from the community where they live	54 (47.4%)	48 (42.1%)	12 (10.5%)
3. I will take care of a family member suffering from AIDS	102 (89.5%)	12 (10.5%)	0

Knowledge Score: Overall, 63.2% of participants had poor knowledge score and none scored 'excellent'. Elderly participants (> 35 years) scored comparatively better in comparison to younger age group (15-35) (66.7% Vs 31.3%, $p < 0.05$). Illiterates scored poorly (91.7%) than those having primary (63.9%) and middle and above (50.0%) level of education ($p < 0.05$). Among Hindus, 58.8% had a poor score whereas 100.0% of Muslims scored poorly. About 65 % of people having per capita monthly family income \leq Rs 500/- had poor score (Table 2). Regarding attitude towards PLHAs, 29 % of the respondents disagreed that persons infected with HIV/AIDS who work with other people, such as in a factory or an office should be allowed to continue their work and 26% did not comment on it. About 47% commented that PLHA should not reveal their HIV status to others. About 89% agreed to take care of a family member with AIDS (Table 3).

Sexual practices: Median age of first sex was 21 years. Two participants, both unmarried, disclosed that they had regular partner for last one year or more. Three participants (2.6%), two unmarried and one married, provided history of visiting (CSWs) in last 12 months and among them, one unmarried man did not use condom. Two participants (1.7%), both unmarried, complained of genital discharge in last 12 months and none had sought any treatment.

Qualitative Analysis: Themes obtained from the transcribed data from the in-depth interviews of 24 participants were in the following order (1) Awareness regarding transmission and prevention of HIV/AIDS and STIs (2) Attitude towards PLHA & associated stigma and discrimination (3) Knowledge and practice of safe sex.

Awareness regarding HIV/AIDS and STIs: Transmission and prevention: Overall knowledge about transmission and prevention of HIV/AIDS was poor. There was considerable misconception about other modes of transmission (e.g. mosquito bite, sharing common toilet, sharing food, taking bath in common pond etc) especially among unmarried men. One unmarried participant said 'the disease can occur through heavy load of work and by consuming alcohol'. Most of them were unaware about the signs and symptoms of the disease.

None except two married participants knew that AIDS is not curable and treatment and care are available for the disease. However, none of them heard of Integrated Counseling and Testing Centre (ICTC).

Attitude towards PLHA & associated stigma and discrimination: Quantitative findings were also corroborated by qualitative analysis. Considerable stigma and discrimination for PLHA were observed among all, but more among young participants. Most of the participants felt that the disease is a punishment of past 'sin' of the individual and only the patient is to be blamed for the disease. The causes of negative attitudes, especially among young participants were mostly due to misconception about the disease, poor knowledge about treatment facilities and the sexual route of transmission.

However, most of them agreed that PLHAs should be allowed to continue their work in factories and offices. Most of the participants also opined that patients should keep their HIV status secret from the community where they live. However, most of the participants agreed to take care of a family member with AIDS. Married participants had more awareness and somewhat favourable attitude. The reason behind such favourable attitude was understood as they were more attentive to the health information provided by the health workers.

One of them said 'Even if it is in TV, somebody should come and tell me, and then I would understand. We would rather learn them from a personal contact.'

Knowledge and practice of safe sex : All participants revealing high risk sexual behaviours during quantitative survey were included among interviewees of qualitative survey. Two married participants among those who did not report any high risk sexual behaviour revealed presence of other regular sex partners. Most of them agreed that 'if we use condoms, maybe we are safe'. However, consistent condom use with regular partners was low.

Some important outliers : The majority of the participants, especially older participants opined that premarital sexual activity was on increase and age at first sex is decreasing among young generation and this is due to exposure to media and degradation of social values.

Discussion: Very few studies regarding awareness of HIV/AIDS among automobile repair workers in India were available to our knowledge. The relevant results of the BSS, 2006 among general population in the subgroup of urban males of West Bengal group were compared with those of the present study.³ Overall, poor knowledge regarding transmission and prevention of HIV/AIDS and more discriminatory attitudes towards PLHA were observed in

comparison to urban male population of West Bengal probably because of low educational level of the respondents and less chance of communication with rest of the community owing to duration (About 15-16 hours daily) and intensity of their work load. In BSS 2006, heterosexual route, needle sharing, mother to child transmission and blood transfusion route were reported by 92.9%, 93.8%, 80.5% and 93.2% of respondents respectively, much higher proportion than those in the present study. Whereas in BSS 2006, 41.9% had no incorrect belief regarding transmission, none in our study fell fulfilled the criteria. BSS 2006 reported that 75.4% and 55.7% knew about consistent condom use and one faithful uninfected partner to prevent HIV/AIDS respectively and 47.7% mentioned both which are again much higher than present study findings.

Study conducted by Folashade O Omokhodion et al in Nigeria (2007) among 800 automobile repair workers revealed that 96% had heard about the disease and 95% knew about transmission by sexual intercourse and blood transfusion, much higher in comparison to the present study.⁷ Different studies conducted among automobile drivers in India showed higher level of knowledge and lower level of misconception than the current study. However, most of them are included in HRG and are likely to receive more sex education.

Regarding attitudes towards persons living with HIV/AIDS, though 89% agreed to take care of a family member suffering from AIDS though this attitude remained questionable keeping their negative attitude revealed both from quantitative analysis and FGD in mind.

In spite of poor knowledge level and unfavourable attitude towards PLHA, the study population found to have safer sexual practices. This finding was much lower than that found in other studies in automobile workers by Modi S in India (50%) and Folashade O Omokhodion in Nigeria (87%).^{4,7} At the same time condom usage in last sex with CSW by unmarried workers was higher (100%) in present study than that in the 59% in the Indian study and Nigerian study (87%).^{4,7}

In BSS 2006, reported sex with nonregular partner in last 12 month among urban males in West Bengal group was 7.4% which was higher than that in current study (2.6%, 3/114). Reported condom use in last sex with Non regular partner was lower (66.6% in current study) than BSS 2006 (72.5%). However this must be interpreted with caution as reported high risk sexual behaviour was very low in the current

study. Mean age of first sex in BSS 2006 was 22 years and in study by Modi S was 20.4 years and both are consistent with current study findings.

Only 2 respondents (1.9%) had given history of genital discharge which is suggestive of RTI/STI in current study which is consistent with BSS 2006 findings (1.1%) among urban male in West Bengal group. However health seeking behavior for STI/RTI symptoms was poorer in current study than BSS, 2006 as none sought any treatment in current study compared to 71.9% in BSS, 2006. This discrepancy may be explained by nature of work and poor awareness level of the study population.

The findings of the current study must be interpreted keeping the limitations of study in mind. First of all, due to time and resource constraint, only a small population could be approached and thus the results obtained might not be applicable to this occupational cohort in other urban areas of the state. Further longitudinal studies involving larger subpopulation is required to assess their knowledge, attitude and practices over time. Secondly there was chance of underreporting of sexual practices as our study involved highly sensitive issues. However, efforts were made to overcome the abovementioned limitations by recruiting male interviewer, engaging local health workers during visits, rapport building with the community prior to the study and by adding qualitative assessment.

Conclusion: Sufficient evidences could not be procured in the present study to include automobile repair workers into high risk group as an occupational cohort because most of the participants reported safe sexual practices. However, poor knowledge about HIV/AIDS and discriminatory attitude towards PLHA aggravated by low literacy status, younger age, nature of work, limited exposure to media and poor health seeking behaviour enhanced the vulnerability of this occupational group to HIV/AIDS. Appropriate communication with them by group approach is required to improve their knowledge and change their attitude. Regular inter-personal contacts with health workers of the UHC are also necessary as revealed from both quantitative and qualitative analyses.

Ethical considerations: Ethical issues (including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc) have been completely observed by the authors. Ethical clearance to conduct the study was obtained from the Institutional Ethics Committee of All India Institute

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