

Session S113: The behavioural dimension of the HIV epidemic: risks, perceptions and behaviours

Title: Understanding pathways: Exploring social capital measures and their links to health outcomes

F Samuels (1), S McPherson (1), P Chikukwa (1) JP Gutierrez (2), S Bertozzi (2), L Dandona (3) and R Dandona (3)¹.
Affiliation: (1) Research and Evaluation Unit, International HIV/AIDS Alliance, Brighton, UK, (2) Division of Health Economics and Policy, National Institute of Public Health (INSP), Cuernavaca, Morelos, Mexico, (3) Centre for Public Health Research, Administrative Staff College of India (ASCI), Hyderabad, India.

1. Introduction

1.1 The Frontiers Prevention Program²

The Frontiers Prevention Project (FPP) is an International HIV/AIDS Alliance managed project funded by the Bill and Melinda Gates Foundation. It aims to make a significant contribution to reducing HIV infections in relatively low-prevalence countries (Ecuador, India [Andhra Pradesh] and Cambodia) that are put at risk by the growing HIV pandemic. One key component of the Project's evaluation³ has been the implementation of a baseline survey with Female Sex Workers (FSWs) and men who have sex with men (MSM) in the sites where the program will be implemented. This survey has generated important findings concerning relationships between various characteristics of the population and their behaviour.

1.2 Social Capital Background

The concept of social capital has recently moved beyond the realm of academia to become a concept frequently drawn on by both policy makers and practitioners. Although usefully applied in a range of contexts, the definition is widely contested across disciplines and the inherent ambiguity of the term has resulted in social capital tending to mean 'all things to all people'⁴.

Literature suggests that increasing social capital leads to improved health outcomes and health behaviour^{5,6}. Even though there are few studies on the relationship between social capital and risk behaviour, the available evidence suggest that social capital can improve protective health behaviours^{7,8}. It is also important to understand how social capital can be measure among specific sub-populations, in particular stigmatized groups such sex workers and men who have sex with men. In order to evaluate prevention programmes and improve them we need to disaggregate, better understand and measure both social capital and the relationships between it and behaviour.

2. Description of Findings

2.1 Methodological Description

A baseline survey of FSWs and MSM was conducted in India and Ecuador. Face-to-face interviews were carried out using a structured questionnaire which was divided into various sections, including general socio-demographic and sexual behaviour questions. Stata v8.1 was used a) to describe the sample in terms of key socio-demographic variables, b) to analyse the socio-demographic data by sex practices and c) to estimate associations between behaviours and social support using multivariate regressions. FSWs and MSM were defined as having 'safe sex practices' if they reported that i) they used condoms with all their last 3 clients or ii) where they did not have penetrative sex.

T-tests and chi-square tests for a number of variables were run against the 'safe sex practice' variable. Also tested were the associations between 'safe sex practices' and some of the social support variables. Finally, logistic regression

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² The FPP is described fully elsewhere and so is not the focus of this paper.

³ As part of the FPP the Alliance funded a comprehensive evaluation of the program. Its design is complex with multiple components. It is described elsewhere.

⁴ Lochner K, Kawachi I, Kennedy BP. Social capital: a guide to its measurement. *Health Place*. 1999 Dec;5(4):259-70

⁵ Veenstra G. Social capital, SES and health: an individual-level analysis. *Soc Sci Med*. 2000 Mar;50(5):619-29

⁶ Rose R. How much does social capital add to individual health? A survey study of Russians. *Soc Sci Med*. 2000 Nov;51(9):1421-35.

⁷ Crosby RA, Holtgrave DR, DiClemente RJ, Wingood GM, Gayle JA. Social capital as a predictor of adolescents' sexual risk behaviour: a state-level exploratory study. *AIDS Behav*. 2003 Sep;7(3):245-52.

⁸ Jin FY, Prestage G, Law MG, Kippax S, Van de Ven P, Rawsthorne P, Kaldor JM, Grulich AE. Predictors of recent HIV testing in homosexual men in Australia. *HIV Med*. 2002 Oct;3(4):271-6.

was carried out to further explore the relationship between the social support variables with the ‘safe sex practice’ one, controlling for a number of potential confounding variables.

In addition to the quantitative instrument and in order to complement and explore further findings, a set of qualitative instruments (in-depth interview and focus group discussion guides) were developed and administered to both FSWs and MSM⁹. Data gathered from this approach focused on issues such as social capital, self esteem and stigma and discrimination. Analysis was undertaken manually and through use of Atlas.ti.

This abstract presents findings from the FSW questionnaire in India¹⁰.

2.2 Overview of the Data

This section provides socio-demographic information from FSWs in India. Table 1 shows that the majority of FSWs in the sample are married, although the combined number of FSWs that have been separated, divorced or widowed is equal to this, with a significant number (16.8%) being single. The vast majority of FSWs have children (5,103) and have never been to school (4,967), with the majority being street-based FSWs, followed by a significant number being home-based and very few being brothel-based.

Table 1 Socio-demographic characteristics – FSWs in India

| Variable | Category | N | Percent (%) |
|-------------------------------|---------------|-------|-------------|
| N | | 6651 | |
| Marital status | Single | 1,117 | 16.8 |
| | Married | 2,700 | 40.6 |
| | Separated | 1,923 | 28.92 |
| | Divorced | 118 | 1.77 |
| | Widowed | 792 | 11.91 |
| Do you have children | Yes | 5,103 | 76.74 |
| | No | 1,547 | 23.26 |
| Have you never been to school | Yes | 4,967 | 74.68 |
| | No | 1,684 | 25.32 |
| Category of FSW | Brothel-based | 142 | 2.14 |
| | Street-based | 4,981 | 74.91 |
| | Home-based | 1,526 | 22.95 |

2.3 Safe Sex Characteristics

This section describes the characteristics of the population sampled who engaged in safe sex. As shown in Table 2, of the 5008 FSWs who responded to questions on sex practices, 2848 (56.8%) practiced safe sex. FSWs engaged in safe sex practice tend to be younger (mean age of 25.88 vs 28.12), have fewer children (2.08 vs 2.26), have been working as a FSW for longer (51.51 months vs 49.24), have stayed less in the place, have had a larger number of paying clients in the last 7 days (8.93 vs 6.65), have tended to work longer hours (5.69 vs 4.55) and have earned more rupees in the last 7 days (712.38 vs 400.55).

Table 2 – Safe sex practice

| | Practice safe sex | Does not practice safe sex | Total | p-value |
|--|-------------------|----------------------------|--------|---------|
| N | 2848 | 2160 | 5008 | |
| Mean age of FSW | 25.87 | 28.12 | 26.84 | p<0.001 |
| Mean number of children | 2.08 | 2.26 | 2.17 | p<0.001 |
| Length as sex worker (in months) | 51.51 | 49.24 | 50.53 | - |
| Length staying at place (in months) | 171.31 | 177.40 | 173.92 | - |
| Mean number of paying clients in last 7 days | 8.93 | 6.65 | 7.95 | p<0.001 |
| Mean hours worked in last 7 days | 5.69 | 4.55 | 5.19 | p<0.001 |
| Mean Rupees earned in last 7 days | 712.38 | 400.55 | 577.88 | p<0.001 |
| Mean age at first sex | 15.21 | 15.18 | 15.20 | - |
| Mean age at first sex for money | 21.57 | 24.02 | 22.63 | p<0.001 |

⁹ People living with AIDS and key population gatekeepers were also interviewed in the qualitative data collection process.

¹⁰ Data from MSM in India and FSW and MSM in Ecuador will be presented in the final paper. Qualitative data from both countries will also be included in the full paper.

3. Different Ways of Measuring Social Capital from a Quantitative Baseline

Three methods of measuring social capital from the quantitative datasets are explored in this section:

3.1 The ‘Count On’ Score Measure

This measure was defined using 7 questions from the questionnaire that asked respondents if they had someone to count on if they needed support, e.g. for money, going to the hospital/clinic, someone to talk to, a meal/place to stay, if they got beaten/hurt, if a client was demanding sex/abusive. Responses were rated on a 5-point scale (5=always-1=never) and these were combined to develop a composite score ranging from 7 to 35, with a median score of 22. The scores were grouped to develop a categorical variable, with 3 levels defined as High=count on score > 75th percentile, Average=count on score between 25th and 75th percentile, and Low=count on score < 25th percentile.

Using results from the India FSW survey, 1620 FSWs had a high score (>27), 1431 a low score (<18), while the remainder 2441 had an average score (between 18-27). A T test was run for the ‘count-on’ score measure versus the safe sex practice measure with results showing a significant association between high ‘count on’ and safe sex practice ($p < 0.001$). On average those with safe behaviour had a significantly higher mean ‘count-on’ score - 24.63 (95% CI 24.4 – 24.88), as opposed to those not practising safe sex behaviour - 20.36 (95% CI, 20.11 – 20.61).

3.2 Membership of FSW Support Group

Membership of a support group was defined as ‘yes’ or ‘no’ if a FSW reported they participated (or not) in any support group for FSWs.

In India, 601 (9%) respondents reported they were members of a FSW support group with 6047 (91%) reporting they were not. A chi square test measuring OR was run for the support group membership variable against the safe sex practice measure to further explore the relationship between the two. The results show that a FSW who is a member of a support group is 6 times more likely to practice safe sex - OR=6.15 (95% CI, 4.66 – 8.22)

3.3 ‘Sense of Peer Group’ Measure

This variable was created combining responses from 3 survey questions. The following statements were made with responses given along a 5-point scale (5=always-1=never): 1) By working together FSWs can better protect themselves against violence; 2) By working together FSWs can influence decisions affecting their lives; 3) By working together FSWs can increase condom use with clients. The score was grouped to develop a categorical variable, with 2 levels defined as High=score >50th percentile and Low=score \leq 50th percentile.

For the Indian FSW sample, 2539 FSWs had a high (>10) ‘sense of peer group’ and 2857 a low (\leq 10). A T test was run for this measure against the safe sex practice measure to further explore the relationship between the two. The results show that there is a significant association between a ‘high sense of peer group’ score and safe sex practice ($p < 0.001$). On average those with safe behaviour had a significantly higher mean ‘sense of peer group’ score - 11.50 (95% CI 11.39-11.60) – as opposed to those not practising this behaviour - 8.52 (95% CI, 8.37- 8.67).

4. Multivariate Analysis of the Defined Social Capital Measures and Safe Sex Practice Indicators

A logistic regression was run testing the association of sex practices with a set of variables, including socio-demographic variables. Also tested in the same model were the 3 key social capital variables explored above. Running this analysis for FSWs in India demonstrated that a sub-set of the socio-demographic variables proved to be significant - education, hours worked in last day, earnings from sex work (see Table 3).

After controlling for demographic and socioeconomic characteristics that have been related to health protective behaviour, all the 3 measures included as proxies for social capital in the model proved to be significantly associated with safe sex practice. FSWs who participated in a support group were nearly four times more likely to engage in safe sex practices than those who did not - OR 3.61 (95% CI, 2.60 – 5.00). The composite ‘count on’ measure shows the probability of practising safe sex increases with an increase in the ‘count on’ score - OR 1.06 (95% CI 1.05-1.08). Finally, the ‘sense of peer group’ measure shows the probability of practising safe sex increases with an increase of the score - OR 1.28 (95% CI 1.25 – 1.31).

Table 3 – Logistic regression: safe sex practice

| Variable | Odds Ratio | Std. Err. | z | P>z | [95% Conf. Interval] | |
|--------------------------------------|------------|-----------|-------|-------|----------------------|----------|
| Age | 1.003382 | .0604424 | 0.06 | 0.955 | .891643 | 1.129124 |
| Marital Status | 1.01138 | .040979 | 0.28 | 0.780 | .9341687 | 1.094972 |
| Any children | .9279864 | .1028645 | -0.67 | 0.500 | .7467728 | 1.153174 |
| Education | 1.166224 | .0434131 | 4.13 | 0.000 | 1.084166 | 1.254493 |
| Months staying at place | .9993079 | .0003863 | -1.79 | 0.073 | .9985511 | 1.000065 |
| Months working as sw | .9992289 | .0051464 | -0.15 | 0.881 | .9891929 | 1.009367 |
| Category of sw | 1.106527 | .0983372 | 1.14 | 0.255 | .9296415 | 1.317068 |
| # of paying clients | .9942211 | .0116237 | -0.50 | 0.620 | .9716981 | 1.017266 |
| Total hours worked | 1.085151 | .018631 | 4.76 | 0.000 | 1.049242 | 1.122288 |
| Earnings from sw | 1.000666 | .0001451 | 4.59 | 0.000 | 1.000381 | 1.00095 |
| Any other work | 1.0324 | .0859938 | 0.38 | 0.702 | .8768936 | 1.215482 |
| Participation in support group | 3.60671 | .6012893 | 7.69 | 0.000 | 2.601381 | 5.000559 |
| Count on index | 1.064907 | .0075364 | 8.89 | 0.000 | 1.050238 | 1.079781 |
| Peer support index | 1.279459 | .0178038 | 17.71 | 0.000 | 1.245036 | 1.314834 |
| Age at 1 st sex | .9365382 | .0215165 | -2.85 | 0.004 | .8953021 | .9796737 |
| Age at 1 st sex for money | .9791509 | .0590468 | -0.35 | 0.727 | .8699989 | 1.101997 |

Logistic regression Number of obs = 4110
 LR chi2(16) = 1185.17
 Prob > chi2 = 0.0000
 Log likelihood = -2094.913 Pseudo R2 = 0.2205

5. Conclusions and Further Work

Social capital is made up of a multitude of different components which are both key population and context specific. The quantitative instrument focused on a few variables which may be relevant indicators but are not comprehensive enough to give us a complete picture regarding the pathways and linkages between social capital and behaviour. Hence there is a need to complement these findings with qualitative information.

From the Indian FSW data, it is clear that there is a strong and positive relationship between membership of FSW support groups and social capital, i.e. FSWs who are members of support groups tend to have higher social capital than those who are not. In addition, those who are members of support groups tend to practice safer sex than those who are not.

From a programmatic perspective this implies that in order for FSWs to engage in safer sex practices, programmes should encourage the formation of support groups. This is an especially important finding in relation to the fact that membership of a support group is not associated with key socio-economic variables – FSWs from different socio-economic backgrounds can be part of these groups. Similarly results from the composite ‘count on’ score and ‘sense of peer group’ score show that those with higher scores for both these measures tend to engage in safer sex than those without. However the use of a composite score has its limitations and requires far more work in terms of in-depth analysis before concrete conclusions about programmatic implications can be drawn. Specifically, these measures illustrate the need to further explore qualitative methodologies to shed light on the concept of social capital.