

Social Determinants of HIV: A Study of Women in Madhya Pradesh

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Introduction

There has been a paradigm shift in the manner in which the Health of the population is being currently viewed by health professionals & researchers. There is a realisation that the health of an individual is not just a function of his medical status but is also determined by the environment in which he work and lives. This idea of going beyond a pure bio-medical explanation for health status of individuals and looking at social determinants has provided researchers with tools for explaining the puzzle related to difference in health of individuals and societies who although living in the same country, state or municipal limits have different burden of disease. Research has identified various factors which influence the health status of the population. Analogously, there have been some studies to recognise the determinants of HIV. Variables that have been identified include Education(1-6),Socioeconomic status(3,4),Alcohol(8),Employment(1,6)&Wealth(5). However, studies in India that look at the relative impact of social determinants on HIV at the state level are scarce. This paper is an attempt to fill this gap.

Conceptual Model

The preparation of our conceptual model is based on the Commission on Social Determinants of Health (CSDH) Conceptual Framework which is reproduced below:

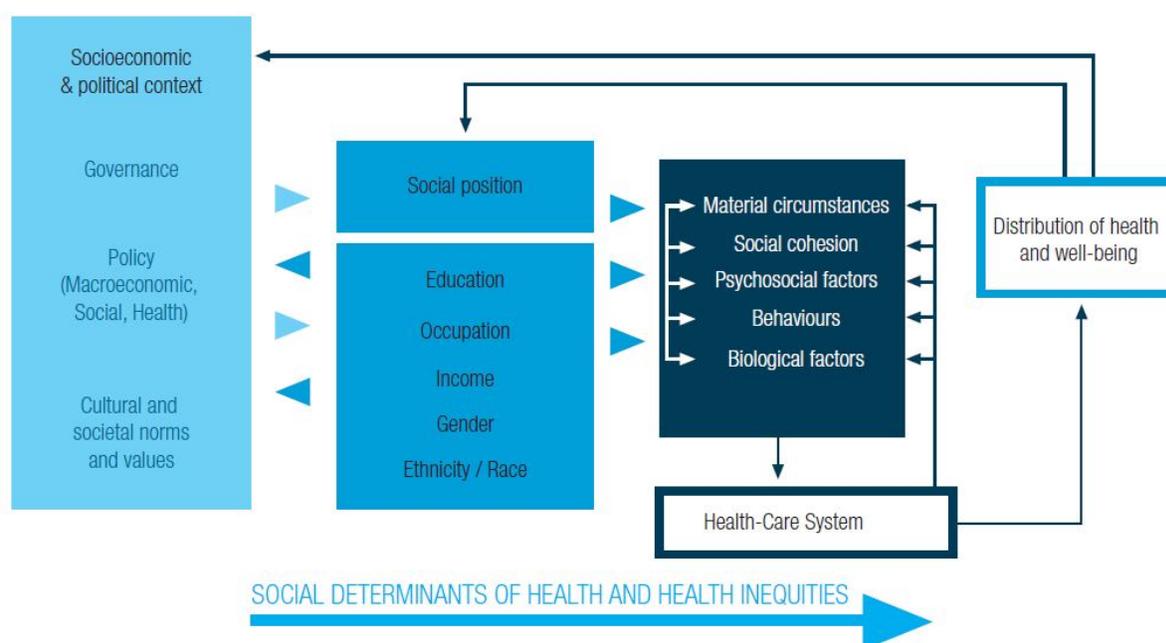


Figure 1: Commission on Social Determinants of Health Conceptual Framework (Reproduced with Permission from Commission on Social Determinants of Health Final Report, WHO 2008, p.43) (9)

The grounding of our model (Fig. 2) lies in the CSDH framework and the choice of determinants to be taken for analysis is based on literature review. The CSDH model has been suitably amended to prepare our model by taking into consideration the availability of data in the Indian context. In our model, we are looking at all the possible paths through which social determinants might act on HIV incidence which is a departure from the original CSDH model.

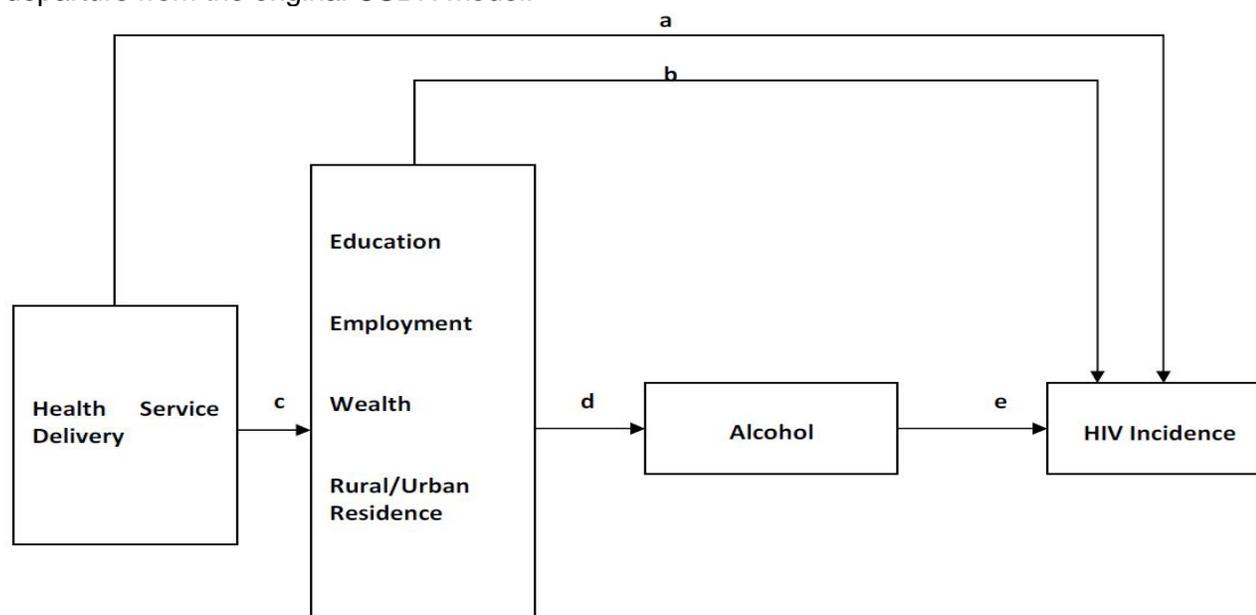


Figure 2: Conceptual Model of Pathways of Social Determinants

Variables

Health Service delivery has been used as a variable in our study to evaluate Governance in the health sector. This follows from the paper by Mundle et al (2012)⁷ in which they have measured the quality of Governance in Indian states. One of the dimensions in measuring Governance that has been considered is Social Service Delivery. Therefore in line with the requirements of this study, we are considering Health service delivery as the dimension representing Health sector governance. Health service delivery has been measured through five indicators: Convenience of Health Facility Timing, Proximity of Health Facility, Quality of care offered, Waiting time in receiving care and Availability of Health Personnel. The rest of the variables in the model are directly measurable through the data.

Data

The data for this study (Sample size n=6427) has been collected from National Family Health Survey -3 (NFHS-3) conducted in 2005-06. NFHS is a large, multi-round survey conducted in sample households across India. There are three rounds of NFHS that have been conducted. The first round took place in 1992-93, the second round was conducted in 1998-99 and the latest round has been in the year 2005-06. This survey provides data on Infant and Child mortality, Reproductive Health, Nutrition, Fertility, Family Planning and Utilisation as well as quality of health services.

Method

Since there is a presence of Latent Variable in the model (i.e. Health Service Delivery) and there are multiple dependent and independent relationships, Structural Equation Modeling (SEM) has been used. SEM will help in estimating these multiple relationships simultaneously and will also help in effortlessly assessing the direct and indirect effect of social determinants on incidence of HIV.

Sample Adequacy

Hoelter Test was adopted to check whether the sample size is adequate for performing our analysis. The result is presented below:

Table 1 : Hoelter Test

	Hoelter (0.05)	Hoelter (0.01)	Critical Value
Measurement Model	731	996	200
Structural Model	785	924	

All the values in the Table above are greater than the critical value 200 (10) which indicate that the sample size is adequate for our model.

Model Fit

We first tested the measurement model. There was high fit between the data and the model with Comparative Fit Index (CFI) = 0.999 & Root Mean Square Error of Approximation (RMSEA) = 0.054 [Value close to 0.95 for CFI is considered to demonstrate a good fit. Value of RMSEA less than 0.05 is considered a good fit while between 0.05 to 0.08 are considered as reasonable errors of approximation (11)].

After ensuring that the measurement model is an adequate fit, we then tested the structural model. The CFI value comes out to be 0.996 while RMSEA= 0.042 again indicating that the structural model has a good fit with the data.

Structural Model

The following structural model was produced after running the analysis

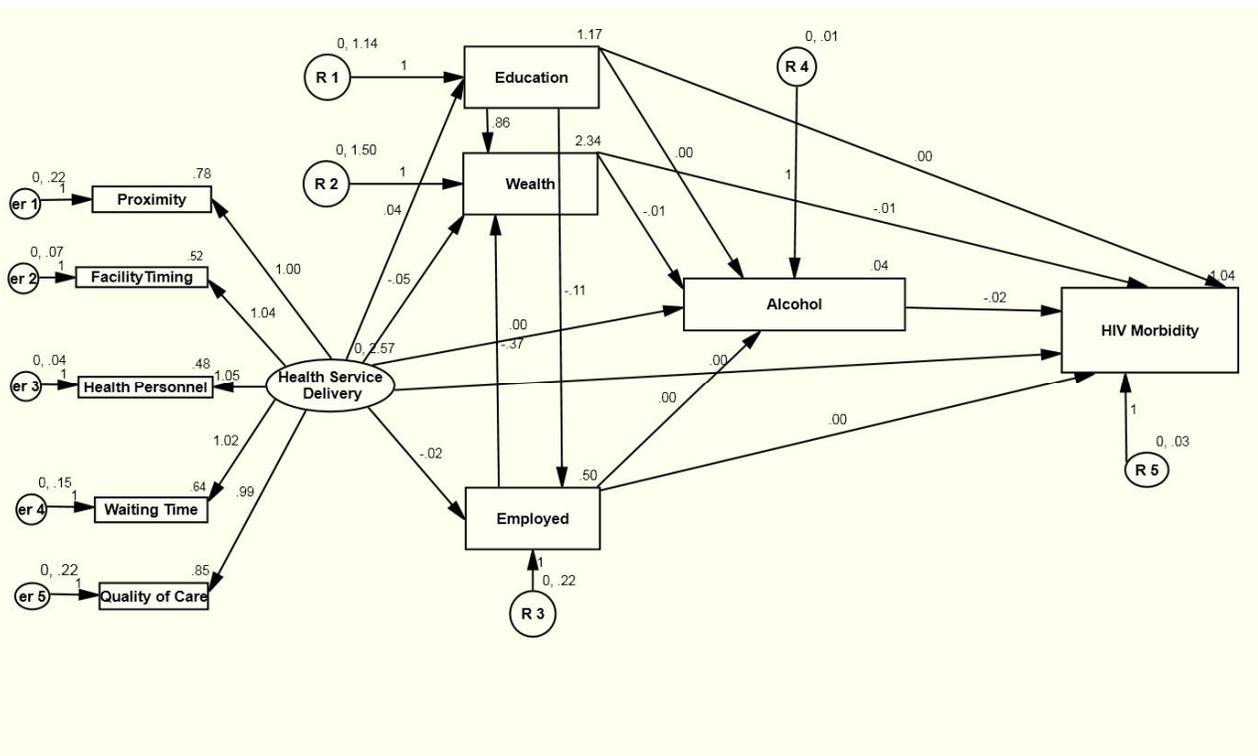


Figure 3: Structural Model for Impact of Social Determinants on HIV Incidence

Results

After ensuring that our conceptualised model fits well with the data, the strength and direction of relationship between our selected social determinants and HIV morbidity is estimated. The table 1 below shows the results.

Table 2: Regression Coefficients

	Health Service Delivery	Wealth	Employed	Education	Alcohol
HIV Morbidity	-0.002	-0.007*	0.000	0.001	-0.024

Note: *: Indicates Statistical significance at 10%

The above results clearly indicate the fact that Wealth is the most important factor in determination of HIV Morbidity in Women in Madhya Pradesh. The lower the wealth quintile one belongs to, the higher are his chances of being diagnosed with HIV. Further, Education has been found to be positively and significantly related to wealth (0.86 at 1% significance).

Conclusion

The results further provide evidence on the importance of education for an individual. The government should make every effort to ensure education to as many people as possible as it will help people move into the higher bracket of wealth quintile which will help in reducing the HIV incidence.

Declaration

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Competing Interests: None declared

Ethical Approval: Not required since the study has been conducted using secondary published source of data.

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