

Research Article

Gender Disparity in Health Expenses, Health Insurance Financing and Out-of-Pocket Expenses for Inpatient Care in India

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A B S T R A C T

Background: Socially constructed gender and the economic status have strong bearing on the household out-of-pocket health expenditure and resulting in unequal distribution of health services.

Objective: To assess the gender disparity in total health expenses, health insurance financing and out-of-pocket expenses for various ailments during inpatient care in India.

Methods: The nationally representative health consumption data from the 71st Round (2014) of National Sample Survey Organization was analyzed. Socio-economic status was estimated using 'Principal Component Analysis'. Respective sample weights have been applied in the calculation of the results. The analysis is done with R studio software. The stratified analysis of gender difference in financing for total health expenses, insurance, out-of-pocket expenses was accessed across three socio-economic-status groups to understand gender and its association between social statuses.

Result: The average total health expense for male inpatient care of various ailments was ranged between Rs. 9589.5 and Rs. 85857.9, whereas for female the average health expenses were ranged between Rs. 7847.8 and Rs. 55604.2. The average insurance financing for male inpatient care of various ailments was ranged between Rs. 906.6 and Rs. 10677.2 and for females, it ranged between Rs. 394.8 and Rs. 6063.2. The average OOPes for male inpatient care of various ailments were ranged between Rs. 9141.8 and Rs. 75180.6, similarly for females, the average OOPes ranged between Rs. 7459.3 and 49583.2. The average total insurance financing in lower SES for inpatient care was usually higher for males than females in low (1.3 to 19.9 times), middle (1.2 to 3.4 times) and high (1.1 to 2.4 times) SES groups and the average OOPes for inpatient care was higher for males than females in low (1.1 to 2.2 times), middle (1.1 to 1.7 times) and high (1.1 to 2.3 times) SES groups for most of the ailments except a few.

Conclusion: Overall insurance coverage is low particularly for females. The gender disparity in lower average health expenses, average insurance financing and out-of-pocket expenses during inpatient care in India is a concern, which requires policy interventions to promote equity.

Keywords: Gender Disparity, Insurance, Healthcare Expenditures, NSSO

Background

The key determinants of uneven distribution of health status are situated outside the health sector in the form of socio-economic conditions.^{1,2} Among these, gender and economical status have been extensively debated. Despite of socio-economic development in India, female feticide and excess female mortality still remains a concern.¹ Gender disparity in nutritional status, immunization coverage, treatment-seeking behavior, etc., is very common feature in India.^{2,3} For example, girl children are 7% less immunized than boys,⁴ women have less access to hospital treatment; and are subject to fewer hospitalizations before death.⁵ Untreated morbidity rates are higher among women than men, and a strong class gradient by gender is found for in-patient health care. Also, girls' access to health care depends heavily on the sex composition of siblings.⁶ Gender inequality is reflected in India's low ranking on the World Economic Forum's Gender Gap Index (GGI), 2014, with scores below average on parameters such as educational attainment (126th rank), economic participation (134th rank) and health and survival (141th rank).⁷

Females constitute 70 per cent of the poor⁸ and the limited financial access along with gendered role in decision making is a key limitation to access healthcare services in lower middle income countries wherein the Out-of-Pocket Expenditure (OOPE) constitutes a sizeable proportion of healthcare expenditure.^{9,10} Healthcare system in India is highly privatized and the main source of financing is OOPE.^{11,12} The OOPE may lead to distress financing and catastrophic health expenses for the households. It is seen that the average Health Care Expenditure (HCE) is lower for females and they are also discriminated, when health care expenses has to be paid for by borrowing, sale of assets, or contributions from friends and relatives.¹³ In India it shows that HCE was systematically lower for women than for men across all socioeconomic subgroups, despite women suffering from a higher morbidity prevalence than men.¹⁴ The health economics literature suggests healthcare utilization provides better insights into the factors responsible for disparity in health status.^{15,16}

However, there is limited data on gender disparity in disease-specific OOPE following hospitalization in India leading to lack of evidence for gender balanced policy formulation. In this context, current study explores the gender disparity in health-care financing for different ailments in India using

recently available nationally representative data from the National Sample Survey Organization (NSSO).¹⁷

Methods

In this study nationally representative secondary data from NSSO, 71st Round (2014) on health consumption (18) was used. The health consumption sub-survey had covered 65,932 households and 0.33 million individual participants. The information on individual and household socio-economic backgrounds, ailments, utilization of healthcare services provided by public and private sectors, and health financing with its source had been collected. The survey adopted a stratified multistage sample design, using census villages for the rural areas and urban blocks for the urban areas as the First-Stage Units (FSUs), and households as the second-stage units. The participants provided a Self-Report illness in the survey. The reference period for inpatient and outpatient care was previous 365 days.¹⁸ In this study 88 types of ailments identified by NSSO were regrouped into seventeen broad categories excluding childbirth. Latter, obstetrics ailment was excluded during analysis as it comprises of only female participants. In this study 'Other' ailment includes the symptoms which don't fit into any of the above categories and those who couldn't even state the main symptom.

Using principal component analysis, availability of latrine, source of water and energy, were considered to identify three (low, middle and high) socio-economic groups. The gender disparity in hospitalization, inpatient healthcare expenses, insurance coverage and OOPEs were estimated. Respective sample weights have been applied in the calculation of the results. The analysis is done on R studio software (32-bit).¹⁹

Result

Overall the number of hospitalized patients was 39.17 million (Male: 19.36 million) during one year preceding the NSSO survey in 2014. It was observed that the top five causes of inpatient care among male were infection (27.4%), injuries (16.1%), gastrointestinal (10.8%), cardiovascular (9.3%) and psychiatric (6.3%) diseases. Among females, the top five causes of inpatient care were infection (24.1%), gastro-intestinal (11.6%), obstetric (9.3%), genitourinary (7.6%) and cardiovascular (7.5%) diseases (Table 1). Only 18.5% (male 21.4%, female 18.3%) of the hospitalized patients had insurance mostly from government funded schemes. Only 2% had self purchased insurance. The distribution of various ailments is given at Table 1.

Table 1. Distribution of various ailments among inpatients

Ailment Nature	Male N (%)	Female N (%)
Infection	5720 (27.4)	5046 (24.1)
Cancer	323 (1.2)	451 (2)
Blood disorders	332 (1.4)	493 (2.4)

Endocrinal disorders	486 (2.1)	663 (3)
Psychiatric disorders	1319 (6.3)	1107 (5.4)
Eye diseases	775 (4.2)	815 (5.4)
Ear diseases	81 (0.5)	102 (0.5)
Cardiovascular disorders	1843 (9.3)	1426 (7.5)
Respiratory diseases	1130 (5.3)	895 (4.7)
Gastrointestinal disorders	2265 (10.8)	2474 (11.6)
Skin diseases	198 (0.9)	192 (0.9)
Musculoskeletal disorders	969 (4.7)	985 (5.2)
Genitourinary disorders	1117 (5.8)	1594 (7.6)
Obstetric conditions	0 (0)	1634 (9.3)
Sicknewborns	179 (1.1)	123 (0.6)
Injuries	3198 (16.1)	1321 (6.5)
Others	561 (2.6)	638 (3.3)

Note: The figures in parenthesis represent weighted percentage.

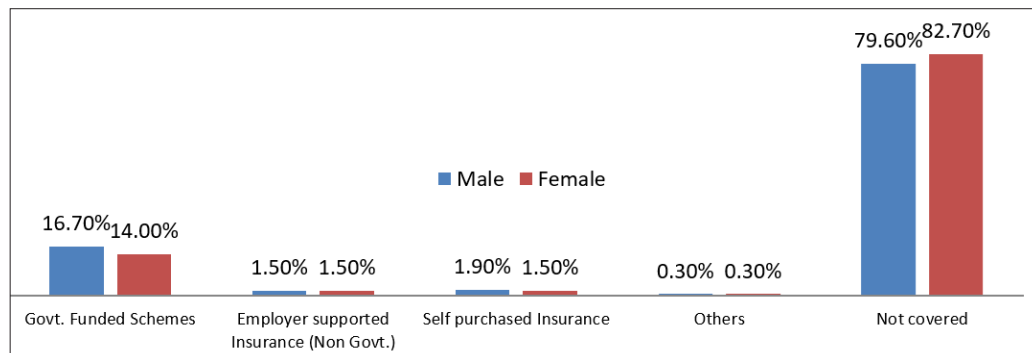


Figure 1. Gender stratified coverage of health insurance among the hospitalized patients

Table 2. Ailment specific average health expenses, insurance financing and out of pocket expenses among inpatients in India

Aliment Type	Average Total Health Expenses (in INR)			Average Insurance Financing (in INR)			Average Out-of-Pocket Expenses (in INR)		
	Male	Female	p-value	Male	Female	p-value	Male	Female	p-value
Infection	9589.5	7847.8	0.0001	906.6	394.8	0.37	9141.8	7459.3	0.0001
Cancer	85857.9	55604.2	0.014	10677.2	6063.2	0.27	75180.6	49583.2	0.022
Blood disorders	15357.5	17852.1	0.65	225.9	277	0.78	15131.5	17575.1	0.66
Endocrinal disorders	19720.8	14269.9	0.005	1907.8	804	0.039	17831.9	13467.1	0.016
Psychiatric disorders	29872.1	20267.9	0.0001	677.2	528.7	0.81	28251.8	19626.7	0.0001
Eye disorders	11077.4	10293.9	0.28	924	790.5	0.58	10153.4	9503.4	0.35
Ear disorders	15836	17557.9	0.54	560.5	455.9	0.82	15275.5	17102	0.52
Cardiovascular disorders	44319.8	26271.6	0.0001	4013.4	2329.9	0.058	40389.2	23944.5	0.0001
Respiratory diseases	13914	13336.5	0.64	707.9	865	0.64	13206	12471.5	0.54

Gastrointestinal disorders	18852.6	17565.7	0.16	1510.9	723.6	0.015	17396.4	16844.2	0.51
Skin diseases	16444.1	13408	0.23	1101.5	643.3	0.51	15342.6	12764.7	0.28
Musculoskeletal disorders	24953.1	26231.8	0.59	1808.5	2698.6	0.32	23144.5	23533.3	0.86
Genitourinary disorders	31130.5	23653.3	0.017	4796.8	1854.2	0.28	26352.9	21801.3	0.004
Sick new born	20136.5	16031.9	0.24	115.6	0	0.23	20020.8	16031.9	0.26
Injuries	29711	23380.3	0.002	1743.2	1129.5	0.19	28010.2	22250.8	0.003
Others	27171.8	22783.4	0.14	2410.7	751.3	0.014	24812.2	22032.1	0.34

Overall, the average total health expense for male inpatient care of various ailments was ranged between Rs.9589.5 and Rs. 85857.9. Similarly, for female inpatients the average health expenses was ranged between Rs. 7847.8 and Rs. 55604.2. The average total health expense for inpatient care was higher for males than females (1.1 to 1.7 times) for all ailments except for blood, ear and musculoskeletal disorders. The gender difference in total health expenses was significant for ailments like infection, cancer, endocrinal, psychiatric, eye, cardiovascular and injury ailments.

The average insurance financing for male inpatient care of various ailments was ranged between Rs.906.6 and Rs. 10677.2. Similarly, for females, the average insurance financing was ranged between rupees 394.8 and 6063.2. The average insurance financing for inpatient care was higher for males than females (1.2 to 3.2 times) for all ailments except for blood, respiratory and musculoskeletal illness. The gender difference in insurance claim amount was significant for ailments like endocrinal, gastrointestinal and 'other' ailments.

Table 3. Socio-Economic Status (SES) stratified analysis of gender difference in Total Health Expense

Ailment Type	Average Total Health Expenses								
	Low SES			Middle SES			High SES		
	Male	Female	p-value	Male	Female	p-value	Male	Female	p-value
Infection	7474	6321.6	0.007	10817.9	8644.4	0.0002	10392.1	8712.6	0.1
Cancer	78137.4	41062.7	0.22	98837.2	65906.7	0.034	52250.5	40658.4	0.26
Blood disorders	16224.8	11866.3	0.18	16174.5	22221.9	0.55	11414.7	14395.3	0.49
Endocrinal disorders	16158	12001.2	0.12	21555.2	14399.9	0.01	18004.4	19426.3	0.79
Psychiatric disorders	26986.9	15781	0.0003	32763.6	23357.3	0.006	24578.5	20929.1	0.43
Eye diseases	8818	6483.9	0.026	12699.3	12699.3	0.47	10818.8	11490.6	0.76
Ear diseases	12642.7	13477.7	0.84	17998.4	19547	0.7	9808.1	17946.2	0.3
Cardiovascular disorders	40111.2	17158.2	0.0001	46592	28935.3	0.0001	40550.2	33299.1	0.31
Respiratory disorders	10685.3	9664.9	0.49	16573.2	15251	0.53	12295.2	15037.5	0.29
Gastrointestinal disorders	15822	14227	0.18	20123.9	19933.1	0.89	21516.9	17393.2	0.084
Skin diseases	15131.1	11767.5	0.42	14678.1	13646.8	0.71	25610.5	15714.3	0.3
Musculoskeletal disorders	16584.1	14529.4	0.28	30015.2	32365.3	0.54	24621.7	28752.4	0.54
Genitourinary disorders	24275.6	18697.7	0.046	35760.3	26230.1	0.068	27060.6	24604.5	0.59
Sick new born	12400.6	13878.6	0.75	22852.9	20468.3	0.67	24537.6	10378.8	0.093
Injuries	22468.8	17207.8	0.022	35361.3	27063.5	0.015	26696.4	23577.3	0.46
Others	17507.8	19478.5	0.59	32281.7	27636.4	0.36	32103.7	14555.4	0.001

The average OOPes for male inpatient care of various ailments were ranged between Rs. 9141.8 and Rs. 75180.6. Similarly, for females, the average OOPes ranged between Rs. 7459.3 and Rs. 49583.2. The average out of pocket expenses for inpatient care was higher for males than females (1.03 to 1.17 times) for all ailments except for blood, ear and musculoskeletal disorders. The gender difference in out of pocket expenses was significant for ailments like infection, cancer, endocrinal, psychiatric, cardiovascular, genitourinary disorders and injuries.

The average total health expenses in low SES group, middle SES group, high SES for male inpatient care of various ailments was ranged between Rs. 7474 and Rs. 78137.4; Rs. 10817.9 and Rs. 98837.2 and Rs. 9808.1 and Rs. 52250.5 respectively. Similarly, for females in low, middle and high SES group, the average total health expenses were ranged between Rs. 6321.6 and Rs. 41062.7; Rs. 8644.4 and Rs. 65906.7 and Rs. 8712.6 and Rs. 40658.4 respectively. The average total health expense for inpatient care was higher for males than females in all three SES groups for all ailments except certain specified ailments in each SES group i.e. ear diseases, sick newborn and 'other' illnesses in low

SES group, blood, ear and musculoskeletal disorders in middle SES and blood, endocrinal, eye, ear, respiratory and musculoskeletal disorders in high SES. The gender difference in average total health expenses in lower SES was significant for ailments like infection, psychiatric, eye, cardiovascular, genitourinary ailments and injuries. Similarly, in middle SES the gender difference was significant for ailments like infection, cancer, endocrinal, psychiatric, cardiovascular disorders and injuries. The gender disparity was significant only for 'other' ailments in high SES group.

The average insurance financing for male inpatient care of various ailments among lower, middle and high SES groups was ranged between rupees 0- 2706.2; 129 -18353.8 and 0- 5433.8 respectively. Similarly for females in low, middle and high SES groups, the average insurance financing was ranged between rupees 0 - 1024.4; 0 - 9278.4 and 0- 2376.8 respectively. The average total insurance financing in lower SES for inpatient care was usually higher for males than females in low (1.3to 19.9 times), middle (1.2 to 3.4 times) and high (1.1 to 2.4 times) SES groups, for all ailments except for certain ailments as given in the table 4.

Table 4.SES stratified analysis of gender difference in financing through insurance

Ailment Type	Average Amount of Insurance Financing								
	Low SES			Middle SES			High SES		
	Male	Female	p-value	Male	Female	p-value	Male	Female	p-value
Infection	130.7	163.7	0.52	1586.2	578.7	0.35	282.5	258.8	0.86
Cancer	955.6	1024.4	0.95	18353.8	9278.4	0.2	80	2376.8	0.15
Blood disorders	0	156.1	0.39	421.4	337	0.78	0	364.3	0.28
Endocrinal disorders	1165.1	58.6	0.085	1827.5	1311.2	0.5	4090.9	0	0.021
Psychiatric disorders	677.2	528.7	0.81	2413	526.9	0.019	518	1360.2	0.47
Eye diseases	415.8	500	0.77	1357.4	1059.8	0.47	612.1	340.8	0.46
Ear diseases	1090.9	116.7	0.31	411.5	703.4	0.63	0	115.4	0.48
Cardiovascular disorders	2706.2	294.1	0.17	4239	3456.3	0.5	5433.8	1258.6	0.061
Respiratory disorders	214	484	0.34	1113.1	1339.1	0.71	467.2	0	0.2
Gastrointestinal disorders	352.5	523.8	0.5	2300.9	866.4	0.012	1198.6	708.4	0.46
Skin diseases	6.9	286.6	0.099	2243.3	1143.3	0.44	0		
Musculoskeletal disorders	305.3	298.6	0.98	3123.4	4596.3	0.36	177.8	469.7	0.35
Genitourinary disorders	735.1	348.5	0.18	7747.9	2782	0.3	1438.8	1482.1	0.97
Sick newborn	13.5	0	0.37	129	0	0.45	235.3	0	0.39
Injuries	730.5	310.1	0.45	2625.4	1688.1	0.23	1002.8	880.4	0.85
Other	130.3	199.2	0.68	4602.1	1363.1	0.015	343	26.8	0.33

Table 5.SES stratified analysis of gender difference in OOPes

Aliment Type	OOPE								
	Low SES			Middle SES			High SES		
	Male	Female		Male	Female		Male	Female	
	Mean	Mean	p-value	Mean	Mean	p-value	Mean	Mean	p-value
Infection	7343.3	6157.9	0.005	10115.2	8077.5	0.0002	10109.5	8453.7	0.1
Cancer	77181.8	40038.3	0.22	80483.4	56700.2	0.063	52170.5	38281.6	0.17
Blood disorders	16224.8	11710.1	0.17	15753.1	21884.9	0.54	11414.7	14031	0.55
Endocrinal disorders	15064.2	11946.9	0.23	19727.7	13088.7	0.01	13913.5	19426.3	0.24
Psychiatric disorders	26309.7	15252.3	0.0002	30350.6	22830.4	0.022	24060.5	19568.9	0.32
Eye diseases	8402.2	5983.9	0.018	11341.8	10904	0.65	10206.7	11149.8	0.67
Ear diseases	11551.8	13361	0.65	17586.8	18843.6	0.75	9808.1	17830.8	0.31
Cardiovascular disorders	37404.9	16864.2	0.0001	42482.1	25479	0.0001	35116.4	32063.4	0.66
Respiratory disorders	10471.3	9180.9	0.37	15460.1	13912	0.43	11828	15037.5	0.21
Gastrointestinal disorders	15501.5	13703.9	0.12	17901.6	19070.1	0.37	20329.8	16684.9	0.11
Skin diseases	15124.2	11480.9	0.38	12434.8	12503.6	0.98	25610.5	15714.3	0.3
Musculoskeletal disorders	16278.9	14230.7	0.28	26891.8	27769	0.8	24443.9	28282.7	0.57
Genitourinary disorders	23540.5	18350.2	0.057	28046.3	23451.5	0.037	25621.7	23122.4	0.56
Sick newborn	12387.1	13878.6	0.75	22723.9	20468.3	0.69	24302.4	10378.8	0.099
Injuries	21812.1	16897.7	0.029	32769.9	25375.4	0.024	25693.6	22696.9	0.47
Others	17377.5	19279.3	0.61	27781.4	26273.3	0.76	31760.6	14528.6	0.002

The average OOPes for male inpatient care of various ailments in low, middle SES and high SES groups was ranged between Rs. 7343.3 and Rs. 77181.8; Rs. 10115.2 and Rs. 80483.4 and Rs. 9808.1 and Rs. 52170.5 respectively (table not given). Similarly, for females, the average OOPes among low, middle and high SES groups ranged between Rs. 5983.9 and Rs. 40038.3; Rs. 8077.5 and Rs. 56700.2 and Rs. 8453.7 and Rs. 38281.6 respectively. The average OOPes for inpatient care was higher for males than females in low (1.1 to 2.2 times), middle (1.1 to 1.7 times) and high (1.1 to 2.3 times) SES groups for all ailments except for ear, sick newborn and other ailments in low SES group; for blood, ear, gastrointestinal, skin and musculoskeletal illness in middle SES group and for blood, endocrinal, eye, ear, respiratory and musculoskeletal disorders in high SES group. The gender difference in average OOPes in lower SES was significant for ailments like infection, psychiatric, eye, cardiovascular, genitourinary and injury, similarly in middle SES group was significant for ailments like infection, endocrinal, psychiatric, cardiovascular, Genitourinary disorders and injuries and

in high SES group was significant for sick newborn and 'other' ailments.

Discussion

Equity in healthcare is one of the important and most desired goals to be achieved for any society. Inequalities in healthcare are measured on the basis of health outcome, utilization pattern and level of OOPes, between the non-poor or poor, urban or rural, advantaged or disadvantaged and other socio-economic groups of the population.²⁰ This study brings into focus healthcare inequalities in India that are based on social groups.

In this study, the burden of OOPes is higher among inpatients from low and middle SES groups than that of high SES. This highlights both inequity and inequality among various SES groups. A study on rural cancer patients in a public tertiary hospital in an eastern Indian state, shows that expenditure on female adults is significantly less than on male adults, and that about 73% of the difference can be drawn back to gender discrimination the biggest reason for

the difference in expenditure is attributed to differences in treatment seeking and medical expenditures before coming to the tertiary center.²¹ A small study conducted in rural Uttar Pradesh showed that among households with male children, the average expenditure on health care during the neonatal period was nearly fourfold that of households with females. Further, households with female newborns used cheaper public care providers, whereas households with male newborns preferred private providers (although unqualified) as these were perceived to deliver satisfactory care.²²

The average OOPes for majority of ailments is higher for males than their female counterparts. Most importantly, wherever the average OOPes for females is higher than their male counterparts in select ailments as highlighted above, the statistical significance is nil. Therefore, considering gender difference and statistical significance, the average OOPes is always higher for males than females. This highlights higher healthcare spending for males is higher than their female counterparts. The probability of financing the hospitalization of boys through borrowing, sale of assets, and helps from relatives, is much higher than it is for girls.^{27,29} This gender disparity may be due to differential health-seeking behaviour, cultural behaviour, accessibility and availability of services;²⁰ as well as may be due to male-female differences in demographic, socio-economic and health care-related factors such as lack of women focused policies and budgeting.^{6,29}

In general, women in developed countries are more aware about their health use more health-care facilities and preventive care²⁴ and therefore, spend more on their health.^{25,26} But in countries like India and China, where a complex web of poverty, social hierarchy and deep-rooted patriarchal structure eliminates women's health from the household priority list, women often invest more of their time in household activities or work that is not directly linked to economic outcomes.²⁷⁻²⁹

Therefore, they may postpone meeting their own health needs to meet those of male family members directly involved in earning income²³⁻²⁵ and prioritize the health of male members over their own.^{6,23} This is still an example of gender discrimination rather than gender equity since women's indirect contribution to household income through household chores and care giving remains unaccounted. In the absence of robust social protection schemes, poor families often mitigate health-related out-of-pocket expenditure by compromising on the health needs of female family members.⁶ On the other hand, in non-poor families, women have less power to bargain on their needs due to lack of property ownership, lack of income earning means, lack of community support, and ongoing social norms and perceptions.⁶ Thus, the gender differential in

HCE in India is perhaps the result of powerful synergies between socio-economic status and patriarchal values.

Conclusions

Gender disparity in total health expenditure, financing through insurance and out-of-pocket expenses for various ailments is a concern. In a developing country like India, where majority of the population spends on healthcare services from their own pockets, higher government spending on health is essential, so that the population can be protected from distress financing and catastrophic health expenses. The gendered pattern of healthcare expenditure requires differential pricing of healthcare services to promote gender equity, which needs to be explored. As far as OOPes is concerned, higher OOPes among male than their female counterparts require further study to explore the determinants including variation in treatment quality if any. However, designing a financial protection mechanism requires a deeper understanding of both the absolute and relative amounts of the financial burden of OOPes on the households. Gender analysis of health financing indicators should be given priority while evaluating health policies and programmes.

List of Abbreviations

FSUs: First-Stage Units

HCE: Health Care Expenditure

NSSO: National Sample Survey Organization

OOPes: Out-of-Pocket Expenses

SES: Socio-Economic Status

Conflict of Interest: None

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