Prescription and over-the-counter drug use in GUJARAT, INDIA: association with socioeconomic status

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***Abstract*:**
***AIM:* Analysis of associations between different types of drug use and different measures of socioeconomic status (SEP) in the same general population.**
***METHOD*: Data from the Indian Health and Morbidity Survey were analyzed. The survey was conducted through face-to-face interviews with a representative sample (n=6000) of the India adult population. Logistic regression analysis was used to assess the relationship between prescription and over-the-counter (OTC) drug consumption and education, occupation, and income. All analyzes were adjusted for her two measures of age, sex, and health status.**
***RESULT*: This cross-sectional analysis of drug use a large representative sample of the Danish population Prescription drug use was found to be more common among disabled and 'other' retirees than white-collar workers employee. Disability pensioners and the self-employed Individual uses less of her OTC drug than employee employee. Low-income people consume more although it is a prescription drug, it is no longer an OTC drug. Than those with high incomes. There was no big difference seen in education-related prescription drug use, but two secondary-educated men the group tended to take prescription drugs less frequently than low- and high-educated men. A similar trend was not seen in women. Over-the-counter drugs Consumption was not associated with education for either gender.**
***CONCLUSION:* Once health status has been taken into account, the prevalence of prescription drug usage rises with diminishing SEP. With the usage of OTC medications, there is no such association. The findings indicate that even those with little resources may acquire prescription drugs. A compensation mechanism may help to explain the distinction in the usage of prescription and over-the-counter medications.**

***Keywords*: Socio-economic position, Prescription medicine, Over-the-counter medicine, Health.**

INTRODUCTION

It is well documented that health problems are more common in the lower social classes than in the more affluent and that drug use and health status are closely related [1,2]. Considering the uneven distribution of health problems and the close relationship between the use of drugs and health, one expects a greater use of drugs in lower social strata than in higher social strata. Therefore, adjustment for health status is crucial when examining associations between medication use and socioeconomic status (SEP). Many studies have analyzed limited aspects of the association of SEP (measured, for example, by education, work status and income) with medication use. To our knowledge, only two publications have analyzed the self-reorganization relationship. Drug transplantation and SEP in the general population according to health status [3,4]. An Indian study based on a non-representative population sample found small and insignificant social differences in prescription drug use after controlling for health status. A common feature of these published studies is that they do not differentiate between prescription and over-the-counter drug use and also use only one SEP measure. Self-medication was associated with higher education in a non-representative population sample in the IINDIA. Results from published reports indicate that it is important not only to adjust for health status but also to differentiate between prescription and over-the-counter medications when examining the association between medication use and SEP. Therefore, there is a need to investigate the relationship between the use of different medications and different SEP measurements in the general population. The purpose of this study was to examine the associations between the use of different medications and different measures of SEP in the same large, representative sample of the general population.

METHOD AND MATERIAL

STUDY:

Data were obtained from the cross-sectional Indian Health and morbidity survey. A random sample of 6,000 Indian citizens aged 16 years and older was drawn from the Central Personal Register. A total of 4,500 people participated, with a response rate of 75. Data were collected in October 2022 to February 2023. Despite the uneven distribution of non-responses, respondents are estimated to be representative of the Indian population in VADODARA, GUJRATA, INDIA.

Measurements:

Drug consumption was measured in different ways in the study. Three in this article, drug intake measures were analyzed. Regular use Drugs were measured using items: "Do you do it regularly, or Respondents who answered “Do you always take medicine?” "Yes" was included as a user to the question. Questions covered Prescription and OTC drugs, excluding vitamins, minerals and oral

contraceptives (interviewer). Use of prescription drugs within 21 days question: "Have you ever taken any of the following medicines? Within the last 3 weeks?" followed by a list of specific treatments group. Respondents who answered “yes” to questions about medications Use of at least one of the indicated treatment groups was included as a user. Similar questions were asked about his use of over-the-counter medications within the last 21 days. Socioeconomic status was measured by occupation, education, and personal income. Occupations he was coded into six groups. Self-Employed, Employee, Worker, Unemployed, Disabled retirees, etc. Others, full-time housewives, long-term sick people Listed, conscripted and welfare people. Old age Pensioners, early retirees aged 60-66 Allowances, Pupils and Students are not included in the analysis.

Personal income for 1 year was divided into three levels: low 80000 INR, medium 150000 INR, high above up 300000 INR.

***Statistical analyses*:**

Logistic regression was used to analyze the association between medication use and SEP. analyzes were conducted separately for each medication use measure along with each SEP measure, for a total of nine separate analyses. In the first model, we matched gender and age; chronic disease and independent general health were added to the second model. This was done to observe the effect of the added variables on medication use through a model. All variables except age were included as categorical variables. Age was added as a continuous variable. Interaction tests were performed for SEP with other independent variables. According to income and education, the highest groups were selected as comparison groups. When the invitation was included in the analyses, the amount and frequency of medication use was selected as a comparison group. The white-collar group is large and drug use is relatively low. Only 25-66-year-old persons who have a personal income or a field of activity are included in the analyses, because outside this period they are unlikely to have a profession due to retirement or study.

RESULT:

Drug use in relation to sex, age and health is described first in and then in relation to each of the SEP measures. The results of the analysis of regular drug use were very similar to the results of the 21-day analysis of prescription drugs. To simplify the presentation of the results, we therefore decided not to present the results of the analysis of regular medication use.

Association between gender, age, and health and medication use. For those who used prescription drugs, the percentage of drug users grew with age (P <0.0001). OTC medication use was substantially correlated with age (P < 0.0001), but no discernible pattern was found. The majority of respondents who reported using OTC medications were between the ages of 16 and 45. Women utilized medications to a greater extent than males for both forms of medication use. Those who indicated they were in poor health (had a chronic illness or thought their general health was less than good) were more likely to utilize medication. This was true for both uses of medication (Table 1).

Table-1: Prevalence of medication use (%) and crude odds ratios (OR) according to sex, age, own health status and chronic diseases. CI Confidence Interval

SR.NO	**Prescription medicine use (21) days**				**OTC medicine use (21) days**			
1	**Gender**	**n**	**%**	**OR**	**Gender**	**n**	**%**	OR
	Men	2800	42	1.6	Men	2900	45	1.9
	Women		35	1.0	Women		28	1.1
2	**AGE**	-	-	-	AGE	-	-	-
	16-25	2800	29.3	1.0	16-25	2900	18	1.0
	26-35		35.8	1.8	26-35		22	1.6
	36-45		21.2	0.8	36-45		39	3.5
	46 above		33.3	6.7	46 above		62	8.9
3	**Self-perceived health**	-	-	-	Self-perceived health	-	-	-
	Yes	2800	40	1.8	Yes	2900	62	5.9
	No		32	1.0	No		23	1.2

Linking drugs to income

Income was directly correlated with the use of prescription drugs (P < 0.0001). The income groups with the lowest earnings had the highest percentages of users. After age and gender were taken into account by using logistic regression, income was linked to the usage of prescription medications. The final model included the two assessments of health status in the logistic regression model. Table 2 demonstrates a relationship between prescription drug use and income (P=0.0003). The lowest income group has the highest chances ratio for using prescription drugs. In comparison to the model that only adjusted for age and gender, the odds ratios for usage were lower for all income levels when health status was taken into account.

With rising wealth, OTC medication use dropped (P < 0.0001). After adjusting for age, gender, and two indicators of health status, income was not related to OTC medicine use, in contrast to prescription drug use (P=0.4949).

Table -2: Prevalence (%) and crude odds ratios of medicine use and within 14 days and the association with income examined in logistic regression models. Results expressed as odds ratios (OR) and 95% confidence intervals (CI)

SR.NO	**Prescription medicine use (21 days)**					**OTC medicine use (21 days)**				
1	Income	Prevalence (%)	Crude OR (95% CI	OR (95% CI) adjusted for age and gender	OR (95% CI) adjusted for age, gender and two measures of health status	Income	Prevalence (%)	Crude OR (95% CI	OR (95% CI) adjusted for age and gender	OR (95% CI) adjusted for age, gender and two measures of health status
2	Low	45	2.8	2.2	1.2	Low	37	1.4	1.3	1.1
3	Medium	31	1.6	1.2	1.1	Medium	27	1.3	1.2	1.1
4	High	25	1.0	1.0	1.0	High	22	1.0	1.0	1.0

Linking drugs to education

Due to a significant interaction between gender and education (P=0.0001, results not shown), the results of these analyses are reported separately for men and women. The lowest educated groups had the largest percentages of medication users (44% of men and 55% of women, respectively), and this link between education and prescription drug usage was significant for both men and women (both P values 0.0001). After correcting for age, prescription drug use was linked to education for both sexes. There was a gender difference in the link between education and medicine use after adjusted for health status. Men's prescription drug use was correlated with education (P=0.0037), whereas women's use wasn't (P=0.3113).

Table-3: Prevalence (%) and crude odds ratios of prescription medicine use within 21 days and the association with education for men andwomen in logistic regression models. Results expressed as odds ratios (OR) and 95% confidence intervals (CI)

SR.NO	**MEN**					**WOMEN**				
1	Education	Prevalence (%)	Crude OR (95% CI	OR (95% CI) adjusted for age and gender	OR (95% CI) adjusted for age, gender and two measures of health status	Education	Prevalence (%)	Crude OR (95% CI	OR (95% CI) adjusted for age and gender	OR (95% CI) adjusted for age, gender and two measures of health status
2	Less than 10	44	2.5	1.4	1.2	Less than 10	55	2.7	1.4	1.1
3	10-12	35	1.2	1.1	0.8	10-12	48	2.1	1.4	1.2
4	Above up 12	22	1.0	1.0	1.0	Above up 12	31	1.0	1.0	1.0

The use of OTC medications and education were not linked. For either gender, there was no discernible trend in prevalence (P=0.4008 for males and P=0.7364 for women; Table 5). After adjusting for age, gender, and two indicators of health status for either gender, no connection for either gender was found. In all of the logistic regression studies, gender and the two indicators of health status had a significant impact on the usage of medications (results not shown). Women were more likely than men to utilise medications. The same applied to people who self-reported having a chronic illness and having poorer than ideal general health. Age-related increases in regular and prescription medication use were observed, but not in OTC medication use.

Table-4: Prevalence (%) and crude odds ratios of OTC medicine use within 21 days and the association with education for men andwomen in logistic regression models. Results expressed as odds ratios (OR) and 95% confidence intervals (CI)

SR. NO	MEN					WOMEN				
1	Education	Prevalence (%)	Crude OR (95% CI	OR (95% CI) adjusted for age and gender	OR (95% CI) adjusted for age, gender and two measures of health status	Education	Prevalence (%)	Crude OR (95% CI	OR (95% CI) adjusted for age and gender	OR (95% CI) adjusted for age, gender and two measures of health status
2	Less than 10	27	1.0	1.1	0.9	Less than 10	40	1.1	1.2	1.0
3	10-12	24	0.9	1.1	0.9	10-12	37	1.0	1.0	1.0
4	Above up 12	22	1.0	1.0	1.0	Above up 12	35	1.0	1.0	1.0

DISCUSSION :

This study's main finding was that social disparities in medication use exist in the general population for prescription drug use but not for over-the-counter drug use. When occupation or income were taken into account while calculating SEP, this was true for prescription drug consumption. Utilizing schooling as a SEP indicator revealed no gradient for women, but a curve-linear connection for men. Social differences in the use of OTC medications, on the other hand, did not appear to exist for any of the SEP measures. Frequent use and prescription drug use both displayed a similar trend in terms of their correlation with several SEP indicators (results not shown for regular medicine use). No prior study, to our knowledge, has looked into the self-reported general use of medication in a broad population while separating usage of prescription and OTC medications. The findings of this study are consistent with the variations in prescription medication use amongst educational categories observed in the Indian population. After accounting for health status, the correlation in the study was not considered significant. The results of this study are consistent with two ecological studies that found that prescription drug use decreased as SEP increased. When other SEP measures were utilized in this investigation, no gender differences were discovered. So, compared to occupation and money, education as a measure of SEP represents a different component of social standing. Income may influence health more through its function as a barometer of social standing than through its influence on material living standards, according to some research. When assessing how well a health care system is working, analyses of the relationship between medicine use and income are very pertinent. Our findings add to the body of knowledge about the relationship between SEP and medication use in the general population. The current study provides evidence of social differences in the regular and prescription usage of medications. The correlations revealed that those that are least wealthy utilize medicine the most. This finding shows that the co-payment for pharmaceutical costs and income redistribution through taxes in India work, and that even though they consume more medication, the poorest people still have access to it. We did not observe an increase in OTC medication use with rising SEP, in contrast to some other investigations. Since OTC medications aren't covered by insurance, social divides might be anticipated.

CONCLUSION

In this study, cross-sectional data were used as the basis for the analyses, which produced relationships as their findings. It is presumable that medication consumption is a result of poor health. SEP and poor health are strongly associated, and current theological debates—which are outside the purview of this article—are attempting to establish a causal link between health and SEP. Unknown is the reliability of the respondents' information. It has been demonstrated that self-reporting of prescription medication usage is generally good to outstanding across low- and middle-income groups. In this investigation, the recall window was 21 days. This might lead to even higher recall validity for prescription drugs. Regarding the reliability of self-reported OTC medication use, we are not aware of any published evidence.

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