



GENDER DIFFERENCES IN HEALTH-RELATED EXPENDITURE FOR OLDER ADULTS

Community Medicine

Yogesh R. Yadav	Former Intern, Community Medicine Department, Rajiv Gandhi Medical College, Kalwa, Thane-400 605, Maharashtra, India.
Kusum Saini	Former Intern, Community Medicine Department, Rajiv Gandhi Medical College, Kalwa, Thane-400 605, Maharashtra, India.
Aniruddha Malgaonkar	Assistant Professor, Community Medicine Department, Rajiv Gandhi Medical College, Kalwa, Thane-400 605, Maharashtra, India.
Pradnya Jadhav*	Assistant Professor, Community Medicine Department, Rajiv Gandhi Medical College, Kalwa, Thane-400 605, Maharashtra, India. *Corresponding Author
Sundaram Kartikeyan	Professor and Head, Community Medicine Department, Rajiv Gandhi Medical College, Kalwa, Thane-400 605, Maharashtra, India.

ABSTRACT

This cross-sectional descriptive online study was conducted by the chain sampling technique on 103 participants (38 females: 36.89% and 65 males: 63.10%) to determine their patterns of out-of-pocket health-related expenditure. The mean age of female and male participants was 53.11 +/- 6.55 years and 55.09 +/- 6.20 years respectively, without significant gender difference ($Z=1.509$; $p=0.131$). The gender difference was not significant in relation to occupation ($Z=1.194$; $p=0.234$), religion ($Z=0.195$; $p=0.841$), type of family ($Z=0.802$; $p=0.423$), number of earning members in the family ($Z=0.316$; $p=0.748$) and mean total family income ($Z=0.280$; $p=0.779$). Though the mean duration of illness for female participants was significantly higher ($Z=2.384$; $p=0.017$) than that for their male counterparts, the average monthly expenditure during the recall period was significantly higher for males for prescribed medications ($Z=2.704$; $p=0.006$), investigations ($Z=3.033$; $p=0.002$), follow-up visits ($Z=2.172$; $p=0.029$) and self-medication ($Z=4.976$; $p<0.0001$).

KEYWORDS

Gender differences, Health expenditure, Older adults, Out-of-pocket expenditure

INTRODUCTION

Increased use of technology in diagnostics and treatment of diseases and increased expectations of the population has led to an increase in the cost of health care, [1] which has led to inequity in access to health care services. [2] In a study [2] conducted in Puducherry, South India, nearly 70% of the population had utilized the public sector in contrast to 19.9% reported by a Haryana-based study. [3]

In India, healthcare is predominantly financed through out-of-pocket expenditure at the point of delivery of services. [4] The effect of severe financial hardship is widespread in low-income countries where health care is mainly financed by direct out-of-pocket payments. [5] Out-of-pocket payments are widespread in India, where, only 15% of the population is covered by health insurance. [6] Public expenditure on health in India is about one per cent of gross domestic product, which is much lower than that in Nepal and Sri Lanka. [6] As a consequence of out-of-pocket expenditure, households would have reduced amount of resources for purchasing items that would be essential for the quality of life. Out-of-pocket expenditure on health care has been implicated as a creator of poverty and "medical poverty trap" in Indonesia, [7] Vietnam, [8] China, [9] Thailand, [10] and other Asian countries. [5]

A "poverty trap" is a spiralling mechanism that makes it very difficult for people to escape poverty. Although China has made great efforts to improve the medical service level and medical security system in poor areas in recent years, the poor still face a great burden of medical care. [11] A study [12] reported that more than half of the households attributed their poverty to household members suffering from diseases. Studies have focused on the health-poverty nexus, [13] disease-driven poverty trap, [14, 15] poverty and ill-health vicious cycle, [16] ecosystem-poverty-health interaction, [17] and medical poverty trap. [18]

The present study was conducted on adults of either gender, aged between 45 and 65 years, to determine their patterns of out-of-pocket health-related expenditure.

MATERIALS AND METHODS

This cross-sectional descriptive study was conducted in 2020 using a pre-tested and pre-validated questionnaire via Google forms. This online questionnaire was administered, by the chain sampling

technique, to older adults (aged between 45 and 65 years), of either gender, who were residing in a metropolitan city in Western India. Informed consent was taken on the Google forms. Questions on the Google forms included personal particulars, clinical history and health-related expenses incurred by the participant during a recall period of 3 months preceding the date of answering the questionnaire. The data were adapted to Microsoft Excel spreadsheet (Microsoft Corporation, Redmond, WA, USA) and analyzed using SPSS statistical software Windows Version 25.0 (IBM Corporation, Armonk, NY, USA). For discrete data, the percentage of responses and the standard error of difference between two sample proportions were calculated. For continuous data, the standard error of difference between two means was calculated. 95% Confidence interval (CI) was stated as: [Mean-(1.96)*Standard Error] - [Mean+(1.96)* Standard Error]. The statistical significance was determined at $p<0.05$.

RESULTS AND DISCUSSION

There were 103 participants (38 females: 36.89% and 65 males: 63.10%).

Demographics: The mean age of female and male participants was 53.11 +/- 6.55 years (95% CI: 51.02–55.19 years) and 55.09 +/- 6.20 years (95% CI: 53.59–56.60 years), respectively. The gender difference in mean age was not significant ($Z=1.509$; $p=0.131$). The third quartile was identical between the two genders, but the first quartile and median of the age distribution was lower for female participants. (Fig-1).

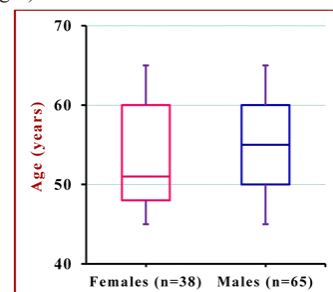


Fig-1: Box plot of age distribution

Table-1: Gender differences in monthly health-related expenses

Monthly Expenses in Rupees		Females (n=38)	Males (n=65)	Z & 'p' values
Prescribed medications	Mean +/- SD	537 +/- 726	930 +/- 686	Z = 2.704 'p' = 0.006 *
	95% CI	306 – 768	763 - 1097	
Investigations	Mean +/- SD	251 +/- 148	386 +/- 299	Z = 3.033 'p' = 0.002 *
	95% CI	204 – 298	313 – 458	
Follow-up visits	Mean +/- SD	126 +/- 61	251 +/- 457	Z = 2.172 'p' = 0.029 *
	95% CI	107 – 146	140 – 362	
Self-medication	Mean +/- SD	87 +/- 57	186 +/- 142	Z = 4.976 'p' < 0.0001 *
	95% CI	69 – 106	151 – 220	

Z = Standard error in difference between two means; SD = Standard deviation;

CI = Confidence interval; *Significant

The gender difference was not significant in relation to occupation ($Z=1.194$; $p=0.234$), religion ($Z=0.195$; $p=0.841$), type of family ($Z=0.802$; $p=0.423$), and number of earning members in the family ($Z=0.316$; $p=0.748$). However, the gender difference in level of education was highly significant ($Z=3.115$; $p=0.001$). The mean total family income of female and male participants was 24351 +/- 17786 rupees (95% CI: 18696–30007 rupees) and 25452 +/- 21498 rupees (95% CI: 20226–30679 rupees), respectively. The gender difference in mean total family income was not significant ($Z=0.280$; $p=0.779$).

Monthly health-related expenses: The average monthly expenditure during the recall period was significantly higher for males for prescribed medications, investigations, follow-up visits and self-medication (Table-1). Indian studies [19, 20] have reported widespread gender bias in intra-household expenditure on health and that women find themselves in subordinate positions to men and are socially, culturally, and economically dependent on them. Health expenditure on males was found to be relatively high as compared to that on females in studies conducted during two time periods: 1999-2000 and 2007-2008. [21] In developing countries, deep rooted social hierarchy and patriarchy relegate women's health to the bottom of the household priority list. Moreover, the household work done by women is not seen as economically productive activity and therefore, priority is given to the needs of earning male family members. [22-24] A longitudinal survey [25] concluded that expenditures on female adults are significantly lower than those on their male counterparts. Another study [26] found that there was a significant difference between male and female out-of-pocket health expenditure in urban areas.

Duration of illness: The mean duration of illness for female participants was 7.02 +/- 6.82 years (95% CI: 4.85–9.19 years), while that for their male counterparts was significantly lower at 4.04 +/- 4.39 years (95% CI: 3.02–5.15 years), exhibiting significant ($Z=2.384$; $p=0.017$) gender difference.

Post-surgery expenses: A total of 18 females and 21 males had undergone surgery during one year preceding the study. The mean monthly post-surgery expenses for female and male participants was 290 +/- 292 rupees (95% CI: 197–292 rupees) and 262 +/- 123 rupees (95% CI: 232–292 rupees), respectively. The gender difference in mean monthly post-surgery expenses was not significant ($Z=0.379$; $p=0.704$).

Health problems: About one-third of respondents were diabetic without significant gender difference ($Z=0.037$; $p=0.968$). The frequency of hypertension in males and females was slightly above 40%, without significant gender difference ($Z=0.163$; $p=0.872$). The gender difference in frequency of other health problems was also not significant ($Z=0.910$; $p=0.362$).

Financial problems: 23 females and 34 males had financial problems due to which, seven females and three males had deferred the purchase of spectacles / hearing aids, exhibiting significant gender difference ($Z=2.104$; $p=0.035$). 16 females and 22 males had skipped purchase of medications due to financial constraints. The gender difference was not significant ($Z=0.381$; $p=0.703$).

CONCLUSION

The average monthly expenditure during the recall period was significantly higher for males for prescribed medications, investigations, follow-up visits, and self-medication, although the mean duration of illness for female participants was significantly higher than that for males.

REFERENCES

- Prinja, S., Bahuguna, P., Pinto, A. D., Sharma, A., Bharaj, G., Kumar, V., et al. (2012). "The cost of universal health care in India: A model based estimate". *PLoS ONE*, 7(1), e30362.
- Archana, R., Kar, S. S., Premarajan, K., & Lakshminarayanan, S. (2014). "Out of pocket expenditure among the households of a rural area in Puducherry, South India". *J Nat Sci Biol Med*, 5(1), 135-138.
- Ray, T. K., Pandav, C. S., Anand, K., Kapoor, S. K., Dwivedi, S. N. (2002). "Out-of-pocket expenditure on healthcare in a north Indian village". *Natl Med J India*, 15(5), 257-260.
- National Health Systems Resource Centre. (2016). "National Health Accounts Estimates for India, 2013-14". New Delhi: Ministry of Health and Family Welfare, Government of India.
- van Doorslaer, E., O'Donnell, O., Rannan-Eliya, R. P., Somanathan, A., Adhikari, S. R., Garg, C. C., et al. (2007). "Catastrophic payments for health care in Asia". *Health Econ*, 16(11), 1159-1184.
- Pandey, A., Ploubidis, G. B., Clarke, L., & Dandona, L. (2018). "Trends in catastrophic health expenditure in India: 1993 to 2014". *Bull World Health Organ*, 96(1), 18-28.
- Gertler, P., & Gruber, J. (2002). "Insuring consumption against illness". *Am Econ Rev*, 92(1), 51-70.
- Wagstaff, A. (2005). "The economic consequences of health shocks". World Bank policy research working paper No. WPS 3644, Washington, DC: World Bank.
- Lindelow, M., & Wagstaff, A. (2005). "Health shocks in China: Are the poor and uninsured less protected?" World Bank policy research working paper No. 3740. Washington, DC: World Bank.
- Limwattananon, S., Tangcharoensathien, V., & Prakongsai, P. (2007). "Catastrophic and poverty impacts of health payments: Results from national household surveys in Thailand". *Bull World Health Organ*, 85(8), 600-606.
- Zhou, Y., Guo, Y., & Liu, Y. (2020). "Health, income and poverty: evidence from China's rural household survey". *Int J Equity Health*, 19(1), 36.
- Palmer, M. (2011). "Disability and poverty: A conceptual review". *J Disa Policy Stu*, 21(4), 210-218.
- Bonds, M. H., Keenan, D. C., Rohani, P., & Sachs, J. D. (2010). "Poverty trap formed by the ecology of infectious diseases". *Proc Bio Sci*, 277(1685), 1185-1192.
- Nongphala, C. N., Plucinski, M. M., Murray, M. B., Farmer, P. E., Barrett, C. B., & Keenan, D. C. (2014). "Poverty, disease, and the ecology of complex systems". *PLoS Bio*, 12(4), e1001827.
- Plucinski, M. M., Nongphala, C. N., & Bonds, M. H. (2011). "Health safety nets can break cycles of poverty and disease: A stochastic ecological model". *J R Soc Interface*, 8(65), 1796-1803.
- Pickett, K. E., & Wilkinson, R. G. (2015). "Income inequality and health: a causal review". *Soc Sci Med*, 128, 316-326.
- Grace, D., Lindahl, J., Wanyoike, F., Bett, B., Randolph, T., & Rich, K. M. (2017). "Poor livestock keepers: Ecosystem-poverty-health interactions". *Philos Trans R Soc Lond*, 372(1725), 20160166.
- Mcintyre, D., Thiede, M., Dahlgren, G., & Whitehead, M. (2006). "What are the economic consequences for households of illness and of paying for health care in low- and middle-income country contexts?" *Soc Sci Med*, 62(4), 858-865.
- Saikia, N., Moradhvaj, & Bora, J. K. (2016). "Gender Difference in Health-Care Expenditure: Evidence from India Human Development Survey". *PloS one*, 11(7), e0158332.
- Fikree, F. F., & Pasha, O. (2004). "Role of gender in health disparity: the South Asian context". *BMJ*, 328(7443), 823-826.
- Maharana, B., & Ladusingh, L. (2014). "Gender disparity in health and food expenditure in India among elderly". *Int J Pop Res*, Article ID 150105, 8 pages.
- Gao, M., & Yao, Y. (2006). "Gender gaps in access to health care in rural China". *Econ Dev Cult Change*, 55(1), 87-107.
- Ahmed, S. M., Adams, A. M., Chowdhury, M., Bhuiya, A. (2000). "Gender, socioeconomic development and health-seeking behaviour in Bangladesh". *Soc Sci Med*, 51(3), 361-371.
- Santov, G. (1995). "Social roles and physical health: The case of female disadvantage in poor countries". *Soc Sci Med*, 40(2), 147-161.
- Batra, A., Gupta, I., & Mukhopadhyay, A. (2018). "Gender Differences in Health Expenditure of Rural Cancer Patients: Evidence from a Public Tertiary Care Facility in India". *J Quant Econ*, 16(3), 615-629.
- Rout, H. S. (2006). "Gender inequality in household health expenditure: The case of urban Orissa". *Nagarloek*, 38(3), 44-48.