

## INDIRECT COST OF HIV/AIDS: RESULTS OF A SURVEY FROM A TURKISH RESEARCH CENTER

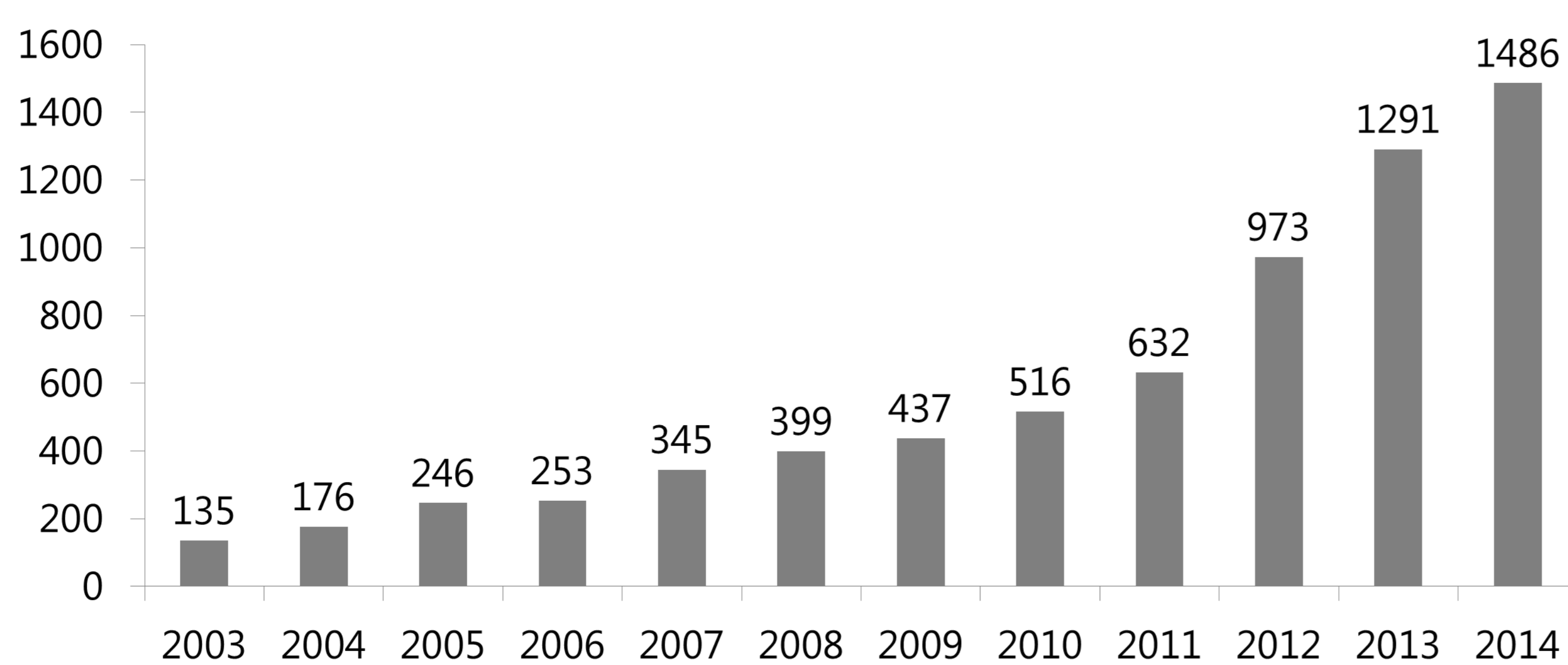
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### OBJECTIVES

Anti-retroviral treatment (ART) alternatives in HIV/AIDS have improved in the last decade with a significant impact on both the length and quality of life of patients. As patients are now living longer, indirect costs associated with the disease are becoming increasingly important. A total of 6889 HIV+ cases were diagnosed between 2003-2014 in Turkey according to the data from the Turkish Public Health Institution (Figure 1), and in recent years there has been increasing evidence indicating that the impact of HIV/AIDS on the general economy may be higher than expected. The aim of this study was to explore the indirect costs of HIV/AIDS in Turkey.

**Figure 1:** Number of HIV+ patients recorded between 2003 and 2014



**Source:** Turkish Public Health Institution (2015)

### METHODS

The study adopted the human capital approach to measure indirect costs. A questionnaire, exploring the number of days lost at work due to the disease and the extent of productivity losses, was designed. The questionnaire was completed via telephone interview by 72 HIV+ patients registered at a university hospital in Ankara, Turkey between August-November 2015. The indirect costs associated with lost income due to premature death were also calculated from the patient record database of the centre (255 patients). The number of life years lost due to premature death and official employment statistics were used to estimate the income lost.

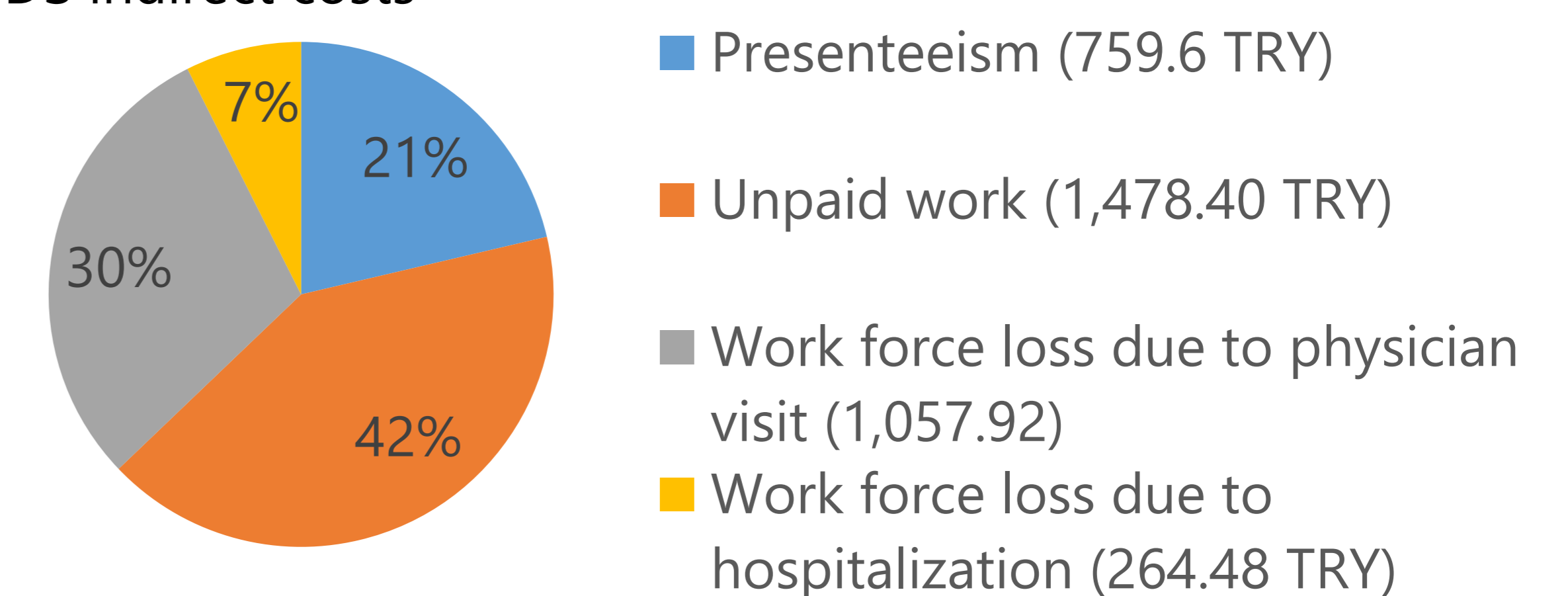
### RESULTS

Three different types of indirect costs were calculated from the answers to the questionnaire: 1) productivity loss due to absenteeism (days of work missed because of illness), 2) productivity loss due to presenteeism (days at work with limited performance because of health status) 3) productivity loss due to unpaid caregiving by a relative

Productivity loss due to absence from work was subdivided into loss due to hospitalization and loss due to physician visit.

The annual indirect cost of HIV/AIDS per patient was estimated as 3,560.40TRY. The majority of this cost was due to unpaid work (1,478.4TRY) and absenteeism due to the disease related visit to the health center (1,057.92TRY).

**Figure 2:** HIV/AIDS indirect costs



**Table 1:** Indirect costs due to life years lost after HIV diagnosis

	Male		Female	
	19-29	30-39	19-29	30-39
Average age at diagnosis	25.1	30.65	24.5	30.17
Maximum age for HIV	48.14	53.65	47.5	53.17
Lost life year	29.36	23.85	30.0	24.33
Lost working year	11.86	6.35	10.5	4.83
Lost income (TRY)	308,902	221,495	252,344	144,708

- Maximum age for HIV after diagnosis is estimated as 22 years for males 23 years for females (Harrison, 2010)
- Retirement age is 60 for males, 58 for females
- Income statistics are from the Turkish Statistics Institute
- Net present value methods is used with 3% discount rate

The total lost income of patients in the dataset at productive age (19-60) was estimated as 10,401,595TRY (Table 1).

**Table 2:** Loss of income due to HIV/AIDS

Age Groups	Number of male patients	Number of female patients	Loss of Income (TRY)	
			Male	Female
19-29	7	2	2,162,314	504,688
30-39	31	6	6,866,345	868,248
Total	38	8	9,028,659	1,372,936
Total			10,401,595	

### CONCLUSION

This study explored the indirect costs of HIV/AIDS from a single research centre in Turkey.

The results indicated that indirect costs have a significant impact on society and the general economy which should also be taken into account when estimating the total burden of the disease.

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