

MULTIPLE SCLEROSIS BURDEN OF ILLNESS STUDY FOR TURKEY

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OBJECTIVES

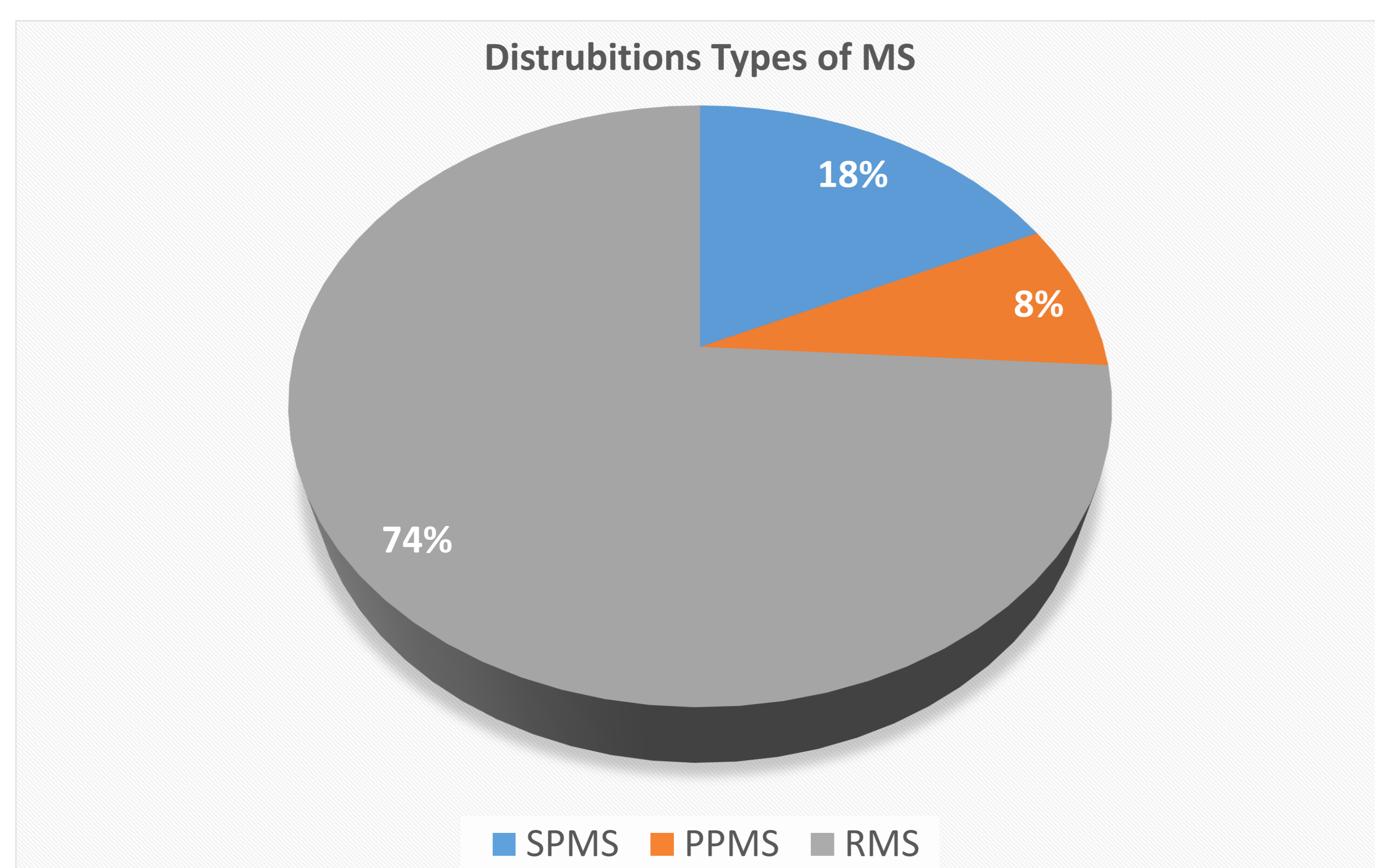
Multiple Sclerosis (MS) is a major public health problem in Turkey with high cost implications. The objective of this study is to analyze the economic burden of illness for MS in Turkey, both from the payer's and society's perspective.

METHODS

To be able to perform this study, total cost of MS was calculated by estimating direct and indirect costs. Direct costs estimations were performed in two phases. In the first phase, a Delphi Group, which consisted of 9 neurologists, was gathered to identify the direct costs of medicines, physician admissions, physiotherapy and diagnostic test requirements related with the disease. In the second phase of direct costs estimation, informations collected from Delphi Group, MS prevalence in Turkey data and Health Implementation Notification (SUT) price lists were utilized. For the indirect costs estimation, human capital approach has been preferred and Turkish Statistical Institute (TurkStat) was chosen as source for labor statistics and and population/age distribution data.

FINDINGS

Graphic 1: Distribution of Types of MS based on Delphi Panel Outcomes



According to the epidemiology data for MS, prevalence of the disease is taken as 40/100.000 which corresponds to 31.926 patients in Turkey when population data of 2016 is used. By taking Delphi Group's observational estimations into consideration, the prevalences of the types of MS (RRMS, SPMS, PPMS) were distributed as 74%, 18% and 8%, respectively.

Direct costs, including diagnosis, treatment of attacks and symptoms, RRMS, PPMS and SPMS, were found to be as follow;

Table 1: MS Direct Costs to Payer

Category	Cost (mTRY)
Total MS Cost	705,7 mTRY
Diagnosis Cost	13,29 mTRY
Attacks and Symptoms Cost	22,6 mTRY
RRMS Cost	597,6 mTRY
SPMS Cost	24,6 mTRY
PPMS Cost	46,9 mTRY

* RRMS: Relapsing Remitting Multiple Sclerosis
* SPMS: Secondary Progressive Multiple Sclerosis
* PPMS: Primary Progressive Multiple Sclerosis

As mentioned in Methodology, human capital approach method was performed to estimate the indirect costs of the disease. The calculations were done by taking daily gross earnings in 2016 as basis. The gross earnings in 2016 were calculated by inflating the latest earning statistics data (2010) available in TurkStat database. The indirect costs were found by calculating all possible earning losses caused by absenteeism, early retirement, early death and cost of caregivers;

Table 2: MS Indirect Costs to Society (mTRY)

Absenteeism	Early Retirement	Early Death	Cost of Caregivers	Total
52,3 (2,8%)	1.308,9 (69,6%)	404,6 (21,5%)	113,6 (6%)	1.879,4 (100%)

RESULTS

The direct costs including diagnosis, treatment of MS attacks and symptoms, for RRMS, PPMS, SPMS are found to be 705.745.333 TRY (~115,6 mEUR) in total for the payer. Medicines make only 61% of this direct burden of illness in MS. The indirect costs and economic losses caused by loss of productivity due to MS, are consisting of factors such as absenteeism, early retirement, early death, and cost of caregivers, which is a service required by most MS patients, and indirect costs sum up to 1.879.454.246 TRY (~307,8 mEUR) for the society.

CONCLUSION

In this study, the direct costs from payer's (SGK) perspective and the indirect costs from society's perspective are presented. To be able to perform more reliable indirect cost calculation, indirect cost data should be collected directly from MS patients. As this study indicates, MS disease and its treatment cause negative outcomes both on public health and economy. However, new innovative medicines for MS treatment are expected to reduce the negative effects of MS with increased cure rates and reduced relapse.