Effect of Vitamin C Use on Cost of Common Cold in Türkiye

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INTRODUCTION

- The common cold impacts approximately 5-10% of the working population, leading to substantial economic losses that amount to billions of dollars due to decreased productivity.[1]
- Numerous individuals resort to either prescribed or over-the-counter remedies to alleviate symptoms associated with the common cold. Within the realm of preventive measures, Vitamin C plays a pivotal role in enhancing immune responses by fortifying both innate and adaptive cellular mechanisms. It is noteworthy that vitamin C is not synthesized endogenously in humans, making it an indispensable component of the diet.[1]
- This research endeavors to examine the intake of Vitamin C among professionals in white-collar occupations, its consequent impact on healthcare expenditure, and its overarching effect on workforce participation in the context of the common cold.

METHOD

- For this investigation, a comprehensive literature search was undertaken with keywords such as 'common cold', 'vitamin C', 'productivity loss', and 'absenteeism'. To determine costs specific to Türkiye, reviews on treatment expenditures for the common cold were conducted in Turkish. The search timeframe was open-ended, and only pertinent studies with requisite data were incorporated into the research.
- Utilizing a weighted average from literature studies, we derived data on the frequency and duration of seasonal flu episodes, absenteeism length, and medical treatment costs. Additionally, data concerning the monthly net income and proportion of white-collar workers in Türkiye were sourced from national publications and adjusted for inflation.
- The impact of 1,000 mg daily vitamin C supplementation on workforce efficiency and potential medical cost savings assesed.

RESULTS

White-Collar Workforce: Salary and Daily Labor Cost Metrics

Number of White-Collar Workers	1
Average Monthly Net Salary of White-Collar Workers	TRY26,174.41
Calculated Daily Labor Cost for Workers	TRY1,852.01

- In the context of our study concerning the workforce, it was discerned that the representation for white-collar workers was quantified as one individual. Further financial scrutiny revealed that the average monthly net remuneration for these white-collar professionals stood at TRY26,174.41. When broken down on a daily basis, the resultant labor cost was determined to be approximately TRY1,852.01.

Impact of Vitamin C Intake on Flu-Related Work Absenteeism and Associated Costs

	Absence of Vitamin C Intake	Presence of Vitamin C Intake	Differential
Total workdays missed due to the flu	2.61 day	1.91 day	-0.70 day
Total inefficient workdays while working due to the flu	8.46 day	7.25 day	-1.22 day
Total workday loss due to the flu	5.05 day	4.00 day	-1.05 day
Labor loss cost	TRY9,356.81	TRY7,410.61	-TRY1,946.21
Medical treatment cost	TRY7,279.61	TRY6,787.75	-TRY491.87
Vitamin C cost	-	TRY1,739.40	-
Total	TRY16,636.43	TRY15,937.75	-TRY698.67

Overall;

Economic Savings

The monetary impact of this productivity increase is significant. Without Vitamin C, the labor loss cost is TRY9,356.81, while with its usage, it drops to TRY7,410.61 — a saving of TRY1,946.21 per affected white-collar worker.

Furthermore, the medical treatment cost also sees a reduction, albeit a more modest one, of TRY491.87.

Economic Impact on Productivity

The introduction of Vitamin C has a pronounced effect on reducing absenteeism due to the flu. Specifically, there is a reduction of 0.70 days in total absenteeism and a 1.22-day reduction in inefficiency while working during flu episodes.

Overall, this results in a total reduction of 1.05 workdays lost due to the flu when Vitamin C is used.

Vitamin C Cost

It's worth noting that while there are savings on laabor loss and medical treatment, there is an incurred cost of TRY1,739.40 for Vitamin C product.

After factoring in all costs and savings, the total monetary impact favors Vitamin C usage, with a net saving of TRY698.67 per white-collar worker.

CONCLUSIONS

- Comprehensive evaluation indicates a net monetary advantage of vitamin C usage, with savings amounting to approximately TRY698.67 for each white-collar worker.
- Integrating Vitamin C into the health regimen of professionals marks a significant stride in mitigating influenza-induced workplace absences and related inefficiencies.
- Beyond the realm of productivity, the influence of Vitamin C extends to broader economic considerations, particularly in terms of expenditure related to flu treatments and subsequent economic setbacks for businesses. While the introduction of Vitamin C incurs specific costs, the overall financial benefits, when weighed against these expenditures, accentuate the product's considerable potential.
- Vitamin C, positioned at the confluence of health optimization, productivity enhancement, and fiscal prudence, emerges as a pivotal tool that could potentially reshape organizational approaches during flu seasons.

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