A cost of illness study of the economic burden of diabetes in the Eastern Mediterranean Region

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Abstract

Background: Diabetes poses an increasing public health and economic challenge in the Eastern Mediterranean Region (EMR), yet its full financial impact across the region remains poorly quantified.

Aim: To estimate the economic burden of diabetes, including direct and indirect costs, in the 22 EMR countries and territories.

Methods: A prevalence-based approach was used to estimate the annual direct and indirect costs of diabetes in the EMR from 2023 to 2050. Data were sourced from international, open-access databases. Mortality costs were estimated using the value of a statistical life-year approach.

Results: In 2023, diabetes affected more than 74 million people in the EMR and caused approximately 833 000 deaths. By 2050, diabetes cases are projected to reach 150 million, with associated deaths rising to 2 million. The economic burden in 2023 was estimated at 639 billion international dollars (Int$), 89% of which was attributable to indirect costs. By 2050, the burden is expected to reach Int$ 1.5 trillion.

Conclusion: Without urgent intervention, diabetes will place increasing strain on healthcare systems, hinder economic growth and widen health inequalities. Implementing cost-effective public health strategies can significantly reduce its societal and economic burden.

Keywords: diabetes, economic burden, cost of illness, direct cost, indirect cost, productivity losses, presenteeism, absenteeism, mortality, Eastern Mediterranean

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Introduction

Diabetes is one of the most alarming public health challenges of the 21st Century *(1,2)*. In 2021, more than 537 million adults worldwide were living with diabetes, representing a global prevalence of 10.5%. This figure is projected to increase to 643 million by 2030 and 783 million by 2045 *(3)*. The Eastern Mediterranean Region (EMR) has the highest prevalence of diabetes among WHO regions, due to factors such as demographic transition, sedentary lifestyles, and unhealthy dietary patterns *(4,5)*.

Having caused an estimated 6.7 million deaths in 2021, diabetes is now among the top 10 causes of death globally, exceeding the combined mortality from infectious diseases *(3,6)*. Diabetes and its complications can severely impair health-related quality-of-life *(7–9)*. To address this growing burden, WHO and other United Nations (UN) agencies have set a target to reduce premature deaths due to noncommunicable diseases (NCDs), including diabetes, by 30% by 2030 *(10)*.

Beyond its health impact, diabetes imposes a substantial economic burden worldwide *(11)*. Global health expenditures on diabetes reached $US 966 billion in 2021 and are projected to exceed $US 1 trillion by 2045 *(3)*. Studies in countries and territories of the EMR have shown substantial diabetes-related costs. For example, in 2019, the total cost of diabetes in the 6 countries of the Gulf Cooperation Council (GCC) exceeded $US 13.2 billion, with direct medical costs accounting for a major share *(12)*.

Cost-of-illness studies quantify the economic burden of disease by examining direct, indirect and intangible costs *(13,14)*. Direct costs include health care expenditures for diabetes management and associated complications – including out-of-pocket costs – as well as non-medical costs such as transportation *(15)*. Indirect costs reflect productivity losses due to illness, disability or premature death, and the value of informal caregiving. Intangible costs include reductions in quality-of-life and societal costs of mortality, often estimated using monetary valuation *(16)*.

Information from cost of illness studies is necessary to determine the scope of the illness and guide activities to scale up cost-effective interventions that will provide a significant return on investment *(17)*. These studies provide essential evidence to guide resource-related

decision-making and the design of cost-effective interventions *(18)*.

Based on available evidence, no study has comprehensively assessed the economic burden of diabetes in the EMR. To address this gap, this analysis estimated the direct and indirect costs – due to absenteeism, presenteeism and mortality – in the 22 countries and territories of the EMR from 2023 to 2050.

Methods

Cost estimation

This study used a prevalence-based approach to estimate the annual direct and indirect costs of diabetes in the 22 countries and territories of the EMR from 2023 to 2050. Rather than considering new cases only, this approach accounts for all cases of diabetes within a year. The number of prevalent cases and deaths (among individuals aged 20–79 years) attributable to diabetes was obtained from the International Diabetes Federation (IDF) Diabetes Atlas 2021 *(3)*. The estimates provided by IDF were then redistributed by sex and 5-year age groups in the EMR using data from the Institute for Health Metrics and Evaluation (IHME) Global Burden of Disease (GBD) Study 2021 *(19)*. Population estimates from the United Nations World Population Prospects *(20)* were used to model the future burden over time, assuming that prevalence and mortality rates remain constant throughout the period. Therefore, changes in prevalence and mortality over time are driven solely by changes in size and demographic structure.

Currency and discounting

The study used international dollars (Int$) to ensure comparability across the selected countries and territories. This currency unit adjusts for differences in purchasing power, reflecting the relative cost of goods and services in each country and territory. All future costs were discounted at an annual rate of 3%, in line with WHO recommendations *(21)*.

Reporting standards

We followed the Guidelines for Accurate and Transparent Health Estimates Reporting (GATHER) to guide methodological reporting and ensure transparency and reproducibility *(22)*.

Study setting

The analysis was performed for the 22 countries and territories of the EMR: Afghanistan, Bahrain, Djibouti, Egypt, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, occupied Palestinian territory, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates and Yemen.

Cost components

This study estimated direct costs and indirect economic losses associated with diabetes in the EMR. Direct costs refer to diabetes-related expenditures incurred by the health system. Indirect losses include foregone productivity due to absenteeism, presenteeism, and premature deaths attributable to diabetes. The calculation methods are presented as follows.

Direct health care costs

To calculate the annual direct health care costs in each country or territory, the following formula was used:

$$C \times CR \times HEP$$

where C = number of diabetes cases; CR = coverage rate; and HEP = diabetes-related health expenditure per person.

We used the percentage of diagnosed cases from the IDF *(3)* to determine coverage rates, assuming that all diagnosed cases received treatment. The diabetes-related health expenditure per person, in Int$, was obtained from the IDF *(3)*.

Cost of absenteeism

Excess absenteeism refers to the average additional number of workdays missed by employees due to diabetes. The following formula was used to calculate the annual productivity loss due to absenteeism:

$$\sum_{a,s} \left(CW_{a,s} \times LFPR_s \times ER_s \times GDPW \times APRR \right)$$

where $CW_{a,s}$ = number of diabetes cases in the working-age population (15–64 years), stratified by age (a) and sex (s); $LFPR_s$ = sex-specific labour force participation rate; ER_s = sex-specific employment rate; $GDPW$ = gross domestic product per working-age population; and $APRR$ = absenteeism-related productivity reduction rate.

The labour force participation rate represents the proportion of the working-age population that is economically active, while the employment rate reflects the proportion currently employed. For both rates, we used country and sex-specific values sourced from the International Labour Organization *(23)*. GDP per working-age population was calculated by dividing total GDP, obtained from the World Bank *(24)*, by the working-age population (15–64 years). The absenteeism-related productivity reduction rate was based on an estimated annual average of 2.8 workdays lost per worker with diabetes, as reported by the American Diabetes Association *(25)*. This estimate was converted into a percentage using the total number of annual workdays in each country or territory.

Cost of presenteeism

Excess presenteeism refers to the average additional productivity loss among employees with diabetes who are present at work but perform at reduced capacity due to the disease and its complications. The following formula was used to calculate the annual productivity loss among workers affected by diabetes due to presenteeism:

$$\sum_{a,s} \left(CW_{a,s} \times LFPR_s \times ER_s \times GDPW \times PPRR \right)$$

where $CW_{a,s}$ = number of diabetes cases in the working-age population (15–64 years), stratified by age (a) and sex (s); $LFPR_s$ = sex-specific labour force participation rate; ER_s = the sex-specific employment rate; *GDPW* = gross domestic product per working-age population; and *PPRR* = presenteeism-related productivity reduction rate.

We used the same method as in the absenteeism calculation. The only difference was the PPRRs (7.4% on average), which were based on estimates from the United States Centers for Disease Control and Prevention *(26)*. This rate was assumed to be constant across all countries.

Societal cost of mortality

We estimated the societal cost of mortality caused by diabetes using the value of a statistical life-year (VSLY) approach, which captures the value of all deaths, not just those occurring among the employed.

The formula used to estimate the annual cost of premature mortality was as follows:

$$\sum_{a,s} \left\{ D_{a,s} \times LE_a \times [VSLY \,/\, (1+r)^{LE_a}] \right\}$$

where $D_{a,s}$ = number of diabetes-related deaths by age group (a) and sex (s); LE_a = life expectancy at age (a); *VSLY* = value of a statistical life-year; and r = discount rate.

Life expectancy by 5-year age group was sourced from the WHO Global Observatory *(27)*. The value of a statistical life (VSL) for each country or territory was calculated using the method proposed by Viscusi and Masterman based on differences in gross national income (GNI) per capita *(28)*. Once obtained, the VSL was divided by the life expectancy of an individual at the median age in each country or territory to derive the VSLY *(29)*.

Sensitivity analysis

We conducted a sensitivity analysis to assess how the economic burden would change if mortality costs were estimated using a productivity-based approach. This alternative used the human capital method by applying the following formula:

$$D \times L \times E \times \left[\sum_{t=S}^{R} GDPW \,/\, (1+r)^{t-S} \right]$$

where D = number of diabetes-related deaths; L = labour force participation rate; E = employment rate; S = starting age of employment; R = retirement age; *GDPW* = gross domestic product per working-age population; and r = discount rate. The working-age population was defined as 15–64 years across all countries and territories.

Results

Health burden

In 2023, more than 74 million people in the EMR were living with diabetes. Of these, 54% resided in 6 countries of Group 3 (Table 1). Pakistan alone accounted for approximately 46% of the regional total, followed by Egypt, with nearly 11 million cases. If prevalence rates remain constant, the number of people living with diabetes in the region is projected to reach about 150 million by 2050, corresponding to a compound annual growth rate (CAGR) of 2.6%.

In 2023, diabetes was responsible for nearly 833 000 deaths in the EMR, resulting in 14.9 million years of life lost (Table 2). Group 3 accounted for 61% of these deaths (507 000), Group 2 for 32% (270 000), and Group 1 for

Table 1. Diabetes prevalence in the EMR in 2023 and projections for 2030, 2040 and 2050 *(continued)*

Country or territory	2023	2030	2040	2050	CAGR* (%)
Bahrain	122 565	153 912	185 215	216 728	2.1
Kuwait	926 621	1 134 571	1 367 256	1 556 066	1.9
Oman	445 858	588 390	800 289	1 070 141	3.3
Qatar	364 071	423 000	476 301	589 041	1.8
Saudi Arabia	5 891 925	7 648 184	10 413 095	13 321 302	3.1
United Arab Emirates	835 629	1 028 741	1 211 327	1 309 061	1.7
Group 1 subtotal	**8 586 670**	**10 976 797**	**14 453 482**	**18 062 339**	**2.8**
Egypt	10 964 054	13 273 093	16 877 300	20 570 249	2.4
Iraq	2 100 452	2 749 048	3 884 698	5 137 148	3.4
Islamic Republic of Iran	5 573 894	6 709 868	8 163 693	8 879 846	1.7
Jordan	866 119	1 089 347	1 471 027	1 827 383	2.8
Lebanon	374 907	419 379	479 650	533 481	1.3
Libya	395 013	503 183	670 508	774 997	2.5
Morocco	2 402 808	2 775 756	3 210 803	3 538 400	1.4
Occupied Palestinian Territory	186 573	236 137	335 595	454 503	3.4
Syrian Arab Republic	1 556 275	2 137 862	2 893 841	3 706 641	3.3
Tunisia	901 793	1 022 862	1 150 823	1 207 875	1.1
Group 2 subtotal	**25 321 887**	**30 916 536**	**39 137 939**	**46 630 523**	**2.3**

Table 1. Diabetes prevalence in the EMR in 2023 and projections for 2030, 2040 and 2050 *(concluded)*

Country or territory	2023	2030	2040	2050	CAGR* (%)
Afghanistan	1 698 517	2 245 958	3 360 817	4 891 567	4.0
Djibouti	53 972	65 587	82 838	97 566	2.2
Pakistan	33 810 158	40 651 148	53 166 381	68 438 345	2.6
Somalia	381 452	500 402	725 549	1 045 412	3.8
Sudan	3 695 041	4 792 912	6 772 958	9 319 189	3.5
Yemen	575 637	779 837	1 177 730	1 679 681	4.0
Group 3 subtotal	**40 214 778**	**49 035 843**	**65 286 273**	**85 471 759**	**2.8**
Total	**74 123 334**	**90 929 177**	**118 877 694**	**150 164 620**	**2.6**

**CAGR: compound annual growth rate.*

Table 2. Diabetes-related deaths in the EMR in 2023 and projected estimates for 2030, 2040 and 2050

	2023	2030	2040	2050	CARG (%)
Bahrain	589	845	1134	1394	2.5
Kuwait	2841	3761	5140	6251	2.2
Oman	2169	2875	4291	6848	2.6
Qatar	818	991	1164	1636	1.3
Saudi Arabia	44 664	61 765	96 492	140 059	2.9
United Arab Emirates	3777	5045	7161	5920	2.4
Group 1	**54 858**	**75 283**	**115 383**	**162 109**	**2.8**
Egypt	123 405	158 766	216 005	284 305	2.1
Iraq	22 984	31 454	48 683	68 622	2.8
Islamic Republic of Iran	50 257	65 943	90 781	115 870	2.2
Jordan	5640	7893	12 291	16 479	2.9
Lebanon	5437	6500	7804	8557	1.3
Libya	3845	5389	8692	11 358	3.1
Morocco	33 418	42 283	53 092	63 411	1.7
Occupied Palestinian Territory	2984	4073	7274	12 519	3.4
Syrian Arab Republic	14 867	20 943	29 951	40 832	2.6
Tunisia	7337	9437	11 771	13 437	1.8
Group 2	**270 174**	**352 681**	**486 344**	**635 389**	**2.2**
Afghanistan	33 758	44 384	67 978	103 303	2.6
Djibouti	884	1127	1579	1995	2.2
Pakistan	413 012	506 140	673 489	898 302	1.8
Somalia	9 002	11 933	17 068	24 990	2.4
Sudan	42 729	59 557	86 889	123 432	2.7
Yemen	8072	10 950	17 836	28 031	3.0
Group 3	**507 459**	**634 091**	**864 839**	**1 180 053**	**2.0**
Total	**832 490**	**1 062 055**	**1 466 566**	**1 977 550**	**2.1**

7% (55 000). Diabetes-related deaths ranged from 589 in Bahrain to 413 012 in Pakistan. If current mortality trends persist, the number of deaths attributable to diabetes in the region could reach nearly 2 million annually by 2050. The projected CAGR for mortality is 2.1%, ranging from 2.0% in Group 3 to 2.8% in Group 1.

Economic burden

In 2023, the total economic burden of diabetes in the EMR was estimated to be Int$ 639 billion. Group 1 countries accounted for the largest share (Int$ 320 billion), followed by Group 2 (Int$ 210 billion) (Table 3). Despite bearing a substantial proportion of cases and diabetes-related deaths, Group 3 countries contributed less than one-fifth of the total burden.

Direct health care costs represented 10.6% of the total economic burden, ranging from 5.1% in Saudi Arabia to 61.2% in the Syrian Arab Republic. The remaining 89.4% was attributed to indirect costs, driven primarily by

productivity losses due to premature mortality. These losses accounted for 80.1% of the total economic burden.

In 2023, diabetes-related costs represented 5.9% of the combined Gross Domestic Product (GDP) of the 22 countries and territories in the region. While direct costs, absenteeism, and presenteeism are captured in GDP estimates, productivity losses due to premature deaths are not. Reporting the economic burden as a percentage of GDP allows for consistent comparisons, although the figures should not be interpreted as a direct impact on economic output.

If current prevalence and mortality rates remain unchanged, the total economic burden of diabetes in the region is projected to reach Int$ 1.5 trillion by 2050. This corresponds to a CARG of 3.2% over the 27-year period.

Sensitivity analysis results

The sensitivity analysis revealed that the total economic burden in the EMR was more than 4 times lower than the estimate based on the societal cost approach, representing 1.4% of the regional GDP in 2023 (Table 5).

Table 3. Economic burden of diabetes in the EMR in 2023

	Total (Int$ million)	Direct cost (%)	Indirect cost (%)	Total (% of GDP)
Bahrain	2299	11.6	88.4	2.4
Kuwait	14 774	15.4	84.6	6.1
Oman	5068	9.5	90.5	2.5
Qatar	8345	10.7	89.3	2.6
Saudi Arabia	270 025	5.1	94.9	13.3
United Arab Emirates	19 546	5.7	94.3	2.4
Group 1 subtotal	**320 056**	**5.9**	**94.1**	**8.6**
Egypt	98 959	10.1	89.9	4.7
Iraq	15 185	18.6	81.4	2.4
Islamic Republic of Iran	60 901	28.1	71.9	3.8
Jordan	3864	39.3	60.7	3.3
Lebanon	3427	20.0	80.0	4.9
Libya	4062	13.9	86.1	3.0
Morocco	14 068	12.9	87.1	3.8
Occupied Palestinian Territory	669	39.8	60.2	2.2
Syrian Arab Republic	3367	61.2	38.8	5.4
Tunisia	5991	20.1	79.9	3.5
Group 2 subtotal	**210 492**	**18.1**	**81.9**	**4.0**
Afghanistan	2308	11.3	88.7	2.7
Djibouti	229	6.0	94.0	2.8
Pakistan	98 673	8.3	91.7	6.6
Somalia	482	18.2	81.8	1.7
Sudan	5974	32.8	67.2	4.0
Yemen	1022	23.7	76.3	1.1
Group 3 subtotal	**108 688**	**9.9**	**90.1**	**5.8**
Total	**639 237**	**10.6**	**89.4**	**5.9**

Table 4. Economic burden of diabetes in the EMR in 2023 and projections for 2030, 2040 and 2050 (Int$ million) ***(continued)***

	2023	2030	2040	2050	CARG (%)
Bahrain	2299	2986	3700	4405	2.4
Kuwait	14 774	18 587	23 332	27 051	2.3
Oman	5068	6724	9522	13 408	3.7
Qatar	8345	9723	11 081	13 710	1.9
Saudi Arabia	270 025	365 061	537 501	739 641	3.8
United Arab Emirates	19 546	24 709	30 367	30 318	1.6
Group 1 subtotal	**320 056**	**427 790**	**615 503**	**828 533**	**3.6**

Table 4. **Economic burden of diabetes in the EMR in 2023 and projections for 2030, 2040 and 2050 (Int$ million) *(concluded)***

	2023	2030	2040	2050	CARG (%)
Egypt	98 959	123 001	161 574	204 108	2.7
Iraq	15 185	20 378	29 904	40 652	3.7
Islamic Republic of Iran	60 901	76 190	98 498	114 661	2.4
Jordan	3864	5038	7096	9030	3.2
Lebanon	3427	3941	4564	5043	1.4
Libya	4062	5498	8062	9824	3.3
Morocco	14 068	16 916	20 400	23 374	1.9
Occupied Palestinian Territory	669	861	1313	1933	4.0
Syrian Arab Republic	3367	4638	6337	8253	3.4
Tunisia	5991	7140	8409	9151	1.6
Group 2 subtotal	**210 492**	**263 601**	**346 156**	**426 028**	**2.6**
Afghanistan	2308	3051	4620	6900	4.1
Djibouti	229	288	385	470	2.7
Pakistan	98 673	119 469	157 727	207 228	2.8
Somalia	482	633	914	1331	3.8
Sudan	5974	7903	11 303	15 827	3.7
Yemen	1022	1396	2193	3271	4.4
Group 3 subtotal	**108 688**	**132 740**	**177 142**	**235 028**	**2.9**
Total	**639 237**	**824 132**	**1 138 801**	**1 489 589**	**3.2**

Table 5. **Sensitivity analysis of the economic burden of diabetes in the EMR in 2023 (Int$ million)**

	Group 1	Group 2	Group 3	EMRO	% of GDP	% of indirect cost
Base scenario	320 056	210 492	108 688	639 237	5.9	89.4
Human capital approach	55 193	65 755	32 608	153 557	1.4	56.0
Variation (%)	-83	-69	-70	-76	-76	-37

Discussion

This study offers a comprehensive estimate of the economic burden of diabetes across all 22 countries and territories of the EMR. In 2023, the total cost of diabetes was estimated at Int$ 639 billion. Driven by ageing and population growth, this figure is projected to reach Int$ 1.5 trillion by 2050. The increase in diabetes cases will place increasing pressure on healthcare systems, hinder economic growth, and widen health inequalities, particularly in low- and middle-income countries, where the burden is projected to grow most rapidly.

The VSLY was used as a primary method to estimate the cost of diabetes-attributable mortality. This method captures the cost of all deaths, which is particularly relevant in contexts where a large proportion of the population falls outside the working age or operates in the informal sector *(30)*.

These findings are consistent with regional and global estimates, highlighting the EMR as having some of the highest diabetes prevalence and mortality rates worldwide *(3,31)*. Previous studies, such as Lin et al. and Namazi et al., have also reported significant increases in diabetes-related disability-adjusted life years (DALYs), incidence, and prevalence, further illustrating the rising health and economic burden in the region, particularly in countries with high levels of obesity and urbanisation *(2,32)*.

This study revealed considerable variations among countries and territories, reflecting differences in healthcare infrastructure, demographic and economic profiles, and public health responses across the region. Such disparities are consistent with earlier research. For example, a recent meta-analysis by Ansari-Moghaddam et al. reported significant variation in diabetes treatment costs, with Qatar spending the highest per-patient amount ($US 3 315), while Islamic Republic of Iran spent the least ($US 255) *(33)*. Similarly, Arshad et al. reported annual per-patient costs ranging from $US 555.20 to $US 5 200, depending on the country's or territory's healthcare infrastructure and access to treatment *(11)*.

To counter the increasing burden of diabetes, immediate public health interventions are essential. The WHO 'best buys' for preventing and controlling NCDs offer a cost-effective framework for action. These include promoting physical activity, reducing salt and sugar intake, ensuring access to essential diabetes medications

at the primary health care level, and enforcing regulations on tobacco and alcohol use. The WHO Regional Office for the Eastern Mediterranean framework for action on diabetes prevention and control provides region-specific strategies, emphasising the importance of strengthening health systems, improving access to care, and enhancing public awareness.

Although this study did not estimate the out-of-pocket (OOP) expenditure related to diabetes, it is important to note that a significant proportion of the population in low and middle-income countries (LMICs) within the EMR face high OOP health care costs. As a result, the economic impact of diabetes disproportionately affects individuals and households, particularly in low-income settings where financial barriers may limit access to essential care, medications, and diagnostics. The high cost of diabetes care, combined with the risk of complications, can lead to catastrophic health expenditures, pushing many families into poverty.

To address this, it is crucial to implement policies that reduce OOP expenditure through expanded health care coverage and financial protection mechanisms. Governments should ensure that diabetes care is included in Universal Health Coverage (UHC) benefit packages and that essential medicines, like insulin, are affordable and accessible.

In addition to the economic challenges, it is important to consider the unique circumstances of countries and territories facing humanitarian crises, such as Yemen, the Syrian Arab Republic, and Sudan. In these settings, the disruption of healthcare infrastructure and services exacerbates the burden of diabetes management. Access to essential medicines, such as insulin and diagnostic tools, is often severely limited, while continuity of care is compromised by conflict, displacement, and resource scarcity. This places individuals at greater risk of developing complications, increased mortality and economic hardship among families already experiencing the consequences of conflict and displacement.

In accordance with WHO recommendations, the continuity of diabetes care must be prioritised in humanitarian settings. Tools such as the WHO NCD emergency kit can support the safe and effective delivery of diabetes care in these contexts. Coordinated international support is needed to rebuild health systems and integrate diabetes care into broader humanitarian response frameworks, thereby ensuring that vulnerable populations receive the care they need.

Future research directions

Further studies could expand the scope of analysis by incorporating additional cost categories or by examining the indirect health impact and comorbidities associated with diabetes. Future research is needed to assess the costs and benefits of diabetes prevention and control interventions in the Eastern Mediterranean Region.

Strengths and limitations of the study

This study estimated the economic burden of diabetes in the EMR, using the VSL and human capital approaches to reflect broad societal and conservative productivity loss estimates. A key strength lies in the use of context-specific data from the IDF, supplemented by additional indicators from the IHME and World Bank *(3,19,24)*. This systematic approach enabled a more accurate reflection of health care expenditures and provided insights into both direct and indirect costs, including mortality and productivity losses due to presenteeism and absenteeism.

However, several limitations should be noted. First, due to limited data on health care service coverage, this analysis relied on the percentage of diagnosed cases as a proxy. This approach may not have fully captured the actual health care coverage in some countries/territories, potentially leading to over- or under-estimating costs. Second, reliance on IDF estimates for certain cost inputs, due to limited country-level data, may not have fully reflected the actual health care expenditures. Third, the study used VSL estimates derived from the United States. While this is a common approach in the absence of local estimates, it may not have fully accounted for regional variations in income, cultural attitudes towards risks, or perceptions of mortality-related risks in diverse settings such as the EMR. Fourth, productivity reduction rates related to absenteeism and presenteeism were based on global estimates and assumed to be constant across countries. This assumption may not hold, as these rates likely vary by region due to differences in work environments, cultural norms, and economic conditions. Fifth, intangible costs, such as pain, suffering, and reduced quality of life, were not included, which may have resulted in underestimation of the full societal impact of diabetes.

Conclusion

Without immediate intervention, diabetes will place unsustainable pressure on healthcare systems, exacerbate health inequalities, and significantly impede economic growth in the EMR. To mitigate this impending crisis, EMR countries and territories must adopt urgent and targeted public health measures, including those outlined in the WHO regional framework for action on diabetes prevention and control. A multisectoral approach is essential to address the complex challenges posed by diabetes, ensuring that healthcare systems are resilient and that the economic and social consequences of the disease are effectively managed in the decades ahead.

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Étude sur le coût de la maladie concernant la charge économique du diabète dans la Région de la Méditerranée orientale

Résumé

Contexte : Le diabète pose un défi croissant en termes de santé publique et d'économie dans la Région de la Méditerranée orientale, mais son impact financier complet à l'échelle de la Région reste mal quantifié.

Objectif : Estimer la charge économique du diabète, y compris les coûts directs et indirects, dans les 22 pays et territoires de la Région de la Méditerranée orientale.

Méthodes : Une approche fondée sur la prévalence a été utilisée pour estimer les coûts directs et indirects annuels du diabète dans la Région entre 2023 et 2050. Les données provenaient de bases de données internationales en libre accès. Les coûts liés à la mortalité ont été estimés en utilisant la valeur d'une approche statistique fondée sur les années de vie.

Résultats : En 2023, le diabète touchait plus de 74 millions de personnes dans la Région de la Méditerranée orientale et a causé environ 833 000 décès. À l'horizon 2050, les cas de diabète et les décès associés devraient atteindre 150 millions et deux millions, respectivement. La charge économique en 2023 a été estimée à 639 milliards de dollars internationaux, dont 89 % attribuables aux coûts indirects. D'ici 2050, ce fardeau devrait atteindre 1500 milliards de dollars internationaux.

Conclusion : Sans intervention urgente, le diabète exercera une pression croissante sur les systèmes de santé, freinera la croissance économique et creusera les inégalités en matière de santé. La mise en œuvre de stratégies de santé publique offrant un bon rapport coût-efficacité peut réduire considérablement la charge sociétale et économique de la maladie.

دراسة عن تكلفة الاعتلال للعبء الاقتصادي للسكري في إقليم شرق المتوسط

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الخلاصة

الخلفية: يمثل السكري تحديًا متزايدًا في مجالي الصحة العامة والاقتصاد في إقليم شرق المتوسط، ولكن لا يزال هناك قصور في تحديد حجم تأثيره المالي الكامل على مستوى الإقليم.

الأهداف: هدفت هذه الدراسة الى تقدير العبيء الاقتصادي للسكري، ويشمل ذلك التكاليف المباشرة وغير المباشرة، في بلدان إقليم شرق المتوسط وأراضيه البالغ عددها 22.

طرق البحث: استُخدم نهج قائم على معدل الانتشار لتقدير التكاليف السنوية المباشرة وغير المباشرة للسكري في إقليم شرق المتوسط في الفترة من عام 2023 إلى عام 2050. و تم الحصول على البيانات من قواعد البيانات الدولية المفتوحة. وقُدِّرت تكاليف الوفيات باستخدام قيمة النهج الإحصائي لسنوات العمر.

النتائج: في عام 2023، أصاب السكري أكثر من 74 مليون شخص في إقليم شرق المتوسط، وتسبب في نحو 833 000 وفاة. وبحلول عام 2050، من المتوقع أن تصل حالات الإصابة بالسكري إلى 150 مليون حالة، مع ارتفاع عدد الوفيات المرتبطة بها إلى مليونَي وفاة. وقُدر العبيء الاقتصادي في عام 2023 بمبلغ 639 مليار دولار دولي، ويُعزَى 89% منه إلى التكاليف غير المباشرة. وبحلول عام 2050، من المتوقع أن يصل هذا العبيء إلى 1.5 تريليون دولار دولي.

الاستنتاجات: إذا لم يحدث تدخل عاجل، فسوف يشكل السكري ضغطًا متزايدًا على نُظم الرعاية الصحية، ويعوق النمو الاقتصادي ويُعمِّق أوجه عدم المساواة في الصحة. ويمكن أن يؤدي تنفيذ استراتيجيات فعالة من حيث التكلفة في مجال الصحة العامة إلى أن يخفف كثيرًا العبيءَ المجتمعي والاقتصادي الناجم عن السكري.

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