

# Economic and Humanistic Burden of Atopic Dermatitis in the Middle East Africa Region in Adults & Adolescents

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## OBJECTIVE

This study aimed to assess the economic and humanistic burden of AD in adolescents and adults in seven countries in the Middle East and Africa (MEA) region including Algeria, Egypt, Kingdom of Saudi Arabia (KSA), Kuwait, Lebanon, South Africa and United Arab Emirates (UAE).

## CONCLUSIONS

Atopic dermatitis has a significant burden in the MEA region. The magnitude of economic burden varies between individual countries.

AD creates a significant humanistic burden. The utility decrement due to AD may reach up to 0.19 QALYs per patient.

AD poses a significant impact on the economy. On average, indirect costs are more than double the direct costs.

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## INTRODUCTION

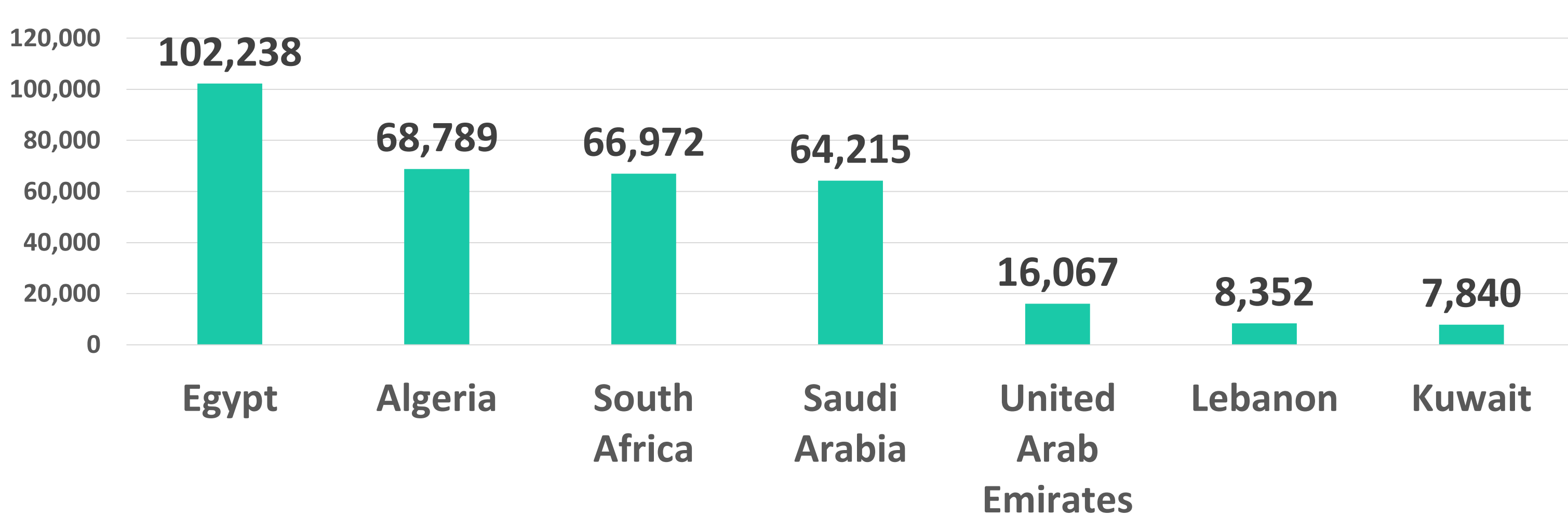
- Atopic dermatitis (AD) is a chronic dermatological disease that affects the skin in both children and adults. AD presents with itching and redness with varying severity that affects the patient's quality of life and productivity. Also, it has a financial impact as medications and healthcare services are needed to relieve the symptoms
- Estimating the burden in specific countries in the region should help decision makers to compare the burden of AD to other diseases and help them allocate the available resources efficiently.

## RESULTS

### Humanistic burden

The aggregated humanistic burden for the seven countries was about 344K Quality Adjusted Life Years (QALYs) loss due to AD.

### Estimated annual QALY loss per country



To allow comparability between the countries, a weighted average for the utility loss due to AD was calculated based on the affected number of patients in each country. The weighted average utility loss per patient values were very close for all included countries, ranging from 0.185 (Lebanon and South Africa) to 0.189 (UAE) QALYs. The average utility loss due to AD was 0.187 QALYs per patient. Based on this finding, the large difference between countries in lost QALYs per population is mainly due to the variance in population sizes.

### Economic burden

#### Direct costs

UAE and Kuwait had a higher average cost per patient compared to other countries with 3,569 USD (2019) and 2,880 USD respectively, while Algeria had the lowest average of 312 USD. On a population level, UAE had the highest annual cost of 112.5 million USD. The total direct cost for the seven countries combined was estimated to be more than 460 million USD.

### Average annual direct health care costs of atopic dermatitis (per patient and per population)

Country	Average annual cost per patient in 2019 USD*	Average annual cost per patient in local currency	Annual cost per country in Million local currency	Local currency (ISO code)
Algeria	312	37,281	5,108	DZD
Egypt	469	7,864	1,601	EGP
Saudi Arabia	780	2,924	373	SAR
Kuwait	2,880	819	14	KWD
Lebanon	817	1,230,932	20,565	LBP
South Africa	449	6,481	868	ZAR
UAE	3,569	13,107	413	AED

\*using annual mean exchange rate for converting local currency to USD

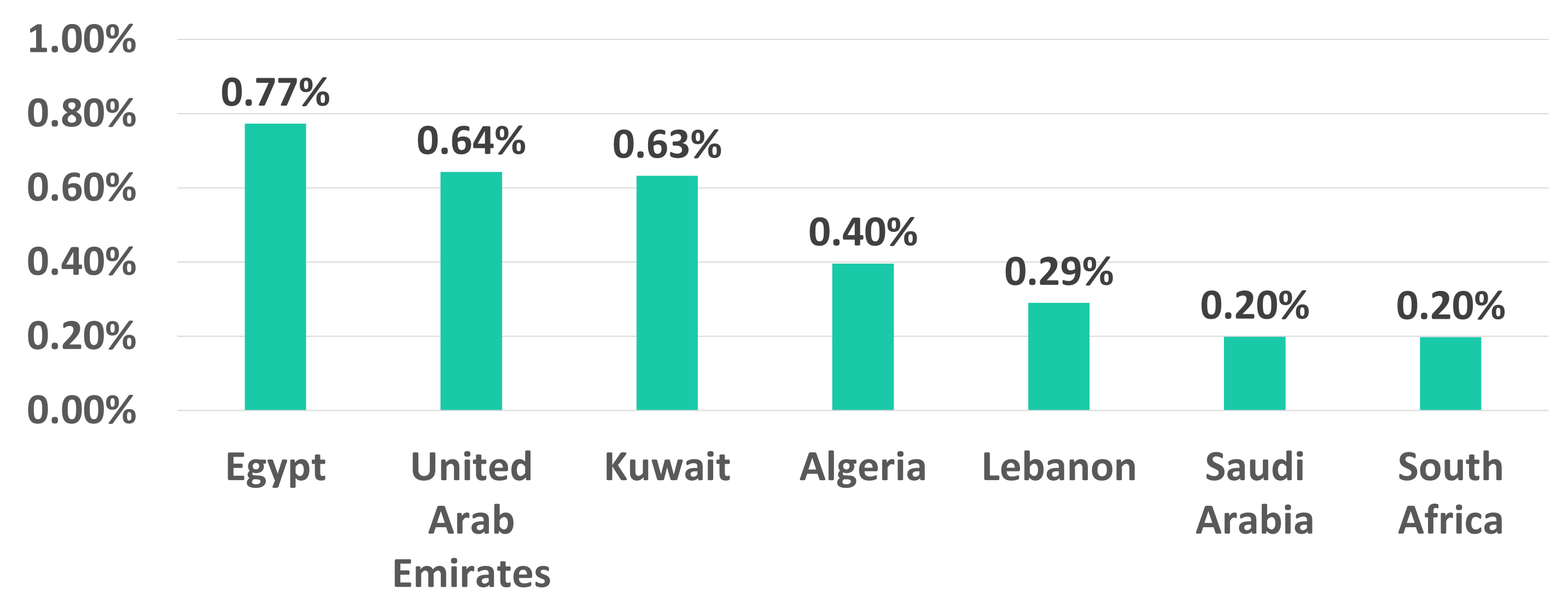
### Annual direct cost as a percent of local healthcare expenditure (HCE)

Egypt had the highest annual direct cost as a percent of its HCE at 0.77% while South Africa and Saudi Arabia had the lowest cost per HCE with 0.2%.

## METHODS

- Literature review and expert interviews were conducted to collect humanistic and economic burden data.
- Literature and interview data were aggregated and assessed to obtain a single set of estimates characterizing the humanistic and economic burden.
- For calculations, a bottom-up approach was used. Per patient data were multiplied by the number of patients in a country to estimate the total burden.
- Direct costs were estimated among the treated population (including medications, outpatient visits, hospitalization, phototherapy)
- Validation meetings were held to confirm face validity of these estimates.

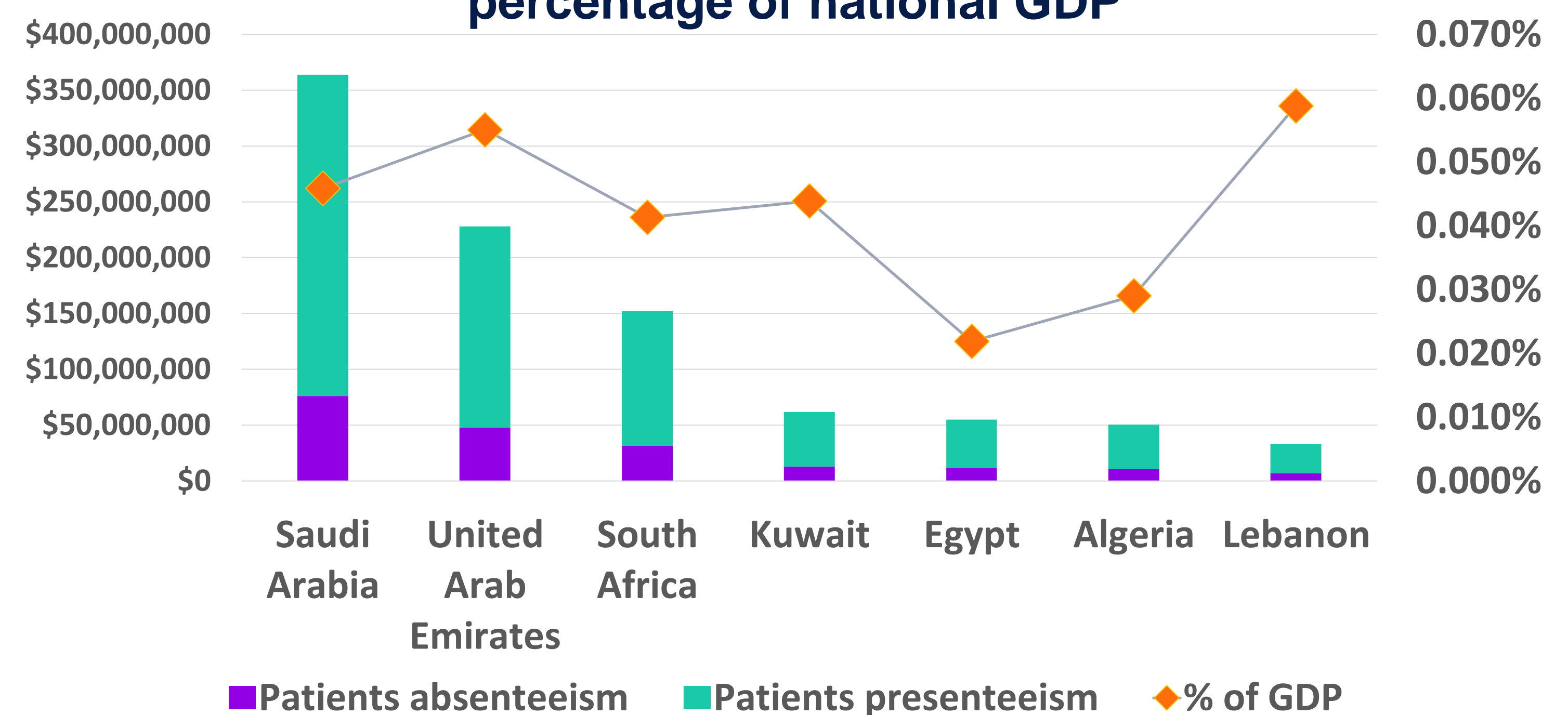
### Direct cost of AD as a percentage of total health expenditure



### Indirect costs (productivity loss)

Productivity lost was the highest in Saudi Arabia (364 million USD annually). However, Lebanon was relatively the most affected country by the disease, since its indirect cost as a percent of Gross Domestic Product (GDP) was the highest with 0.059%.

### Absenteeism, presenteeism and total indirect cost as a percentage of national GDP



### Total economic burden

The total economic burden for the seven countries was estimated at more than 1.4 billion USD annually with KSA being the most affected with a total economic burden of 463 million USD annually.

### Total country level annual economic burden (Direct and indirect costs)

Country	Indirect costs in million USD (2019)	Direct costs in million USD (2019)	Total economic burden in million USD (2019)	Total economic burden as a percent of national GDP
Algeria	50.4 (54.1%)	42.8 (45.9%)	93.2	0.054%
Egypt	54.9 (36.5%)	95.5 (63.5%)	150.4	0.060%
Saudi Arabia	363.7 (78.5%)	99.5 (21.5%)	463.2	0.058%
Kuwait	61.7 (57.9%)	44.8 (42.1%)	106.5	0.076%
Lebanon	33.3 (70.9%)	13.6 (29.1%)	46.9	0.083%
South Africa	152.1 (71.7%)	60.1 (28.3%)	212.2	0.058%
UAE	228.0 (67.0%)	112.5 (33.0%)	340.5	0.082%