

Pharmaceutical market and health system in the Middle Eastern and Central Asian countries: Time for innovations and changes in policies and actions

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The pharmaceutical market has some unique specifications in healthcare economics. It has to provide its products to the health systems and usually has to get its profits from reimbursement systems. But both health and reimbursement markets are rather different from free markets in terms of their official rules and being categorized as “market failure”. In such conditions, the first thought that comes to mind is that pharmaceutical activities are somehow dependent on health system indicators. With this thought, we tried to seek any correlation between pharmaceutical market size and some main health indicators in some Middle East and Asian countries in central Asia. Most of the countries included in the study are categorized as low or middle income countries. The primary data were acquired from the World Bank and World Health Organization and are summarized in Table I. Data were analysed using SPSS 6.

Correlation analysis by Pearson’s correlation coefficient (PC) showed that spending on health in the countries strongly depends on their gross domestic product (GDP) per capita (PC = 0.957, $p < 0.01$). Adult mortality rate (PC = -0.615, $p < 0.01$), under five year mortality rate (PC = -0.416, $p < 0.05$), life expectancy (PC = 0.632, $p < 0.01$) and healthy life expectancy (PC = 0.654, $p < 0.01$) have a significant correlation with spending on health. Vaccination does not show any significant correlation with health spending. A significant correlation is seen between per capita pharmaceutical consumption (total market/population) and GDP per capita (PC = 0.646, $p < 0.01$) and health spending per capita (PC = 0.781, $p < 0.01$).

Per capita pharmaceutical consumption shows a significant correlation with adult mortality rate (PC = -0.522, $p < 0.01$), under five year mortality rate (PC = -0.410, $p < 0.05$), life expectancy (PC = 0.562, $p < 0.01$), and healthy life expectancy (PC = 0.581). The number of physicians has no significant correlation with any health indicators or even the pharmaceutical market ($p < 0.01$).

These results shows that the development process of a country in the region and growth of GDP per capita have strongly raised health

Table I. Health indicators in the Middle East and Central Asian region

Country	Population (million)	GDP/capita US\$	Immunization		Health/capita US\$	Health/GDP [%]	Life expectancy	Healthy life expectancy	Adult mortality /1000	Under 5 mortality/1000	Physicians /1000	Drug consumption/capita
			DPT	Measles								
Afghanistan	29.8	486	83	76	51	10.5	42	38	479	257	0.2	8.4
Azerbaijan	8.8	4,889	73	67	285	5.8	68	59	182	36	3.79	17.0
Bahrain	0.8	25,744	98	99	1108	4.3	75	68	103	12	2.97	143.8
Egypt	83.0	2,270	97	95	113	5.0	69	60	187	23	2.43	30.1
Iran	72.9	4,541	99	99	269	5.9	72	61	124	32	0.89	39.1
Iraq	31.5	2,090	65	69	98	4.7	63	54	285	45	0.53	19.0
Jordan	6.0	4,182	98	95	336	8.0	72	63	149	20	2.56	122.5
Kazakhstan	15.9	7,252	98	99	331	4.6	64	56	310	30	3.88	26.5
Kuwait	2.8	52,866	98	97	1416	2.7	78	69	61	11	1.85	118.9
Kyrgyz	5.3	864	95	99	57	6.6	66	57	264	38	2.3	27.4
Lebanon	4.2	8,221	74	53	663	8.1	72	62	160	13	3.25	261.9
Oman	2.8	16,469	98	97	497	3.0	74	65	129	12	1.84	42.9
Pakistan	169.7	955	85	80	23	2.4	63	55	204	89	0.78	2.5
Qatar	1.4	70,224	99	99	1715	2.4	78	67	72	8	2.76	166.4
Saudi Arabia	25.4	14,794	98	98	714	4.8	72	62	154	21	1.62	66.9
Syria	21.1	2,473	80	81	72	2.9	72	63	150	18	0.53	35.5
Tajikistan	7.0	711	93	89	38	5.3	67	57	173	64	2.01	5.3
Tunisia	10.4	3,804	99	98	240	6.3	75	66	103	21	1.34	54.8
Turkey	74.8	8,217	96	97	571	6.9	74	68	108	22	1.45	119.0
Turkmenistan	5.1	3,911	96	99	77	2.0	63	55	298	48	2.44	46.3
UAE	4.6	50,055	92	92	1520	3.0	78	68	73	8	1.55	300.0
Uzbekistan	27.8	1,155	98	95	62	5.4	68	59	181	38	2.62	11.5
Yemen	23.6	1,117	66	58	64	5.7	64	54	217	69	0.33	5.3

GDP – gross domestic product, DPT – diphtheria, pertussis and tetanus

expenditures, but this increase has a small effect on health indicators (PCs < 0.65). Other studies have shown the same results but all of them criticized the correlation between GDP and health indicators because of age, urbanization and other structures of the countries [1, 2].

The pharmaceutical market has been extended by growth in GDP and health budgets but this extension had a small effect on health indicators. This idea is confirmed when there is no correlation between the pharmaceutical market and the number of physicians as the main prescriber of pharmaceuticals. This may be due to three main reasons:

- 1) The percentage of generic medicines on the market is not equal in these countries. For example, a generic market in a country such as Iran could provide medicines at a lower price [3-5] than a branded market such as that of the United Arab Emirates. Since the expenditures have been compared in this study, we cannot determine the generic share in the market and exact utilization of medicines. If there is a clarified national medicine policy in these countries it is possible to estimate the share of generic medicines in the market.
- 2) Usually in these countries physicians do not take responsibility for the affordability of medicines. In some further developed countries in the region the government or governmental insurance systems compensate medical costs but in others there is no financing system to make a fair payment system for patients. In most countries of the region, the national drug regulatory bodies register medicines regardless of other health system priorities, causing a double pharmaceutical market in these countries. In addition, a public market with many defects or private markets with a lot of overlooked affordability problems are other concerns that need attention.
- 3) There are different burdens of disease between these countries and elasticity of medication is different between the diseases [6]. So it changes the contribution of medicines in household baskets.

Therefore to have a secure pharmaceutical market, all health indicators from community health should be specially considered to implement an evidence-based national drug policy. This needs an effective strategy to recognize all health indicators such as exact rates of diseases and adverse drug reactions, demands, resources and opportunities. Community health initiatives must be scientifically sound, culturally acceptable, and managerially feasible in developing countries [7] but current evidence within the studies countries is not yet sufficient to generate proper actions. Lack of proper national health indicators may also result in

inappropriate use of drugs, causing serious adverse reactions in organs such as skin [8] or kidney [9]. It is very important to emphasize conducting proper meta-analysis studies that would result in better understanding of places where the most often sold drugs such as antibiotics [4] are used in common diseases such as irritable bowel syndrome that may not necessarily need antibiotic therapy [10].

We strongly believe that it is essential for the study countries to merge national health and drug policies to obtain benefits in the health of their whole population, not restricted to patients. Powerful public insurance or social security systems that use scientific and clarified procedures for registration and selection of cost-effective medicines for formularies can help.

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