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The Burden of Chronic Obstructive Pulmonary Disease, Access to Primary Health Care and Health Literacy.

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ABSTRACT

Reforming the primary health care system requires a clear system of tracking of the changes in the industry, taking into account the political, socio-economic and other factors. DALY measurements are one of the new tools for improving the primary health care sector cap urban to assess the health needs of the population and the priorities at local and national level. Data for the years 2013 -2015 for chronic obstructive pulmonary disease (COPD) in one of the regions of Kazakhstan indicates the incidence of growth among the working population. In our research, we have identified years of life lost for COPD in one of the regions of Kazakhstan, as well as we explored access to primary health care and health literacy levels in urban and rural population. To evaluation years of life lost (YLL) we used the data of the mortality, standardized table of expectancy of Life at Age 2013 (IHME) of one of the region of Kazakhstan in period 2013-2015. We also developed a survey (approved by local ethics board) among urban and rural residents to assess the prevalence of the disease and access to primary health care. In urban population 2015 year 150 people from all aged died from COPD, increased from 101 compared with that in 2013, in rural the same situation indicator of mortality rise from 316 in 2013 to 516 in 2015. From our survey, we identified that over the past year seek treatment 93.0% of the urban and 94.4% rural population. At the dispensary comprised 38.7% of the city, 52.9% of the rural population by cardiovascular diseases, followed by gastrointestinal diseases prevalent and on the 3rd place respiratory disease 16.2% urban and 24.0% rural population (P<0,001). In respiratory diseases taken high incidence among the rural population aged 40-49 years in the urban population in the age group 50-59 years, but in both areas high incidence of disease among the youngest age group. General health literacy levels for urban and rural male respondents were 34.0±8.6 and 35.7±9.9, respectively. For female urban and rural respondents: 33.49±9.4 and 34.0±9.6 respectively. Our analysis confirms the need to determine the burden of disease for the development of improving the quality of primary care policy by identifying vulnerable groups.

Keywords: YLL, COPD, access to primary health care, health literacy, Kazakhstan.

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INTRODUCTION

Reforming the primary health care system requires a clear system of tracking of the changes in the industry, taking into account the political, socio-economic and other factors.

The effectiveness of the primary health care system is difficult to assess because of the difficulty of measuring the yield makroefficiency and relative health benefits in some sectors microefficiency. In this case, an important role is played by the criterion of social justice and the measurement needs of the population. Disability-adjusted life year measurements are one of the new tools for improving the primary health care sector cap urban to assess the health needs of the population and the priorities at local and national level [1]. One of the leader contributors to disease of global burden in older people is chronic respiratory diseases (9·5%) [2]. In South Korea the burden of chronic obstructive pulmonary disease (COPD) 4.07 per 1000 persons [3]. The estimation of China data for the COPD from 1990 to 2010 found that there was significant decrease of DALY due to COPD in 2010, compared to 1990, the YLD burden is still increasing [4].Data for the years 2013 - 2015 for COPD in one of the regions of Kazakhstan indicates the incidence of growth among the working population. In our research, we have identified years of life lost (YLL) or COPD in one of the regions of Kazakhstan, as well as we explored access to primary health care and health literacy levels in urban and rural populations.

METHODS

To evaluate years of life lost (YLL) we used the data of the mortality, standardized table of expectancy of Life at Age 2013 (IHME) of one of the region of Kazakhstan in period 2013-2015. We also developed a survey (approved by local ethics board) among urban and rural residents to assess the prevalence of the disease and access to primary health care. From 2400 respondents 1200 from urban another 1200 rural population participated in survey. We estimated the Pearson Chi-square (χ^2) test between the variables in the total sample and the subgroups divided according to rural and urban population. To study health literacy levels we conducted a health literacy survey in 998 urban and 826 rural residents using HLS-EUQ questionnaire [5].

RESULTS

In urban population 2015 year150 people from all aged died from COPD, increased from 101 compared with that in 2013, in rural the same situation indicator of mortality rise from 316 in 2013 to 516 in 2015. In table 1 we show the years of life lost from COPD. We found that YLL exceed in all age groups in 2015 in comparison with 2013 year. In 2015, the negative trend of the incidence observed among the working population, where they find a case of death. With regard to the comparison of performance between urban and rural areas, the results show that the death rate prevails among rural areas in all years studied.

Results of survey revealed that over the past year seek treatment 93.0% of the population of urban and 94.4% rural population (Table 2), of which the dispensary inspection turned 5.3% of the urban population and 6.3% rural population (P<0,001) (Table 3), although at a dispensary comprised 52.8% of the urban population and 47.2% of the rural population (table 4). At the dispensary comprised 38.7% of the city, 52.9% of the rural population by cardiovascular diseases, followed by gastrointestinal diseases prevalent and on the 3rd place respiratory disease 16.2% urban and 24.0% rural population (P<0,001). In respiratory diseases taken high incidence among the rural population aged 40-49 years in the urban population in the age group 50-59 years, but in both areas high incidence of disease among the youngest age group (Table 5).

We found that population casually refer to the health 43.1% in urban and 41.9% (P<0,001) in rural areas. In second place the cause of ill health linked in rural areas due to lack of funds 26.3%, and in urban areas 13.6% (P<0,001) (Table 6). The high cost of medicines say 58.7% of urban and 67.5% rural population (Table 7). 52.4% rural and 21.8% (P<0,001) of the urban population is obtained prescription drugs by benefit package. Interruptions with concessional mark 10.2% urban and 17.0% rural population, indicating that the late provision of medicines from of benefit package (Table 8).

We also found that general health literacy level (GHL) in urban respondents were 34.0±8.6 out of 50 and 33.49±9.4 out of 50 for men and women, respectively, without significant difference (Table 9).

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In rural population general health literacy indices were: 35.7±9.9 out of 50 and 34.0±9.6 out of 50 for men and women, respectively, without significant difference (Table 10).

For the general health literacy 15.5% of urban and 18.7% rural respondents had inadequate level, 30% of urban and 23.4% of rural respondents had problematic level, 36.1% of urban and 31.2% of rural had sufficient level, 18.5% of urban and 26.7 % of rural had excellent level of general health literacy (GHL).

Table 1. Years of life lost

AGE	2015		2014		2013	
	URBAN	**RURAL**	URBAN	**RURAL**	URBAN	**RURAL**
0	0,0	0,0	0	0	0	0
1-4	0,0	0,0	0	0	0	0
5-9	0,0	0,0	0	0	0	0
10-14	0,0	0,0	0	0	0	0
15-19	0,0	0,0	0	0	0	0
20-24	66,9	0,0	0	0	0	0
25-29	0,0	0,0	0	0	0	0
30-34	0,0	0,0	0	0	0	0
35-39	52,1	0,0	0	0	0	0
40-44	94,4	0,0	0	0	0	0
45-49	42,4	127,0	0	0	0	42,3
50-54	112,7	450,9	37,5	300,6	187,9	112,7
55-59	197,4	690,7	0	592,1	197,3	657,8
60-64	650,6	1414,3	820,3	1074,9	452,5	1046,6
65-69	832,5	1926,7	880,0	1617,4	380,5	1688,8
70-74	504,7	2232,3	562,9	1164,6	388,2	1378,2
75-79	427,3	1663,5	381,5	1098,8	305,2	961,5
80-84	217,6	893,1	343,5	389,3	194,6	354,9
85+	41,0	385,4	41	246,0	8,2	155,8

Table 2 Number of times in the last 12 months, you sought medical assistance	urban		rural		PearsonChi-Square
	N	%	N	%	
1-3 times	775	64,6%	944	78,7%	92,520 for all
4-8 times	142	11,8%	128	10,7%	
9-12 times	89	7,4%	28	2,3%	
More than 12 times	110	9,2%	33	2,8%	
Have not been checked by the doctor for 12 months.	84	7,0%	67	5,6%	
Total	1200	100,0%	1200	100,0%	

Table 3 What was the reason for you to be seen by the doctor the last time?	urban		rural		**Total**		
	N	%	N	%	N	%	
Preventive examination	459	38,3%	904	75,3%	1363	56,8%	468, 723(afor all
Screening	136	11,3%	110	9,2%	246	10,3%	
Vaccinations	53	4,4%	19	1,6%	72	3,0%	
Examination of chronic diseases	64	5,3%	88	7,3%	152	6,3%	
Being sick and getting treatment	387	32,3%	75	6,3%	462	19,3%	

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Referral for hospital treatment	52	4,3%	4	,3%	56	2,3%	
Referral for supporting treatment	22	1,8%	0	,0%	22	0,9%	
Other (please write)	27	2,3%	0	,0%	27	1,1%	
Total	1200	100,0%	1200	100,0%	2400	100,0%	

Table 4 Do you have chronic diseases?	urban		rural		**Total**	
	N	%	N	%	N	%
Yes	421	52,8%	376	47,2%	1200	50,0%
No	779	48,6%	824	51,4%	1200	50,0%
Multiple answer questions: If yes, what type of a chronic disease you have?						
	N number	**%**	**N number**	**%**	**N Number**	**%**
1.Diseases of the cardiovascular system	163	38,7%	465	52,9%	628	48,3%
2. Diseases of the gastrointestinal tract	77	18,3%	225	25,6%	302	23,2%
3. Diseases of the respiratory system	68	16,2%	211	24,0%	279	21,5%
4. Diseases of the musculoskeletal system	55	13,1%	71	8,1%	126	9,7%
5. Diseases of neurological system	52	12,4%	16	1,8%	68	5,2%
6.Oncology	22	5,2%	10	1,1%	32	2,5%
7. Other	70	16,6%	7	,8%	77	5,9%
Total	421	100,0%	879	100,0%	1300	100,0%

Chi-SquareTests

Table5 Age group of dispensary patients with chronic respiratory disease				
Age	urban		rural	
	n	**%**	**n**	**%**
18-29	16	6,6	24	9,9
30-39	13	5,4	43	17,9
40-49	10	4,2	57	23,7
50-59	22	9,2	42	17,4
60+	7	2,9	45	19,1

Table 6 What is the reason poor health?	urban		rural		**total**		
	N	**%**	**N**	**%**	**N**	**%**	
1. Neglect their health	250	43,1%	210	41,9%	460	42,6%	75,604 for all
2. Lack of funds	79	13,6%	132	26,3%	211	19,5%	
3. Low qualification of medical staff	75	12,9%	55	11,0%	130	12,0%	
4. The remoteness of health care facilities	25	4,3%	53	10,6%	78	7,2%	
5.Lack of time for examination and treatment	76	13,1%	22	4,4%	98	9,1%	
6. Difficult to answer	43	7,4%	20	4,0%	63	5,8%	
7. Other	32	5,5%	9	1,8%	41	3,8%	
Total	580	100%	501	100%	1081	100%	

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Table 7 The high cost of of drugs in pharmacies	urban		rural		Total		
Yes	704	58,7%	810	67,5%	1514	63,1%	62,732(a) for all
No	339	28,3%	340	28,3%	679	28,3%	
Do not know, have not tried	157	13,1%	50	4,2%	207	8,6%	
Total	1200	100,0%	1200	100,0%	2400	100,0%	

Table 8 Are you issued drugs on prescription free of charge or on preferential terms?	urban		rural		Total		
Yes, fully	262	21,8%	629	52,4%	891	37,1%	794,133 for all
Yes, but there are shortages of subsidized medicines	122	10,2%	204	17,0%	326	13,6%	
Yes, but the pharmacy, where soft drugs are released	26	2,2%	168	14,0%	194	8,1%	
Yes, but there are cases of failure on the part of the doctor to prescribe preferential drugs	30	2,5%	79	6,6%	109	4,5%	
Not looking for preferential and free medicines	246	20,5%	85	7,1%	331	13,8%	
Have not received	436	36,3%	28	2,3%	464	19,3%	
Other (please write)	78	6,5%	7	,6%	85	3,5%	
Total	1200	100,0%	1200	100,0%			

Table 9 – Health literacy indices in urban respondents

	Mean F	Mean M	df	p	Valid N F	Valid N M	Std. Dev F	Std. Dev M
HC HL(health care health literacy)	33.52	34.4	913	0.2	497	418	10.5	9.2
DP HL(disease prevention health literacy)	33.10	34.2	917	0.1	499	420	10.5	9.5
HP HL (health promotion health literacy)	33.05	33.5	928	0.5	504	426	9.9	9.5
GHL(general health literacy)	33.49	34.0	891	0.4	478	415	9.4	8.6

Table 10 – Health literacy indices in rural respondents

	Mean M	**Mean F**	**t-value**	**p**	**Valid N M**	**Valid F**	**Std.Dev. M**	**Std.Dev. F**
HC HL(health care health literacy)	36.1	34.2	2.21	0.03	248	525	11.2	11.4
DP HL(disease prevention health literacy)	36.7	33.7	3.56	0.0004	249	519	10.9	10.8
HP HL (health promotion health literacy)	34.3	34.0	0.27	0.8	249	520	10.7	9.8
GHL(general health literacy)	35.7	34.0	2.26	0.02	247	508	9.9	9.6

DISCUSSION

Our analysis shows high uptake in the population for primary health care and low coverage dispensary group of patients at the primary care. Untimely and incomplete coverage of drug supply within benefit package can become one of the barriers to the provision of quality primary health care. The increased incidence of COPD population in the region of Kazakhstan among rural residents is associated with inattention to the health of inhabitants and low financing primary care. In this connection, it is recommended to intensify

efforts to increase the uptake of the population for preventive check-ups to prevent the development of chronic diseases of the respiratory tract and cardiovascular diseases. Healthcare reform in Kazakhstan has led the development of the institutional framework that requires further development [6-8]. The State Program on 2016-2019 in Kazakhstan provided further development of primary health care and increasing funding by changing the insurance model of primary health care system [9]. The strategic objectives of the State program aimed at reducing the mortality cases in population and to reduce the economic burden on the country by the growth of the working age population. 45.5% of the urban and 42.1% or the rural respondents had inadequate or problematic (i.e. limited) general health literacy(GHL). As shown in many researches HL is closely associated with health behavior, health outcomes, health care utilization [5]. Thus, the findings of our research indicate that health literacy levels of the urban and rural population to be enhanced in order to improve population health outcomes.

CONCLUSION

Our analysis confirms the need to determine the burden of disease for the development of improving the quality of primary care policy by identifying vulnerable groups.

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