

Research Article

Estimation of life expectancy in Sistan and Baluchestan province, Iran

Fatemeh Roostae¹, Jhila Roostae², Hamid Mohammadi³,
Bahram Donyavi⁴, Raziheh Keykhaie⁵, Javad Sharifi-Rad^{6,7*},
Paridokht Shahrak¹, Mahdiyeh Adrom⁸, Fatemeh Soroush¹

¹Department of Health Deputy, Zahedan University of Medical Science, Zahedan, Iran

²Department of Deputy Treatments, Zahedan University of Medical Science, Zahedan, Iran

³Department of Health Deputy, GP Technical Assistant center Health of Zahedan University of Medical Science, Zahedan, Iran

⁴Master of Science in State Management, Zahedan Islamic Azad University, Zahedan, Iran

⁵Department of Health Educations, Zahedan University of Medical Science, Zahedan, Iran

⁶Department of Zabol Medicinal Plants Research Center, Zabol University of Medical Sciences, Zabol, Iran

⁷Department of Pharmacognosy, Zabol University of Medical Sciences, Zabol, Iran

⁸Department of Psychology Zahedan University of Medical Science, Zahedan, Iran

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***Correspondence:**

Dr. Javad Sharifi-Rad,

E-mail: javad.sharifirad@gmail.com

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ABSTRACT

Background: Life expectancy deals with the overall level of population health thoroughly considering the effect of mortality. Life expectancy is defined as the expected number of years of life remaining at a given age of people who living in a specific country. This study aimed to estimate life expectancy for the Sistan and Baluchestan province and all its cities based on gender.

Methods: This study is a descriptive analytical study. For the analysis of the objectives the required data are mortality information and population data based on age groups and gender. One of the most applicable and most reputed methods in the life table construction is Chaing's methods and was applied this method to estimate life expectancies.

Results: Based on the analysis of mortality data, life expectancy at birth for females and males were estimated of 71.5 (This ratio is the percentage of 12 months. 71.5, i.e. 71 years and 6 months) and 68.2 years respectively, and for both sex combined, 69.7 years. These expected years as life expectancy has various values in the rank for the province's cities. In the descending order the values of life expectancies are belong to Khash, Chabahar, Zahedan, Sarbaz, Zabol, Saravan, Nikshahr and Iranshahr cities in the given order.

Conclusion: This health indicator has smallest value in Sistan and Baluchestan province in compared to other provinces and whole country as well. To increase life expectancy due to health conditions, economic efficiency and extensive planning by the authorities, planners and policy makers are required.

Keywords: Life expectancy, Estimation, Sistan and Baluchestan

INTRODUCTION

Enjoyment of the blessings of health is considered as an important issue to most human beings. So men always try to achieve their own material and spiritual welfare.¹ World health organization's definition of the word

“health” and the other definitions are somehow emphasized on overall well-being of human.² In 2010, health goals including two major objectives: 1) increasing years (life expectancy) and health quality of life and 2) eliminating health disparities.³ Capability is the center of education and health promotion. So one of the main goals

of the health promotion is considered as the empowerment of individuals.⁴ Increasing the empowerment of individuals leads to increasing the quality of life, and consequently increasing the life expectancy too.⁵ In considering the effect on morality, life expectancy of the overall level of population health can show that “The life expectancy could numerically be defined as the final outcome of the risk factors leading to death, health programs and health or non-health behavior of people and all the factors which have an impact on them”.⁶

We can simply define the life expectancy as the amount of years a person expects to live in a country. Life expectancy is considered as one of the most important indicators of health promotion and could be considered as the life expectancy of individuals.⁷ In addition to morality rates, life expectancy is one of the most important indexes and represents the cultural, social, economic and sanitary qualification of each society that can be helpful in evaluating the previous services.⁸

Aborning, life expectancy represents the average years in which the newborn baby will live, provided that, for the next few years of life his/her probability of death is similar to the contemporaneous humans. We can calculate the life expectancy for all ages and for example, reveal that as an average, how many years can a 65-year-old man live? Of course provided that, in the future his probability pattern of death is similar to those contemporaneous 65-year-old men.⁹

Besides the per capita income indicators and literacy, we can assume the life expectancy as a promotion index, so we calculated the World Bank's human development index based upon these three indicators, and has regularly the countries based on them. Aborning, strongly the life expectancy is influenced by the death of the first year of a life. For this reason, we can assume this index like a death indicator of the children under the year one as a health, economic and social index.¹⁰

It should be noted that the concept of life expectancy is synonymous with the concept of average life, with the difference that the average life is calculated based on both the age at the time of death and the annual records statistics of deceased. One of the best methods of calculating the life expectancy is using the life tables.¹¹

Life expectancy can be useful in the evaluation of the accomplished health services¹² in the province of Sistan and Baluchistan and especially planning for the future. We've should done broad efforts to improve the health of the community and thereby improving the life expectancy. So investigating different causes and circumstances of death among children and mothers can help officials in preparing and improving the development planning and health.

METHODS

Through recorded death in given year and the population in different age groups in bureau of statistics in Zahedan city. This cross-sectional study is initially extracted after returning into the general statistics office in Zahedan city in order to discovering all death occurred in a given year and all the population recorded by user (in a census providing in a given year in the province of Sistan and Baluchistan) of the bureau of statistics so the data is entered separately into the table according to the sex, age range and the city.

Consequently, life expectancy has been evaluated and assessed in these groups. For each community, calculation of life table can be possible according to the size of population, the number of death in each age or age group per year.

In this study, the main variables include: age, sex/gender, and city of residence.

Life's tables are directly calculated by the special method as a Chiang's method by knowing the exact amount of population and assessing the amount of death in each age group, based upon the scientific guideline and taking into account the following criteria:

RESULTS

All result of this study as well as population and morality statistics are given as the separate age group in the following (Table 1-3).

In a given year, for the sake of men and women (lived) in province of Sistan and Baluchistan and generally the whole province we present the estimated life expectancy in age group based on probabilities of death in age groups in table 1 to 27 based on these calculation, for females, we estimate the life expectancy at birth as 71.5, men as 68.2 and for all men and women as 69.7 also we estimated the amount of life expectancy at birth, respectively, from high to low in the city of Khash, Chabahar, Zahedan, Sarbaz, Zabol, Saravan, Nikshahr and Iranshahr.

The difference between the lowest and highest life expectancy is considered as a 19.16 years so it needs to be checked.

A Table 1, 2 and 3 is considered as the comparative tables of life expectancy which compared the cities together and the whole province with each other.

During 2005 to 2010, we specified the life expectancy with different colors on a map of the world. Also we defined, respectively, some of life expectancies countries from high to low.¹³

Table 1: Life expectancy for women in the age group breakdown.

Age group	Life expectancy								
	Province	Zabol	Chabahar	Nikshahr	Sarbaz	Iranshahr	Saravan	Khash	Zahedan
<1	71.5074	73.0296	78.9176	67.1994	79.5629	61.1459	68.2974	89.2846	74.4011
1-4	70.9798	72.3119	78.2462	66.9568	78.5629	61.1729	67.7073	88.4777	74.0144
4-9	68.0068	68.9357	74.8381	66.018	75.2876	59.6737	64.544	85.0389	70.4298
10-14	63.812	64.2654	70.5685	64.1595	71.3501	56.5296	59.9256	80.311	65.68
15-19	59.383	59.5402	66.3525	61.2767	66.9584	52.2891	55.4169	75.7882	60.8868
20-24	55.0199	54.9181	62.2269	57.9353	62.8431	48.1179	51.028	71.2662	56.2686
25-29	50.8454	50.4586	58.592	54.3533	58.8868	44.419	47.1269	67.1041	51.6098
30-34	46.4205	45.842	54.5793	49.8424	54.6833	40.4636	42.9128	62.6606	46.8448
35-39	41.7534	41.1193	50.0469	45.0143	50.3328	35.969	38.337	57.9755	42.0594
40-44	37.1719	36.415	45.8149	40.5425	46.1304	31.4045	33.7801	53.4809	37.3574
45-49	32.6077	31.8359	41.4399	35.9195	42.1518	26.7816	29.2094	49.4289	32.6781
50-54	28.0556	27.2378	36.8522	31.6136	38.191	22.1523	24.6095	45.1613	28.0654
55-59	23.5519	22.6973	32.534	27.1922	33.8405	17.5234	19.9787	41.1353	23.5945
60-64	19.4487	18.9125	27.9708	23.5191	29.6016	13.1719	15.6884	37.0036	19.6433
65-69	16.1767	15.5785	24.0081	20.0685	26.5102	10.6287	12.494	33.1631	16.2129
70-74	13.4687	12.621	20.0715	17.3452	24.4517	8.26955	9.97041	29.377	13.6692
75-79	10.7415	9.74843	16.7371	15.3414	22.226	5.98506	7.1797	26.1078	10.5443
80-84	8.92093	7.22777	13.4461	13.6914	20.9386	4.51042	6.09249	26.1307	8.35049
85+	8.40525	4.96364	11.8718	13.4444	23.6	4.70588	6.74468	31.6667	6.7

Table 2: Life expectancy for men in the age group breakdown.

Age group	Life expectancy								
	Province	Zabol	Chabahar	Nikshahr	Sarbaz	Iranshahr	Saravan	Khash	Zahedan
<1	68.2732	68.5027	71.5606	63.1835	66.9325	62.2765	65.2331	74.8441	71.804
1-4	67.6542	67.7483	70.8226	62.7999	66.0976	61.7965	64.7079	74.0596	71.2966
4-9	64.3527	64.5626	67.439	60.4603	62.6347	58.9267	61.6204	70.2959	67.6155
10-14	59.9568	59.9115	63.0398	57.201	58.4169	55.1777	57.1657	65.5668	62.8519
15-19	55.4151	55.1525	58.9734	53.1448	54.1247	50.711	52.6075	60.7923	58.0605
20-24	51.05	50.6209	54.9187	49.1309	49.9815	46.4579	48.3381	56.2383	53.4965
25-29	46.842	46.3695	50.8085	44.8933	45.9619	42.5272	44.2417	52.0134	49.1142
30-34	42.7056	42.2693	46.5745	40.6704	41.9081	38.5874	40.2057	47.8627	44.9095
35-39	38.462	38.0249	42.2754	36.2658	37.9103	34.4277	36.1804	43.4588	40.6121
40-44	34.253	33.5818	38.3816	31.9754	34.1405	30.4417	32.083	39.3003	36.2192
45-49	30.0258	29.2893	34.3506	27.9688	30.605	26.224	28.2763	34.9117	31.7017
50-54	25.8622	25.0368	30.2114	24.0952	26.996	22.1179	23.9701	30.8216	27.4319
55-59	21.8324	20.9733	26.4212	20.1106	23.0156	18.2673	19.7399	26.9657	23.3011
60-64	18.0503	17.298	22.5611	16.9809	19.1011	14.3584	15.9621	22.6848	19.365
65-69	15.0506	14.6469	18.9358	14.3549	16.165	12.0188	12.9766	18.8727	15.9237
70-74	12.5822	11.6406	16.0793	12.4417	14.3108	10.4712	10.3649	16.032	13.3554
75-79	9.89206	8.62135	13.6883	10.0163	11.6182	8.24821	8.09082	13.1085	10.1864
80-84	7.91314	6.22025	11.0533	7.95094	9.74892	6.49501	5.94623	12.2789	8.63409
85+	6.5219	3.82609	9.625	6.8625	10.0938	5.28916	5.02817	11.04	6.84884

Table 3: The life expectancy of Province men and women in separate groups.

Age group	Life expectancy								
	Province	Zabol	Chabahar	Nikshahr	Sarbaz	Iranshahr	Saravan	Khash	Zahedan
<1	69.7417	70.6458	74.4244	64.2488	71.3984	61.7408	66.7694	78.6469	73.0323
1-4	69.166	69.9088	73.715	63.9241	70.4858	61.5163	66.2136	77.8459	72.5826
4-9	66.0322	66.631	70.3155	62.3618	67.0963	59.3318	63.0907	74.2131	68.9476
10-14	61.7311	61.9712	65.9711	59.7385	62.9874	55.8823	58.5573	69.4753	64.1905
15-19	57.2418	57.2281	61.831	56.199	58.6391	51.5253	54.0232	64.798	59.3983
20-24	52.8768	52.6544	57.7347	52.4809	54.4891	47.313	49.6967	60.24	54.8078
25-29	48.6835	48.3018	53.8302	48.5421	50.4714	43.5014	45.6966	56.0084	50.2913
30-34	44.4055	43.9454	49.6888	44.1776	46.3259	39.5542	41.5755	51.6937	45.8128
35-39	39.9624	39.4702	45.2885	39.5842	42.1586	35.2336	37.2859	47.1491	41.2792
40-44	35.5762	34.8997	41.2413	35.2058	38.1709	30.9751	32.9656	42.8047	36.7356
45-49	31.1804	30.4606	37.0404	30.8852	34.4068	26.552	28.7543	38.5141	32.1393
50-54	26.8326	26.0379	32.7006	26.8036	30.6165	22.1905	24.2985	34.3042	27.7105
55-59	22.5818	21.7369	28.6825	22.6255	26.4573	17.9572	19.8729	30.3178	23.4245
60-64	18.6417	17.9982	24.5109	19.2211	22.3674	13.8206	15.8417	26.0401	19.4807
65-69	15.5149	15.0056	20.7757	16.2183	19.3353	11.3915	12.7551	22.137	16.0435
70-74	12.9355	12.0118	17.5598	13.8817	17.3327	9.45456	10.193	18.8298	13.4855
75-79	10.2293	9.04714	14.8146	11.552	14.7843	7.21772	7.67925	15.7394	10.3347
80-84	8.31523	6.59466	12.0016	9.59359	13.1236	5.63075	5.99692	14.9668	8.51255
85+	7.26613	4.2517	10.5474	8.90517	14.4043	4.99405	5.71186	15.0323	6.78767

DISCUSSION

Finding in relation to the first specific target, that is, “estimating the life expectancy in different age groups “showed the great importance of their life expectancy at birth and consequently present this reality that in the province of Sistan and Baluchestan, in a given year, a new born baby, on average, expect to live about 69.74 year. But it is estimated as 85 year for different age groups with interval of 1-0 year and 4-1 year or after that for the five years old children or the superior one so we present them in the tables 1 to 3.

Also in similar study Hossein Fallahzadeh et al. with similar research on the life expectancy in different age groups are estimated too.¹⁴

Finding in relation to the second specific target, that is, “life expectancy in sex groups presented that for female, we estimates the exact amount of life expectancy as 71.5 years and for men as 68.2 years” and is almost “the life expectancy of women is considered as 3.3 years, more than the men”, In exception “in Iranshahr the life expectancy of women is considered as 61.1 years, for men as 62.2 years” that consequently “the life expectancy of men is considered as 1.1 years, more than women”.

In 2003, based on the study of Poor Malek, In our country we considered the life expectancy of women as 73.17 and for men as 70.09 that consequently “the life expectancy

of women is considered as 3.08 years, more than the men”.¹⁵

Findings in relation to the third specific target, that is, the comparison of life expectancy in different cities of the province found that there is a great difference about life expectancy between different cities of the province so that the maximum life expectancy is reported from Khash, about 78.64 year (for women as 89.2 year and men as 74.1 year) and the minimum life expectancy is reported from Iranshahr, about 61.74 years (woman as 61.1 years old men as 62.2 year), respectively, according to the census statistics in a given year, we underline that life expectancy belongs to the population and deaths so this difference can be measured in similar texture districts of Baluchestan.

According to Ghafarian Shirazi's study, the maximum life expectancy of men depends on Boyerahmad and Kohgiluyeh as 72.4 year and the minimum life expectancy is related to Gachsaran as 69.2 years. Also the maximum life expectancy of women is related to Gachsaran as 75.5 year and the minimum life expectancy belong to Boyerahmad as 72.9 years.¹⁶

Finding in relation to the fourth specific target, that is, the comparison between the life expectancy of this province and the country showed the exact amount of life expectancy in Sistan and Baluchestan 79.7 year, for women as 71.5 year and for men as 68.2 year, while during 2005 to 2010, which is almost equal to in a given year, we estimate the exact amount of Iran's life

expectancy is considered as 71 years, for women as 72.6 years and for men as 69.4 years so its difference between men and women is about 1.3 years for women as 1.1 years and for men as 1.2 years.¹³

In 1382, based on Fallahzadeh research, in providence of Yazd the exact amount of the men s life expectancy is considered as 71.9 years and for women as 74.5 years which in 2003 in comparison with the country is considered for men as 67 years and for women as 72 years which its difference is about 5 years for men and 2.5 years for women and consequently This amount is more than the country s life expectancy.¹⁴

Life expectancy is considered as one of the most important health development indicator and generally it has the least amount in Sistan and Baluchestan toward the whole country and the other provinces for increasing the life expectancy, it is essential to prepare the extensive programming according to the income health and economic conditions by the officials.

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