MODESTUM
OPEN ACCESS

Original Article

Electron J Gen Med 2019;16(1):em101
ISSN:2516-3507
https://doi.org/10.29333/ejgm/102412

# The quality of life of young men from the far north

V.K. Iurev[1], P.G. Zhirkov[2]

**ABSTRACT**

The SF-36 questionnaire and a specially designed survey were used to assess the quality of life and the prevalence of lifestyle factors that affect negatively the health of 570 young men who are 15, 16 and 17 years old living in Yakutsk city. It was found that the average quality of life for all eight scales of the SF 36 questionnaire was in the range of "satisfactory" and "good". Yakutsk boys have lower quality of life indicators than in the population on most scales of the questionnaire, which is associated with living in extreme climatic conditions and social problems in the region. There are no significant differences in the way of life among young Yakuts and Russians, but young Yakut people have lower rates on the scales of the questionnaire PF, RP, SF and MH, which is obviously due to their ethnicity.

**Keywords:** young men, quality of life, lifestyle, Yakutsk city, national features

## INTRODUCTION

In recent decades, the study of quality of life has taken a strong position among the methods of assessing the degree of people well-being. Being a fairly simple, informative and reliable way, it allows evaluating the basic functions of a person – physical, mental, social and spiritual. The growing interest in the problem of quality of life points to the concern of modern society with the problem of sustainable social development of the population.

Each country of the world, each region has its own unique natural and climatic conditions, characteristic features of the demographic situation, traditions, conditions, lifestyle, social benefits and social problems. In this connection, regional studies of the quality of life of certain social groups of the population are of particular relevance.

Adolescence is a special period in a person's life. At this age, there is often the formation of chronic pathology, the rapid transition of acute forms of disease in recurrent and chronic forms (7). An important role in this is played by factors of the environment and lifestyle, the influence of which adolescents are more exposed than adults. In this connection, it is important to study the quality of life of adolescents, as for any state, this social group of the population is the intellectual, labor, reproductive, defense potential of the country (8).

This study was conducted in Yakutsk city – the capital of the Republic of Sakha (Yakutia). Yakutsk is the largest city located in the permafrost zone. At the beginning of 2017 the population of the city was 322 708 people, of whom 13.2 percent were school students.

The quality of life was assessed according to the SF-36 questionnaire, which refers to non-specific questionnaires widely used in the USA, Europe and Russia in population studies and meets all the requirements for questionnaires (3,4,12).

The study was based on 14 schools and colleges. After obtaining consent, 570 young men aged 15, 16 and 17 were asked to complete the SF-36 questionnaire. In accordance with the generally accepted methodology, 36 points of the questionnaire were grouped into eight scales: Physical Functioning (PF), Role- Physical Functioning (RP), Bodily pain (BP), General Health (GH), Vitality (VT), Social Functioning (SF), Role-Emotional (RE) and Mental Health (MH) (13,14). Each scale varied between 0 and 100, with a higher score indicating a higher quality of life. Indicators below 50 points were regarded

[1] *Head of the Department of Public Health and Health Care, Doctor of Medical Sciences (Advanced Doctor), Professor, Saint-Petersburg State Pediatric Medical University, Russia.*
[2] *Postgraduate at the Department of Public Health and Health Care, Saint-Petersburg State Pediatric Medical University, Russia.*

***Correspondence:*** *V.K. Iurev*
*Head of the Department of Public Health and Health Care, Doctor of Medical Sciences (Advanced Doctor), Professor, Saint-Petersburg State Pediatric Medical University, Russia*

*Received: 1 Aug 2018, Accepted: 22 Oct 2018*

**© 2019 by the authors; licensee Modestum Ltd., UK.** This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0/).

**Table 1:** *Indicators of quality of life of Yakutsk young men*

| Scale SF-36 | n | M | σ |
|---|---|---|---|
| PF | 554 | 88.99 | 17.08 |
| RP | 553 | 75.99 | 31.00 |
| BP | 525 | 74.73 | 22.37 |
| GH | 533 | 67.48 | 21.44 |
| VT | 521 | 60.26 | 20.41 |
| SF | 559 | 81.36 | 20.95 |
| RE | 554 | 70.60 | 35.67 |
| MH | 522 | 68.81 | 18.42 |

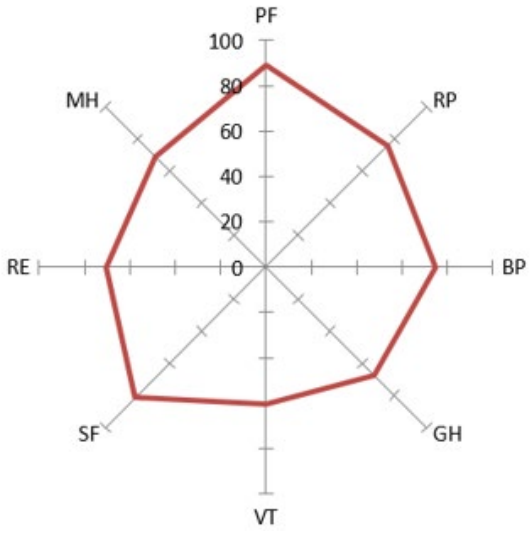


**Figure 1:** *The profile of the quality of life of Yakutsk young men*

as bad, from 50 to 70 points, as satisfactory, from 70 points and above, as good (1, 10). As a comparison group, we used the average values of the data of a multicenter study of the quality of life of adolescents enrolled in schools and colleges in 5 regions of Russia (Moscow, St. Petersburg, Pskov, Omsk, Smolensk) (1).

## MATERIALS AND METHODS

In addition to the SF-36 questionnaire, in order to assess the prevalence of lifestyle factors affecting health, young men were asked to complete a specially designed survey containing relevant questions.

From 570 respondents, 566 filled in the questionnaire and the survey by 85% or more, including information on age was provided by 559 boys, nationality – by 544 adolescents.

For comparison of the obtained results the P-value calculation and ANOVA univariate analysis of variance (nonparametric Kruskal-Wallis test) were used.

## RESULTS

The assessment of the quality of life showed (**Table 1**) that the average indicators of quality of life of young men living in Yakutsk in all eight scales exceeded 50 points, that is, were satisfactory and good. The lowest values of indicators (**Figure 1**) were marked on the scales characterizing vitality (VT), general health (GH) and mental health (MH), which were in the range of satisfactory and were respectively 60.26, 67.48 and 68.81 points.

On other five scales the young men had good indicators. At the same time, indicators reflecting the state of physical functioning (PF) and social functioning (SF) had the highest level – 88.99 and 81.36 points, respectively.

Comparison of average indicators of quality of life of Yakutsk young men with the average quality of life of young men in the population (**Table 2**) found that young people living in Yakutsk have a statistically significant lower level of quality of life in seven out of eight indicators. Only the level of social functioning (SF) of Yakutsk young men corresponded to that in the population. The most significant differences were observed on the scales of the questionnaire characterizing (**Figure 2**) vitality (VT), general health (GH) and role-emotional (RE).

**Table 2:** *Indicators of quality of life of Yakutsk young men and comparison group*

| Scale SF-36 | Yakutsk | | | Comparison group | | | p |
|---|---|---|---|---|---|---|---|
| | n | M | σ | n | M | σ | |
| PF | 554 | 88.99 | 17.08 | 727 | 92.1 | 14.9 | <0.05 |
| RP | 553 | 75.99 | 31.00 | 727 | 78.8 | 27.7 | <0.05 |
| BP | 525 | 74.73 | 22.37 | 727 | 79.2 | 21.5 | <0.05 |
| GH | 533 | 67.48 | 21.44 | 727 | 73.0 | 18.2 | <0.05 |
| VT | 521 | 60.26 | 20.41 | 727 | 67.1 | 19.3 | <0.05 |
| SF | 559 | 81.36 | 20.95 | 727 | 81.6 | 19.6 | >0.05 |
| RE | 554 | 70.60 | 35.67 | 727 | 75.8 | 32.8 | <0.05 |
| MH | 522 | 68.81 | 18.42 | 727 | 71.2 | 17.8 | <0.05 |


**Figure 2:** *Average indicators of quality of life of Yakutsk young men and comparison group*

**Table 3:** *Indicators of quality of life of Yakutsk young men depending on age*

| Scale SF-36 | 15 years | | | 16 years | | | 17 years | | | p |
|---|---|---|---|---|---|---|---|---|---|---|
| | n | M | σ | n | M | σ | n | M | σ | |
| PF | 204 | 87,85 | 19,58 | 178 | 90,28 | 14,61 | 172 | 89,63 | 14,96 | 0,696 |
| RP | 204 | 74,22 | 30,69 | 178 | 78,32 | 29,89 | 171 | 75,44 | 32,71 | 0,309 |
| BP | 187 | 75,14 | 22,09 | 174 | 73,97 | 22,23 | 164 | 74,91 | 22,62 | 0,792 |
| GH | 190 | 67,64 | 20,45 | 174 | 68,87 | 21,20 | 169 | 65,84 | 22,68 | 0,454 |
| VT | 185 | 60,75 | 20,00 | 172 | 61,16 | 20,61 | 164 | 58,81 | 20,70 | 0,440 |
| SF | 206 | 79,55 | 21,63 | 180 | 82,36 | 20,59 | 173 | 82,30 | 20,71 | 0,320 |
| RE | 203 | 69,54 | 36,09 | 179 | 73,18 | 35,52 | 172 | 68,41 | 35,74 | 0,328 |
| MH | 186 | 66,90 | 18,57 | 172 | 70,69 | 18,42 | 164 | 69,06 | 18,01 | 0,113 |

Due to the fact that in the studied statistical population there were adolescents of different ages (37.3% – 15-year-olds, 32.0% – 16-year-olds and 30.7% – 17-year-olds), which could have an impact on the average indicators of quality of life, by means of ANOVA univariate analysis of variance the differences between the indicators on the scales of the questionnaire in different age groups were assessed. The calculations showed (**Table 3**, **Figure 3**) that there are no statistically significant differences between individual age groups in all scales of the questionnaire in this sample. Thus, it was found that age did not have a significant impact on the average indicators of quality of life.

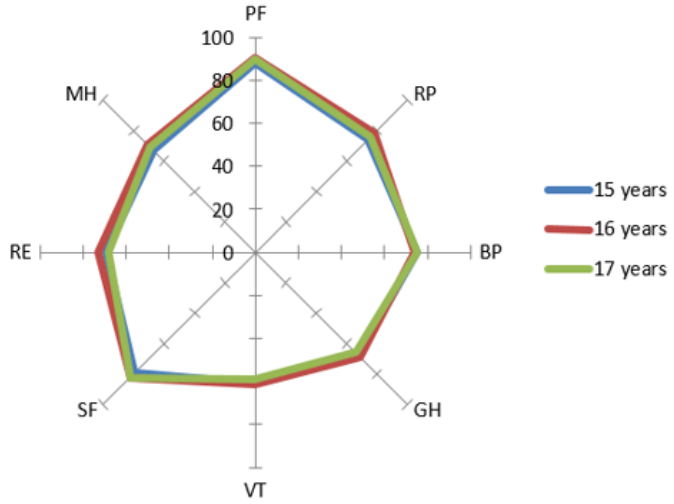


**Figure 3:** *Quality of life profile of Yakutsk boys in different age groups*

**Table 4:** *Indicators of quality of life of Yakutsk young men depending on nationality*

| Scale | Yakuts | | | Russians | | | p |
|---|---|---|---|---|---|---|---|
| SF-36 | n | M | σ | n | M | σ | |
| PF | 274 | 88.01 | 15.83 | 161 | 89.92 | 18.07 | >0.05 |
| RP | 273 | 75.64 | 31.24 | 161 | 77.95 | 30.54 | >0.05 |
| BP | 259 | 73.41 | 21.95 | 149 | 78.58 | 22.54 | <0.05 |
| GH | 267 | 65.87 | 20.65 | 155 | 70.30 | 21.26 | <0.05 |
| VT | 256 | 58.89 | 20.42 | 148 | 63.14 | 19.80 | <0.05 |
| SF | 276 | 81.07 | 18.54 | 162 | 83.49 | 21.92 | >0.05 |
| RE | 274 | 71.59 | 35.82 | 161 | 70.39 | 34.76 | >0.05 |
| MH | 256 | 68.11 | 17.31 | 149 | 71.36 | 18.46 | >0.05 |

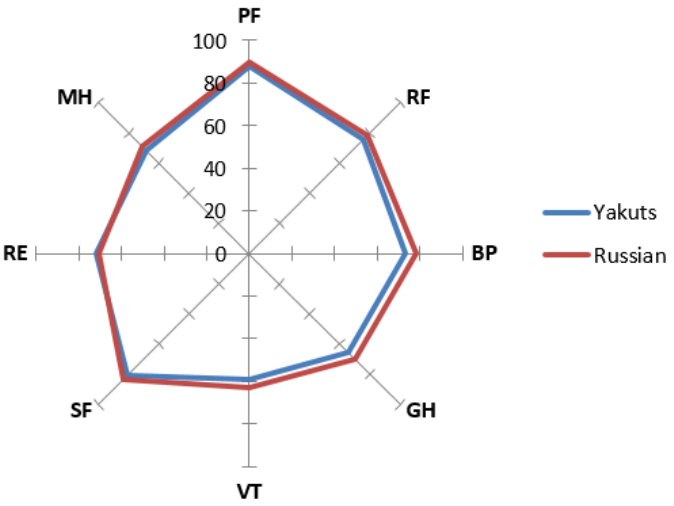


**Figure 4:** *Quality of life profile of young Yakuts and Russians*

Yakutsk is a multinational city; most of the population are Yakuts, who account for 46.5% of the population and Russian – 37.3%. Residents of other nationalities (Ukrainians, Kyrgyz, Evenks, Buryats, Armenians, Evens, etc.) amount 16.2%. In our sample, young Yakuts were 50.1%, Russians – 29.3%, representatives of other nationalities – 20.6%. In this connection, it was important to compare the average indicators of the quality of life of representatives of indigenous nationality – young Yakuts and foreign nationality – Russians.

The analysis (**Table 4**, **Figure 4**) showed the presence of significant differences ($p \leq 0.05$) between the selected ethnic groups of young men. The Russians, compared with the Yakuts, had better results on four scales: physical functioning (PF), role- physical functioning (RP), social functioning (SF) and mental health (MH). At the same time, young Yakuts had higher results on the scale of RE – role-emotional.

**Table 5:** *Prevalence of lifestyle factors affecting negatively health among young Yakuts and Russians (by 100; P±m)*

| Health risk factors | Nationality | | p |
|---|---|---|---|
| | Yakuts | Russians | |
| Sleep deprivation | 48.0±3.0 | 47.9±5.5 | >0.05 |
| Long stay at the computer | 46.6±3.0 | 48.6±3.9 | >0.05 |
| Small being in the fresh air | 29.9±2.7 | 29.3±3.5 | >0.05 |
| Low physical activity | 27.2±2.6 | 29.3±3.6 | >0.05 |
| Long-term additional classes (language, music, etc.) | 31.0±2.8 | 27.9±3.5 | >0.05 |
| Irregular nutrition | 23.8±2.5 | 23.6±3.3 | >0.05 |
| Smoking | 7.2±1.6 | 11.4±2.5 | >0.05 |
| Regular consumption of beer, gin and tonic and other low-alcohol beverages | 2.3±0.9 | 10.7±2.4 | <0.05 |
| Regular consumption of wine, champagne and other alcoholic beverages | 4.1±1.2 | 10.7±2.4 | <0.05 |

The established differences in the indicators of the quality of life of young Yakuts and Russians suggest that this is due to the peculiarities of the way of life of adolescents of different nationalities. In this connection, the prevalence of lifestyle factors that affect negatively health among young Yakuts and Russians was studied by an anonymous survey (**Table 5**). The analysis of the received answers allowed refuting this assumption. There were no statistically significant differences in almost all risk factors (except for the regularity of alcohol consumption) (p>0.05).

## DISCUSSION

As the study showed, Yakutsk boys have lower quality of life indicators than in the population for most scales of the questionnaire. The quality of life of the population, including adolescents, is largely determined with the system of objective conditions for the existence, activity and development of man and society, such as natural and climatic conditions, the welfare of the inhabitants of the region, the quality of the social sphere, the quality of the ecological niche, etc.

Yakutsk city, on the basis of which this study was conducted, is located in the permafrost zone and has extreme natural and climatic conditions – an extremely severe winter with a temperature drop to -50° – - 60° and a short hot summer with a temperature reaching +40°. In addition to the problems of natural and climatic nature in the Republic of Sakha (Yakutia), there are many social problems – problems associated with the labor market and employment of residents, leading to a high level of unemployment, unresolved housing problems, the problem of transport accessibility, low material welfare of the population, etc. (2) It is obviously that problems of natural, climatic and social nature characteristic to the region led to a decrease in the quality of life of Yakutsk young men.

However, the differences in the quality of life of young Yakuts and Russians established by the results of the study can not be explained by objective living conditions, as regardless of the nationality of young Yakuts and Russians live in the same city, are in the same social conditions and are exposed to the same impact of natural and climatic factors. In addition, the study proved the absence of differences in the lifestyle of young Yakuts and Russians.

Long-term research of scientists of the North-Eastern Federal University named after M.K. Ammosov, conducted in conjunction with specialists of a number of universities in the United States, proved that the physiology of the Yakuts has unique features that allow due to high energy production ensuring effective adaptation to low temperatures of the environment (6).

However, living in the urban environment, where the impact of extremely low temperatures is partially eliminated, these features of physiology have a negative impact on the body of the Yakuts, among which there is deterioration in metabolism, an increase in the frequency of obesity, hypertension, and diabetes.

A.D. Stepanova (5) in her dissertation research proved that living in conditions of long-term adaptation to the effects of the environment formed morphological and functional characteristics of the organism in Yakut children. In particular, the tests conducted by the author to determine the strength of muscles in the population of Yakut children showed that this group has lower rates compared to children of European origin.

These facts suggest that the differences in the quality of life of young Yakuts and Russians are related to the ethnicity of adolescents.

## CONCLUSIONS

1. The average indicators of quality of life of young people living in Yakutsk for all eight scales of the questionnaire SF 36 are in the range of "satisfactory" and "good".
2. Yakutsk young men have lower indicators of quality of life for most scales of the questionnaire than in the population, which is associated with living in extreme climatic conditions and social problems in the region.
3. Young Yakuts, compared with Russians, have lower rates on the scales PF, RP, SF and MH, which is due to their ethnicity.

## REFERENCES

1. The algorithm for assessing the quality of life of adolescents associated with health: evaluation criteria, the allocation of risk groups. Federal guidelines for the provision of medical care to students. 2016.
2. Zakharova RN, Mikhailova AE, Pavlova AB, et al. Health and quality of life in the North. Yakutsk, Publishing house of North-Eastern Federal University; 2015.
3. Novik AA, Ionova TI. Guide to the study of quality of life in medicine. Under the editorship of Acad. Yu.L. Shevchenko. RANS 2012.
4. Novik AA, Ionova IT. Study of quality of life in pediatrics. Under the editorship of Acad. Yu.L. Shevchenko. RANS 2017.
5. Stepanova AD. Morphofunctional features of the body of 7 - 8 year-old children of the indigenous population of the Republic of Sakha (Yakutia). Autoabstract of dis. Cand. of Med. Sciences. Novosibirsk 2005.
6. The uniqueness of the Yakuts body physiology. Retrieved from http://www.1sn.ru/91900.html
7. Iurev VK, Zhirkov PG. Prevalence of some lifestyle risk factors negatively affecting the health of high school students. Pediatrician. 2018;9(2):49-54. https://doi.org/10.17816/PED9249-54
8. Iurev VK, Zhirkov PG. Self-assessment of health and readiness for military service by high school students of Yakutsk. Pediatrician. 2018;9(3):72-6.
9. Ahles T, Saykin A, Furstenberg C, et al. Quality of life of long-term survivors of breast cancer and lymphoma treated with standard-dose chemotherapy or local therapy. J. Clin. Oncol. 2005. 23(19):4395-405.
10. Spilker B (Ed.). Quality of life and pharmacoeconomics in clinical trials (2nd ed.). Philadelphia: New-York Lippincott-Raven, 1996.
11. Spilker B (Ed.). Quality of life assessment in clinical trials. New York, 1990.
12. Staquet et al. (Ed.). Quality of life assessment in clinical trials. Oxford University Press: Oxford, New York, Tokyo, 1998.
13. Ware JE. The status of health assessment 1994. Publ. Hlth. 1995;(16):327-54.
14. Ware JE, Kosinski M, Keller SD. SF-36 Physical and Mental Health Summary Scales: A User's Manual. The Health Institute, New England Medical Center. Boston, Mass. 1994.

◇◈◈◈◈◈◇