

# Correlation of quality of life with component questionnaire in children with acute broncho-pulmonary disease

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**Purpose:** to determine the effect of disease symptoms of quality of life in children with acute broncho-pulmonary diseases according to the developed questionnaire.

**Material & Methods:** survey 143 children with acute broncho-pulmonary diseases at children's Hospital conducted using a questionnaire developed. The results worked out using standard software packages SPSS for Windows 13.

**Results:** the quality of life in the surveyed children with acute broncho-pulmonary diseases is estimated as lowered. Determined correlation between the assessment of the quality of life questionnaire and components in school children with acute broncho-pulmonary diseases who were hospitalized.

**Conclusions:** the biggest impact on quality of life of children with acute broncho-pulmonary disease have seizures wheezing and walking up the stairs, moderate effect giving cough and its effect on the general condition, nasal discharge and presence of dyspnea, exercise or physical activity, the problem of pressure in chest, missing school because of broncho-pulmonary diseases, depressed state due to disease and the fear of what may worsen cough, because of the disease the child may lag behind the school program and the impact on sleep. But the most complicated nasal breathing and availability allocation cough and daily activity have little impact on the quality of life for these children by correlation factor.

**Keywords:** quality of life, broncho-pulmonary diseases, children.

## Introduction

For today, it is possible even more often to meet the data, concerning the quality of life (QL) which is the difficult, multi-component phenomenon, which depends both on objective and various subjective factors in scientifically methodical literature [2]. The concept QL is very wide and philosophical, however scientists allocate three main types of definitions: global, component and narrow [9; 11].

Support of the quality of life, which is dependent on health, became one of the important components of health care in the world [7].

A global measure of perception by a patient of a disease and the functional status mean under the question of QL, which is connected with health [3; 10]. Therefore, considering question of QL of patients, estimate the degree of wellbeing and satisfaction with those aspects of life which illness and its treatment influences [6].

Various questionnaires are used for the purpose of an assessment of QL and definition of influence of a disease on state of a patient [1-4; 6]. Concerning the questionnaires of QL which concern broncho-pulmonary diseases, they are developed for persons with chronic pathologies [5; 8; 10].

As the interaction between a rehabilitologist and a patient is one of the factors of successful rehabilitation, we need to consider both objective data of inspections, and subjective

estimates of state of a patient, by drawing up the program. Besides for today it is recognized that influence of a disease on an organism can't be estimated only by use objective criteria (a status assessment by a doctor) [1]. Therefore, we developed the questionnaire of poll for children with the sharp broncho-pulmonary diseases (BPD) for the purpose of definition of influence of symptomatology of a disease on motor activity and quality of life of a child [4].

## Communication of the research with scientific programs, plans, subjects

The work is performed by a subject of the Built plan of the research work in the sphere of physical culture and sport for 2011-2015, the subject 4.2. «Physical rehabilitation of incomplete with violation of activity of the musculoskeletal system» (number of the state registration is 0111U006471).

## Purpose of the research

To define influence of symptomatology of a disease on the quality of life of children with sharp broncho-pulmonary diseases according to the developed questionnaire.

## Material and Methods of the research

143 children with sharp broncho-pulmonary diseases who came on treatments to regional children's hospital, the average age of which made  $9,8 \pm 2,9$  years old, took participation in the research. 64 children had pneumonia from them (com-

plicated by pleurisy at 2 of them) and 79 of the interrogated had different forms of bronchitis.

We did the statistical processing of results of researches by means of a standard package of the application program SPSS for Windows 13.

## Results of the research and their discussion

When studying QL, we rely on the subjective estimation which was given the patient at the time of poll. Besides, it is necessary to consider that the subjective perception of various components of the quality of life by certain people can be very different. However, studying state of children with sharp broncho-pulmonary diseases, for the definition of influence of a disease on their state interested us as the child estimates displays of a disease on the state and motor activity, for the purpose of the subsequent accounting of these data on physical rehabilitation classes.

This questionnaire contains questions which can conditionally be divided on such as: «general questions», «symptoms», «activity», «influence of a disease», at the same time practically all questions (except «general») estimated a state for the last 3 days.

So, studying results by the questionnaire of poll of QL, which is developed by us, we saw that children on average gained  $58,29 \pm 12,01$  points from the maximum 156 points. To estimate this result, we applied calculation of index of the quality of life (IQL), applying the approach of calculation, which is used by authors of other techniques for calculation of IQL and evaluation criterion by the formula:

$$IQL = (1 - N_{fact.} / N_{max.}) \times 100,$$

where  $N_{fact.}$  – the actual number of points which is received by the specific patient;  $N_{max.}$  – the maximum number of points which can be received by this questionnaire.

If IQL equals 80% and more, then QL consider satisfactory, 60–79% – lowered, 40–59% – low, 20–39% – very low, 19% and less – minimum [5].

Proceeding from these calculations, on average QL at the interrogated patients is estimated as lowered, as IQL made  $62,6 \pm 7,8\%$ . However, carrying out the statistical processing of frequencies by means of the standard package of the application program SPSS for Windows 13, we found out what QL is estimated as lowered at 69,2% of respondents, and at 30,8% of children with sharp broncho-pulmonary diseases – as low.

However, considering that the subjective estimate displays individual perception of the quality of life by the child and are based on subjective feelings and personal estimates [9], first, we want to pay attention to correlation communications of an assessment of QL with those questions, which concern an assessment of influence of symptomatology on a state of the child (tab).

Apparently from the table, irrespective of age, moderate influence on the quality of life, according to the questionnaire, children, with sharp broncho-pulmonary diseases has cough and its influence on a state of the child, allocation, from a nose and existence of get out of breath ( $0,30 < r < 0,49$ ).

However, complicated nasal breath and existence of allocation at cough have smaller influence on the quality of life of these children according to the correlation coefficient ( $0,20 < r < 0,29$ ). The existence of attacks of whistling breath gives the greatest influence on the quality of life, according to the data of inspection. And there we want to pay attention that, estimating get out of breath on motor activity through the question, it was how difficult for children to go upstairs, we see that there is a strong impact on the quantity of life ( $r=0,682$ ), than at the question concerning the existence of get out of breath at physical activity. In our opinion, it can be explained with that children don't differentiate these questions concerning get out of breath more often, and perceive them as one: «existence of get out of breath» at the time of poll, however they define more accurately it when a performance of specific action by them concerns a question. Concerning influence of a disease on restriction with sports or physical exercises for the last 3 days, we see that there is a moderate communication with the quality of life.

## Correlation communication estimates of the quality of life with components of the offered questionnaire at children with sharp broncho-pulmonary diseases

| General  |                |
|--|----------------|
| Age  | $r=-0,059$     |
| Quantity of SRVI per a year                      | $r=0,251^{**}$ |
| Concentration at school                          | $r=0,263^{**}$ |
| Admission of school                              | $r=0,116$      |
| Disease duration to a hospital                   | $r=0,175^*$    |
| Friendship with coevals                          | $r=0,038$      |
| Daily activity                                   | $r=0,236^{**}$ |
| Symptoms   |                |
| Cough  | $r=0,424^{**}$ |
| Exhaustion cough                                 | $r=0,313^{**}$ |
| Allocations of a phlegm                          | $r=0,220^{**}$ |
| Breath by a nose                                 | $r=0,219^{**}$ |
| Allocations from a nose                          | $r=0,374^{**}$ |
| Get out of breath at rest                        | $r=0,486^{**}$ |
| Get out of breath at PA                          | $r=0,398^{**}$ |
| Attacks of whistling breath                      | $r=0,596^{**}$ |
| Influence of disease                             |                |
| Pressure in a breast                             | $r=0,397^{**}$ |
| Tension of neck/shoulders                        | $r=0,118^*$    |
| Admission of school because of BPD               | $r=0,386^{**}$ |
| Clothing   | $r=0,270^{**}$ |
| Concern which can worsen a state                 | $r=0,401^{**}$ |
| Concern about progress because of BPD            | $r=0,306^{**}$ |
| Dejectedness because of health                   | $r=0,198^{**}$ |
| Restrictions because of cough/ get out of breath | $r=0,428^*$    |
| Dream  | $r=0,407^{**}$ |
| Confidence outdoors                              | $r=0,198^*$    |
| Activity   |                |
| Engagement in sports / physical exercises        | $r=0,334^{**}$ |
| Go upstairs                                      | $r=0,682^{**}$ |

**Note:** QL – quality of life; PA – physical activity; SRVI – sharp respiratory viral infections; BPD – broncho-pulmonary disease; \* –  $p < 0,05$ ; \*\* –  $p < 0,01$ .

Such interrelation, in our opinion, is explained by the general physical activity of children to a disease. According to our su-

pervision, children who spend a free time at the computer or the TV, consider that the disease doesn't limit him in this opportunity, and often and, on the contrary, carrying out treatment in hospital they attend class in MPC, thereby consider that their engagement in sports/physical culture are on due levels.

Here we can allocate pressure problems in breasts, transmission of school through BPD, dejectedness through a disease and fear concerning that which can worsen cough and that because of a disease the child can lag by the school program, rather the correlation communications which concern an assessment of QL and questions of influence sharp broncho-pulmonary disease on a state of the child. Also this analysis of results was confirmed by negative influence of a disease on a dream. Concerning the subgroup of the general questions, they have no close interrelation with an assessment of quality of life at the time of stay of the child in a medical institution, only the assessment of daily activity and an opportunity to concentrate at school has a weak influence ( $0,20 < r < 0,29$ ).

## Conclusions

According to the developed questionnaire, we found out that most of all influence of QL of children with sharp broncho-pulmonary diseases of attack of whistling breath and go up-stairs. The moderated connection has cough and its influence on the general condition of the child, allocation from a nose, existence of get out of breath, sports or physical exercises, pressure problems in breasts, admissions of classes at school through BPD, dejectedness through a disease and fear of rather possible deterioration in cough and lag from the school program because of a disease, and also negative influence of a disease on a dream. But such data of a clinical picture as complicated nasal breath and existence of allocations at cough, and also daily activity, have a weak influence on the quality of life of these children according to the correlation coefficient.

**Prospects of the subsequent research:** to define correlation communications of QL of this questionnaire with other objective indicators of a state of children with sharp broncho-pulmonary diseases in the conditions of hospitalization.

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