

Effect of Family-Oriented Rehabilitation on Quality of Life in Children With Brain Tumors And in Their Parents: Observational Prospective Study

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Authors declare nothing to disclose

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BACKGROUND & OBJECTIVE

- Brain tumors (BT) are the one of the most frequent types of cancer in children
- Childhood BT survivors have different problems and notable QoL impairment due to impact of both the cancer and antitumor treatment
- Parents and siblings of BT survivors are confronted with major changes and burden in their lives
- Family-oriented rehabilitation is promising to support cancer children and their families with the re-entry into 'normal' life
- The main goal of rehabilitation in cancer survivors – to improve/maintain QoL
- We aimed to evaluate QoL in children with BT in remission and their parents during family-oriented rehabilitation.



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PATIENTS AND METHODS



Clinical Rehabilitation Research Center for children with oncological, hematological and immunological diseases "Russkoye pole"



- Children are undergoing a 4-weeks complex medical social rehabilitation program after the end of cancer treatment, which includes:
 - correction of stato-kinetic disorders
 - medical-physical rehabilitation
 - neuro-psychological correction
 - psychological support
 - educational assistance
 - social support
- Parents are having the following types of support:
 - psychological support
 - social support
 - social-legal consultation



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Sample characteristics

Children, n=82	
Mean age (SD), y. o.	11.8 (3.1)
Boys, n (%)	47 (57)
Median duration of remission (range), mos	26 (1-123)
Parents, n=82	
Mean age (SD), y.o.	44.4 (11.1)
Mothers, n (%)	70 (85)

BT types in survivors: medulloblastoma (49%), astrocytoma (22%), anaplastic ependymoma (4%), others (25%)

QoL questionnaires

- **PedsQL** – QoL assessment in children (child- and parent-report forms)
- **RAND SF-36** – QoL assessment in parents

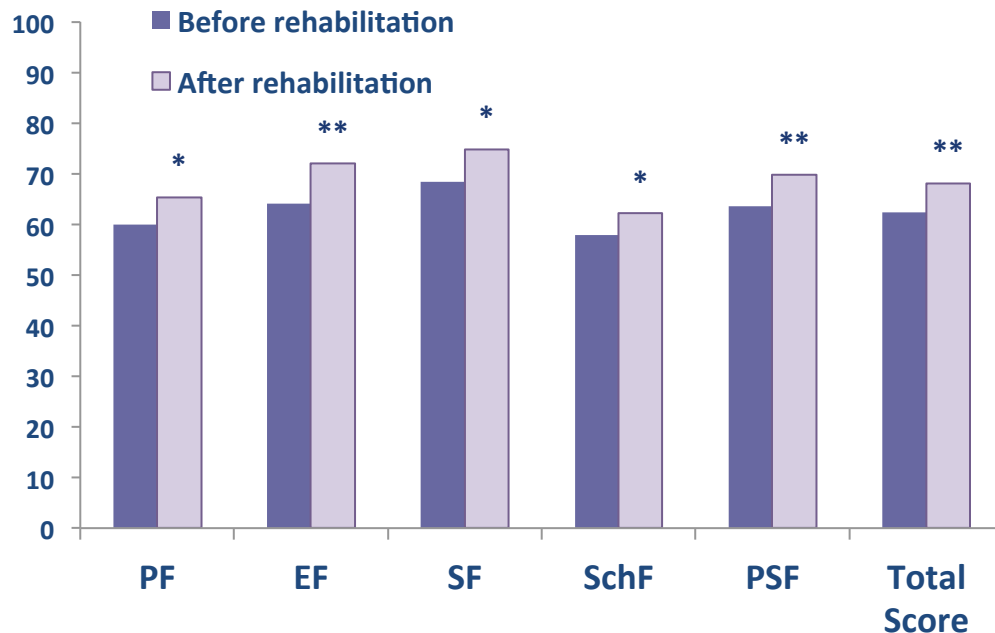
Time points for QoL assessment

- First evaluation - before rehabilitation,
- Second evaluation - after rehabilitation

Statistics: χ^2 test, t-test, Wilcoxon test, Generalized Estimation Equations.



QoL in children before and after rehabilitation by child-reports



PedsQL scales:

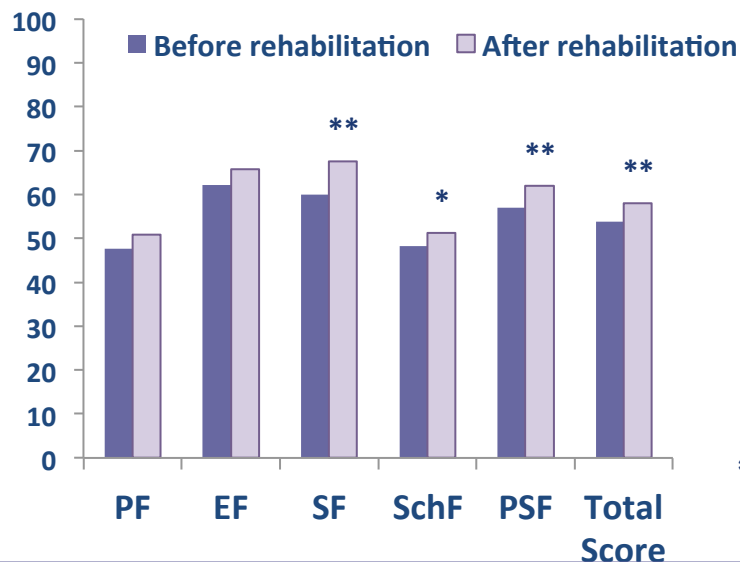
PF – physical functioning,
 EF – emotional functioning,
 SF – social functioning,
 SchF – school functioning;
PSF – psychosocial functioning,
Total Scale Score

*p<.05; **p< .001

- According to child-reports QoL increased mainly in terms of **emotional** (64.1 vs 72.0) and **social functioning** (68.5 vs 74.8).
- **Psychosocial functioning** and **Total Scale Score** significantly increased (63.6 vs 69.8, 62.4 vs 68.1).
- QoL improvement was revealed in children with adjustment for age, gender, duration of remission and baseline QoL (p<.05).



QoL in children before and after rehabilitation by parent-reports



PedsQL scales:

PF – physical functioning,

EF – emotional functioning,

SF – social functioning,

SchF – school functioning;

PSF – psychosocial functioning,

Total Scale Score

*p=.05; **p< .001

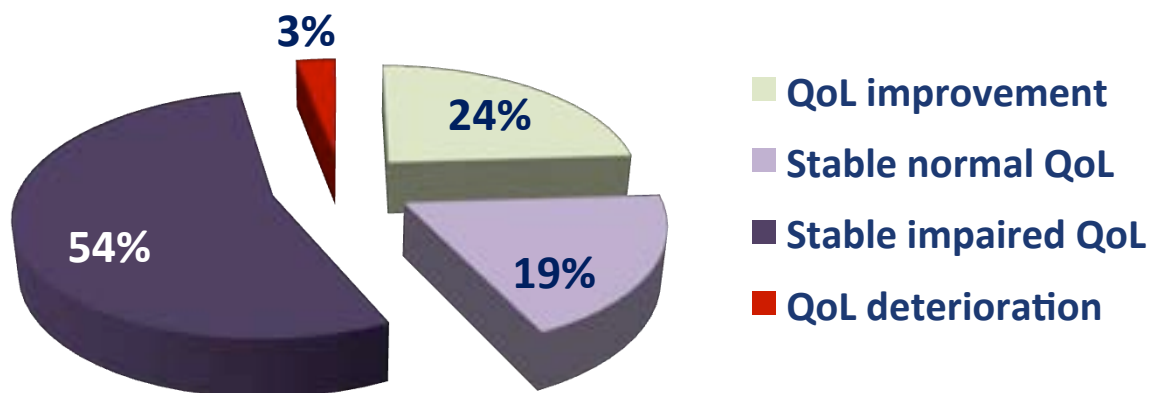
- According to parent-reports QoL in children increased mainly in terms of **social functioning** (60.1 vs 67.6).
- **Psychosocial functioning** and **Total Scale Score** significantly increased (57.1 vs 62.0, 53.8 vs 58.0).

QoL in parents before and after rehabilitation

- Parents' QoL improved almost by all SF-36 scales with adjustment for their age, gender, baseline QoL and duration of remission in children (p<.05).



Distribution of BT survivors according to QoL changes after rehabilitation **as compared to healthy peers**

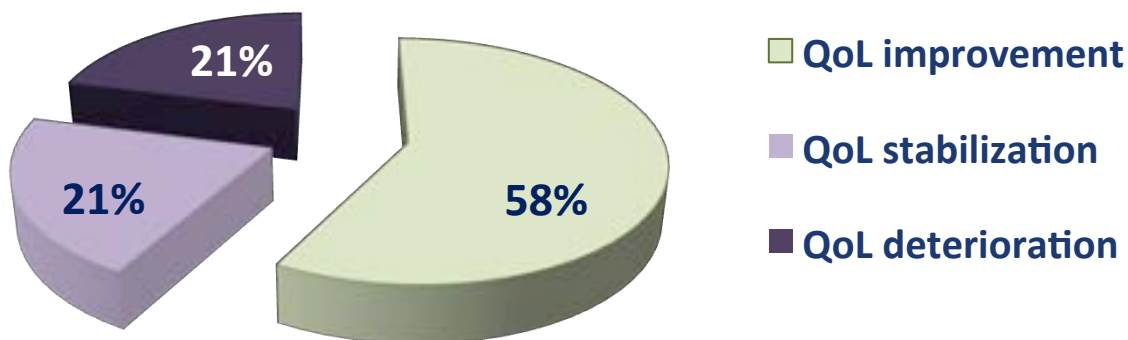


- QoL improved in 24% of BT survivors.
- QoL was stable in 73% of BT survivors.
- QoL deteriorated in 3% of BT survivors.

- After rehabilitation, the number of BT survivors with significant QoL impairment decreased (78% vs 57%, $p < .001$).



Distribution of BT survivors according to QoL changes after rehabilitation as compared with baseline by Total Scale Score



- QoL improved in 58% of BT survivors.
- QoL was stable in 21% of BT survivors.
- QoL deteriorated in 21% of BT survivors.



CONCLUSIONS

- Family-oriented rehabilitation is effective in terms of QoL improvement both in surviving children with brain tumors and in their parents.
- QoL information may help to identify specific support needs for cancer survivors and their families.
- Taking into account the revealed heterogeneity of surviving children in terms of QoL changes, further ongoing work is worthwhile to identify predictors of QoL changes during rehabilitation.



THANK YOU FOR YOUR ATTENTION!



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