

## Surf Project research 2016-2017

### Background

Surfing is a cool sport with a positive image. However, children with a developmental disorder or disability typically do not have access to this sport, due to the need for professional guidance and individual coaching. The Surf Project provides surfing lessons for these children, in a safe, predictable and controlled environment, with the help of a large group of enthusiastic and professional volunteers. Parents report that their children strongly benefit from the lessons; they see their children's self-confidence and self-esteem build up over the first few lessons and are happy to see their children enjoy the surfing lessons, often 'without disability'. The Surf Project aims to have surf therapy integrated in regular health care in the future. In order to do so, objective research is needed.

In 2016, the Surf Project set up a collaboration with a team of psychologists and psychiatrists "Triversum", a large Centre for Child and Adolescent Psychiatry in the Netherlands. Together they set up a pilot study, aiming to evaluate whether research was possible in this group, and if so, which instrument(s) would be useful. Conclusions from the pilot study were:

1. It is feasible do to research with the KIDSCREEN-27<sup>1</sup>, a parent-rated questionnaire measuring quality of life;
2. It is not feasible to have children fill in the KIDSCREEN-27<sup>1</sup>, due to the complexity of the questions;
3. The NOSIK<sup>2</sup> questionnaire on parental stress is not sufficiently relevant for this group, and should not be used in further research;
4. Preliminary results on the KIDSCREEN-27 show a positive effect of surfing on the quality of life of participants.

Although first results appear positive, the results should be interpreted with care since they were obtained in a small group of children (24 participants, surfing on one location during one season).

In 2017, the research was repeated and data of new participants was added, aiming to replicate the previous findings in a larger group of children on different locations during different seasons.

### Methods

The initial sample consisted of 86 children. These children participated in the Surf Project in 2016 and 2017, on three different locations. The children followed a series of 3 surfing lessons, during different times of the year (but always between April and September, considering the water temperature).

Parents of these children were asked to fill in the KIDSCREEN-27<sup>1</sup> questionnaire three times: T1 (before surfing lessons commenced), T2 (in the week after the third surfing lesson was completed), and T3 (a follow-up measurement 3-4 months after the surfing lessons ended). The KIDSCREEN-questionnaire measures quality of life in five domains: Health, Feelings, Family, Friends and School.

The questionnaire was sent out digitally; parents received an e-mail with a link through which they could fill out the questionnaire, using Qualtrics ([www.qualtrics.com](http://www.qualtrics.com)).

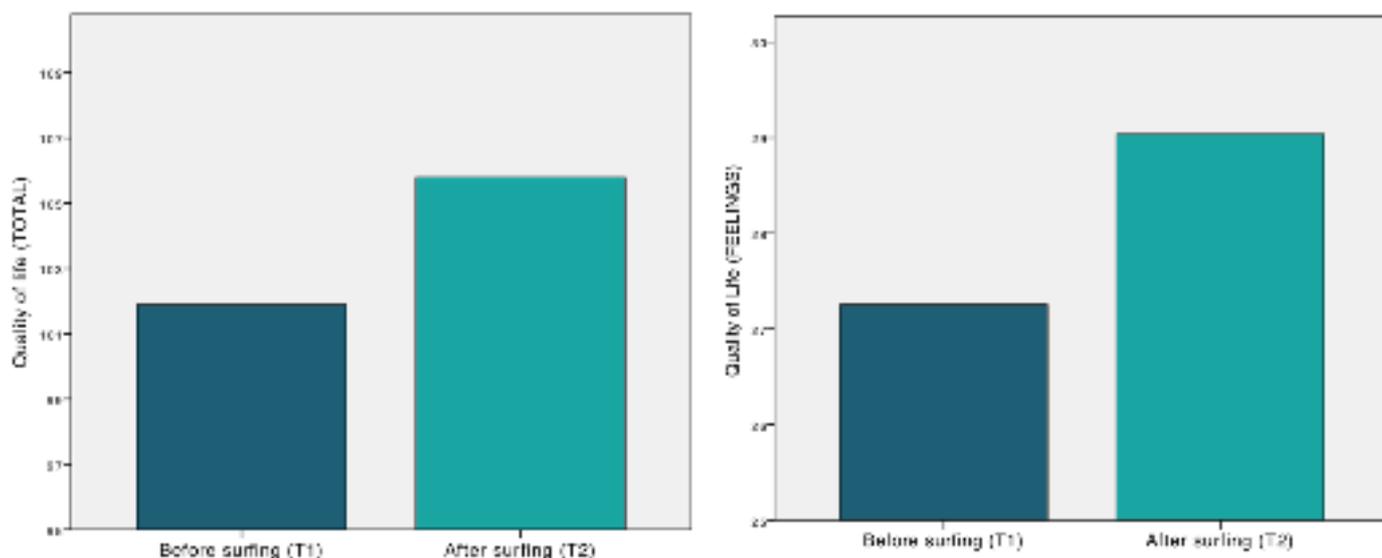
Total scores and scores on the five subscales of the questionnaire were compared between the different time points using paired sample t-tests.

## Results

Data was complete for T1 and T2 for a total of 46 children. Of these children, 71% was male and 29% female. Ages ranged between 9 and 19 years old. Children were enrolled in the Surf Project with various backgrounds and disabilities, amongst which Down syndrome, ADHD and autism spectrum disorder. Sample characteristics are summarized in Table 1.

A large portion of questionnaires on T3 was not filled out. Therefore, T3 was left out of the analyses. Qualitative results show that after sending out several reminders for the questionnaire, it was not feasible to ask parents to fill out a follow-up measurement 3-4 months after surfing had ended.

Results for T1 and T2 showed a significant change in the Total score of the questionnaire ( $p=.022$ ), as well as the Feelings domain ( $p=.002$ ). Scores on both domains were higher on T2 (after three surfing lessons) compared to T1 (before surfing). These results confirmed previous findings, in a larger group. Results are shown in Figure 1 and summarized in Table 2.



**Figure 1.** Mean scores on the Total score and Feelings subscale of the KIDSCREEN-27 questionnaire for quality of life (parent-rated version).



## Conclusion

The results of this study show that children participating in the Surf Project show significant improvement in their quality of life after three surfing lessons. The results suggest that the greatest improvement is seen in the 'feelings' domain, also resulting in a better total score and thus a better general quality of life.

### *Future research*

In 2018 the research will be continued, adding new participants to the dataset. With a larger dataset, we hope to be able to conduct more complex analyses in the future. As a result, it may be possible to investigate whether the effects of surfing are similar or different for a variety of age groups, disabilities, or locations.

In addition to doing quantitative research, the Surf Project values qualitative research as well. Over the past few years we have collected a wide variety of qualitative data, by sending evaluations to parents and volunteers, and interviewing parents and children about their experiences. In 2018 we plan to share our qualitative and quantitative data in a publication in a professional journal.

Furthermore, we will attend a large meeting with the worldwide network for surf therapy (international surf therapy organization, ISTO), in order to share our data and experiences and learn about research that is being done in other countries. We believe this will be an important and exciting step towards professionalising our research programme, which will help attain our goal of getting surf therapy integrated in health care as an evidence-based therapy option.

## References

<sup>1</sup> Ravens-Sieberer, U., Auquier, P., Erhart, M., Gosch, A., Rajmil, L., Bruil, J., ... & Mazur, J. (2007). *The KIDSCREEN-27 quality of life measure for children and adolescents: psychometric results from a cross-cultural survey in 13 European countries. Quality of Life Research, 16(8), 1347-1356.*

<sup>2</sup> Brock, A.J.L.L. de, Vermulst, A.A., Gerris, J.R.M. & Abidin, R.R. (1992). *NOSI, Nijmeegse Ouderlijke Stress Index. Experimentele versie. Handleiding. Lisse: Swets & Zeitlinger.*

**Table 1.** Sample characteristics

<b>Number of participants (N)</b>	46
<b>Age (M, SD)</b>	13.45 (2.5)
8-12 years (N, %)	15 (32.6%)
13-16 years (N, %)	27 (58.7%)
17-19 years (N, %)	3 (6.5%)
<b>Sex (% male)</b>	70.9%
<b>Disability or disorder (N, %)</b>	
ADHD	5 (10.9%)
Autism spectrum disorder (ASS)	12 (26.1%)
ASS + ADHD	1 (2.2%)
Down syndrome	23 (50%)
Other	5 (10.9%)

**Table 2.** Results of the statistical analysis

	<b>M (SD)</b>		<b>Test statistics</b>	<b>p-value</b>
	<b>T1</b>	<b>T2</b>		
<i>Quality of life</i>				
Total score*	101.73 (12.77)	105.42 (9.61)	$t(45) = -2.38$	0.022
Health	16.07 (2.94)	16.2 (2.51)	$t(45) = -0.31$	0.761
Feelings*	27.28 (4.28)	28.96 (3.03)	$t(45) = -3.28$	0.002
Family	28.21 (3.56)	28.87 (2.73)	$t(45) = -1.32$	0.192
Friends	13.5 (3.32)	14.16 (3.54)	$t(43) = -1.1$	0.276
School	15.96 (2.65)	16.4 (2.96)	$t(44) = -1.04$	0.306

\* Significant difference at  $p < .05$ .