

# Quality of life in growth hormone treated children and adolescents with growth hormone deficiency and smallness for gestational age



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## 1. Background / Aim

The potential benefit of growth hormone (GH) therapy on health-related QOL (HQoL) of children with short stature related to GH deficiency (GHD) or smallness for gestational age (SGA) has not been well documented.

We therefore assessed potential disease and treatment related predictors for a poor HQoL in GH treated children. Children with male gender, SGA disorder, greater height deficit and poor height gain were expected to be at risk.

## 2. Subjects and Methods

The QoLISSY questionnaire - a cross-culturally developed height specific instrument - was sent by mail to 157 children with idiopathic GHD and 219 non-syndromic SGA children, between 8 and 18 years old, being treated for at least one year with GH for short stature (height SDS < -2.5) at a Belgian GH treatment center. The questionnaires were filled out by the child. Response rate was 20.5%. Clinical and growth data were retrieved from the BESPEED database for GH treated children.

## 3. Results

	GHD (n=22)	SGA (n=55)	Significance (p value)
Female Male (n =)	14/8	32/23	0.798
Age at evaluation (Yr)	13.2 ± 2.8	13.9 ± 2.4	0.253
Height at eval.(SDS)	-2.0 ± 1.1	-2.0 ± 0.9	0.875
Age at start GH (Yr)	7.9 ± 2.7	8.4 ± 2.8	0.529
Height at start GH(SDS)	-3.3 ± 0.7	-3.1 ± 0.5	0.170
Duration of GH tr. (Yr)	4.7 ± 2.8	5.3 ± 2.7	0.456
Height gain 1st y (SDS)	0.7 ± 0.5	0.5 ± 0.3	0.056
Total height gain (SDS)	1.2 ± 1.1	1.0 ± 0.9	0.357

Table 1. Comparison of auxological data between patients with GH deficiency and SGA related smallness. Data are mean and SD.

	GHD (n=22)	SGA (n=55)	Significance (p value)
Total Funct. Score (%)	76 ± 18	76 ± 15	0.928
Physical Funct. Score (%)	77 ± 16	77 ± 14	0.974
Social Funct. Score (%)	75 ± 21	75 ± 17	0.993
Emotional Funct score(%)	77 ± 20	76 ± 17	0.790

Table 2. Comparison of Qolissy scores between patients with GH deficiency and SGA related smallness. Data are mean and SD.

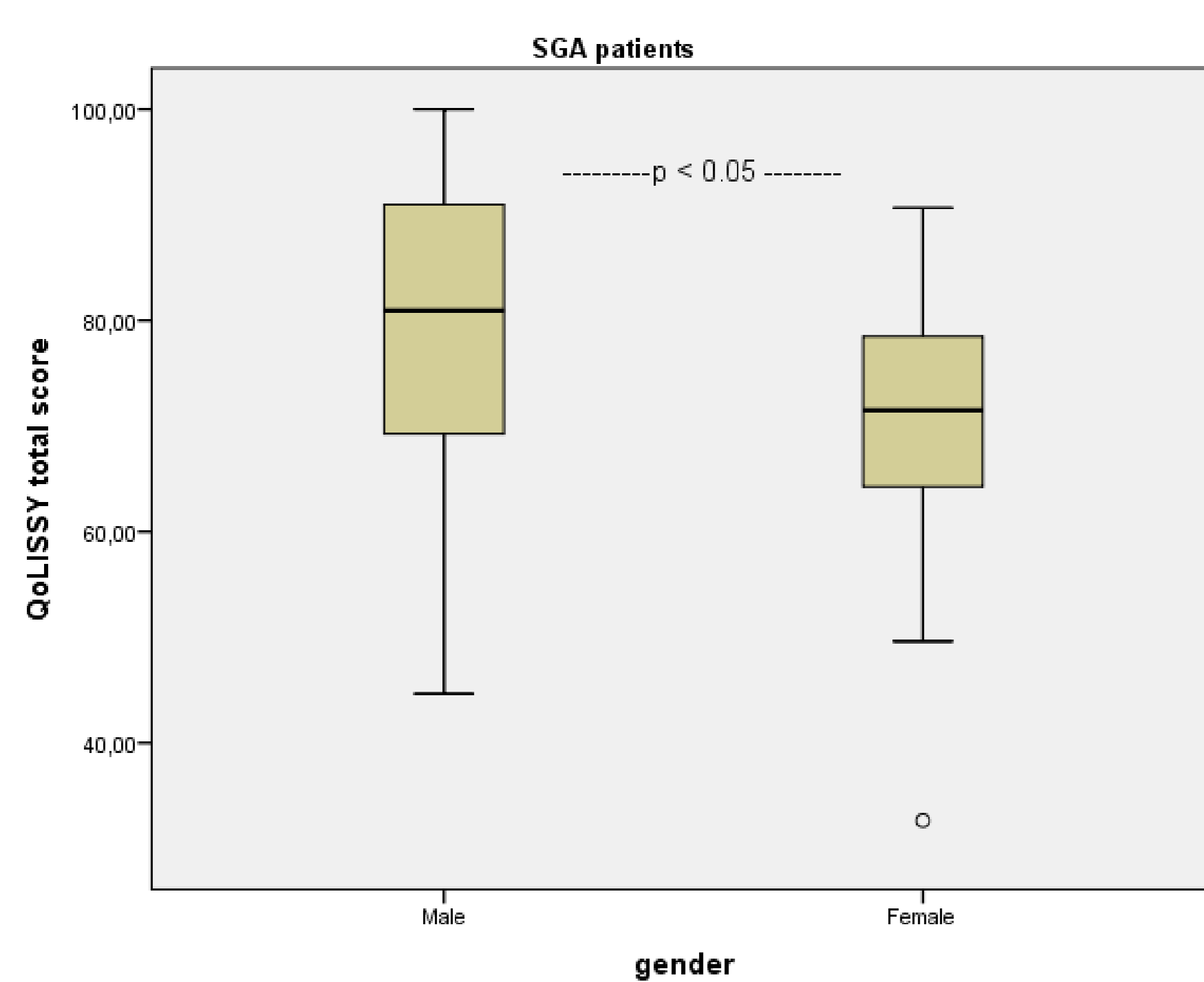


Fig 1. Comparison of Qolissy total score between male and female SGA patients.

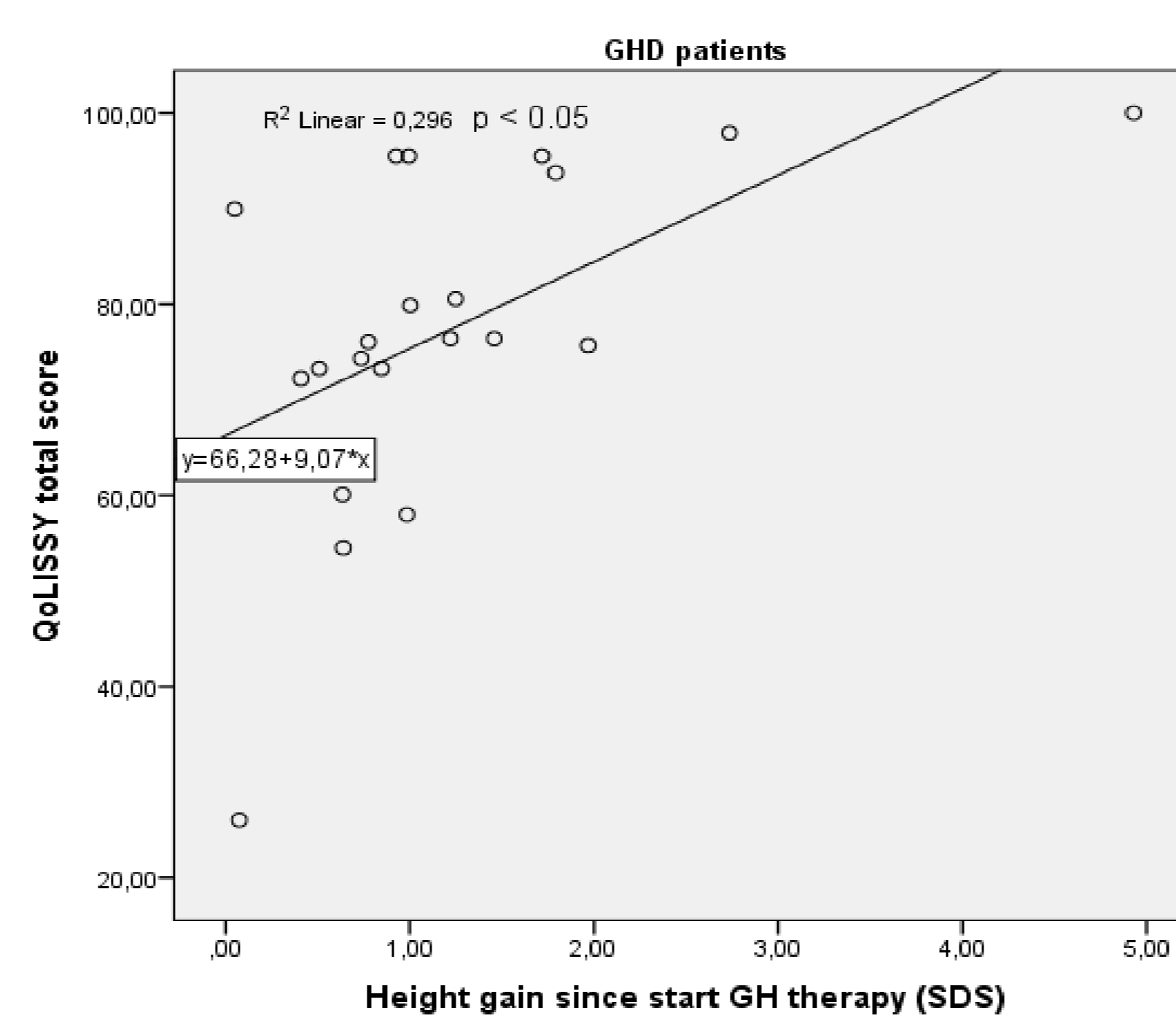


Fig 2. Univariate correlation between Qolissy total score and height gain since start therapy in GHD patients.

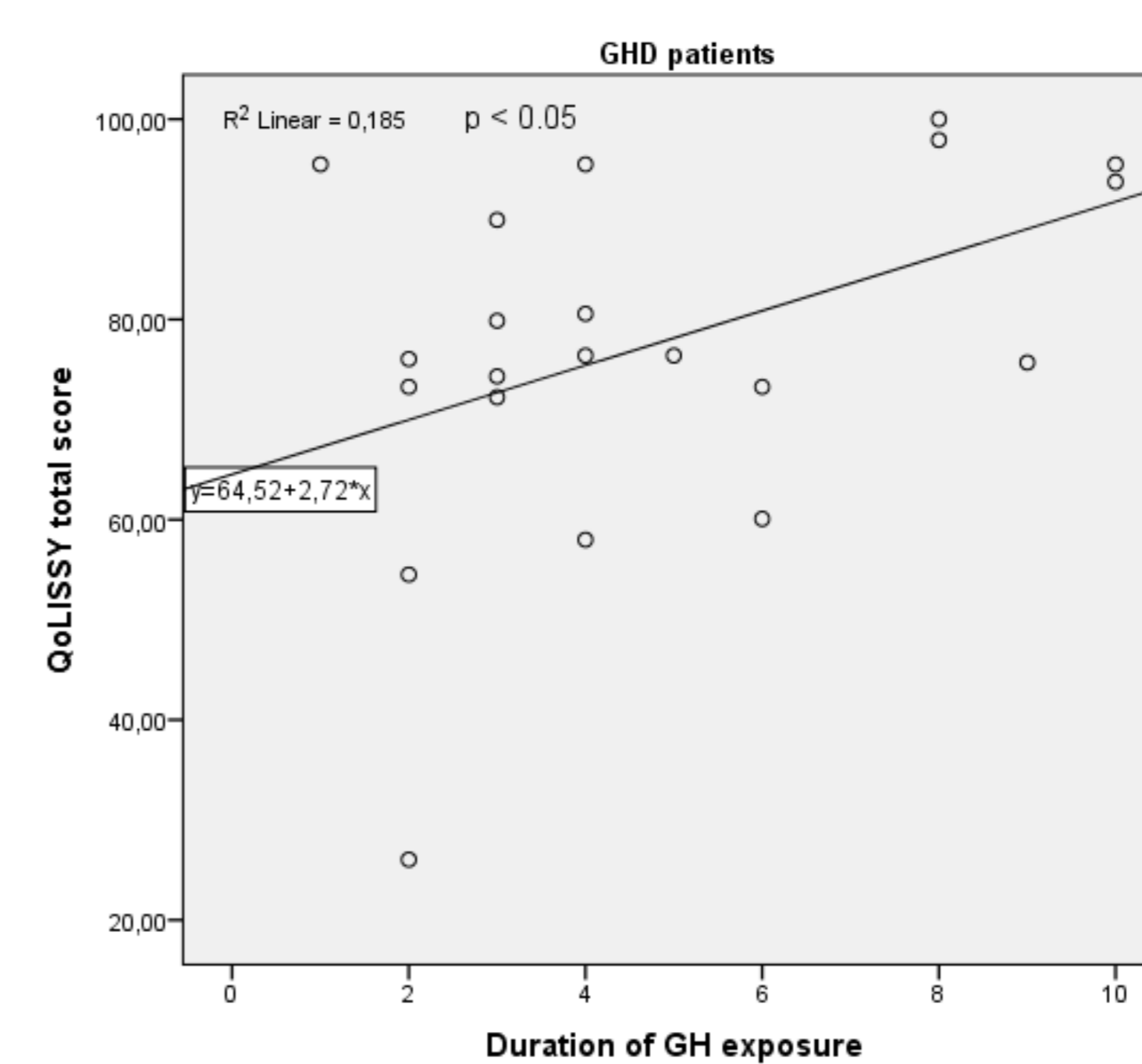


Fig 3. Univariate correlation between Qolissy total score and duration of GH exposure in GHD patients.

Dependent variable : QoLISSY total score

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	4,271	,221		19,321	,000			
	Height gain since start GH (SDS)	,221	,070	,348	3,141	,003	,382	,361	,344
	gender	-,299	,133	-,248	-2,243	,028	-,297	-,266	-,246

Table 3 Results of multiple regression analysis with Qolissy total score as dependent variable

## 4. Conclusion

In a written survey with a low response rate, GH treated SGA girls were found to have the lowest HQoL. Females and children with the lowest height gain GH appear most at risk for presenting the lowest HQoL under GH therapy.

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