

## **Supplementary Online Content**

Bruins TE, van Veen MM, Mooibroek-Leeuwerke T, Werker PMN, Broekstra DC, Dijkstra PU. Association of socioeconomic, personality, and mental factors with health-related quality of life in patients with facial palsy. *JAMA Otolaryngol Head Neck Surg.* Published online February 13, 2020. doi:10.1001/jamaoto.2019.4559

**eTable 1.** Detailed Patient Characteristics

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This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1. Detailed Patient Characteristics**

Variable (n valid observations)	n (%)	median (IQR)
<b>General</b>		
Gender (121)		
Male	58 (48.9)	
Female	63 (52.1)	
Age (years) (121)		62 (48; 71)
Marital status (120)		
No relationship±	30 (24.8)	
Single	23	
Divorced	4	
Widow/widower	3	
Relationship±	90 (74.4)	
In a relationship: not living together	2	
In a relationship: living together	8	
Married	80	
Missing	1 (0.8)	
Residence (inhabitants per municipality) (121)		55939 (33634; 127492)
Durel subscale 1 (120)		
ORA never	87 (71.9)	
ORA ever	33 (27.3)	
Durel subscale 2 (121)		
NORA never	76 (62.8)	
NORA ever	45 (37.2)	
Durel subscale 3: IR (118)		5.0 (3.0; 11.0)
<b>Socio-economic status</b>		
Education (120)		
Lower±	79 (65.3)	
Primary school	5	
Lower education	21	
Medium education	53	
Higher±	41 (33.9)	
Higher education	41	
Missing	1 (0.8)	
Occupational status (119)		
Working±	67 (55.4)	
Not working±	52 (43.0)	
Missing	2 (1.7)	
Income (net per month) (111)		
Low: Less than €1400,-±	37 (30.6)	
Less than €800,-	15	
€800-€1400	22	
Middle: €1400-€2400±	41 (33.9)	
€1400-€1800	19	
€1800-€2400	22	
High: More than €2400±	33 (27.3)	
€2400-€3200	17	
More than €3200	16	
Missing	10 (8.3)	
<b>Facial palsy related</b>		
Duration FP (years) (121)		
Laterality palsy (121)		
Left	57 (47.1)	
Right	59 (48.8)	
Bilateral	5 (4.1)	

**eTable 1. Detailed Patient Characteristics (continued)**

Variable (n valid observations)	n (%)	median (IQR)
Etiology (121)		
Benign tumor±	44 (36.4)	
Acoustic neuroma	31 (25.6)	
Parotid tumor	10 (8.3)	
Osteoma	2 (1.7)	
Glomus tumor	1 (0.8)	
Infection±	22 (18.2)	
Bell's palsy	11 (9.1)	
Ramsay-Hunt	2 (1.7)	
Polio	3 (2.5)	
Otitis media	6 (5.0)	
Trauma±	18 (14.9)	
Soft tissue trauma and temporal bone fracture	10 (8.3)	
Iatrogenic	8 (6.6)	
Head and neck cancer±	13 (10.7)	
Brain tumor	8 (6.6)	
Head-neck cancer	4 (3.3)	
Rhabdomyosarcoma	1 (0.8)	
Congenital±	10 (8.3)	
Other±	14 (12.0)	
Birth related	2 (1.7)	
HELLP syndrome	1 (0.8)	
Cavernoma medulla oblongata	1 (0.8)	
Guillain-Barre syndrome	2 (1.7)	
M. Parry-Romberg	1 (0.8)	
Unknown±	7 (5.8)	
Sunnybrook composite score (77)		30 (25; 42)
<b>Personality</b>		
TIPI (117)		
Extraversion	4.5 (3.0; 6.0)	
Agreeableness	4.0 (3.5; 4.5)	
Conscientiousness	6.5 (5.5; 7.0)	
Emotional Stability	5.5 (4.0; 6.5)	
Openness to experiences	5.0 (4.5; 6.5)	
<b>Mental</b>		
HADS anxiety (120)		
No anxiety ( $\leq 7$ points)	45 (37.2)	
Moderate anxiety (8-10 points)	55 (45.5)	
Severe anxiety ( $\geq 11$ points)	20 (16.5)	
HADS depression (117)		
No depression ( $\leq 7$ points)	11 (9.1)	
Moderate depression (8-10 points)	71 (58.7)	
Severe depression ( $\geq 11$ points)	35 (28.9)	
<b>HRQOL</b>		
FaCE total score (111)		52 (5.0; 93.3)
FDI physical score (109)		70 (63; 80)
FDI social score (111)		76.0 (64; 84)

IQR: interquartile range, FP: facial palsy, TIPI: Ten-Item Personality Inventory, DUREL: Duke University Religion Index, ORA: Organizational Religious Activity, NORA: Non-Organizational Religious Activity, IR: Intrinsic Religiosity, HADS: Hospital Anxiety and Depression Scale, Sunnybrook: Sunnybrook Facial Grading system, FaCE: Facial Clinimetric Evaluation, FDI: Facial Disability Index

± categories used in analysis

**eTable 2. Univariate Analysis FaCE Scale Total Score**

Variable	B	95% CI	P	R <sup>2</sup>
<b>General</b>				
Gender (0 male; 1 female)	-5.56	(-12.13; 1.02)	0.097*	0.025
Age (years)	-0.17	(-0.36; 0.03)	0.088*	0.026
Marital status (0 no relationship; 1 relationship)	-3.17	(-10.86; 4.51)	0.415	0.006
Residence population	<-0.001	(<0.001; <0.001)	0.851	<-0.001
DUREL				
ORA (0 never; 1 ever)	-4.58	(-12.03; 2.86)	0.225	0.013
NORA (0 never; 1 ever)	-6.12	(-12.95; 0.72)	0.079*	0.028
IR	-0.40	(-10.21; 0.41)	0.328	0.009
<b>Socio-economic status</b>				
Education (0 lower; 1 higher)	4.20	(-2.77; 11.17)	0.235	0.013
Occupational status (0 working; 1 not working)	-8.22	(-14.79; -1.65)	0.015*	0.054
Income (net per month)				
Lower than €1400 (ref.)	-	-	0.335	0.022
€1400-€2400	6.30	(-2.18; 14.79)		
Higher than €2400	4.14	(-4.78; 13.05)		
<b>Facial palsy related</b>				
Duration FP (years)	-0.12	(-0.30; 0.06)	0.180*	0.016
Laterality FP (0 unilateral; 1 bilateral)	-17.76	(-33.45; -2.06)	0.027*	0.044
Etiology				
Head and neck cancer (ref.)	-	-	0.760	0.024
Infection	4.89	(-8.09; 17.07)		
Benign tumor	2.73	(-8.61; 14.08)		
Trauma	8.65	(-4.20; 21.51)		
Congenital	4.86	(-10.46; 20.17)		
Other	7.69	(-6.16; 21.54)		
Sunnybrook composite score	0.37	(0.22; 0.53)	<0.001*	0.241
<b>Personality</b>				
TIPI				
Extraversion	2.56	(0.65; 4.48)	0.009*	0.062
Agreeableness	0.01	(-3.93; 3.96)	0.995	<0.001
Conscientiousness	0.25	(-3.21; 3.71)	0.886	<0.001
Emotional Stability	2.85	(0.82; 4.88)	0.006*	0.059
Openness to experiences	2.33	(-0.14; 4.80)	0.065*	0.032
<b>Mental</b>				
HADS				
Anxiety	-2.53	(-4.11; -0.96)	0.002*	0.086
Depression	0.81	(-0.91; 2.53)	0.354	0.008

FaCE: Facial Clinimetric Evaluation, DUREL: Duke University Religion Index, ORA: Organizational Religious Activity, NORA: Non-Organizational Religious Activity, IR: Intrinsic Religiosity, FP: facial palsy, Sunnybrook: Sunnybrook Facial Grading system, TIPI: Ten-Item Personality Inventory, HADS: Hospital Anxiety and Depression Scale, \*<0.2

**eTable 3. Univariate Analysis FDI Physical Score**

Variable	B	95% CI	P	R <sup>2</sup>
<b>General</b>				
Gender (0 male; 1 female)	-0.95	(-7.12; 5.22)	0.761	0.029
Age (years)	-0.18	(-0.36; -0.01)	0.038*	0.040
Marital status (0 no relationship; 1 relationship)	-6.93	(-13.85; -0.004)	0.050*	0.035
Residence population	<0.001	(<0.001;<0.001)	0.293	0.010
DUREL				
ORA (0 never; 1 ever)	-5.07	(-11.86; 1.72)	0.142*	0.020
NORA (0 never; 1 ever)	-2.17	(-8.54; 4.21)	0.502	0.004
IR	-0.44	(-1.20; 0.31)	0.245	0.013
<b>Socio-economic status</b>				
Education (0 lower; 1 higher)	5.03	(-1.44; 11.48)	0.126*	0.022
Occupational status (0 working; 1 not working)	-6.07	(-12.27; 0.13)	0.055*	0.035
Income (net per month)			0.830	0.004
Lower than €1400 (ref.)	-	-		
€1400-€2400	-1.95	(-9.62; 5.72)		
Higher than €2400	-2.24	(-10.32; 5.85)		
<b>Facial palsy related</b>				
Duration FP (years)	0.03	(-0.13; 0.19)	0.681	0.002
Laterality FP (0 unilateral; 1 bilateral)	-6.81	(-21.47; 7.86)	0.359	0.008
Etiology			0.176*	0.064
Head and neck cancer (ref.)	-	-		
Infection	7.21	(-4.66; 19.07)		
Benign tumor	0.46	(-10.36; 11.28)		
Trauma	9.90	(-2.20; 21.99)		
Congenital	10.45	(-3.35; 24.26)		
Other	7.96	(-5.24; 21.15)		
Sunnybrook composite score	0.20	(0.04; 0.36)	0.015*	0.084
<b>Personality</b>				
TIPI				
Extraversion	0.23	(-1.58; 2.04)	0.802	0.001
Agreeableness	0.80	(-2.77; 4.37)	0.657	0.002
Conscientiousness	0.66	(-2.52; 3.83)	0.682	0.002
Emotional Stability	1.44	(-0.52; 3.39)	0.148*	0.020
Openness to experiences	0.77	(-1.56; 3.10)	0.512	0.004
<b>Mental</b>				
HADS				
Anxiety	-1.29	(-2.6; 0.05)	0.059	0.033
Depression	0.84	(-0.79; 2.47)	0.309	0.010

FDI: Facial Disability Index, DUREL: Duke University Religion Index, ORA: Organizational Religious Activity, NORA: Non-Organizational Religious Activity, IR: Intrinsic Religiosity, FP: facial palsy, Sunnybrook: Sunnybrook Facial Grading system, TIPI: Ten-Item Personality Inventory, HADS: Hospital Anxiety and Depression Scale, \* $<0.2$

**eTable 4. Univariate Analysis FDI Social Score**

Variable	B	95% CI	P	R <sup>2</sup>
<b>General</b>				
Gender (0 male; 1 female)	-2.68	(-8.62; 3.27)	0.374	0.007
Age (years)	0.06	(-0.11; 0.24)	0.460	0.005
Marital status (0 no relationship; 1 relationship)	5.50	(-1.26; 12.27)	0.110*	0.023
Residence population	<-0.001	(<0.001;<0.001)	0.530	0.004
DUREL				
ORA (0 never; 1 ever)	-0.50	(-7.16; 6.17)	0.883	<0.001
NORA (0 never; 1 ever)	-0.39	(-6.54; 5.77)	0.901	<0.001
IR	-0.15	(-0.88; 0.59)	0.690	0.002
<b>Socio-economic status</b>				
Education (0 lower; 1 higher)	1.94	(-4.39; 8.28)	0.544	0.003
Occupational status (0 working; 1 not working)	1.96	(-3.99; 7.90)	0.516	0.004
Income (net per month)			0.497	0.014
Lower than €1400 (ref.)	-	-		
€1400-€2400	4.15	(-3.19; 11.49)		
Higher than €2400	3.42	(-4.33; 11.17)		
<b>Facial palsy related</b>				
Duration FP (years)	-0.003	(-0.16; 0.15)	0.971	<0.001
Laterality FP (0 unilateral; 1 bilateral)	-19.30	(-33.15; -5.45)	0.007*	0.065
Etiology			0.098*	0.084
Head and neck cancer (ref.)	-	-		
Infection	-4.80	(-15.96; 6.36)		
Benign tumor	-3.67	(-13.75; 6.42)		
Trauma	2.11	(-9.28; 13.50)		
Congenital	-13.00	(-26.08; 0.08)		
Other	-11.00	(-23.47; 1.47)		
Sunnybrook composite score	0.06	(-0.09; 0.22)	0.401	0.010
<b>Personality</b>				
TIPI				
Extraversion	2.90	(1.32; 4.49)	<0.001*	0.112
Agreeableness	1.07	(-2.22; 4.35)	0.522	0.004
Conscientiousness	3.24	(0.36; 6.12)	0.028*	0.045
Emotional Stability	4.00	(2.37; 5.63)	<0.001*	0.184
Openness to experiences	2.90	(0.814; 4.99)	0.007*	0.068
<b>Mental</b>				
HADS				
Anxiety	-2.80	(-4.00; -1.60)	0.001*	0.165
Depression	-1.56	(-3.10; -0.01)	0.048	0.037

FDI: Facial Disability Index, DUREL: Duke University Religion Index, ORA: Organizational Religious Activity, NORA: Non-Organizational Religious Activity, IR: Intrinsic Religiosity, FP: facial palsy, Sunnybrook: Sunnybrook Facial Grading system, TIPI: Ten-Item Personality Inventory, HADS: Hospital Anxiety and Depression Scale, \*<0.2