

# Self-reported health status and its predictors among people with diabetes in France



Arnaut, T. <sup>1</sup>, Cerletti, P. <sup>1</sup>, Laurent, J. <sup>2</sup>, Hermanns, N. <sup>3</sup>

<sup>1</sup> Roche Diagnostics International AG, Basel, Switzerland

<sup>2</sup> Carenity, Paris, France

<sup>3</sup> Forschungsinstitut der Diabetes Academy Mergentheim (FIDAM), Bad Mergentheim, Germany

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## Background

In this study, we aimed at measuring self-reported health status in people with diabetes in France and analysed independent risk factors for lower self-reported health status.

## Materials and Methods

The analysis of the patient-centered cross-sectional survey included 130 people with type 1 and 150 people with type 2 diabetes (tab. 1) in France. Perceived health status was assessed by a global health question on a Likert-scale of 1 to 5 (excellent=1, to 5=poor). In a multivariate regression, risk-factors of low health status were block-wise analyzed (tab. 2). The sample was weighted according to the age distribution of the French population (INSEE report 2021).

**Table 1.** Sample description. Each model includes the variables of the previous models.

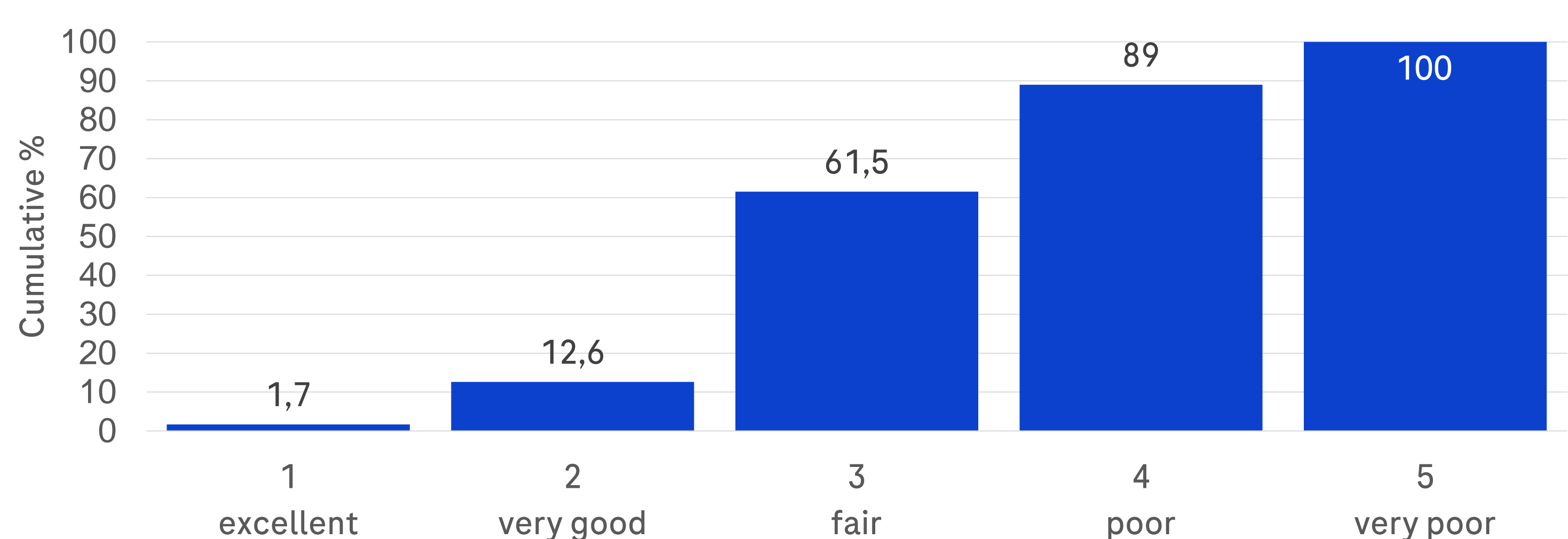
Characteristic		All N=280	Type 1 Diabetes N=149	Type 2 Diabetes N=131	p
Age group	18 - 35 years, n (%)	17 (6,1)	15 (10,1)	2 (1,5)	< 0.001
	36 - 45 years, n (%)	21 (7,5)	16 (10,7)	5 (3,8)	
	46 - 60 years, n (%)	98 (35,0)	61 (40,9)	37 (28,2)	
	>60 years, n (%)	144 (51,4)	57 (38,3)	87 (66,4)	
Diabetes duration	< 1 year, n (%)	6 (2,1)	6 (4,0)	0 (0,0)	< 0.001
	1 - 4 years, n (%)	25 (8,9)	9 (6,0)	16 (12,2)	
	4 - 9 years, n (%)	38 (13,6)	11 (7,4)	27 (20,6)	
	≥ 10 years, n (%)	211 (75,4)	123 (82,6)	88 (67,2)	
Gender	Female, n (%)	147 (52,5)	86 (57,7)	61 (46,6)	0.100
	Male, n (%)	132 (47,1)	62 (41,6)	70 (53,4)	
	Nonbinary, n(%)	1 (0,3)	1 (0,7)	0 (0)	
Paid 5- score, mean (SD)		11.0 (±4.5)	11.3 (±4.6)	10.6 (4.4)	0.169
Perceived health status	Excellent	5 (3,4)	5 (3,4)	0 (0,0)	0.011
	Very good	31 (11,1)	22 (14,8)	9 (6,9)	
	Good	137 (48,9)	76 (51,0)	61 (46,6)	
	Intermediate	75 (26,8)	32 (21,5)	43 (32,8)	
	Poor	32 (11,4)	14 (9,4)	18 (13,7)	
Number of complications	No	180 (64,3)	110 (61,1)	70 (53,4)	<.001
	At least 1 complication	65 (23,2)	21 (32,3)	44 (33,6)	
	> than 1 complication	35 (12,5)	18 (12,1)	17 (13,0)	
Number of diabetes complications	No	197 (70,4)	116 (77,9)	81 (61,8)	.007
	At least 1 complication	49 (17,5)	17 (11,4)	32 (24,4)	
	> 1 complication	34 (12,1)	16 (10,7)	18 (13,7)	

**Table 2.** Description of models. Each model includes the variables of the previous models.

Model 1 - Demographics	1. Age (categorical, tab. 1) 2. Sex (female = 1; male = 2; nonbinary = 3)
Model 2 - Socioeconomic status	Model 1 + 3. Years of education 4. Employment status (disabled = 0; unemployed = 1; part time job = 2)
Model 3 - Diabetes-specific variables	Model 2 + 5. diabetes type (1; 2) 6. diabetes duration 7. treatment regimen
Model 4 - Complications	Model 3 + 8. diabetes-specific complications 9. Non-diabetes-specific complications
Model 5 - Psychosocial aspects	Model 4 + 10. diabetes treatment satisfaction (categorical, higher scores indicate lower satisfaction) 11. diabetes distress (PAID-5; higher scores indicate higher distress).

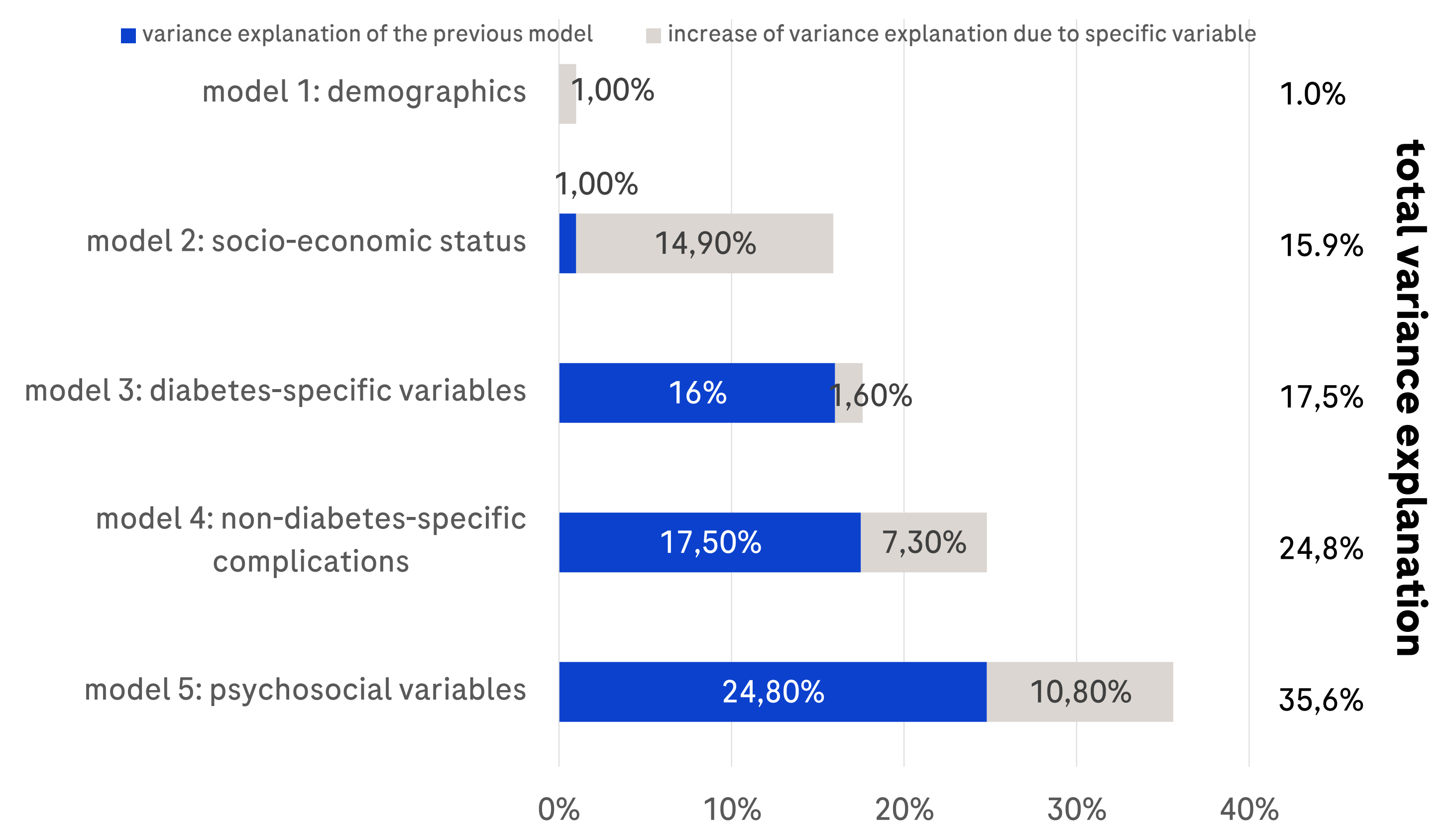
## Results

The mean general health score was 3.3 ±0.9, suggesting poorer health than average; 1.2% rated their health status as excellent, 13.1% as very good, 49.2% as good, 23.5% as fair and 13.0% as poor.

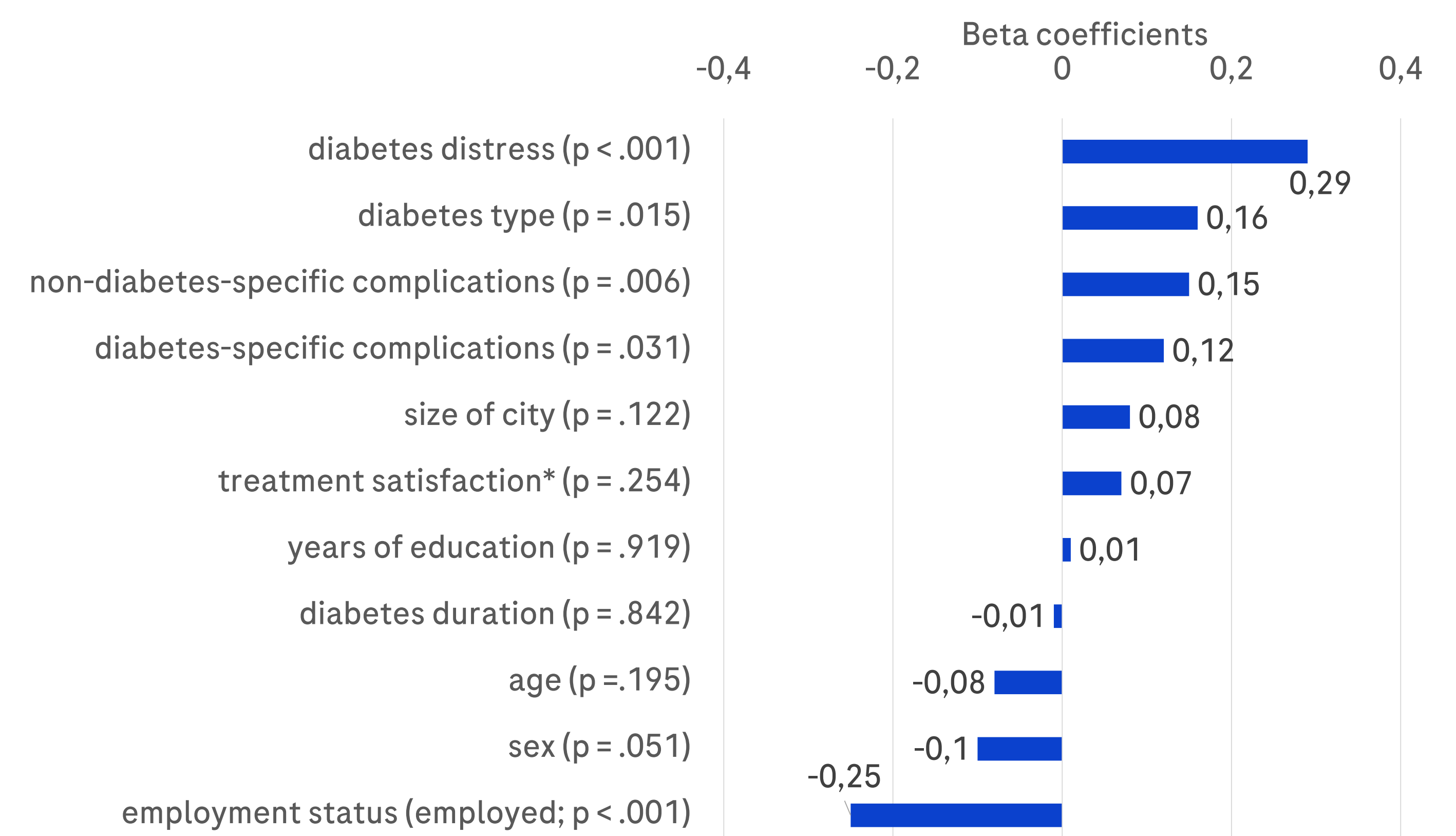


**Figure 1.** Cumulative distribution of the general health score.

The multi-variate model explained one third ( $R^2=35.6\%$ ) of the variance of the health status. Lower health status was not strongly associated with demographic ( $\Delta R^2= 1.0\%$ ,  $p=0.216$ ) or diabetes specific variables ( $\Delta R^2= 2.6\%$ ,  $p=0.051$ ) whereas socio-economic variables ( $\Delta R^2= 13.9\%$ ,  $p<0.001$ ), prevalent complications ( $\Delta R^2= 7.3\%$ ,  $p<0.001$ ) and psychosocial variables ( $\Delta R^2= 10.8\%$ ,  $p<0.001$ ) explained significant more variance (fig. 2). Regarding the impact of the variables, diabetes distress ( $\beta=0.29$ ,  $p<0.001$ ) and employment status ( $\beta=-0.25$ ,  $p>0.001$ ) were most important significant predictors (fig. 3).



**Figure 2.** Increase in  $R^2$  of the predictors of the general health score. Each model includes the variables of the previous models.



**Figure 3.** Beta coefficients of the predictors of the general health score. \* = higher scores indicate lower satisfaction.

## Conclusion

Survey participants reported a rather low health status, mainly driven by socioeconomic (especially employment status) and psychosocial factors (especially diabetes distress). Together, these variables explained two-thirds (24.7%) of the variance in health status. Consequently, job-status and diabetes distress, rather than diabetes-specific variables or medical conditions, seem to be the main determinants of perceived health status of people with diabetes in France.

## Contact information and conflict of interest

Tim Arnaut; tim.arnaut@roche.com  
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## Reference

Skovlund, S. E., Renza, S., Laurent, J., & Cerletti, P. (2023). Identification of Core Outcome Domains and Design of a Survey Questionnaire to Evaluate Impacts of Digital Health Solutions That Matter to People With Diabetes. *JDST Journal of Diabetes Science and Technology*, 19322968231179740.