

# Switzerland - Identification of diabetes self-management profiles in adults: a cluster analysis with selected self-reported outcomes

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## Overview

### Identification

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ID NUMBER  
10.16909-DATASET-19

### Version

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VERSION DESCRIPTION  
Version 1.0

PRODUCTION DATE  
2020-05-01

### Overview

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#### ABSTRACT

STUDY TYPE : Cross-sectional study using data from the 2014 follow-up of the CoDiab-VD cohort.

The current study describes diabetes self-management (DSM) profiles in adults using self-reported outcomes associated with the performance of diabetes care activities, and psychological adjustment to the condition. We used self-reported data from a community-based cohort of adults with diabetes (N= 316). We conducted clustering analysis on selected DSM self-reported outcomes (i.e., DSM behaviors, self-efficacy and perceived empowerment, diabetes distress and quality of life). We tested whether the clusters differed according to care delivery processes, socio-demographic and clinical variables. Clustering analysis revealed four distinct DSM profiles that combine high/low engagement in DSM, and good/poor psychological adjustment with the disease. The profiles are differently associated with variables of financial insecurity perceived, having an insulin treatment, having depression, and congruency of care received with the Chronic Care Model. The results could help health professionals gain a better understanding of the different realities of people living with diabetes, identify patients at risk of poor DSM-related outcomes, and lead to the development of profile-specific DSM interventions.

#### KIND OF DATA

Sample survey data [ssd] / Self-reported data collected from paper questionnaire

#### UNITS OF ANALYSIS

The analysis unit is the individual.

Among the 519 participants recruited in 2011–2012, we sent the 2014 follow-up questionnaire to the 402 participants not lost to follow-up, and 339 participants returned the completed questionnaire (response rate 84.3%).

#### KEYWORDS

Diabetes, self-management, clusters, health behaviors, self-efficacy, empowerment, diabetes distress, quality of life

### Coverage

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GEOGRAPHIC COVERAGE  
Canton of Vaud, Switzerland

UNIVERSE  
Non-institutionalized adults with diabetes

### Producers and Sponsors

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## PRIMARY INVESTIGATOR(S)

Name	Affiliation
Peytremann Bridevaux Isabelle	Center for Primary Care and Public Health (Unisanté)

## OTHER PRODUCER(S)

Name	Affiliation	Role
Alexandre, Ketia	School of Health Sciences (HESAV), University of Applied Sciences and Arts Western Switzerland (HES-SO), Lausanne, Switzerland	PhD Student
Vallet, Fanny	Faculté de Psychologie et des Sciences de l'Education, University of Geneva, Geneva, Switzerland	Scientific associate
Betticher, Daniel	Faculté de Psychologie et des Sciences de l'Education, University of Geneva, Geneva, Switzerland	Study supervisor

## OTHER ACKNOWLEDGEMENTS

Name	Affiliation	Role
The individuals with diabetes who participated in the 2014 follow-up of the CoDiab-VD cohort.		Answers to the self-assessed questionnaires
Antille-Zuercher, Emilie	Center for Primary Care and Public Health (Unisanté), University of Lausanne, Switzerland	Management of the CoDiab-VD cohort and data management
Auxiliary staff		Enveloping of the documents and data entry

## Metadata Production

## METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Center for Primary Care and Public Health (Unisanté), University of Lausanne, Switzerland	Unisanté		Data publisher

## DDI DOCUMENT VERSION

Version 2.0 (may 2020)

## DDI DOCUMENT ID

10.16909-DATASET-19

## Sampling

### **Sampling Procedure**

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Pharmacies accepting to participate in the study recruited individuals with diabetes during six-week periods in 2011-12 and 2017.

At time of the first recruitment in 2011-12, the number of survey participants were 519. From this baseline number, the participants of the 2014 follow-ups were 339. Among those participants, 316 had no missing data for the variables of interest and were included in the present study.

# Questionnaires

## Overview

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The 2014 annual questionnaire is composed of two parts: 1) the core questionnaire, which is quite similar for each annual CoDiab-VD questionnaire, and 2) a thematic module on psychosocial aspects of diabetes, which is specific to the 2014 questionnaire.

All variables described hereafter were collected in the 2014 questionnaire and used in the present study.

Variables used for the identification of diabetes self-management profiles:

Diabetes self-management behaviors (Summary of Diabetes Self-Care Activities: healthy eating, physical activity, self-monitoring of blood glucose and foot care)

Self-efficacy (Stanford diabetes-specific questionnaire)

Empowerment (Diabetes Empowerment Scale)

Diabetes distress (Problem Areas In Diabetes (PAID instrument)

Diabetes-specific quality of life (Audit of Diabetes Dependent Quality of Life, ADDQoL)

Variables used for the comparison of diabetes self-management profiles:

Sociodemographic characteristics:

-Age

-Gender

-Household size

-Difficulty paying bills

-Employment

Clinical variables:

-Diabetes type

-Disease duration

-Antidiabetic treatment

-HbA1c knowledge

-Anthropometric values:

---Weight

---Height

-Smoking

-Depression screening (two validated questions for the screening of depression)

-Comorbidities:

----List of following chronic diseases: heart disease (heart failure, valve disease, heart muscle disease), chronic lung disease (asthma, chronic bronchitis, emphysema), osteoporosis, osteoarthritis or arthritis; cancer or malignancy or lymphoma (with the exception of skin cancer), gastric or duodenal ulcer, depression, Parkinson's disease, hypertension, hyperlipidaemia, other chronic condition.

-Health literacy

Process of care indicators (whether the process was received during the past 12 months):

-Glycated haemoglobin (HbA1c) check

-Eye examination by ophthalmologist

-Urine test for microalbuminuria

-Diabetic foot examination

-Lipid profile

Outcomes of care indicators:

-Patient assessment of diabetes care, congruence of care with the chronic care model

-(Patient Assessment of Care for Chronic Conditions, PACIC)

## Data Collection

### Data Collection Dates

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Start	End	Cycle
2014-10-01	2015-01-31	N/A

### Data Collection Mode

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Paper questionnaire, self-administered. Data were self-reported by the participants, who filled in the questionnaire at home and sent it back to the investigators.

### Data Collection Notes

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## Questionnaires

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  - Height
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## Data Processing

### Data Editing

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Data were checked first upon receipt of the questionnaires, for inconsistency (multiple check marks when only one allowed, incoherent numbers or between related questions); second, throughout the scanning process, for data entry; and last, by proofing the output Excel file obtained after the entry process.

#### OTHER PREPROCESSING :

The clustering analysis was performed using self-reported data from the 316 participants who had no missing data on the variables used for the DSM profiles' identification. First, we performed descriptive univariate analyses (i.e., frequency, percentages, mean scores and standard deviations). Successively, we converted variables' scores used for cluster identification to standardized values since each instrument had different scales and units. These statistical procedures were applied on the average value of the diabetes distress variable (PAID-5, range 0 to 4), which was then rescaled for reporting to a range from 0 to 20 to ease the comparison with previous literature. To determine the number of clusters, we proceeded by visual examination of the dendrogram (agglomeration schedule) and looked at the stage of appearance of sudden large increase in the similarity measure between joined clusters. Then, to test the robustness of identified clusters, we compared two classification methods: agglomerative hierarchical procedure using Ward's method and iterative partitioning using k-means method. We calculated a Cohen's kappa coefficient to measure the level of agreement in the distribution of participants in the identified clusters between both methods. Finally, we tested whether the clusters differed according to socio-demographic, clinical and care delivery process variables using One-Way ANOVA for continuous variables and  $\chi^2$  comparison for categorical variables. All analyses were conducted with SPSS statistical software 23.0.

## Data Appraisal

No content available