Trends in long-term use of antidepressants in Switzerland and associated factors between 2013 and 2021

Melanie A. Amrein (✉ melanie.amrein@helsana.ch)

Helsana Insurance Group

Michael P. Hengartner

Zurich University of Applied Sciences

Markus Näpflin

Helsana Insurance Group

Renato Farcher

Helsana Insurance Group

Carola A. Huber

Helsana Insurance Group

Abstract

Purpose: Antidepressant use has increased in many European countries, mostly driven by longer treatment duration. The aim of this study was to provide prevalence rates of long-term users of antidepressants for the Swiss population over the last decade and to investigate associated factors for longer use.

Methods: We examined the prevalence rates of individuals with at least one prescription for antidepressants using longitudinal health claims data. To compare different lengths of prescription duration, we defined short-term (<6 months), medium-term (6-12 months) and long-term users (>12 months). We applied a binary logistic regression model to investigate the effects of population characteristics and treatment patterns on long-term compared to short- and medium-term users.

Results: In 2021, 9% of the Swiss population (*n*=770 698) received at least one antidepressant prescription. This one-year-prevalence remained stable since 2013. In 2020, the proportion of long-term users was 69.4%, with steady increase from 2014 to 2020. The numbers of medium- and short-term users have decreased during this period. Older age, being a woman, living in an urban area, living in the Italian speaking part of Switzerland, living in a nursing home, being enrolled in a standard care plan, and receiving psychiatric or psychotherapeutic care were factors associated with long-term users.

Conclusions: The proportion of long-term users in Switzerland is steadily increasing. Taking antidepressants longer than recommended may indicate possible overprescribing. Given the ongoing debate about the confounding effects of relapse and withdrawal, more research is needed to investigate antidepressants overprescribing, particularly for older people.

1. Introduction

Mental health problems are a major global issue accounting for 16% of the total global burden of disease. [1] Leading causes of mental health problems are depression and anxiety disorders. [2] Antidepressants (AD) are widely used as the current standard treatment for these disorders to reduce symptoms of low mood, anxiety, or anhedonia and to prevent relapse. [3, 4] AD are also prescribed for other in- and off-label indications such as insomnia, pain, eating disorders, smoking cessation, migraine and attention-deficit/hyperactivity disorders. [5, 6] Since their market entrance in 1980s and 1990s, global AD prescriptions increased massively especially in high-income countries. [7] In the US, the use of AD increased almost 65% between 1999 and 2014. [8] In Europe, the mean prevalence rate over 27 countries was 7.2% in 2010, while AD consumption has doubled between 2000 and 2020. [9] Recent literature indicates that a higher number of AD prescriptions is mainly due to a higher number of long-term users. [10, 11]

The recommended duration of the use of AD depends on the underlying disorder. For example, people with major depression should use AD for at least four to nine months beyond depression remission, and people with a higher risk for recurrence should use AD for two years or more. [12] Maintenance treatments

longer than two years should be clinically motivated, for example, for individuals with recurrent depression, with residual mood symptoms, or for individuals with a treatment-resistant depression. [13] Several studies showed that longer use of AD increased in the last decade. [14–16] For example, the prevalence of long-term use substantially increased by 13.7% from 1995–2005 to 2005–2015 in the Netherland [14] and 29.9% had an AD prescription duration of at least three years between 2013 and 2016 in Italy. [5] No study so far examined prevalence of long-term use of AD in Switzerland.

Prolonged use of AD has received increasing criticism in recent years as it can increase the risk of adverse effects over time, for example weight change, sleep disturbance, and persistent sexual dysfunction. [7, 10, 17, 18] Older people in particular have a higher risk of adverse events such as falls, stroke, or gastrointestinal bleeding. [18] It is recommended that physicians carefully assess the appropriateness of AD on an individual basis. [17] Therefore, it is important to examine the characteristics of individuals with long-term use of AD, which could provide valuable insight into the factors related to long-term use.

The aim of this study was 1) to present recent one-year prevalence rates of AD prescription across the last decade in Switzerland, 2) to show prevalence trends of long-, medium- and short-term users, and 3) to investigate relevant factors according to population and treatment characteristics associated with long-term use.

2. Methods

2.1 Data and study population

This is a retrospective cohort study based on longitudinal health claims data from the insurance group Helsana. Helsana is one of the largest health insurers in Switzerland. In 2021, it covered approximately 1 330 000 (15%) of the Swiss population. All Swiss residents need to contract a mandatory health insurance on the private market. Every person chooses a monthly deductible amount (franchise) between 300 to 2500 Swiss Francs per year. Health insurance can either be a standard care or managed care model. For example, in the family doctor managed care model, the insured has a physician who acts as the first provider and coordinator of care when medical care is needed. Basic health insurance covers the costs in the event of illness, accident, and maternity, including health care and pharmacy invoices for health care use and prescription drugs. For the present study, we included people aged 18 and older, who had at least one AD prescription between 2013 and 2021.

2.2 Variables

2.2.1 Antidepressants

ADs are grouped according to the Anatomical Therapeutic Chemical (ATC) classification system of the World Health Organization with the code N06A. [19] The group is subdivided according to different modes of action: 1) tricyclic ADs (TCAs, N06AA), 2) selective serotonin reuptake inhibitors (SSRIs, N06AB), 3) monoamine oxidase inhibitors (MAOIs, N06AG), and 4) other ADs (N06AX), which have unique structures and properties that target diverse receptors in the central nervous system, e.g. serotonin norepinephrine reuptake inhibitors (SNRIs) or tetracyclic ADs (TeCA). [19] For our analyses we distinguish between TCAs, SSRIs, MAOIs, other ADs, and separately between mirtazapine (SNRI), venlafaxine (TeCA), and St. John's wort (other ADs).

2.2.2 Categories of length: Short-, medium- and long-term user

To analyse the length of prescriptions, we classified people as short-, medium-, or long-term user. To do so, we tracked the first AD prescription for each user between 2013 and 2021 without a prescription in 2012 to analyse new prescribers. Then, we counted the numbers of quarters with at least one AD prescription to analyse the length of AD prescription and distinguish between long-, medium- and short-episodes. Short-term is defined as a prescription length of one or two quarters (= max. six months), medium-term as a prescription length of three or four quarters (= max. 12 months) and long-term as a prescription length of five or more quarters (= more than 12 months). If there is a break between quarters of AD prescription, we allowed for an interruption of maximum 6 months before we labelled it as a new episode of AD prescription. Examples of episodes in each category are shown in the Supplementary Material. To analyse the numbers of people by categories of length across the years, people were allocated to one of the three categories for each year. If more than one episode in one year appeared, the longest episode was counted. We excluded all people with an AD prescription in 2013, which had a higher number of people, because it was the first observation year, making the following years comparable. We used the data from the whole year 2021 and the first quarter in 2022 to analyse categories of length for 2020, but we did not analyse the categories of lengths for the years 2021 and 2022 because long- and medium-term users would be underestimated. Therefore, long-, medium-, and short-term users were analysed for 2014 to 2020.

2.2.3 Population characteristics

Population characteristics comprise: sex, age, age groups (19-30, 31-40, 41-50, 51-60, 61-70, 71-80, >80), seven regions of Switzerland according to the Swiss Federal Office of Statistics (Zurich, Midland CH, Lemanic region, North-western Switzerland, Eastern Switzerland, Ticino, and Central Switzerland) [20], three area categories that display the level of urbanization according to the national community typology of the Swiss Federal Office of Statistics (urban, rural and intermediate area = dense urban areas and rural centres) [21], language regions (German, French, and Italian), health insurance plan (managed care vs. standard plan), franchise (low: ≤ CHF 500, high: > CHF 500), and living in a nursing home.

Treatment characteristics comprise the drug class of AD, number of prescriptions, prescription source (type of health care provider) and psychiatric or psychotherapeutic care. AD drug class includes the following categories: TCAs, SSRIs, MAOIs, mirtazapine, venlafaxine, St. John's wort, and other ADs. Each AD prescription was coded to a prescription source that includes: 1) general practitioner (GP), 2) psychiatrists or psychiatric clinics, 3) hospital ambulatory and nursing homes, and 4) other medical specialists (e.g., gynaecologist). psychiatric or psychotherapeutic care included psychiatric or psychotherapeutic diagnostics and therapies by psychiatrists or psychotherapists in psychiatric clinics or at the doctor s office.

2.3 Statistical analysis

To analyse AD prevalence across the years, we calculated the number of people aged 18 or older who had at least one AD prescription in each year from 2013 to 2021. These numbers are provided both raw and extrapolated to the entire Swiss population using census data from the Swiss Federal Office of Statistics. [22] The procedure of extrapolation was used to adjust for age, sex and region (of residency). The prevalence rates are calculated with the extrapolated data to give an overview of the extrapolated one-year prevalence of people with at least one AD prescription in Switzerland between 2013 and 2021.

The total number of people with at least one AD prescription between 2013 and 2021 was calculated. All results were extrapolated relative to the demographic distribution of the overall Swiss population by each year. The extrapolations were based on individual weighting factors (wi), which were calculated as the inverse of the sampling probability (pi = NHelsana,i/NSwitzerland,i) of a given stratum (i): wi = 1/pi. The strata are defined by people s characteristics including age class, gender, cantons (regions areas) by year. The data for NSwitzerland,i is derived from the federal statistical office of Switzerland.[22]

Chi-square tests and ANOVA were used to test differences between short-, medium-, and long-term users in population and treatment characteristics. Associations between long-term users and population and treatment characteristics were tested using logistic regression analyses. The regression analysis model included sex, age, nursing home, insurance model, psychiatric or psychotherapeutic care, living area and language region to predict the probability to be a long-term user compared to short- and medium-term user. Results from the regression models were presented as odds ratios (ORs) with 95% confidence intervals (CI). For all tests $p < 0.05$ was considered statistically significant. All analyses were performed using the statistical software R, version 2022.02.3.[23]

3. Results

3.1 Time trend and one-year prevalence of antidepressant use in Switzerland

In 2021, 770 698 (9.0%) individuals in Switzerland received at least one AD prescription (see Table 1). Between 2013 and 2017 there was a minor increase of 0.4% in the extrapolated one-year prevalence, but the prevalence returns to its origin in 2020. After 2020, the prevalence increased again by 0.1%. The prevalence was twice as high in women (11.6%) as in men (6.3%) and this ratio has remained stable over the years. Sample characteristics for each year, including information of sociodemographic variables, geographic indicators, AD drug classes, and health care models, are presented in the supplementary material.

3.2 Long-, medium- and short-term users: Population and treatment characteristics

Between 2014 and 2020, the number of episodes with at least one AD prescription ranged from one to nine episodes per person, with a mean of 1.42 (*SD*=0.74). Episodes were classified as long, medium, or short. From 2014 to 2020, the proportion of long-term users increased from 60.8% to 69.4%, while medium- and short-term users decreased over this period (see Figure 1). There was a 28.5% relative increase in long-term users between 2020 (*n* = 53 664) and 2014 (*n* = 41 752). The relative decrease in medium-term users was 14.0% and in short-term users 10.9%. Between 2014 and 2020, the duration of prescription for long-term users ranged from less than two years (27.5%) to more than eight years (17.6%), with a mean of 4.45 years (median 4). In 2020, 45% of long-term users received AD prescriptions for five years or longer. The extrapolated number of people for Switzerland in 2020 is 366 485 (4.3%) for long-term, 54 566 (0.6%) for medium-term and 109 613 (1.3%) for short-term users.

Table 2 shows people characteristics including descriptive, geographical, and health care variables of 2020 for short-, medium-, and long-term users (*n* = 77 338). There are significantly more women among long-term users (66.3%) than short-term (63.2%) and medium-term users (63.1%). The total mean age was 60.5 years, while long-term users were significantly older than the other groups. The distribution of short-, medium-, and long-term users varies across age groups. The age group with the highest proportion of short-term users are 51-60 years old (18.0%), while 21.9% of the long-term users were older than 80 years. 54.5% of long-term users were older than 60 years. Further, table 2 shows that long-term users (vs. short- and medium-term users) had a higher percentage of people in the Italian part of Switzerland, indicating by the variables of living region and language region. There was a small effect between the categories of lengths in terms of area of living, as long-term users have a slightly higher percentage of people living in rural areas and smaller percentage of people living in urban areas. More people with a standard care insurance model (vs. managed care model) were long-term users than short- and medium-term users. Long-term users seemed to choose more often a low franchise and were more often living in a nursing home than short- und medium-term users.

Treatment characteristics for drug classes, prescription sources and psychiatric or psychotherapeutic care are also presented in Table 2. In total, the number of prescriptions ranged from one to 48, with a mean of 3.4 (median 3, standard deviation 2.86). The AD class SSRI was most often

prescribed across all AD classes and significantly more often for long-term users (50.4%) than for short- (22.8%) and medium-term users (35.4%). AD class MAOI, Mirtazapine and Venlafaxine were also more prescribed to long-term users, and tricyclic AD and St. John's wort were more prescribed to short-term users. In total, general practitioners were more frequently prescribing AD (64.6%) than psychiatrists or psychiatric clinics (23.9%) and hospitals (11.1%) and other prescription source (8.7%). In total, 64.6% (*n* = 49 942) received psychiatric or psychotherapeutic care with the highest percentage for long-term users (67.8%).

Table 3 shows results from a logistic regression predicting the probability to be a long-term user compared to short- and medium-term user. Factors related to long-term users were higher age (OR=1.013), being female (OR=1.059), living in a nursing home (OR=2.263), standard care insurance (OR=1.601) and receiving psychiatric or psychotherapeutic care (OR=1.345). There was a small effect for area of residence, as people living in rural areas (OR=1.056) had a higher probability to be a long-term user compared to people living in urban areas. The probability to be a long-term user was lower for people from the German (OR=0.787) and the French (OR=0.832) speaking part of Switzerland compared to people from the Italian speaking part.

4. Discussion

There were three main findings in this study. First, AD prevalence in Switzerland has remained stable from 2013 to 2021. Prevalence rates for women were twice as high than for men, which did not change over the years. Second, the prevalence of long-term users compared to medium- and short-term users were higher and has been increasing from 2014 to 2020. In 2020, more than two-thirds of our sample were long-term users, and one in six long-term users received AD for more than eight years. Third, long-term users had a higher probability to be older, female, living in a nursing home, living in the Italian speaking part of Switzerland, and receiving psychiatric or psychotherapeutic care.

The extrapolated one-year prevalence in Switzerland for people with at least one AD prescription per year was 9.0% (*n*=770 000) in 2021. Between 2013 and 2021, the one-year prevalence remained stable between 8.9% - 9.2%. This may surprise as for other industrialized countries prevalence rates significantly increased in the last two decades, although these rates varies widely across countries and subgroups. [8, 24] For Switzerland, AD consumption has increased until 2014 [25], but did not increase between 2017-2020 [26]. This is in line with our results indicating a stable prevalence after 2013. One explanation for this result could be that the prevalence rates of AD use reached the prevalence of mental disorders treated with AD. There is only little evidence on the prevalence rates of mental disorders in Switzerland. For example, in 2017 5.4% of the Swiss population have indicated in interviews that they had a diagnosed depression, while 34.6% reported mild to severe depressive symptoms. [26] However, guidelines recommend that AD should not generally be used as first-line treatment for mild depression, because there is no statistically demonstrable difference between placebo and AD. [12] Besides depressive disorders, ADs are prescribed for other reasons such as anxiety disorder [6]. A study from 2010 estimated that 14% of the European population had an anxiety disorder. [27] In Switzerland, current

prevalence rates for anxiety disorders and other diseases treated with AD are lacking. This is crucial to detect possible overprescribing patterns for people with certain mental disorders.

This study shows that long-term use compared to short- and medium-term use is highly substantial and, in line with previous findings, long-term use has steadily increased between 2014 and 2020. [14, 16, 28, 29] Recent studies, however, have reported a smaller proportion of long-term users [5, 14], which could also be explained by the different definitions of long-term use. In our study, the prescription duration of long-term users ranged from more than one year to eight years. 45% of long-term users have a prescription duration of five years or more, suggesting possible chronic use. [16] The trend of an increasing number of long-term users can have different reasons. For example, there is evidence that general practitioners continue to prescribe AD because they fear relapsing symptoms of depression and because they are unaware of the negative aspects of long-term use of AD. [30] This would lead to overprescribing of long-term AD treatment. In addition, a recent review article shows that withdrawal symptoms, such as increased anxiety, dizziness, mood swings, flu-like symptoms, insomnia, or nausea, occurs in more than half of all AD users [31] and that guidelines on AD withdrawal need to be urgently updated. [32] There is growing evidence that depression relapse is seriously confounded with withdrawal reactions, especially when doctors are not familiar with antidepressant withdrawal. [33, 34] As thousands of individuals are seeking support for AD withdrawal, [35] more education, guidance, and support for general practitioners and patients are needed to reduce unnecessary treatment. [10] Another explanation for the increasing number of long-term users can be that AD are more prescribed for reasons other than depression or anxiety disorders, which may require a different treatment duration of AD, for example, chronic pain. [36] There is evidence that chronic pain was the most common potential treatment indication for newer use of AD in older adults [37]. In summary, as long-term use of AD increases, further research is needed examining different strategies that may reduce prolonged treatment.

In line with other studies, our results indicate that older people are more often long-term users. [16] 54.5% of long-term users were older than 60 years. Longer use of AD in older people is problematic as these medications are often prescribed for off-label indications such as sleep disorders, without much supporting scientific evidence [38]. In addition, older people have a greater risk for adverse events, because multimorbidity and polypharmacy can lead to drug-drug interactions. [18] Psychotherapy should be considered as alternative treatment especially for long-term users, as recent meta-analyses indicate that psychotherapy is superior in longer treatment than AD treatment alone. [39, 40] Our results show that long-term users across all age categories are more likely receiving psychiatric or psychotherapeutic care compared to medium- and short-term users. However, one third of long-term users did not receive psychiatric and psychotherapeutic care, which requires further investigations into the underlying reasons.

This study has also several limitations. Firstly, our data reflect medication acquisition rather than actual consumption. However, the data are based on objective, claim-based data, avoiding reporting and recall biases that can occur when people self-report their AD use. Secondly, we included recent claims that were submitted until mid of 2021, but receipts may be submitted later, which would lead to an underestimation of long-term AD user. Thirdly, to compare percentages of long-, medium-, and short-term users across the

years, we excluded all people with an AD prescription in 2013. This may have underestimated long-term users across all years, as people with prescription start in 2013 and a duration longer than nine years do not appear. Fourthly, people in Switzerland can change their health insurance every year. For this reason, we only included people with ongoing insurance coverage in the study period.

In conclusion, although one-year prevalence remained stable in Switzerland, long-term AD prescription has increased in recent years, while 69% of individuals with at least one AD prescription in 2020 were long-term users. Longer treatment than recommended may indicate possible overprescribing. Recent studies highlight the risk of long-term use in terms of withdrawal symptoms and adverse events with prolonged treatment, particularly in older people.

Declarations

Supplementary Information

Supplementary data are available online.

Author contributions

MA/RF/CH: conceptualization, methodology. MN: data preparation and data management. MA/MN: statistical analyses. MA: writing first draft. MH/RF/CH: reviewing and editing.

Data Availability

Due to Swiss law restrictions, data are not publicly available. Insurance claims data from Helsana Group underlie protection and privacy restrictions, but are available upon reasonable request from Helsana Department of Health Sciences (C.A.Huber)

Code availability

Not applicable.

Competing Interests

The authors have no competing interests to declare that are relevant to the content of this article.

Ethical approval

This is an observational study. According to the Swiss national ethical and legal regulations, ethical approval from the local ethical committee of the canton Zurich was not needed for the study as all data were de-identified.

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Tables

Table 1. Total number, extrapolated number and extrapolated one-year prevalence of people who were prescribed at least one AD in Switzerland between 2013 and 2021 in total and by gender.

Year	Extrapolated *N*	Prevalence Total	Prevalence Women	Prevalence Men
2013	707291	8.9	11.5	6.1
2014	730503	9.0	11.7	6.3
2015	734986	9.0	11.6	6.3
2016	749572	9.1	11.7	6.4
2017	766559	9.2	11.8	6.6
2018	765575	9.2	11.7	6.5
2019	762114	9.0	11.6	6.4
2020	752260	8.9	11.4	6.3
2021	770698	9.0	11.6	6.3

Table 2. Population and treatment characteristics: Descriptive, geographical, and health care variables, AD drug classes, prescription source and psychiatric care by categories of length of AD prescription including difference statistics.

	Total	Short	Medium	Long	
	Mean (*SD*) / *n* (%)	Mean (*SD*) / *n* (%)	Mean (*SD*) / *n* (%)	Mean (*SD*) / *n* (%)	*p*
N	77 338	15 925 (20.6%)	7 749 (10.0%)	53 664 (69.4%)	
Sex (women)	50 507 (65.3%)	10 065 (63.2%)	4 886 (63.1%)	35 556 (66.3%)	< .001[a]
Age	60.5 (19.5)	55.0 (19.6)	55.1 (19.7)	62.9 (18.9)	< .001[b]
Age group					< .001[a]
19-30	6 133 (7.9%)	2 120 (13.3%)	983 (12.7%)	3 030 (5.6%)	
31-40	7 689 (9.9%)	2 167 (13.6%)	1 053 (13.6%)	4 469 (8.3%)	
41-50	11 086 (14.3%)	2 506 (15.7%)	1 329 (17.2%)	7 251 (13.5%)	
51-60	13 965 (18.1%)	2 874 (18.0%)	1 418 (18.3%)	9 673 (18.0%)	
61-70	11 200 (14.5%)	2 112 (13.3%)	983 (12.7%)	8 105 (15.1%)	
71-80	12 577 (16.3%)	2 237 (14.0%)	963 (12.4%)	9 377 (17.5%)	
>80	14 688 (19.0%)	1 909 (12.0%)	1 020 (13.2%)	11 759 (21.9%)	
Region of residence					< .001[a]
Zurich	18 044 (23.3%)	3 956 (24.8%)	1 883 (24.3%)	12 205 (22.7%)	
Midland	16 256 (21.0%)	3 225 (20.3%)	1 603 (20.7%)	11 428 (21.3%)	
Lemanic region	12 479 (16.1%)	2 515 (15.8%)	1 358 (17.5%)	8 606 (16.0%)	
North-western	10 552 (13.6%)	2 187 (13.7%)	1 036 (13.4%)	7 329 (13.7%)	
Eastern	8 769 (11.3%)	1 881 (11.8%)	869 (11.2%)	6 019 (11.2%)	
Ticino	6 117 (7.9%)	1 004 (6.3%)	498 (6.4%)	4 615 (8.6%)	

Central	5 121 (6.6%)	1 157 (7.3%)	502 (6.5%)	3 462 (6.5%)	
Language region					< .001[a]
German	55 901 (72.3%)	11 790 (74.0%)	5 569 (71.9%)	38 542 (71.8%)	
French	15 123 (19.6%)	3 088 (19.4%)	1 662 (21.4%)	10 373 (19.3%)	
Italian	6 314 (8.2%)	1 047 (6.6%)	518 (6.7%)	4 749 (8.8%)	
Area					= .003[a]
urban	53 022 (68.6%)	11 058 (69.4%)	5 370 (69.3%)	36 594 (68.2%)	
intmed	14 743 (19.1%)	3 013 (18.9%)	1 452 (18.7%)	10 278 (19.2%)	
rural	9 573 (12.4%)	1 854 (11.6%)	927 (12.0%)	6 792 (12.7%)	
Standard care model	34 697 (44.9%)	5 489 (34.5%)	2 802 (36.2%)	26 406 (49.2%)	< .001[a]
Franchise (Low)	65 283 (84.4%)	12 563 (78.9%)	6 227 (80.4%)	46 493 (86.6%)	< .001[a]
Nurs (Yes)	6 928 (9.0%)	443 (2.8%)	375 (4.8%)	6 110 (11.4%)	< .001[a]
AD Drug class					
TCA	7 932 (10.3%)	1 841 (11.6%)	828 (10.7%)	5 263 (9.8%)	< .001[a]
SSRI	33 403 (43.2%)	3 630 (22.8%)	2 740 (35.4%)	27 033 (50.4%)	< .001[a]
MAOI	76 (0.1%)	2 (0.0%)	6 (0.1%)	68 (0.1%)	< .001[a]
Mirtazapine	10 944 (14.2%)	1 900 (11.9%)	1 008 (13.0%)	8 036 (15.0%)	< .001[a]
Venlafaxine	5 361 (6.9%)	340 (2.1%)	292 (3.8%)	4 729 (8.8%)	< .001[a]
St. John s wort	6 143 (7.9%)	2 181 (13.7%)	1 003 (12.9%)	2 959 (5.5%)	< .001[a]
Other ADs	22 540	3 701	2 236	16 603	<

	(29.1%)	(23.2%)	(28.9%)	(30.9%)	.001[a]
Number of prescriptions	3.4 (2.86)	1.0 (0.74)	2.1 (1.66)	4.3 (2.91)	< .001[a]
Prescription source					
GP	49 942 (64.6%)	8 984 (56.4%)	4 568 (58.9%)	36 390 (67.8%)	< .001[a]
Psychiatrists/psychiatric clinics	18 456 (23.9%)	1 959 (12.3%)	1 747 (22.5%)	14 750 (27.5%)	< .001[a]
Hospital	8 591 (11.1%)	1 106 (6.9%)	739 (9.5%)	6 746 (12.6%)	< .001[a]
Other prescription source	6 736 (8.7%)	1 231 (7.7%)	648 (8.4%)	4 857 (9.1%)	< .001[a]
Psychiatric care	49 942 (64.6%)	8 984 (56.4%)	4 568 (58.9%)	36 390 (67.8%)	< .001[a]

Note: CH = Switzerland; Area: intmed = intermediate area: dense urban areas and rural centres; Franchise: High = >500 CHF, Low = <500 CHF; Nurs = Nursing home, TCA = tricyclic antidepressants (N06AA), SSRI = selective serotonin reuptake inhibitors (N06AB), MAOI = monoamine oxidase inhibitors (N06AG); GP = general practitioner, others = combination of providers. [a] Pearson s chi-square test, [b] ANOVA

Table 3. Binary logistic regression model predicting long-term user as opposed to short- and medium-term user for 2020.

	OR	95% CI	p-value
Sex (women)	1.059	1.025, 1.095	< .001
Age	1.013	1.012, 1.014	< .001
Nurs	2.263	2.066, 2.420	< .001
Standard care (vs. managed care)	1.601	1.550, 1.655	< .001
Psychiatric care	1.345	1.301, 1.391	< .001
Area			
urban	1	-	-
intmed	1.018	0.978, 1.061	0.378
rural	1.056	1.006, 1.110	0.029
Language			
Italian	1	-	-
German	0.787	0.740, 0.837	< .001
French	0.832	0.777, 0.892	< .001

Note: Nurs = Nursing home; intmed = intermediate area: dense urban areas and rural centres.

Figures

Figure 1

Number of people who had at least one AD prescription per year allocated to one of the three categories of length for 2014-2020.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Supplementarydata.docx