UCLA

Title

The Role of Behavioral Health Diagnoses in Adverse Selection

Permalink

https://escholarship.org/uc/item/9qk8567d

Journal

Psychiatric Services, 71(9)

ISSN

1075-2730

Authors

Keller, Michelle S
Xu, Haiyong
Azocar, Francisca
et al.

Publication Date

2020-09-01

DOI

10.1176/appi.ps.201900354

Copyright Information

Peer reviewed

HHS Public Access

The Role of Behavioral Health Diagnoses in Adverse Selection

Michelle S. Keller, Ph.D., M.P.H.,
Department of Health Policy and Management, Fielding School of Public Health, University of California, Los Angeles

Division of General Internal Medicine, Department of Medicine, Cedars-Sinai Medical Center, Los Angeles

Haiyong Xu, Ph.D.,
Division of General Internal Medicine and Health Services Research, Department of Medicine, David Geffen School of Medicine, University of California, Los Angeles

Francisca Azocar, Ph.D.,
Optum, United Health Group, San Francisco

Susan L. Ettner, Ph.D.
Department of Health Policy and Management, Fielding School of Public Health, University of California, Los Angeles

Division of General Internal Medicine and Health Services Research, Department of Medicine, David Geffen School of Medicine, University of California, Los Angeles

Abstract

Objective: Adverse selection in medical insurance is well documented; however, little is known about the role of behavioral health. This study's objective was to examine the probability of being enrolled in the lowest-deductible plan among commercially insured patients, according to psychiatric diagnosis.

Methods: This cross-sectional study used 2012–2013 benefit design and plan choice data linked to 2011–2012 behavioral health claims for a national sample of individuals (N=116,975) and different family types (couple with at least one dependent, N=59,237; single subscriber with at least one dependent, N=19,066; couple with no dependents, N=40,917) with Optum, UnitedHealth Group "carve-in" plans. Analyses included multiple logistic regressions examining whether the individual (or family) was enrolled in the plan with the lowest-deductible as functions of whether individuals (or family members) had any psychiatric diagnosis, the number of psychiatric diagnoses they had, and whether they had individual major psychiatric diagnoses.

Results: For individuals, having any psychiatric diagnosis was associated with an increase of about 10% in the probability of being enrolled in the lowest-deductible plan compared with having no psychiatric diagnosis (44.9% vs. 40.7%, p=0.04). Each additional psychiatric diagnosis increased this probability by three percentage points (p=0.02). A diagnosis of depression was associated with the largest increase.

Conclusions: When individuals were offered the choice of a health insurance plan, having a prior psychiatric diagnosis (specifically depression) was associated with being enrolled in the lowest-deductible plans. Individuals with depression may anticipate future expenditures and select plans accordingly.

Self-selection into health insurance plans is well documented. Individuals with poorer health and higher expenditures are more likely to select more generous health insurance plans (1–4). If too many individuals with poor health choose a particular plan, the plan's costs quickly escalate beyond the amount collected from monthly premiums, potentially leading to the plan's collapse, the well-known "death spiral."

Although many studies have examined adverse selection by using self-reported overall health or medical diagnoses (5–11), few have examined the role of behavioral health diagnoses (12). This gap in the literature is significant; individuals with a history of behavioral health conditions tend to incur higher medical expenditures than others (11, 13), and the prevalence of behavioral health disorders is high. Nearly one in five U.S. adults live with a mental health illness (12).

Examining the role that behavioral health diagnoses play in adverse selection is important for several reasons. First, given the continuing rise in high-deductible plans, consumers may be increasingly exposed to high deductibles (14), which could further increase adverse selection. Out-of-pocket spending has grown 58% in employer-sponsored health insurance since 2007, more than double the increase in worker's wages. Deductibles now account for more than half of enrollee cost-sharing payments (14). Enrollees planning for behavioral health–related expenditures may select plans with lower deductibles. Second, to avoid adverse selection, plans may distort the quality of services they provide (15), restrict provider networks (16, 17), assess higher copays for drugs for specific conditions (18), or create formularies favoring certain conditions. Plans may be using these approaches to avoid adverse selection among individuals with behavioral health conditions (16, 19, 20). Thus, ensuring that plans with benefits for individuals with behavioral health diagnoses are adequately compensated is critical to safeguarding the accessibility of mental health treatment.

Most studies examining the association between behavioral health and adverse selection have considered prior use of behavioral health services or self-reported mental health, finding mixed evidence for adverse selection (19). Prior use of psychiatric services and the number of chronic conditions in the family were found to be associated with lower likelihood of selecting into less generous plans (5, 21). A study using self-rated behavioral health found that perceived mental health risk, but not perceived poor general health, affected health insurance choices for some groups (24). The limitations of these studies

included that they aggregated all use of behavioral health services into one or two variables and examined only one or two employers at a time, which limited generalizability.

There is also scant evidence on how policy holders make decisions for dependents with behavioral health diagnoses. In one of the few studies examining this topic, Padgett et al. (22) used insurance claims and enrollment data from federal employees and family members in the Federal Employee Program and found that children of families enrolled in the more generous plan were 2–3 times more likely as children enrolled in the less generous plan to use outpatient mental health services; these children also had more mental health care visits, suggesting potential adverse selection by families, although this conclusion could be muddied by the effect of moral hazard.

In this study, we assessed the role of behavioral health in self-selection behavior by examining the association between having behavioral health diagnoses and being enrolled in the lowest-deductible plan among a population of employees and dependents enrolled in commercial "carve-in" plans, in which behavioral health and medical benefits are administered by the same plan. We hypothesized that having behavioral health conditions would be associated with enrollment in plans with a lower deductible because subscribers and families may have higher expected future costs of care. We also hypothesized that those with severe or chronic behavioral health conditions would be more likely to be enrolled in plans with lower deductibles than those with less severe or more time-limited conditions. Our study complements the existing literature by examining a comprehensive set of specific behavioral health diagnoses; by using administrative data, which are thought to be more reliable than self-report; by separately considering both individual and family subscribers; and by examining selection by different family types.

Thus, our research question for this retrospective study, which used secondary data analysis, was as follows: among individual subscribers and families with employer-sponsored health insurance choices, are behavioral health diagnoses associated with enrollment in health insurance plans with the lowest deductibles?

Methods

Sources of Data

Many studies of self-selection in the employer-sponsored health insurance market are limited by analyzing plan choice among only one employer. We were able to examine selection behavior across a wide spectrum of employers in multiple industries across states using data sets provided by the behavioral health division of Optum, a fully owned subsidiary of UnitedHealth Group. Optum is one of the largest national managed behavioral health organizations, and its members are distributed across all U.S. states. Employer-sponsored health insurance accounts for half of all health insurance coverage in the United States (23); thus, examining drivers of selection behavior in this market can have important financial implications.

To construct our analysis data set, we linked five databases provided by Optum or its sister company, UnitedHealthcare: specialty behavioral health claims providing detailed

information on diagnoses; eligibility files, which include age, gender, the individual's relationship to the insurance subscriber, state of residence, and plan enrollment information; employer and plan characteristics from Optum's book of business; detailed benefit design data; and sociodemographic data from a commercial marketing database for a subset of enrollees (used for sensitivity analyses). Notably, our data contained individual identifiers that, although scrambled so individuals were de-identified, were constructed to allow us to link members together into family units. The benefit design data contained information at the level of insurance plan year on benefit design features, including deductibles, out-of-pocket maximums, copayments, coinsurance by type of service, excluded diagnoses, and treatment limitations, in addition to employer ID and year. The source of this information was Optum's claims processing engine, which therefore represented the true values for these benefit design features.

We pooled two sets of observations, each based on 13 months of data: those with 2011 claims data and information on 2012 plan choice from January 2012 and those with 2012 claims data and information on 2013 plan choice from January 2013. This study was deemed exempt by the University of California, Los Angeles, Institutional Review Board.

Sample

Data were analyzed separately for single subscribers with individual coverage (N=116,975) and three family types: a couple (i.e., an adult subscriber with a spouse or domestic partner) with at least one dependent (N=59,237), an adult subscriber with one or more dependents (N=19,066), and a couple with no dependents (N=40,917). (For a summary of the initial sample sizes and the number of observations dropped after imposing study inclusion and exclusion criteria, see the online supplement.) We included only individuals or families who were offered two or more plan choices.

Measures

We used benefit design data to create a dichotomous variable for whether the selected plan had the lowest deductible among all the plans that were provided by the employer. We used *ICD-9* codes from the specialty behavioral health claims to assign prior-year behavioral health diagnoses for individuals and families. These diagnoses included adjustment disorders, posttraumatic stress disorder, generalized anxiety disorder, obsessive-compulsive disorder, panic disorder, phobias, cognitive disorders (e.g., dementia), attention-deficit hyperactivity disorder, other childhood disorders, development disorders (e.g., pervasive development disorders), bipolar disorder, depression, personality disorders, psychotic disorders (e.g., schizophrenia), alcohol use disorders, drug use disorders, and a category for other psychiatric disorders. We did not examine childhood behavioral health diagnoses among individual subscribers, given that all individuals were ages 18–64 while in the study cohort.

We controlled for the subscriber's age group, sex, year of plan selection, and state of residence in January of the plan selection year. Where relevant in the family models, we also controlled for couple type (i.e., same-gender or different-gender domestic partnership or same-gender or different-gender married couple) and number of dependents younger than

age 6, ages 6–11, ages 12–17, ages 18–26, and ages 27 or older. In sensitivity analyses, we instead controlled for whether the families had any dependents in these age categories. Using the subsample of observations with sociodemographic data (available for half of the sample), we also ran sensitivity analyses, adding covariates for the subscriber's race-ethnicity and language, household income and net worth, and education level.

Analysis

For the individual subscribers, we estimated three regression models, examining whether the subscriber had any psychiatric diagnosis, the number of psychiatric diagnoses the subscriber had, and whether the subscriber had a psychiatric diagnosis in each major diagnosis category. For the family units, following Deb et al. (24) and Strombom et al. (25), we examined whether anybody in the family had any psychiatric diagnosis, the total number of psychiatric diagnoses in the family, and whether anybody in the family had a psychiatric diagnosis in each major diagnosis category.

We estimated all models by using logistic regression with robust "sandwich" standard errors with generalized estimating equations to account for employer-level sampling (26, 27). To facilitate interpretation of the magnitude of the estimates, we report marginal effects (the average percentage point changes in the probability of the outcome associated with a one-unit change in the predictor from zero to one, holding all of the other covariates constant at their original values). Because marginal effects are nonlinear functions of the regression estimates, standard errors were calculated with a first-order Taylor series expansion (28).

Results

Characteristics of the Study Samples

Table 1 and Table 2 include sociodemographic characteristics and behavioral health claims diagnoses for individual subscribers and family units. The most common diagnoses were depression, adjustment disorders, and generalized anxiety disorder; attention-deficit hyperactivity disorder was also a prevalent diagnosis for family units with dependents.

Association Between Behavioral Health Diagnoses and Selection of the Lowest-Deductible Plan

Table 3 shows the marginal effects of behavioral health diagnoses on being enrolled in the lowest-deductible plan among those offered by the employer group. Among individual subscribers, having any psychiatric diagnosis was associated with a four-percentage-point higher probability of being enrolled in the plan with the lowest deductible compared with having no diagnosis, ceteris paribus (marginal effect=0.04; 95% confidence interval [CI]=0.00, 0.08; p=0.04). The effect appears to be additive: on average, for individual enrollees, the regression-adjusted probability of being enrolled in the behavioral health plan with the lowest deductible increased by approximately three percentage points with each additional psychiatric diagnosis (marginal effect=0.03; 95% CI=0.00–0.05; p=0.01). The probability of being enrolled in the plan with the lowest deductible was four percentage points higher for individuals with a prior-year diagnosis of major depression compared with those without such a diagnosis, ceteris paribus (marginal effect=0.04; 95% CI=0.01–0.08;

p=0.02). However, other behavioral health diagnoses did not have a significant effect on being enrolled in the plan with the lowest deductible.

Among single parents (subscriber with at least one child), having any behavioral health diagnosis in the family was significantly associated with being enrolled in the lowest-deductible plan (marginal effect=0.05; 95% CI=0.02–0.08; p 0.001). The probability of being enrolled in the behavioral health plan with the lowest deductible increased by approximately two percentage points with every additional diagnosis in the family (marginal effect=0.02; 95% CI=0.00–0.03; p=0.01). Being enrolled in the plan with the lowest deductible was significantly associated with adjustment disorders (marginal effect=0.06; 95% CI=0.02–0.10; p=0.001) and generalized anxiety disorder (marginal effect=0.06; 95% CI=0.01–0.10; p=0.02).

Among couples with at least one dependent (families with one adult subscriber, one spouse or domestic partner, and at least one child), we did not find any significant associations between being enrolled in the lowest-deductible plan and having any psychiatric diagnosis, the number of psychiatric diagnoses within the family, or the presence of indicators for the major diagnosis categories within the family. Among couples with no dependents, having a family member with an adjustment disorder diagnosis was associated with a five-point higher probability of being enrolled in the behavioral health plan with the lowest deductible (marginal effect=0.05; 95% CI=0.01–0.09; p=0.02).

Sensitivity Analyses

We had sociodemographic data for approximately half of the sample. To test the robustness of our findings, we reran the models controlling for race-ethnicity and language, income and net worth, and education. The models controlling for sociodemographic variables showed more significant results, suggesting our original findings may be conservative. However, when comparing results from the parsimonious regressions run using the subsamples with and without sociodemographic data, we found that the stronger results in the full models were due to limiting the sample to individuals with sociodemographic data, not to controlling for the sociodemographic variables per se.

Discussion

In our cross-sectional analyses of U.S. employer-sponsored plans, we found that among individuals and families, there was an association between being enrolled in plans with lower deductibles and behavioral health diagnoses. For individual subscribers, this was true among individuals with conditions that may be chronic or recurrent, such as depression. As the number of diagnoses increased, the likelihood of being enrolled in the plan with the lowest deductible increased because individuals may have planned for future expenditures. Among single parents with at least one dependent and couples with no dependents, adjustment disorders and generalized anxiety disorder were associated with being enrolled in the plan with the lower deductible.

Our findings are in line with other studies that examine self-selection among individuals with behavioral health conditions by considering prior use of health services or self-reported

mental health conditions (21, 24, 29, 30). Our findings provide further evidence of an association between having a chronic mental health condition, such as depression, and being enrolled in a plan with a lower deductible. We also found an association between behavioral health diagnoses in a family and enrollment in a plan with a lower deductible. Therefore, we hypothesized that families may plan for the use of mental health services after major life stressors, although we were not able to confirm this hypothesis with our study. Although adjustment disorders are temporary, their higher prevalence may reflect a shift in diagnosis to a more severe or chronic condition without a corresponding change in administrative coding. Single parents and couples without children were both more likely to be enrolled in the plan with the lowest deductible when anyone in the family had an adjustment disorder. Adjustment disorders were among the most prevalent disorders in our sample: among individual subscribers, 1.7% of our sample had a diagnosis of adjustment disorder in the year before plan selection and among the family groups, the prevalence ranged from 2.4% to 6.0%.

Our findings had several limitations. We did not have access to medical claims, so were not able to control for medical diagnoses in our regressions. Behavioral health and medical conditions are often comorbid (more than 68% of adults with a mental disorder have medical conditions, and 29% of adults with medical conditions have a mental disorder) (31), so our models may not capture decision making for individuals basing their decisions primarily on medical diagnoses, potentially leading to overstatement of our effects. Additionally, clinicians have increasingly been providing behavioral health care in primary care. As a result, we may not have captured all behavioral health diagnoses if individuals received care outside of the behavioral health care setting.

Self-selection could be driven by differences in other benefit design features, including copays, coinsurance, or premiums. Notably, however, we found little variation in other aspects of benefit design across commercial plans offered within the same employer groups, so other cost-sharing features were effectively held constant. To address concerns about unmeasured differences in plan premiums, we constructed a proxy for relative premiums by using actual claims experience. Controlling for this measure yielded similar results among individual subscribers but much stronger and highly significant associations in the expected direction among families. Although relative premiums are prone to reverse causality, these findings suggest that if anything, our estimates are conservative.

We also did not have data about the amount of time individuals or families had been on plans prior to our study year, so we were not able to control for potential inertia around plan selection. For some family types, the samples for certain diagnoses were small, limiting our ability to draw conclusions about the association between some behavioral health disorders and plan selection. Given our data source, we were not able to assess severity of the condition, limiting our ability to draw conclusions between severity of the diagnoses and plan selection. Finally, we were not able to assess the network available to subscribers, which could influence plan selection.

Our study had important strengths. We add to the literature by modeling how different behavioral health diagnoses are associated with plan choice. Our unique data set includes the

plan choice set for each subscriber, deductibles for each plan, and actual plan selections. Our study is one of few that models insurance choices for different family types, because studies rarely have data to link enrollees within subscriber units. Our data set also includes information on enrollee relationships, so we could study several family types.

Conclusions

Our findings demonstrate that behavioral health diagnoses may play an important role in how individuals make decisions about health insurance. The magnitudes of these associations were fairly substantial: for individual enrollees, having any psychiatric diagnosis was associated with an increase of about 10% in the probability of being enrolled in the lowest-deductible plan compared with having no psychiatric diagnosis (44.9% vs. 40.7%). For single parents, having any psychiatric diagnosis in the family was associated with an increase in probability from 37.1% to 42.1%.

Our findings have policy implications for the employer-sponsored insurance markets. If payers perfectly understood the risk of coverage for the individuals purchasing the coverage, they would set commensurate premiums. However, when individuals systematically select insurance because of unobserved factors (e.g., knowledge of future health expenditures), certain plans might be exposed to more risk, whereas others retain healthier populations. Understanding which diagnoses are associated with enrollment in particular plans has important implications for risk adjustment and the financial viability of health plans offering more generous benefits for individuals with chronic conditions. Employers and other purchasers wishing to compensate more generous plans for adverse selection should adjust capitation payments for behavioral health conditions. Some cross-subsidization across plans may be necessary to avoid the death spiral that could result if increased premiums were fully passed along to the consumers.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

References

1. Atherly A, Dowd BE, Feldman R: The effect of benefits, premiums, and health risk on health plan choice in the Medicare program. Health Serv Res 2004; 39:847–864 [PubMed: 15230931]

2. Maciejewski ML, Dowd B, O'Connor H: Multiple prior years of health expenditures and Medicare health plan choice. Int J Health Care Finance Econ 2004; 4:247–261 [PubMed: 15277781]

3. Van de Ven WPMM, Van Praag BMS: The demand for deductibles in private health insurance: a probit model with sample selection. J Econom 1981; 17:229–252

4. Cutler DM, Zeckhauser RJ: The anatomy of health insurance; in Handbook of Health Economics. Edited by Culyer AJ, Newhouse JP. Amsterdam, Elsevier Science, 2000

5. Merrill J, Jackson C, Reuter J: Factors that affect the HMO enrollment decision: a tale of two cities. Inquiry 1985; 22:388–395 [PubMed: 2934333]

6. Nicholson S, Bundorf K, Stein RM, et al.: The magnitude and nature of risk selection in employer-sponsored health plans. Health Serv Res 2004; 39:1817–1838 [PubMed: 15533189]

7. Hill JW, Brown RS: Biased Selection in the TEFRA HMO/CMP Program. Princeton, NJ, Mathematica Policy Research, 1990.

8. Eggers P: Risk differential between Medicare beneficiaries enrolled and not enrolled in an HMO. Health Care Financ Rev 1980; 1:91–99 [PubMed: 10309136]

9. Mello MM, Stearns SC, Norton EC, et al.: Understanding biased selection in Medicare HMOs. Health Serv Res 2003; 38:961–992 [PubMed: 12822921]

10. Riley G, Tudor C, Chiang YP, et al.: Health status of Medicare enrollees in HMOs and fee-for-service in 1994. Health Care Financ Rev 1996; 17:65–76 [PubMed: 10165714]

11. Frank RG, McGuire TG: Economics and mental health; in Handbook of Health Economics. Edited by Culyer AJ, Newhouse JP. Amsterdam, Elsevier Science, 2000

12. Key Substance Use and Mental Health Indicators in the United States: Results From the 2017 National Survey on Drug Use and Health. Pub no SMA-18–5068. Rockville, MD, Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, 2018

13. McGuire TG, Sinaiko AD: Regulating a health insurance exchange: implications for individuals with mental illness. Psychiatr Serv 2010; 61:1074–1080 [PubMed: 21041344]

14. Rae M, Copeland R, Cox C: Tracking the Rise in Premium Contributions and Cost-Sharing for Families With Large Employer Coverage. San Francisco, Kaiser Family Foundation, 2019

15. Ellis RP, Jiang S, Kuo T-C: Does service-level spending show evidence of selection across health plan types? Appl Econ 2013; 45:1701–1712

16. Montz E, Layton T, Busch AB, et al.: Risk-adjustment simulation: plans may have incentives to distort mental health and substance use coverage. Health Aff 2016; 35:1022–1028

17. Barry CL, Ridgely MS: Mental health and substance abuse insurance parity for federal employees: how did health plans respond? J Policy Anal Manage 2008; 27:155–170 [PubMed: 18478666]

18. Jacobs DB, Sommers BD: Using drugs to discriminate—adverse selection in the insurance marketplace. N Engl J Med 2015; 372:399–402 [PubMed: 25629737]

19. Berry KN, Huskamp HA, Goldman HH, et al.: A tale of two states: do consumers see mental health insurance parity when shopping on state exchanges? Psychiatr Serv 2015; 66:565–567 [PubMed: 25726986]

20. Goodell S: Enforcing Mental Health Parity. Princeton, NJ, Robert Wood Johnson Foundation, 2015 www.healthaffairs.org/do/10.1377/hpb20151109.624272/full/healthpolicybrief_147.pdf

21. Perneger TV, Allaz A-F, Etter J-F, et al.: Mental health and choice between managed care and indemnity health insurance. Am J Psychiatry 1995; 152:1020–1025 [PubMed: 7793437]

22. Padgett DK, Patrick C, Burns BJ, et al.: The effect of insurance benefit changes on use of child and adolescent outpatient mental health services. Med Care 1993; 31:96–110 [PubMed: 8433582]

23. Health Insurance Coverage of the Total Population. San Francisco, Kaiser Family Foundation, 2018 www.kff.org/other/state-indicator/total-population/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D Accessed April 1, 2020

24. Deb P, Wilcox-Gök V, Holmes A, et al.: Choice of health insurance by families of the mentally ill. Health Econ 1996; 5:61–76 [PubMed: 8653192]

25. Strombom BA, Buchmueller TC, Feldstein PJ: Switching costs, price sensitivity and health plan choice. J Health Econ 2002; 21:89–116 [PubMed: 11845927]

26. Cameron AC, Miller DL: A practitioner's guide to cluster-robust inference. J Hum Resour 2015; 50:317–372

27. Liang K-Y, Zeger SL: Regression analysis for correlated data. Annu Rev Public Health 1993; 14:43–68 [PubMed: 8323597]

28. Dowd BE, Greene WH, Norton EC: Computation of standard errors. Health Serv Res 2014; 49:731–750 [PubMed: 24800304]

29. Branstrom RB, Cuffel B: Economic grand rounds: policy implications of adverse selection in a preferred-provider organization carve-out after parity. Psychiatr Serv 2004; 55:357–359 [PubMed: 15067145]

30. Ellis RP: The effect of prior-year health expenditures on health coverage plan choice. Adv Health Econ Health Serv Res 1985; 6:149–170 [PubMed: 10311892]

31. Druss BG, Walker ER: Mental Disorders and Medical Comorbidity. Princeton, NJ, Robert Wood Johnson Foundation, 2011 www.integration.samhsa.gov/workforce/mental_disorders_and_medical_comorbidity.pdf

Highlights

- Individuals with poorer health and higher previous expenditures are more likely to select more generous health insurance plans; however, little is known about how individuals or families with behavioral health diagnoses select plans.

- Using data from several databases from one of the largest nationally managed behavioral health organizations in the country, the authors found that having prior psychiatric diagnoses was associated with being enrolled in plans with the lowest minimum deductible.

- Depression, generalized anxiety, and adjustment diagnoses were associated with being enrolled in the plan with the lowest minimum deductible, potentially in anticipation of future health care expenditures.

- Employers and other purchasers of health plans wishing to compensate more generous plans for adverse selection should adjust capitation payments for behavioral health conditions.

TABLE 1.

Characteristics and behavioral health diagnoses of 116,975 individual subscribers of commercial health insurance[a]

Characteristic	N	%
Selected plan with lowest deductible		
No	69,103	59.1
Yes	47,872	40.9
Age		
18–24	2,231	1.9
25–34	34,693	29.7
35–44	25,717	22.0
45–54	26,873	23.0
55–64	27,461	23.3
Sex		
Female	52,433	44.8
Male	64,536	55.2
Any behavioral health diagnoses		
No	110,502	94.5
Yes	6,473	5.5
N of behavioral health diagnoses		
0	110,502	94.5
1	4,430	3.8
2	1,312	1.1
3	500	.4
4	231	.2
Behavioral health diagnosis		
Adjustment disorders	2,019	1.7
Posttraumatic stress disorder	280	.2
Generalized anxiety disorder	1,485	1.3
Obsessive-compulsive disorder	135	.1
Panic disorder	340	.3
Phobias	96	.1
Cognitive disorders (e.g., dementia)	60	.1
Attention-deficit hyperactivity disorder	488	.4
Bipolar disorder	555	.5
Depression	2,909	2.5
Personality disorders	62	.1
Psychotic disorders (e.g., schizophrenia)	112	.1
Alcohol use disorders	328	.3
Drug use disorders	186	.7
Other psychiatric disorders	534	.5

[a]The sample included 41 employers in 2011 and 44 employers in 2012.

TABLE 2.

Characteristics and behavioral health diagnoses of three cohorts of commercially insured subscribers, by family type[a]

Characteristic	Couple with one or more dependents[b,c]		Couple with no dependents[b]		Subscriber with one More dependents[b,c]	
	N	%	N	%	N	%
Selected plan with lowest deductible	20,347	34.4	16,341	40.0	7,203	37.8
Age of subscriber						
18–24	159	.3	221	.5	220	1.2
25–34	10,238	17.3	5,144	12.6	4,878	25.6
35–44	28,706	48.5	4,820	11.8	8,800	46.2
45–54	18,007	30.4	10,720	26.2	4,624	24.3
55–64	2,127	3.6	20,012	48.9	544	2.9
Any behavioral health diagnoses in the family						
No	49,491	83.6	37,234	91.0	16,460	86.3
Yes	9,746	16.5	3,683	9.0	2,606	13.7
N of behavioral health diagnoses in the family						
0	49,491	83.6	37,234	91.0	16,460	86.3
1	5,247	8.9	2,232	5.5	1,548	8.1
2	2,447	4.1	905	2.2	600	3.2
3	1,150	1.9	346	.9	274	1.4
4	902	1.5	200	.5	184	1.0
Behavioral health diagnosis for any family member						
Adjustment disorders	3,579	6.0	967	2.4	1,027	5.4
Posttraumatic stress disorder	416	.7	227	.6	112	.6
Generalized anxiety disorder	2,727	4.6	884	2.2	590	3.1
Obsessive-compulsive disorder	325	.6	80	.2	48	.3
Panic disorder	435	.7	214	.5	77	.4
Phobias	174	.3	51	.1	32	.2
Cognitive disorders (e.g., dementia)	129	.2	62	.2	24	.1
Attention-deficit hyperactivity disorder	2,189	3.7	216	.5	623	3.3
Other childhood disorders	675	1.1	NA[d]	NA[d]	230	1.2
Pervasive development disorders	357	.6	NA[d]	NA[d]	77	.4
Bipolar disorder	832	1.4	495	1.2	179	.9
Depression	3,928	6.6	1,916	4.7	918	4.8
Personality disorders	84	.1	47	.1	15	.1
Psychotic disorders (e.g., schizophrenia)	176	.3	99	.2	51	.3
Alcohol use disorders	339	.6	189	.5	75	.4

Characteristic	Couple with one or more dependents[b,c]		Couple with no dependents[b]		Subscriber with one More dependents[b,c]	
	N	%	N	%	N	%
Drug use disorders	427	.7	119	.3	86	.5
Other psychiatric disorders	1,041	1.8	431	1.1	283	1.5

[a]For the family type consisting of a couple with one or more dependents, our sample included 40 employers in 2011 and 41 employers in 2012. For the family type consisting of a couple with no dependents, our sample included 40 employers in 2011 and 41 employers in 2012. For the family type consisting of a single subscriber with one or more dependents, our sample included 39 employers in 2011 and 41 employers in 2012. All regression models controlled for census region.

[b]Sample for the three cohorts were as follows: couple with at least one dependent, N=59,237; couple with no dependents, N=40,917; subscriber with one or more dependents, N=19,066.

[c]Dependents in the sample were age 18 or younger.

[d]NA, not applicable. We excluded childhood disorders, including pervasive developmental disorders and other childhood disorders, from the models with adult subscribers only.

TABLE 3.

Marginal effects (MEs) of psychiatric diagnosis on the probability of subscribers and their families choosing the lowest-deductible plan among those offered by the employer group[a]

Model	Individual subscribers		Subscribers with at least one dependent[b]		Couples with at least one dependent[b]		Couples with no dependents	
	ME	95% CI	ME	95% CI	ME	95% CI	ME	95% CI
Model 1								
Any psychiatric diagnosis	.04[*]	.00, .08	.05[***]	.02, .07	.02	.00, .05	.03	−.01, .06
Model 2								
N of psychiatric diagnoses	.03[*]	.01, .05	.02[*]	.00, .03	.01	.00, .02	.01	.00, .03
Model 3								
Adjustment disorders	.03	−.02, .07	.06[**]	.02, .10	.02	−.10, .04	.05[*]	.01, .09
Posttraumatic stress disorder	.01	−.05, .07	−.03	−.11, .05	−.01	−.06, .04	.02	−.04, .08
Generalized anxiety disorder	.02	−.01, .05	.06[*]	.01, .10	.02	−.01, .05	.01	−.02, .05
Obsessive-compulsive disorder	.10	−.08, .10	.06	−.07, .19	.04	−.01, .10	.02	−.08, .12
Panic disorder	−.02	−.07, .02	.04	−.05, .13	.03	−.02, .07	.04	−.04, .13
Phobias	−.04	−.13, .05	−.12	−.27, .03	−.07	−.16, .04	−.09	−.23, .05
Cognitive disorders (e.g., dementia)	.10	−.02, .22	.12	−.06, .29	.04	−.04, .12	.03	−.07, .13
Attention-deficit hyperactivity disorder	.04	−.03, .10	.03	−.02, .08	.01	−.03, .05	.02	−.04, .08
Other childhood disorders	NA[c]		−.01	−.06, .05	.01	−.03, .05	NA[c]	
Pervasive developmental disorders	NA[c]		−.03	−.15, .08	−.03	−.10, .04	NA[c]	
Bipolar disorder	.04	−.03, .11	−.05	−.14, .03	.03	−.02, .09	.02	−.06, .10
Depression	.04[*]	.01, .08	.02	−.02, .06	.00	−.02, .01	.00	.00, .03
Personality disorders	−.03	−.16, .10	−.02	−.31, .27	−.03	−.12, .07	−.01	−.13, .12
Psychotic disorders (e.g., schizophrenia)	.05	−.06, .15	.00	−.12, .13	.00	−.10, .10	−.03	−.13, .07
Alcohol use disorders	.02	−.04, .07	−.1	−.21, .01	.01	−.04, .06	−.03	−.11, .04
Drug use disorders	.04	−.07, .14	.01	−.12, .13	.00	−.05, .06	.06	−.03, .14
Other psychiatric disorders	.02	−.03, .06	−.01	−.06, .04	.00	−.03, .03	−.02	−.07, .03

[a]Models for individual subscribers also controlled for age group, gender, year of plan selection, and state of residence. Models for family subscribers also controlled for age group, gender of the subscriber, year of plan selection, and state of residence as well as couple type and the number of dependents in the following age categories: 5, 6–11, 12–17, 17, 18–26, 27.

[b]Dependent was age 18 or younger.

[c]NA, not applicable. We excluded childhood disorders, including pervasive developmental disorders and other childhood disorders, from the models with adult subscribers only.

[*]p<.05