



Adolescent health brief

Temporal Trends in Treatment Utilization for Disordered Eating in U.S. Adolescents From 2004 Through 2017: A Nationally Representative Study

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Article history: Received April 5, 2019; Accepted May 4, 2019

Keywords: Eating disorders; Treatment; Trends


 A B S T R A C T

Purpose: The aim of the article was to assess temporal changes in adolescent treatment utilization for disordered eating.

Methods: Data were drawn from adolescents (unweighted N = 236,752), aged 12–17 years, in the National Survey on Drug Use and Health for 2004–2017. Joinpoint regression assessed temporal trends in overall treatment utilization for disordered eating and broken down by inpatient and outpatient services.

Results: Overall treatment utilization ranged from 840 to 1,734 per 100,000 across the 14-year study period. An increase in overall treatment utilization was observed starting in 2010. A similar pattern was observed for outpatient care, with an increase starting in 2010. For inpatient care, an increase in service use was observed across the entire 14-year period.

Conclusions: Treatment utilization for eating problems has increased over time. However, a substantial proportion of teens with eating problems remains without treatment. These findings highlight the need for increased efforts to develop strategies addressing this unmet need.

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IMPLICATIONS AND CONTRIBUTION

Eating disorders are associated with the highest mortality rate of all mental disorders, but most individuals with eating disorders never seek treatment. This study examines temporal trends in treatment utilization for disordered eating in adolescents to help characterize the magnitude of this public health concern.

Although lifetime prevalence estimates of eating disorders from population-based studies of adolescents are relatively low [1], the severity of eating disorders is demonstrated by generally strong associations with other psychiatric disorders, suicidality, and elevated mortality rates [2]. Unfortunately, significant barriers to treatment for eating problems exist, specifically cost of services, stigma, and denial of illness among many others. This is a concern, given recent estimates that only $\leq 20\%$ of adults with disordered eating receive treatment [3].

To what degree comparable gaps in treatment utilization for disordered eating and moreover trends in treatment use exist among adolescents is less characterized. Such information is important for accurately characterizing the magnitude of this public health concern. Temporal trends are needed to inform our progress in providing adequate treatment for adolescents with disordered eating. An important step toward addressing this issue is to characterize the prevalence of treatment utilization for eating disorders on a national level. The present study presents the first nationally representative analysis of temporal trends in treatment utilization among adolescents with eating problems over a 14-year period.

Conflicts of interest: The authors have no conflicts of interest to disclose.

Disclaimer: The content is solely the responsibility of the authors and does not necessarily represent the official views of the funding agency.

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Methods

Data were drawn from the National Survey on Drug Use and Health for years 2004–2017 (unweighted N = 236,752). The

Table 1
Adolescent treatment utilization per 100,000 from 2004 through 2017

Year	Any treatment (SE)	Outpatient treatment (SE)	Inpatient treatment (SE)
2004	1185.20 (102.61)	887.98 (88.98)	140.86 (28.69)
2005	1151.01 (107.49)	919.75 (98.27)	180.93 (38.62)
2006	1227.20 (101.41)	1045.09 (96.30)	110.53 (30.94)
2007	1156.73 (103.54)	903.95 (101.11)	150.00 (43.36)
2008	1212.44 (106.88)	907.97 (99.15)	179.10 (46.53)
2009	967.11 (92.53)	760.17 (76.44)	137.27 (35.61)
2010	1044.85 (92.86)	810.71 (84.29)	207.47 (43.51)
2011	1076.63 (99.21)	836.07 (85.61)	136.45 (32.12)
2012	1168.94 (85.60)	875.53 (69.10)	163.90 (29.48)
2013	1420.29 (97.76)	1176.24 (96.87)	195.81 (44.75)
2014	1609.78 (127.17)	1390.10 (122.43)	202.64 (41.83)
2015	1716.87 (156.51)	1480.56 (151.38)	266.32 (66.93)
2016	1695.19 (107.31)	1437.65 (113.94)	312.48 (57.70)
2017	1733.66 (153.22)	1442.44 (149.10)	239.80 (53.01)

SE = standard error.

Substance Abuse and Mental Health Services Administration conducts this survey annually, using a multistage area probability sampling design within all 50 states to determine the prevalence of substance use and related disorders [4]. The present study specifically analyzed data from adolescents aged 12–17 years. This study is institutional review board exempt. Participants were asked if they had used treatment over the past 12 months for eating problems from the following services: inpatient hospitalization, residential program, partial hospitalization, mental health clinic, therapist, psychologist, psychiatrist, social worker, counselor, in-home care specialist, and primary care provider.

Joinpoint regression was used to quantify annual percent change with 95% confidence intervals. Trends are presented as linear segments connected at the years (i.e., joinpoints) when there was a significant change in the slope of the trend. If no significant change in trend emerged, a straight line is fitted over the full period based on a simple log-linear model. These analyses were conducted separately for overall treatment utilization, inpatient care, and outpatient care for eating problems. Inpatient care consisted of inpatient and residential programs. Outpatient care included partial hospitalization, mental health clinic, therapist, psychologist, psychiatrist, social worker, or counselor that was not part of a clinic and in-home therapist. Overall treatment utilization was derived from inpatient care, outpatient care, and primary care provider.

Results

Across the 14 years of this study, overall treatment utilization for eating problems in adolescents ranged from 967 to 1,734 per 100,000, inpatient treatment utilization ranged from 111 to 312 per 100,000, and outpatient treatment utilization ranged from 760 to 1,481 per 100,000 (Table 1 shows yearly breakdowns by

treatment type). Table 2 and Figure 1 present the annual percent change in treatment utilization from 2004 to 2017. A significant increase in overall treatment utilization was observed starting in 2010. When treatment utilization was analyzed separately by the level of care, a similar pattern was observed for outpatient care, with a significant increase starting in 2010. In contrast, for inpatient care, a significant increase in service use was observed across the entire 14-year period.

Discussion

To our knowledge, this is the first study to have examined long-term trends in treatment utilization for eating problems in a nationally representative sample of adolescents. Inpatient treatment utilization increased over the entire 14-year period, whereas overall and outpatient treatment utilization have increased since 2010. The increase in treatment utilization observed in our study may partly reflect the enhanced mental health coverage in recent years after parity legislation. Specifically, the observed significant increase starting in 2010 for outpatient and overall treatment utilization may in part be related to the Mental Health Parity and Addiction Equity Act of 2008, the Medicare Improvements for Patients and Providers Act of 2008, and the 2014 nationwide health insurance expansion [5]. These government sanctions made it possible for those who previously could not afford specialty care to obtain it. In addition, a recent study found that an increase in eating disorder prevalence in 15- to 19-year-old girls and teenage boys [2]. This, along with a significant increase in marking efforts done by residential treatment programs [6], may in part explain the significant increase in inpatient treatment utilization observed since 2004.

However, when considered together with recent estimates of a 12-month prevalence rate of 2,800 per 100,000 for eating disorders in a nationally representative study of adolescents [7],

Table 2
Annual percent change in treatment utilization by type of treatment, 2004–2017

Type of treatment	Segment 1			Segment 2		
	Period	APC (95% CI)	<i>p</i>	Period	APC (95% CI)	<i>p</i>
Any treatment	2004–2010	−2.52 (−6.87 to 2.04)	.24	2010–2017	8.67 (5.22–12.23)	<.001
Outpatient treatment	2004–2010	−3.18 (−9.34 to 3.39)	.29	2010–2017	10.71 (5.58–16.08)	<.001
Inpatient treatment	2004–2017	5.12 (2.21 to 8.12)	<.01			

APC = annual percent change; CI = confidence intervals.

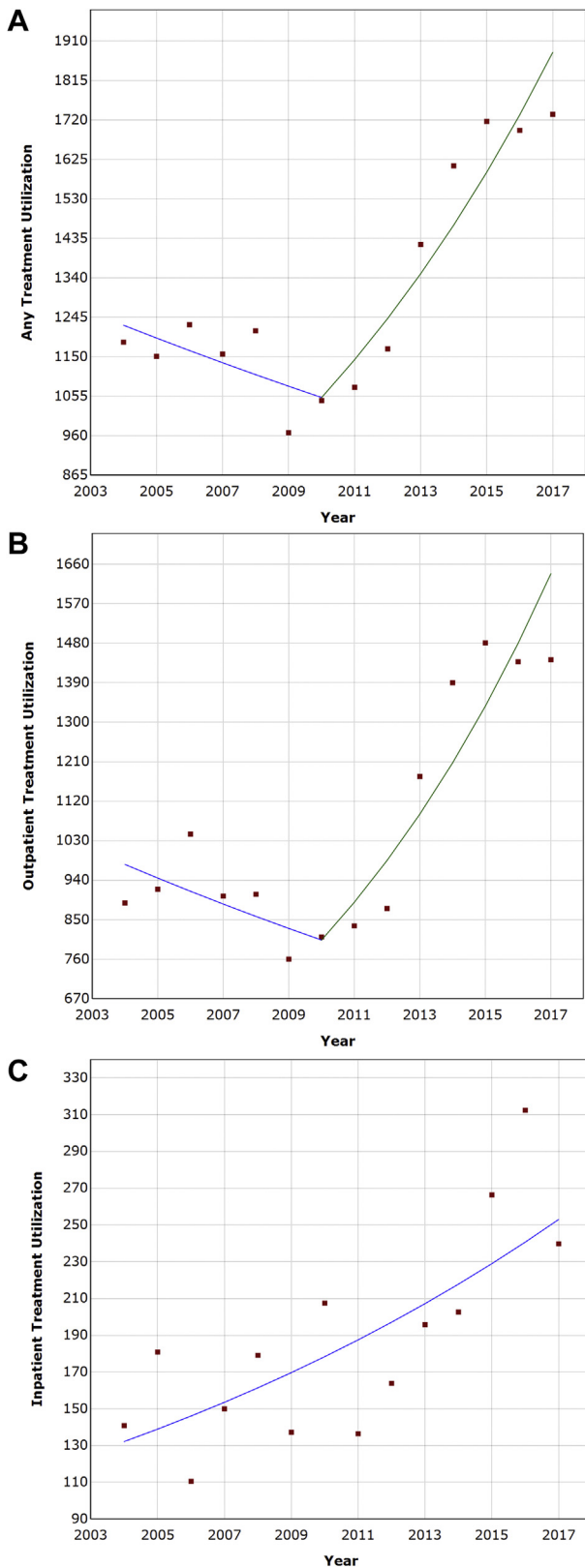


Figure 1. (A) Any treatment utilization for disordered eating in youth, 2004–2017. (B) Outpatient treatment utilization for disordered eating in youth, 2004–2017. (C) Inpatient treatment utilization for disordered eating in youth, 2004–2017.

the findings of the present study suggest that treatment for these clinical conditions remains significantly underutilized. A substantial proportion of adolescents with eating problems are not receiving the treatment they need, the highest rate of overall treatment use across all mental health services being 1,734 per 100,000 across the study period. This suggests that considerable progress remains to be made to reduce the prevalence of untreated eating problems in adolescents. Given that 87% of adolescents have a primary care physician [8], screening for eating disorders in primary care clinics may improve detection of adolescents in need of treatment.

This study is limited in that National Survey on Drug Use and Health is based on self-report rather than medical records. However, this approach is common in studies of treatment utilization, particularly ones comprehensive in the evaluation of treatment sources [9], as to derive these data from medical records in nationally representative samples would otherwise be unfeasible. It also does not allow for a direct analysis of factors accounting for the observed trends or posing barriers to treatment utilization, important considerations for future study.

In conclusion, adolescent treatment utilization for eating problems has increased over the past 14 years. Even so, the present study suggests a substantial proportion of teens are not receiving treatment for eating problems. Given that eating disorders are associated with elevated mortality risk, and that receipt of treatment early in the course of the disorder has been associated with better outcomes among adolescents [10], addressing this unmet need is a pressing priority.

Funding Sources

Preparation of this article was supported in part by the National Institute of Mental Health of the National Institutes of Health under Award Numbers R01MH101138, R01MH115905, and R21MH112055.

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