

Diet Pill and Laxative Use for Weight Control and Subsequent Incident Eating Disorder in US Young Women: 2001–2016

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Objectives. To investigate the prospective association of diet pill and laxative use for weight control with subsequent first eating disorder diagnosis in young women.

Methods. We used longitudinal data from 10 058 US women spanning 2001 through 2016. We used multivariable logistic regression models, adjusting for age, race/ethnicity, and overweight status to estimate the association between weight-control behaviors and subsequent eating disorder diagnosis.

Results. Among those who had not previously received an eating disorder diagnosis, women who reported diet pill (adjusted odds ratio [AOR] = 5.6; 95% confidence interval [CI] = 3.0, 10.5) or laxative (AOR = 6.0; 95% CI = 4.2, 8.7) use for weight control had higher odds of receiving a subsequent first eating disorder diagnosis within 1 to 3 years than those who did not report using these products.

Conclusions. Use of diet pills or laxatives for weight loss can be dangerous and may be a warning sign that warrants counseling and evaluation for the presence of or risk of developing an eating disorder.

Public Health Implications. Policymakers and public health professionals should develop and evaluate policy initiatives to reduce or prohibit access to diet pills and laxatives abused for weight control. (*Am J Public Health*. Published online ahead of print November 14, 2019; e1–e3. doi:10.2105/AJPH.2019.305390)

Research shows that unhealthy weight-control behaviors, including use of diet pills and laxatives for weight control, can put individuals at risk for the development of eating disorders.¹ Use of over-the-counter diet pills or laxatives is not recommended by health care providers as a healthy way to manage weight and can have severe health consequences.² Despite these risks, use of these products for weight control persists in people of all genders, ages, races/ethnicities, and socioeconomic statuses.^{3,4} An estimated 15%³ of adults report lifetime use of diet pills for weight control. Lifetime use of laxatives for weight control among adults is estimated at 5%⁵ and from 15%⁵ to 62% in those with eating disorders.²

Although use of diet pills and laxatives for weight control is common in people with eating disorders,^{2,6} the prospective association of use of these products and subsequent

diagnosis with an eating disorder is not known. Use of these products could indicate an incipient eating disorder or the presence of a full, yet undiagnosed eating disorder. Alternatively, a causal relationship may exist, as using diet pills and laxatives for weight control could serve as a “gateway” behavior to escalating weight-control practices,⁷ dysregulate normal digestive functioning leading to more disordered eating,⁸ and exacerbate emotion dysregulation through dependence on unhealthy

and ineffective coping (i.e., diet pill and laxative use).⁹

We examined whether use of these products for weight control predicts subsequent clinical diagnosis with an eating disorder among young women who have not previously received an eating disorder diagnosis. We hypothesized that those who reported past-year use of diet pills or laxatives for weight control would be more likely than would those who did not to receive a first diagnosis of an eating disorder on the next wave of data collection (1–3 years later).

METHODS

We examined diet pill use, laxative use for weight control, and eating disorder diagnosis using longitudinal data from young women in the US-based Growing Up Today Study (GUTS), which enrolled children, aged 9 to 15 years in 2 stages: GUTS1 baseline in 1996 (n = 16 882) and GUTS2 baseline in 2004 (n = 10 442). Our analysis included GUTS1 and GUTS2 participants who provided data both on past-year use of these products and eating disorder diagnosis from 2001 to 2016. Participants were asked about their use of diet pills (In the past year, did you use diet pills to lose weight or to keep from gaining weight?) and laxatives (In the past year, did you take laxatives to lose weight or keep from gaining

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weight?) for weight control (coded as binary: “yes” if any past-year use; “no” if no past-year use). Surveys were administered annually or sometimes biennially.

We assessed eating disorder diagnosis on 10 waves. Four waves of surveys assessed diet pill use and 10 waves assessed laxative use. To assess eating disorder diagnosis, participants were asked if a doctor, nurse, or other health care provider had ever told them they had an eating disorder, such as anorexia nervosa or bulimia nervosa (coded as binary: yes/no). We excluded respondents if they reported being told they had an eating disorder before or on the same wave that they first reported diet pill or laxative use, and we also excluded them from subsequent analysis once they reported being told they have an eating disorder.

We conducted multivariable logistic regression modeling with 7564 responses from 6977 participants for diet pill use and 40 305 responses from 10 058 participants for laxative use to estimate the prospective association of past-year diet pill or laxative use for weight control with subsequent first report of an eating disorder diagnosis by a health care provider in the next wave of data collection, which could occur 1 to 3 years after the wave reporting product use. We did not consider first report of eating disorder diagnosis that occurred more than 1 consecutive wave from reported diet pill or laxative use as associated with product use. Models controlled for age, race/ethnicity, and overweight status at the time of response to the eating disorder diagnosis item, and generalized estimating equations accounted for repeated measures and sibling clusters. We conducted the statistical analyses using SAS version 9.2 (SAS Institute, Cary, NC).

RESULTS

We conducted analyses with data from 10 058 women, ranging from 14 to 36 years old, over the observation period from 2001 to 2016. Among 7564 responses included in diet pill analyses, 1.8% of these reporting diet pill use in the past year, compared with 1.0% of those not reporting diet pill use in the past year, subsequently reported a first eating disorder diagnosis from a health care provider in the next wave of data collection. Those

who used diet pills had more than 5 times higher adjusted odds (adjusted odds ratio [AOR] = 5.6; 95% confidence interval [CI] = 3.0, 10.5) of receiving an eating disorder diagnosis from a health care provider within 1 to 3 years than those who did not. Among 40 305 responses included in the laxative use analyses, 4.2% of those reporting laxative use for weight control in the past year, compared with 0.8% of those not reporting past-year laxative use for weight control, subsequently reported an eating disorder diagnosis from a health care provider in the next survey wave of data collection. The appendix contains more information (available as a supplement to the online version of this article at <http://www.ajph.org>). Those who reported laxative use for weight control had 6 times higher adjusted odds (AOR = 6.0; 95% CI = 4.2, 8.7) of receiving an eating disorder diagnosis from a health care provider within 1 to 3 years than those who did not (Table 1).

DISCUSSION

Use of diet pills and laxatives for weight management can have deleterious effects.² In addition to the known risks associated with use of these products for weight control, we found that use of these products can precede first eating disorder diagnosis. Although the prospective association between unhealthy

weight-control behaviors and eating disorder symptoms has been previously documented,^{1,2} to our knowledge, this study is the first to estimate the prospective association of use of diet pills or laxatives for weight control and subsequent first diagnosis with an eating disorder. It is plausible that use of these products may increase the likelihood of eating disorder onset by contributing to behavioral dysregulation of eating,⁷ physiological dysregulation of digestion,⁸ or psychological dysregulation.⁹

Our study has several limitations. Many people with eating disorders are never diagnosed by a health care provider, leading to many missed cases of eating disorders. Relatedly, we controlled for race/ethnicity and overweight status because of well-documented diagnostic bias leading to underdetection of eating disorders in people of color and those at higher weights,¹⁰ but residual confounding may still have affected our results. Future research should investigate possible pathways through which diet pill and laxative use might potentiate vulnerability to eating disorders. In addition, family members, clinicians, coaches, and others who work with young people should be aware that any use of diet pills or laxatives for weight control can be dangerous.² Repeated use of these products is a warning sign that warrants counseling and evaluation for the presence or risk of developing an eating disorder.

TABLE 1—Prospective Adjusted Odds Ratios (AORs) and 95% Confidence Intervals (95% CIs) of Adolescent and Young Adult Women Receiving a New Eating Disorder Diagnosis From a Health Care Provider 1–3 Years After Reporting Diet Pill or Laxative Use for Weight Control: Growing Up Today Study Cohort, United States, 2001–2016

Incident Eating Disorder Diagnosis	Total Responses ^a	Responses Reporting Eating Disorder Diagnosis, ^a No. (%)	AOR ^b (95% CI)
Diet pill model			
Diet pill use, no ^c	6 469	63 (1.0)	1 (Ref)
Diet pill use, yes ^c	1 095	20 (1.8)	5.58 (2.97, 10.49)
Laxative model			
Laxative use, no ^d	39 289	293 (0.8)	1 (Ref)
Laxative use, yes ^d	1 016	43 (4.2)	6.03 (4.18, 8.69)

Note. Study size was n = 10 058 participants.

^aRepeated measures responses from participants in prospective cohort over multiple survey waves.

^bMultivariable models control for age, race/ethnicity, and overweight status. Models estimate odds of new eating disorder diagnosis associated with report of diet pill or laxative use for weight control on previous survey wave.

^cData on diet pill use collected in 4 waves of the survey.

^dData on laxative use collected in 10 waves of the survey.

PUBLIC HEALTH IMPLICATIONS

Results of this study suggest that use of diet pills and laxatives for weight control is predictive of later diagnosis of an eating disorder. Given the myriad health risks of these products well documented in the literature,² combined with our evidence that their use may be prospectively associated with eating disorder diagnosis, public health professionals, policymakers, and community advocates should pursue remedies to reduce access to and use of these products, such as a tax¹¹ on these products as well as legislation to ban the sale of diet pills to minors.¹² **AJPH**

CONTRIBUTORS

J. A. Levinson prepared the article. V. Sarda performed analyses. K. Sonnevile, J. P. Calzo, and S. Ambwani conceptualized the study and prepared the article. S. B. Austin conceptualized the study, created the database, performed analyses, and prepared the article. All authors interpreted results.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest.

HUMAN PARTICIPANT PROTECTION

This study was approved by the Brigham and Women's Hospital human subjects committee.

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