

## Original Article

# DISORDERED EATING BEHAVIORS AND THEIR ASSOCIATION WITH DEPRESSION AND ANXIETY AMONG MEDICAL AND DENTAL STUDENTS: A CROSS-SECTIONAL STUDY

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## ABSTRACT

**Objectives:** The study aims to determine the prevalence of disordered eating behaviors among university-going adolescents and young adults aged 18–25 years, and to evaluate their association with depression, anxiety, and stress.

**Materials and Methods:** A cross-sectional study was conducted on 271 medical and dental students in Karachi. Data was collected through convenience sampling. Stress, anxiety, and depression were measured with DASS-21 scale, and disordered eating behaviors were measured using the Eating Attitudes Test-26 (EAT-26). Correlation between variables were assessed using Spearman's correlation coefficient.

**Results:** With a median EAT-26 score of 23, 67.9% of individuals were screened positive for eating disorder risk. Over half of the students reported moderate to severe stress, 44.3% displayed extremely severe anxiety, and 77.4% indicated some degree of melancholy, indicating a large prevalence of psychological distress. EAT-26 scores were shown to be strongly positively linked with depression ( $r = 0.705$ ), stress ( $r = 0.695$ ), anxiety ( $r = 0.594$ ), and BMI ( $r = 0.640$ ), indicating a considerable correlation between disordered eating patterns, psychological distress, and body weight.

**Conclusion:** University students frequently engage in disordered eating practices, which are closely linked to stress, anxiety, depression, and BMI. To prevent long-term mental health repercussions and lessen the public health cost associated with eating-related psychopathology, it is crucial to address disordered eating attitudes throughout adolescence and early adulthood.

**Key words:** Anxiety, anorexia nervosa, bulimia nervosa, BMI, depression, disordered eating behaviors, stress.

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## INTRODUCTION

Eating disorders are the group of disorders that fall under the umbrella of psychiatric disorders characterized by disordered eating or abnormal

weight-control behaviors<sup>1</sup>. The Diagnostic and Statistical Manual of Mental Disorders divides eating disorders into three major groups: bulimia nervosa, binge eating disorder (BED), and anorexia nervosa<sup>2</sup>. Eating disorders are often correlated with marked fluctuations in body weight and social functioning impairments, both of which significantly alter the quality of life and hamper effective social adaptation<sup>3,4</sup>.

These eating disorders are often preceded by disordered eating behaviors. Disordered eating be-

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haviors are irregular and/or unhealthy eating habits that do not fulfill the conventional diagnostic criteria of an eating disorder but may adversely affect health. Behaviors such as skipping meals regularly, stress-related overeating, chronic dieting, occasional binge eating fall under the umbrella of disordered eating behaviors.

Neumark-Sztainer et al. reported that disordered eating behaviors established during adolescence often track into adulthood and if persistent may result in clinically significant eating disorders<sup>5</sup>. Multiple clinical and psychiatric reviews of disordered eating behaviors stress the importance of the latter as important subclinical markers and precursors for development of eating disorders and associated complications<sup>6</sup>.

Disordered eating attitudes are significantly frequent all around the world with a global prevalence of approximately around 22%<sup>7</sup>. It is acknowledged that eating disorders are prevalent in teenagers and even more so in young adults, even though prevalence differs depending on study groups and classifications<sup>8</sup>.

Due to their increased exposure to information, media, and body image awareness, college students are more likely to develop negative eating habits and attitudes that are influenced by peer pressure, stress, and academic obligations. Numerous studies have demonstrated that adolescents in demanding educational environments are more likely to have disordered eating attitudes.

College students' academic lives are more significantly impacted by disordered eating attitudes that result in mild to severe eating disorders that influence their mental health. Stress levels are higher among college students, which may lead to maladaptive coping mechanisms including disordered eating attitudes. According to a Chinese study, 2.17% of college students had a significant risk of eating problems due to their disordered eating attitudes<sup>9</sup>.

In Pakistan various studies have reported the prevalence of disordered eating behaviors varying from 19.5 to 24.7%<sup>10,11</sup>. The prevalence of eating disorders among teenagers and young adults has risen alarmingly during the last 20 years. It is important to remember that EDs are the 12th most common cause of disability-adjusted life years (DALY) worldwide<sup>12</sup>.

The Global Burden of Diseases, Injuries, and Risk Factors (GBD) study has reported a rise in the estimated number of EDs prevalent cases by 43% and DALYs by 42.89%, from 1990 to 2021<sup>13</sup>. Eating Disorders largely emerge during adolescent age group (ages 10–19)<sup>14</sup> and often continue into youth/early adulthood<sup>15</sup>. Adolescence and early adulthood are critical phases of development which are exhibited by rapid biological, physical and psycho-social changes, making youth particularly susceptible to disordered eating behaviors and mental health disorders<sup>16</sup>.

There is growing evidence that social media platforms often show unrealistic body ideals, which can adversely affect the perceptions regarding body image and encourage unhealthy and disordered eating behaviors<sup>17</sup>.

Eating disorders have complex etiological pathways that may involve biological, psychological, social, and cultural elements. The symptoms of eating disorders have been demonstrated to be triggered or exacerbated by several factors, including BMI, childhood trauma, a poor family environment, excessive parental weight preoccupation, peer relationship stress, and social media preconceptions of ideal body size<sup>18-22</sup>.

Socioeconomic, Mental and Public Health Consequences: Tan J et al. reported strong association of eating disorders (anorexia nervosa, bulimia nervosa, and binge-eating disorder) with anxiety, depression, low self-esteem and suicidality<sup>23</sup>. Similarly, a meta-analysis published by Sohn N et al. reported higher prevalence of suicidal thoughts and self-harm in individuals with eating disorders as compared to controls<sup>24</sup>.

Early detection and timely intervention in adolescents with eating disorders is crucial for limiting the progression of symptoms to more severe mental health conditions. This in turn helps in reducing potential long-term health complications, lowering economic burden, hence reducing the risk of chronic mental disorders later in adulthood<sup>25</sup>.

From a public health and economic perspective, early identification and intervention in eating disorders improve psychological and social resilience<sup>26</sup>.

Additionally, corrective steps also play a role in reducing disability-adjusted life years (DALYs)

associated with stark mental health outcomes. The reduction in DALYs is achieved by reduction in both, years lived with disability and premature mortality. Adolescents and young adults who receive appropriate care are more likely to achieve better physical and mental health, cognitive performance, and educational success, allowing smooth and efficient transitions into the mainstream workforce. By doing this, human capital can be preserved and utilized more efficiently to achieve long-term socioeconomic sustainability<sup>13</sup>.

## **MATERIALS AND METHODS**

The ethical review committee of Ziauddin medical and dental college, Karachi approved the study with the reference code 10890825AICHHS.

A cross-sectional study was conducted from September 2025 till January 2026 to explore the relationship between disordered eating attitudes, depression, anxiety and stress among college students. The sample size was calculated by using open Epi software, which was [270-271] based on a reported prevalence of disordered eating of roughly 22–25% in similar groups, a confidence interval width of  $\pm 5\%$ , and a 95% confidence level (40). Students, ages 18 to 25 years, were enrolled using convenience sampling from a medical and dental college in Karachi. All the participants who were enrolled gave written consent.

**Inclusion criteria:** Students of pre-clinical years including 1st year & 2nd year MBBS and 1st year & 2nd year BDS, aged 18-25 years. Participants without a prior diagnosis of any psychiatric disorder.

**Exclusion criteria:** Individuals with diagnosed psychiatric or neurological disorders (excluding self-reported symptoms of depression, anxiety, and Stress). Individuals currently undergoing therapy specifically addressing any mental health related conditions.

Every participant finished a self-reported screening package that included the DASS-21 questionnaire and the eating attitude test (EAT-26).

DASS 21 questionnaire is a self report questionnaire designed to measure depression, anxiety, and stress over the past week. It has 21 items divided into three subscales (7 items each for depression, anxiety, and stress). Each item is rated on a 4 point Likert scale. Scores from each subscale are summed and then multiplied by 2 to make comparable to the full

version of DASS-42. The severity of each mental health problem was categorized as follows:

Depression: Normal <10, Mild=10-13, Moderate=14-20, Severe=21-27, Extremely severe=>28

Anxiety: Normal = 0-7, Mild= 8-9, Moderate=10-14, Severe=15-19, Extremely severe=>20

Stress: Normal = 0-14, Mild=15-18, Moderate=19-25, Severe=26-33, Extremely severe=>34

EAT-26 is a standardized self reported questionnaire used for assessing symptoms of eating disorders. It had 26 items divided into 3 domains: dieting, bulimia and food preoccupation, oral control. Each item was rated on a 6 point Likert scale (from “Always” to “Never”). All the responses were totaled to yield a final score. A score of >20 was considered as at risk for an eating disorder.

The data was collected through self-administered questionnaires using convenience sampling. Both questionnaires were administered in English. Since the participants were university students and understood English language well therefore English version of the questionnaires were used. For calculation of body mass index, height and weight were used which were self-reported by the participants.

Stata version 17 was used to enter and analyze the data. For qualitative variables, pertinent frequency and percentages were computed; for quantitative variables, means  $\pm$  standard deviations were computed. Spearman correlation coefficient was calculated to ascertain the relationship between risk of disordered eating and depression, anxiety and stress.

## **RESULT**

A total of 271 university students participated in the study, among which 179 were females (66.1%) and 92 were males (33.9%). Most of the participants were MBBS students (71.6%), while BDS students accounted for 28.4%. The median age of participants was 20 years. The median BMI for the study participants was 24.6. Weights and heights were provided by the candidates through EAT 26, and BMI was calculated by the formula.

The Shapiro–Wilk test was applied to assess normality, and it demonstrated that age, BMI, EAT-26 scores, depression, anxiety, and stress scores were non-normally distributed ( $p < 0.05$ ). In view of the results of normality, non-parametric tests were

applied.

Furthermore, approximately two thirds of students (67.9%) were screened positive for eating disorder risk (Table 1). The median EAT-26 score was reported to be 23. These findings demonstrated the greater frequency of unhealthy eating attitudes among research participants.

Additional understanding of certain eating patterns was obtained through behavioral analysis. About 40% of students said they occasionally engaged in binge eating. 15% of research participants acknowledged using self-induced vomiting as a weight control strategy. 12.6% of individuals gave an affirmative response when asked if they used diuretics, laxatives, or diet medications. 17 (6.7%) of the study participants exercised for more than 60 minutes per day as a weight-management technique. Approximately 41(15.1%) reported losing more than 20 pounds weight in the preceding six months.

Among the study cohort, 77.4% demonstrated at least some degree of depression ranging from mild

to severe depression. Of these, 53(19.6%) of the students reported extremely severe depression, while 20.7% had severe symptoms of depression. Extremely severe anxiety was reported by 120 (44.28%) of the study participants. Stress levels were also found to be elevated, with half of the participants reporting moderate to severe stress. These findings suggested that a considerable percentage of students were facing mental health problems. Table 2 summarizes the descriptive statistics of depression, anxiety and stress according to severity.

Comparisons between MBBS and BDS students showed that BDS students had higher median BMI and EAT-26 scores. Correlation analysis showed strong positive correlation between disordered eating attitudes and mental health problems. A strong correlation was observed between EAT-26 scores and depression ( $r=0.705$ ), stress ( $r=0.695$ ) anxiety ( $r = 0.594$ ), and BMI ( $r = 0.640$ ). These correlations highlighted the interconnectedness of eating behaviors, body mass index, and mental health. Table 3

## DISCUSSION

The study revealed that 67.9% of participants were screened positive for eating disorder risk based on EAT-26 scores. This prevalence is much higher than the statistics reported in previous studies, that varied from 20–40% among university students<sup>9-11</sup>. The higher risk among our study participants may indicate academic stress, concerns regarding body image, and socio-cultural beliefs and expectations. Behavioral manifestations such as binge eating (40%), self-induced vomiting (15%), and misuse of weight-control methods (12.6%) further emphasize the severity of maladaptive coping strategies. In contrast to the above, individuals with psychological distress are more prone to having disordered eating behaviors. There is bidirectional relationship

**Table 1: Frequency of Eating attitudes (N=271)**

Eating attitude	n	(%)
At risk (>20)	184	(67.9)
Not at risk (<20)	87	(32.1)

**Table 2: Descriptive statistics of depression, anxiety and stress according to severity**

Severity Category	Depression n (%)	Anxiety n (%)	Stress n (%)
Normal	61 (22.51)	37 (13.65)	77 (28.41)
Mild	32 (11.81)	22 (8.12)	25 (9.23)
Moderate	69 (25.46)	44 (16.24)	69 (25.46)
Severe	56 (20.66)	48 (17.71)	69 (25.46)
Extremely Severe	53 (19.56)	120 (44.28)	31 (11.44)

**Table 3: Correlation between EAT 26 score, Depression, Anxiety, Stress and BMI**

	Eat 26 score	Depression	Anxiety	Stress	BMI
Eat 26 score	$r = 1.0000$				
Depression	$r = 0.7059$ $p = 0.0000$	1.0000			
Anxiety	$r = 0.5946$ $p = 0.0000$		1.0000		
Stress	$r = 0.6953$ $p = 0.0000$			1.0000	
BMI	$r = 0.6402$ $p = 0.0000$				1.0000

between disordered eating and mental health symptoms, where psychological distress was associated with higher EAT-26 scores, and vice versa. Prior research has shown that people with high levels of stress frequently utilized emotional overeating as a coping strategy<sup>28-29</sup>.

Participants' psychological profiles were equally troubling. While 44.3% of respondents reported having severe anxiety, 77.4% reported having some form of depression. Moderate to severe stress was indicated by about half of the study participants. These findings are like those reported in previous studies<sup>30-31</sup>.

Correlation analysis revealed strong positive associations between EAT-26 scores and depression ( $r = 0.705$ ), stress ( $r = 0.695$ ), anxiety ( $r = 0.594$ ), and body mass index (BMI;  $r = 0.640$ ). These findings emphasize the relationship between psychological distress, disordered eating behaviors, and body mass index. It has been widely reported in the previous studies that among adolescents and young adults, higher EAT-26 scores are associated with depression, anxiety, and stress<sup>32-33</sup>. Higher Body mass indices and body dissatisfaction have been identified as contributing factors for disordered eating habits and poorer mental health outcomes<sup>34-35</sup>.

However, these associations are not consistent across the board. Various studies have reported weak or no correlations between BMI and disordered eating behaviors. These results suggest that psychological distress and disordered eating behaviors may occur independent of weight parameters<sup>36-37</sup>. Additionally, various studies have reported that gender, culture and socioeconomic status may also moderate the relationship between psychological symptoms and eating behaviors, hence demonstrating weak correlations between anxiety, depression, and EAT-26 scores<sup>38-39</sup>. The inconsistencies indicate that while strong interconnections exist, the relationship is still complex and context dependent.

The results of this study highlight the importance of identifying psychological discomfort and disordered eating attitudes in young people. To identify high-risk individuals, schools and institutions must implement early screening programs and interventions. Our recommendation is to extend these interventions beyond clinical care. Preventive measures like stress management seminars, mental health

literacy awareness programs, and the availability of student counselors in educational institutions at school levels can help improve the current situation. These interventions will foster a culture of resilience and encourage healthy coping strategies. Integration of nutritional education with psychological support services can be vital in modifying the current burden of disordered eating behaviors and mental health problems.

## **LIMITATIONS**

While this study provides valuable data, it has limitations. First, the results may not be as applicable to students from other colleges, universities, or geographical areas because the study was limited to a single college. Second, selection bias might have been created because convenience sampling was used. Because the participants were chosen based on their availability and desire to take part, they might not be typical of all students. In terms of eating attitudes, mental health, health awareness, or readiness to provide personal information, students who opted to participate may differ from those who did not. Future research should employ probability-based sampling techniques and should use longitudinal designs to enhance the representativeness and robustness of the results.

## **CONCLUSION**

According to this study, more than two-thirds of medical and dentistry students were screened positive to be at risk for disordered eating practices. The intimate relationship between eating habits and psychological well-being was highlighted by a strong positive correlation found between disordered eating attitudes and depression, anxiety, stress, and BMI. To slow the development of disordered eating and its long-term health effects, these results highlight the necessity of early screening, integrated mental health care, and preventive interventions inside academic institutions.

## **REFERENCES**

1. Treasure J, Duarte TA, Schmidt U. Eating disorders. *Lancet*. 2020;395(10227):899–911.
2. Krueger RF. Eating disorders. In: *Diagnostic and Statistical Manual of Mental Disorders (DSM 5®)*. American Psychiatric Association; 2013.
3. Hay P, Mitchison D, Collado AE, González Chica D, Stocks N, Touyz S. Burden and health related qual-

- ity of life of eating disorders. *J Affect Disord.* 2023; 326:138–46.
4. Pohjola V, Rissanen A, Roine R, Sintonen H. Quality of life in eating disorders. *Eur Eat Disord Rev.* 2016;24(3):223–30.
  5. Neumark Sztainer D, Wall M, Larson NI, Eisenberg ME, Loth K. Dieting and disordered eating behaviors from adolescence to young adulthood: Findings from a 10 year longitudinal study. *J Am Diet Assoc.* 2011;111(7):1004–11.
  6. Indian Journal of Psychiatry. Reviews on disordered eating behaviors as subclinical markers. *Indian J Psychiatry.* n.d.
  7. Galmiche M, Déchelotte P, Lambert G, Tavolacci MP. Prevalence of eating disorders over the 2000–2018 period: A systematic literature review. *Am J Clin Nutr.* 2019;109(5):1402–13.
  8. López-Gil JF, García-Hermoso A, Smith L, Firth J, Trott M, Mesas AE, Jiménez-López E, Gutiérrez-Espinoza H, Tárraga-López PJ, Victoria-Montesinos D. Global Proportion of Disordered Eating in Children and Adolescents: A Systematic Review and Meta-analysis. *JAMA Pediatr.* 2023 Apr 1;177(4):363-372. doi: 10.1001/jamapediatrics.2022.5848.
  9. Yulin Chai , Guoqi Fu, Yanxu Liu , Qi Song , Cailing Xue , Sheng Luo . The relationship between stress, anxiety and eating behavior among Chinese students: a cross-sectional study. *Front. Public Health,* 2024;12. 1-8. <https://doi.org/10.3389/fpubh.2024.1466700>
  10. Eating Disorders and Disordered Eating Behaviors Among Undergraduate Students in Pakistan as Measured by Eating Disorder Examination Questionnaire (EDE Q). *Khyber Med Univ J.* 2024. doi:10.35845/kmu.j.2024.23315.
  11. Journal of Spark. Eating disorders among Pakistani undergraduates. *J Spark.* 2024. Available from: <https://journalofspark.com/journal/index.php/JSpark/article/view/618>
  12. GBD 2019 Diseases and Injuries Collaborators. Eating disorders as 12th most common cause of DALYs worldwide. *Lancet.* 2020.
  13. GBD 2021 Eating Disorders Collaborators. Global, regional, and national burdens of eating disorders in adolescents and young adults aged 10–24 years from 1990 to 2021: A trend analysis. *Lancet Psychiatry.* 2023;10(3):181–92.
  14. Herpertz Dahlmann B. Adolescent eating disorders: Definitions, symptomatology, epidemiology and comorbidity. *Child Adolesc Psychiatr Clin N Am.* 2015;24(1):177–96.
  15. Lee Y, Lin PY, Huang C. Eating disorders in early adulthood. *Psychiatry Res.* 2014;220(1–2):475–81.
  16. Mabe PA, Forney KJ, Keel PK. Do you “like” me? Facebook use maintains eating disorder risk. *Int J Eat Disord.* 2014;47(5):516–23.
  17. Social media and body image: Unrealistic ideals and disordered eating. Springer. 2022. Available from: <https://link.springer.com/article/10.1007/s40894-022-00179-4>
  18. Mora M, et al. Risk factors for eating disorders. *Front Psychiatry.* 2022; 13:832–45.
  19. Hazzard VM, et al. Childhood trauma and eating disorders. *J Eat Disord.* 2019;7(1):1–10.
  20. Pike KM, et al. Family environment and eating disorders. *Int J Eat Disord.* 2008;41(1):1–9.
  21. Stice E. Risk and maintenance factors for eating pathology: A meta analytic review. *Psychol Bull.* 2002;128(5):825–48.
  22. Yilmaz R, et al. Peer stress and eating disorders. *Eat Behav.* 2019; 32:23–9.
  23. Tan J, et al. The association between eating disorders and mental health: An umbrella review. *J Eat Disord.* 2021;9(1):1–15.
  24. Sohn N, et al. Non suicidal self injury, suicidal thoughts and behaviors in individuals with an eating disorder relative to healthy and psychiatric controls: A systematic review and meta analysis. *Psychiatry Res.* 2020; 284:112–8.
  25. National Institute for Health Research. Prevention and early intervention in eating disorders: Findings from a rapid review. NIHR Journals Library. 2021.
  26. Le LKD, Hay P, Mihalopoulos C. Economic evidence for prevention and treatment of eating disorders: An updated systematic review. *J Ment Health Policy Econ.* 2018;21(2):55–68.
  27. Puccio F, Fuller-Tyszkiewicz M, Ong D, Krug I. A systematic review and meta-analysis on the longitudinal relationship between eating pathology and depression. *Int J Eat Disord.* 2016 May;49(5):439-54. doi: 10.1002/eat.22506. Epub 2016 Feb 3. PMID: 26841006
  28. Understanding changes in eating behavior during the transition to university from a self-determination theory perspective: a systematic review. Maillet MA, Grouzet FME. *J Am Coll Health.* 2023 Feb-Mar;71(2):422-439. doi: 10.1080/07448481.2021.1891922. Epub 2021 Jul 22. PMID: 34292133
  29. Alexatou O, Papadopoulou SK, Mentzelou M, Deligiannidou GE, Dakanalis A, Giaginis C. Exploring the Impact of Emotional Eating Among University Students: A Literature Review. *Med Sci (Basel).* 2025 May 5;13(2):56. doi:10.3390/medsci13020056.
  30. Nadeem T, Gul B, Chhapra R, et al. Eating Disorders in Medical and Nursing Students of a Private University: Relationship with Depression, Anxiety, and Stress. *J Coll*

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- Physicians Surg Pak. 2023;33(7):823-827.
31. Costarelli V, Patsai A. Academic examination stress increases disordered eating symptomatology in female university students. *Eat Weight Disord.* 2013;17:e164–e169.
  32. Santos, M., Richards, C. S., & Bleckley, M. K. (2017). Disordered eating and symptoms of depression and anxiety in adolescents. *Eating Behaviors*, 26, 73–79.
  33. Solmi, F., et al. (2021). Age at onset of mental disorders. *Molecular Psychiatry*, 26, 281–295.
  34. Ponce, O., et al. (2020). Body dissatisfaction, BMI, and eating disorder risk among young adults. *Body Image*, 32, 140–148.
  35. Ward, Z. J., et al. (2019). Global prevalence of eating disorders in 2017. *The Lancet Psychiatry*, 6, 629–640.
  36. van Son GE, van Hoeken D, van der Graaf Y, Hoek HW. Psychopathology and eating disorders in adolescents. *Eur Eat Disord Rev.* 2006;14(5):369 78.
  37. Quick VM, Byrd Bredbenner C. Disordered eating, mental health, and weight status. *J Am Coll Nutr.* 2013;32(5):275 82.
  38. Keel PK, Forney KJ, Brown TA, Heatherton TF. Risk factors for eating disorders: an examination of sociocultural, familial, and individual influences. *Psychol Med.* 2017;47(7):1172 85.
  39. Swami V, Frederick DA, Aavik T, Alcalay L, Allik J, Anderson D, et al. The influence of cultural and individual factors on body weight and shape preferences: a cross cultural study. *Int J Eat Disord.* 2010;43(4):309 17
  40. Fatima W, Ahmad LM. Prevalence of disordered eating attitudes among adolescent girls in Arar City, Kingdom of Saudi Arabia. *Health psychology research.* 2018 Nov 29;6(1):7444.

CONFLICT OF INTEREST  
Authors declare no conflict of interest.  
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### AUTHORS' CONTRIBUTION

The following authors have made substantial contributions to the manuscript as under:

Conception or Design: AI, AI, SZA, FS

Acquisition, Analysis or Interpretation of Data: AI, AI, SZA, FS

Manuscript Writing & Approval: AI, AI, SZA, FS

All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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