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Have your progress notes written for you automatically Try It Out for FREE Behavioral health screening tools offer a structured way to assess, monitor, and guide client treatment. These tools help identify mental health challenges early, track progress over time, and support clinical decision-making. Here's a list of the top 10 behavioral health screening tools for therapists, complete with practical examples and tips for effective use. 1. PHQ-9 (Patient Health Questionnaire-9): The PHQ-9 is one of the most widely used tools for screening and monitoring depression severity in adults. It consists of nine items based on DSM-5 criteria for major depressive disorder, making it both diagnostic and actionable (Kroenke et. al. 2001). Example: Marco reports feeling low energy and experiencing poor sleep for weeks. He is often awake most of the night and has difficulty getting out of bed each morning. He has been late to work several times and faces losing his job. His employer referred him to a counselor, who administered the PHQ-9, and it revealed a score of 17 (indicating moderate to severe depression). Marco's counselor recommended Cognitive Behavioral Therapy (CBT) and a psychiatric evaluation for medication. Automated Documentation and Session Analytics - Mentalyc Insurance & HIPAA Compliant SMART Treatment Plans SOAP, DAP, BIRP, EMDR, Intake Notes & More Individual, Couple, Child, Group Family therapy types Therapeutic Alliance Insights Recording, Dictation, Text & Upload Inputs Tip: Use the PHQ-9 at intake and repeat every 4–6 weeks to track symptom changes and guide treatment adjustments. 2. GAD-7 (Generalized Anxiety Disorder-7). The GAD-7 is a quick, seven-item measure designed to evaluate anxiety severity in teens and adults. It's versatile enough to detect generalized anxiety as well as other anxiety disorders, such as social anxiety or panic disorder (Spitzer et al. 2006). Example: Marta, a 19-year-old college student, struggles with test anxiety. She saw a counselor on campus and scored a 14 on the GAD-7, indicating moderate anxiety. The counselor used this information to focus therapy on relaxation techniques and time management strategies. Tip: Pair the GAD-7 with open-ended questions about anxiety triggers to create a comprehensive treatment plan. 3. ACE Questionnaire (Adverse Childhood Experiences). The ACE questionnaire for teens and adults explores ten categories of adverse childhood experiences, such as abuse, neglect, and household dysfunction (Felitti et al., 1998). A higher score correlates with an increased risk of mental health challenges and chronic illnesses. Take your time back! Get your progress notes done automatically Example: Jordan has a history of substance use and has an ACE score of 7. His therapist incorporates trauma-informed care and EMDR therapy into the treatment plan to address underlying issues. Tip: Approach high ACE scores with sensitivity, emphasizing resilience and protective factors rather than focusing solely on risk. 4. AUDIT (Alcohol Use Disorders Identification Test). The AUDIT is a 10-question tool that evaluates alcohol consumption, dependence symptoms, and related problems in adults (Babor et al., 1989). It's ideal for primary care and behavioral health settings. Example: Maya casually mentions drinking nightly to her therapist. She's been in therapy for two months following the end of a romantic relationship. The therapist administered the AUDIT, and Maya's score was 12, indicating hazardous drinking. The therapist used Motivational Interviewing (MI) to explore Maya's readiness for change and developed a harm-reduction plan. Tip: Normalize the use of the AUDIT by explaining that alcohol use is a routine part of mental health assessments, reducing client defensiveness. 5. DASS-21 (Depression, Anxiety, and Stress Scale – 21 Items). The DASS-21 provides a comprehensive view of adult clients' emotional states by measuring three dimensions—depression, anxiety, and stress (Lovibond & Lovibond, 1995). It helps identify comorbid conditions. Example: Joseph complains of irritability and concentration problems during his initial therapy session. The DASS-21 reveals high scores in stress and moderate scores in depression. The therapist uses these results to focus on stress management techniques and coping strategies so Joseph can better manage his high-stress corporate job. Tip: Use the DASS-21 for clients presenting with overlapping symptoms to pinpoint the most pressing areas for intervention. 6. Vanderbilt ADHD Diagnostic Rating Scale. This scale is a parent- and teacher-completed questionnaire that screens for ADHD symptoms and co-occurring issues in children ages 6-12, such as conduct problems or anxiety (Wolraich et al., 2003). Increase your practice's revenue and reduce therapist burnout Example: 9-year-old Christopher struggles academically and has difficulty sitting still and playing well with other children. He scores high in hyperactivity/impulsivity but low in inattention. The school counselor works with the family and teacher to implement behavioral strategies and accommodations. 7. Columbia-Suicide Severity Rating Scale (C-SSRS). The C-SSRS is a short, structured interview tool designed to identify suicide risk factors in all ages, such as ideation, plans, and prior attempts (Posner et al., 2011). Its simplicity and effectiveness make it a go-to resource in crisis situations. Tip: Collect responses from both parents and teachers to get a fuller picture of a child's behavior across settings. Example: Gloria is a 16-year-old high school student who reports feeling hopeless. The C-SSRS reveals passive suicidal ideation but no immediate plan, prompting her therapist to create a safety plan and increase session frequency. Tip: Use the C-SSRS routinely with clients at higher risk for suicide, such as those with mood disorders or recent trauma. 8. SDQ (Strengths and Difficulties Questionnaire). The SDQ evaluates emotional symptoms, conduct problems, hyperactivity, peer relationships, and pro-social behavior in children and teens aged 4-17. It's a quick and accessible way to screen for potential issues in school-aged children. Example: A teacher reports 11-year-old Alberto's recent aggressive outbursts. The SDQ highlights difficulties in peer relationships and pro-social behavior, guiding Alberto's therapist to focus on social skills training. Tip: Pair the SDQ with interventions emphasizing the child's strengths, reinforcing resilience while addressing challenges. 9. PCL-5 (Posttraumatic Stress Disorder Checklist for DSM-5). The PCL-5 is a self-report measure for adults that assesses PTSD symptoms based on DSM-5 criteria (Weathers et al., 2013). It's ideal for tracking symptom severity and evaluating treatment outcomes. Example: William is a 39-year-old veteran reporting nightmares and flashbacks. He completes the PCL-5 and scores 44, suggesting probable PTSD. William's therapist begins trauma-focused therapy (Prolonged Exposure and EMDR). Tip: Use the PCL-5 periodically to measure progress during trauma-focused interventions. Try Mentalyc Free for 14 Days 10. Yale-Brown Obsessive Compulsive Scale (Y-BOCS). The Y-BOCS is considered the gold standard for measuring obsessive-compulsive symptoms in adults and teens (Goodman, et al. 1989). It evaluates the severity and interference of obsessions and compulsions. Example: Hunter is a 22-year-old mechanic with compulsive handwashing and counting behavior who completes the Y-BOCS and scores 26, indicating severe OCD. Hunter's therapist uses Exposure and Response Prevention (ERP) therapy, monitoring symptom changes with repeat administrations of the Y-BOCS. Tip: Use the Y-BOCS to set specific treatment goals, such as reducing the time spent on compulsive behaviors. Selecting the appropriate assessment and screening tools is a critical step in providing effective, evidence-based treatment. The right tool aligns with clients' needs and integrates seamlessly into a therapist's workflow. Here are key considerations and strategies: 1. Understanding the Client Population. The first step in selecting a tool is knowing clients' demographics and presenting issues. Using the most appropriate tools ensures that assessments are relevant, accurate, and culturally appropriate. Consider the following: Client Age: Some tools are designed for specific age groups. For example, the Vanderbilt Assessment Scale effectively evaluates ADHD symptoms in pediatric clients. Presenting Issues: If a client presents with trauma-related concerns, the PCL-5 provides a targeted approach for PTSD symptoms. For clients with mood or anxiety concerns, the DASS-21 offers a broad-spectrum view. 2. Consider Practicality. In busy practices, time and ease of use are crucial. Select tools that are easy to administer and interpret, ensuring they don't overwhelm workflow or burden clients. Administration Time: Tools like the PHQ-9 are quick to administer, taking only a few minutes, making them ideal for routine screenings. Comprehensive assessments like the MMPI-2 are better suited for in-depth evaluations when time permits. Ease of Interpretation: Look for tools with clear scoring systems and actionable results. Like many digital platforms, tools with automated scoring options or built-in interpretive guidance streamline the process. 3. Treatment Plan Integration. Assessment tools are most valuable when their results directly inform treatment plans. Use screening outcomes to identify key focus areas, set measurable goals, and track progress over time. Guiding Interventions: If a client's GAD-7 score indicates severe anxiety, it can guide the decision to prioritize anxiety-focused interventions, such as CBT techniques or relaxation training. Measuring Progress: Re-administering tools at regular intervals allows therapists to measure changes and evaluate the effectiveness of interventions. For instance, tracking a client's progress with the PHQ-9 highlights improvements or areas requiring further attention. 4. Combine Tools. No single tool captures the full complexity of a client's experiences. Combining tools provides a more comprehensive understanding of their mental health. Broad vs. Specific Assessments: Use tools like the DASS-21 for an overview of depression, anxiety, and stress levels, then follow up with a focused tool like the PCL-5 for trauma-specific concerns. Layering Assessments: Pairing screening tools with functional or behavioral assessments can offer additional insights. For example, combining the Connor-Davidson Resilience Scale with the PHQ-9 might highlight a client's strengths alongside their challenges. 5. Factor in Cultural and Linguistic Considerations. Ensure the tools are validated for diverse populations and available in languages matching clients' needs. Using culturally sensitive tools avoids bias and improves the accuracy of results.6. Leverage Technology When Possible. Digital tools and platforms enhance clinical practice by automating scoring, tracking visual progress, and integrating assessments into electronic health records (EHR). This saves time and ensures that results are easily accessible for ongoing treatment planning. Normalize the Process: Explain that screening tools are part of standard practice to reduce client apprehension. Discuss Results: Share the results with clients to enhance collaboration and transparency in treatment planning. Use Technology: Many tools are available digitally, streamlining administration and scoring. Platforms like TherapyNotes or SimplePractice offer integrated options. Reassess Regularly: Screening tools are not one-and-done! Use them throughout treatment to track progress and adjust interventions. Behavioral health screening tools are indispensable for therapists because they offer a structured, evidence-based way to assess and address mental health concerns. Therapists provide more targeted and effective treatment by incorporating tools like the PHQ-9, GAD-7, and PCL-5 into their practice. Let these tools guide clinical decisions, enhance client outcomes, and elevate clinical practice to new levels of professionalism and effectiveness. Babor, T. F., de la Fuente, J. R., Saunders, J., & Grant, M. (1989). 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Doel, Psychotherapist After graduating from the University of Pennsylvania with her degree in Counseling Psychology, Angela M. Doel worked as a psychotherapist, primarily with families and couples. Her research interests include interpersonal communication, and in 2020, she published The Couples Communication Workbook: Therapeutic Homework Assignments to Foster Supportive Relationships. Along with publishing ten other mental health workbooks, Ms. Doel has written hundreds of mental health articles, blog posts, white papers, and psychotherapy assignment worksheets for adults, teens, and couples. Background: To better manage patients with a wide range of mental health problems, general practitioners would benefit from diagnostically accurate and time-efficient screening tools that comprehensively assess mental illness. Therefore, the aim of this systematic review was to identify screening tools that either take a multiple-mental disorder or a transdiagnostic approach. As primary and secondary outcomes, diagnostic accuracy and time efficiency were investigated. Methods: The data bases MEDLINE, Embase, Cochrane Library, Psyndex and PsycINFO were searched. Studies reporting on multiple-mental disorder or transdiagnostic screening tools used in primary care with adult patients were included. Sensitivity, specificity, positive and negative predictive value served as measures of diagnostic accuracy. Time efficiency was evaluated by the number of items of a screening tool and the time required for its completion and evaluation. Results: Eleven studies met the inclusion criteria. The majority of screening tools assessed multiple mental disorders separately. A sub-group of screening tools took a transdiagnostic approach by examining the spectrum of mood, anxiety and stress-related disorders. One screening tool used internalised, cognitive/somatic and externalised dysfunction as transdiagnostic domains of mental illness. Mostly, a sufficient sensitivity and specificity was reported. All screening tools were found to be time efficient. Conclusion: The eleven identified screening tools can support general practitioners to identify patients with mental health problems. However, there was great heterogeneity concerning their diagnostic scope of psychopathology. Further screening tools for primary care are needed that target broad constructs of mental illness, such as transdiagnostic factors or personality dysfunction. Keywords: Mental illness; general practitioner; index test; primary care; screening; transdiagnostic approach. Mental Health America (MHA) – founded in 1909 – is the nation's leading community-based nonprofit dedicated to addressing the needs of those living with mental illness and to promoting the overall mental health of all Americans. Our work is driven by our commitment to promote mental health as a critical part of overall wellness, including prevention services for all; early identification and intervention for those at risk; integrated care, services, and supports for those who need it; with recovery as the goal. MHA Screening is made possible through the generous contributions of individuals and organizations that share our vision of mental health for all. This program is supported, in part, through philanthropic contributions from Abbvie, Alkermes, Elevance Health Foundation, Johnson & Johnson, Neurocrine Biosciences, The NFL Foundation, Sage Therapeutics, Takeda Lundbeck Alliance, and Teva. Mental illness characterized by abnormal eating habits that adversely affect health Medical conditionEating disorderSpecialtyPsychiatry, clinical psychologySymptomsAbnormal eating habits that negatively affect physical or mental health[1]ComplicationsAnxiety disorders, depression, substance abuse,[2] arrhythmia, heart failure and other heart problems, acid reflux (gastroesophageal reflux disease or GERD), gastrointestinal problems, low blood pressure (hypotension), organ failure and brain damage, osteoporosis and tooth damage, severe dehydration and constipation, stopped menstrual cycles (amenorrhea), infertility, stroke[3]TypesBinge eating disorder, anorexia nervosa, bulimia nervosa, pica, rumination disorder, avoidant/restrictive food intake disorder, night eating syndrome[1]CausesUnclear[4]Risk factorsGastrointestinal disorders, history of sexual abuse, bullying, social media, being a dancer or gymnast[5][6][7][8]TreatmentCounseling, proper diet, normal amount of exercise, medications[2] An eating disorder is a mental disorder defined by abnormal eating behaviors that adversely affect a person's physical or mental health.[1] These behaviors may include eating too much food or too little food. Types of eating disorders include binge eating disorder, where the person suffering keeps eating large amounts in a short period of time typically while not being hungry; anorexia nervosa, where the person has an intense fear of gaining weight and restricts food or overexercises to manage this fear; bulimia nervosa, where individuals eat a large quantity (binging) then try to rid themselves of the food (purging); pica, where the patient eats non-food items; rumination syndrome, where the patient regurgitates undigested or minimally digested food; avoidant/restrictive food intake disorder (ARFID), where people have a reduced or selective food intake due to some psychological reasons; and a group of other specified feeding or eating disorders.[1] Anxiety disorders, depression and substance abuse are common among people with eating disorders.[2] These disorders do not include obesity.[1] People often experience comorbidity between an eating disorder and OCD.[9] The causes of eating disorders are not clear, although both biological and environmental factors appear to play a role.[2][4] Cultural idealization of thinness is believed to contribute to some eating disorders.[4] Individuals who have experienced sexual abuse are also more likely to develop eating disorders.[7] Some disorders such as pica and rumination disorder occur more often in people with intellectual disabilities.[1] Treatment can be effective for many eating disorders.[2] Treatment varies by disorder and may involve counseling, dietary advice, reducing excessive exercise, and the reduction of efforts to eliminate food.[2] Medications may be used to help with some of the associated symptoms.[2] Hospitalization may be needed in more serious cases.[2] About 70% of people with anorexia and 50% of people with bulimia recover within five years.[10] Only 10% of people with eating disorders receive treatment, and of those, approximately 80% do not receive the proper care. Many are sent home weeks earlier than the recommended stay and are not provided with the necessary treatment.[11] Recovery from binge eating disorder is less clear and estimated at 20% to 60%.[10] Both anorexia and bulimia increase the risk of death.[10] Estimates of the prevalence of eating disorders vary widely, reflecting differences in gender, age, and culture as well as methods used for diagnosis and measurement.[12][13][14] In the developed world, anorexia affects about 0.4% and bulimia affects about 1.3% of young women in a given year.[1] Binge eating disorder affects about 1.6% of women and 0.8% of men in a given year.[1] According to one analysis, the percent of women who will have anorexia at some point in their lives may be up to 4%, or up to 2% for bulimia and binge eating disorders.[10] Rates of eating disorders appear to be lower in less developed countries.[15] Anorexia and bulimia occur nearly ten times more often in females than males.[1] The typical onset of eating disorders is in late childhood to early adulthood.[2] Rates of other eating disorders are not clear.[1] These eating disorders are specified as mental disorders in standard medical manuals, including the ICD-10 and the DSM-5. Anorexia nervosa (AN) is the restriction of energy intake relative to requirements, leading to significantly low body weight in the context of age, sex, developmental trajectory, and physical health. It is accompanied by an intense fear of gaining weight or becoming fat, as well as a disturbance in the way one experiences and appraises their body weight or shape. There are two subtypes of AN: the restricting type, and the binge-eating/purging type. The restricting type describes presentations in which weight loss is attained through dieting, fasting, and/or excessive exercise, with an absence of binge/purge behaviors. The binge-eating/purging type describes presentations in which the individual with the condition has engaged in recurrent episodes of binge-eating and purging behavior, such as self-induced vomiting, misuse of laxatives, and diuretics. Pubertal and post-pubertal females with anorexia often experience amenorrhea, that is the loss of menstrual periods, due to the extreme weight loss these individuals face. Although amenorrhea was a required criterion for a diagnosis of anorexia in the DSM-IV, it was dropped in the DSM-5 due to its exclusive nature, as male, post-menopause women, or individuals who do not menstruate for other reasons would fail to meet this criterion.[16] Females with bulimia may also experience amenorrhea, although the cause is not clear.[17] Bulimia nervosa (BN) is characterized by recurrent binge eating followed by compensatory behaviors such as purging (self-induced vomiting, eating to the point of vomiting, excessive use of laxatives/diuretics, or excessive exercise). Fasting may also be used as a method of purging following a binge. However, unlike anorexia nervosa, body weight is maintained at or above a minimally normal level. Severity of BN is determined by the number of episodes of inappropriate compensatory behaviors per week. Binge eating disorder (BED) is characterized by recurrent episodes of binge eating without use of inappropriate compensatory behaviors that are present in BN and AN binge-eating/purging subtype. Binge eating episodes are associated with eating much more rapidly than normal, eating until feeling uncomfortably full, eating large amounts of food when not feeling physically hungry, eating alone because of feeling embarrassed by how much one is eating, and/or feeling disgusted with oneself, depressed or very guilty after eating. For a BED diagnosis to be given, marked distress regarding binge eating must be present, and the binge eating must occur an average of once a week for 3 months. Severity of BED is determined by the number of binge eating episodes per week.[1] Pica is the persistent eating of nonnutritive, nonfood substances in a way that is not developmentally appropriate or culturally supported. Although substances consumed vary with age and availability, paper, soap, hair, chalk, paint, and clay are among the most commonly consumed in those with a pica diagnosis. There are multiple causes for the onset of pica, including iron-deficiency anemia, malnutrition, and pregnancy, and pica often occurs in tandem with other mental health disorders associated with impaired function, such as intellectual disability, autism spectrum disorder, and schizophrenia. In order for a diagnosis of pica to be warranted, behaviors must last for at least one month. Rumination disorder encompasses the repeated regurgitation of food, which may be re-chewed, re-swallowed, or spit out. For this diagnosis to be warranted, behaviors must persist for at least one month, and regurgitation of food cannot be attributed to another medical condition. Additionally, rumination disorder is distinct from AN, BN, BED, and ARFID, and thus cannot occur during the course of one of these illnesses. Avoidant/restrictive food intake disorder (ARFID) is a feeding or eating disturbance, such as a lack of interest in eating food, avoidance based on sensory characteristics of food, or concern about aversive consequences of eating, that prevents one from meeting nutritional energy needs. It is frequently associated with weight loss, nutritional deficiency, or failure to meet growth trajectories. Notably, ARFID is distinguishable from AN and BN in that there is no evidence of a disturbance in the way in which one's body weight or shape is experienced. The disorder is not better explained by lack of available food, cultural practices, a concurrent medical condition, or another mental disorder.[18] Other Specified Feeding or Eating Disorder (OSFED) is an eating or feeding disorder that does not meet full DSM-5 criteria for AN, BN, or BED. Examples of otherwise-specified eating disorders include individuals with atypical anorexia nervosa, who meet all criteria for AN except being underweight despite substantial weight loss; atypical bulimia nervosa, who meet all criteria for BN except that bulimic behaviors are less frequent or have not been ongoing for long enough; purging disorder; and night eating syndrome.[1] Unspecified Feeding or Eating Disorder (USFED) describes feeding or eating disturbances that cause marked distress and impairment in important areas of functioning but that do not meet the full criteria for any of the other diagnoses. The specific reason the presentation does not meet criteria for a specified disorder is not given. For example, an USFED diagnosis may be given when there is insufficient information to make a more specific diagnosis, such as in an emergency room setting. Compulsive overeating, which may include habitual "grazing" of food or episodes of binge eating without feelings of guilt.[19] Diabulimia, which is characterized by the deliberate manipulation of insulin levels by diabetics in an effort to control their weight. Drunkorexia, which is commonly characterized by purposely restricting food intake in order to reserve food calories for alcoholic calories, exercising excessively in order to burn calories from drinking, and over-drinking alcohol in order to purge previously consumed food.[20] Food maintenance, which is characterized by a set of aberrant eating behaviors of children in foster care.[21] Night eating syndrome, which is characterized by nocturnal hyperphagia (consumption of 25% or more of the total daily calories after the evening meal) with nocturnal ingestions, insomnia, loss of morning appetite and depression. Nocturnal sleep-related eating disorder, which is a parasomnia characterized by eating, habitually out-of-control, while in a state of NREM sleep, with no memory of this the next morning. Gourmand syndrome, a rare condition occurring after damage to the frontal lobe. Individuals develop an obsessive focus on fine foods.[22] Orthorexia nervosa, a term used by Steven Bratman to describe an obsession with a "pure" diet, in which a person develops an obsession with avoiding unhealthy foods to the point where it interferes with the person's life.[23] Klüver-Bucy syndrome, caused by bilateral lesions of the medial temporal lobe, includes compulsive eating, hypersexuality, hyperorality, visual agnosia, and docility. Prader-Willi syndrome, a genetic disorder associated with insatiable appetite and morbid obesity. Pregorexia, which is characterized by extreme dieting and over-exercising in order to control pregnancy weight gain. Prenatal undernutrition is associated with low birth weight, coronary heart disease, type 2 diabetes, stroke, hypertension, cardiovascular disease risk, and depression.[24] Muscle dysmorphia is characterized by appearance preoccupation that one's own body is too small, too skinny, insufficiently muscular, or insufficiently lean. Muscle dysmorphia affects mostly males. Purging disorder. Recurrent purging behavior to influence weight or shape in the absence of binge eating.[1] It is more properly a disorder of elimination rather than eating disorder. Symptoms and complications vary according to the nature and severity of the eating disorder:[25] Possible complications acne xerosis amenorrhoea tooth loss, cavities constipation diarrhea water retention and/or edema lanugo telogen effluvium cardiac arrest hypokalemia death osteoporosis[26] electrolyte imbalance hyponatremia brain atrophy[27][28] pellagra[29] scurvy kidney failure suicide[30][31][32] Associated physical symptoms of eating disorders include weakness, fatigue, sensitivity to cold, reduced beard growth in men, reduction in waking erections, reduced libido, weight loss and growth failure.[33] Frequent vomiting, which may cause acid reflux or entry of acidic gastric material into the laryngoesophageal tract, can lead to unexplained hoarseness. As such, individuals who induce vomiting as part of their eating disorder, such as those with anorexia nervosa, binge eating-purging type or those with purging-type bulimia nervosa, are at risk for acid reflux.[34] Polycystic ovary syndrome (PCOS) is the most common endocrine disorder to affect women. Though often associated with obesity it can occur in normal weight individuals. PCOS has been associated with binge eating and bulimic behavior.[35][36][37][38][39][40][excessive citations] Other possible manifestations are dry lips,[41] burning tongue,[41] parotid gland swelling,[41] and temporomandibular disorders.[41] The psychopathology of eating disorders centers around body image disturbance,[42] such as concerns with weight and shape; self-worth being too dependent on weight and shape; fear of gaining weight even when underweight; denial of how severe the symptoms are and a distortion in the way the body is experienced.[33] The main psychopathological features of anorexia were outlined in 1982 as problems in body perception, emotion processing and interpersonal relationships.[43][44] Women with eating disorders have greater body dissatisfaction.[45] This impairment of body perception involves vision, proprioception, interoception and tactile perception.[46] There is an alteration in integration of signals in which body parts are experienced as dissociated from the body as a whole.[46] Bruch once theorized that difficult early relationships were related to the cause of anorexia and how primary caregivers can contribute to the onset of the illness.[43] A prominent feature of bulimia is dissatisfaction with body shape.[47] However, dissatisfaction with body shape is not of diagnostic significance as it is sometimes present in individuals with no eating disorder.[47] This highly labile feature can fluctuate depending on changes in shape and weight, the degree of control over eating and mood.[47] In contrast, a necessary diagnostic feature for anorexia nervosa and bulimia nervosa is having overvalued ideas about shape and weight are relatively stable and partially related to the patients' low self-esteem.[47] Main article: Promotion of anorexia Pro-ana refers to the promotion of behaviors related to the eating disorder anorexia nervosa. Several websites promote eating disorders, and can provide a means for individuals to communicate in order to maintain eating disorders. Members of these websites typically feel that their eating disorder is the only aspect of a chaotic life that they can control.[48] These websites are often interactive and have discussion boards where individuals can share strategies, ideas, and experiences, such as diet and exercise plans that achieve extremely low weights.[49] A study comparing the personal web-blogs that were pro-eating disorder with those focused on recovery found that the pro-eating disorder blogs contained language reflecting lower cognitive processing, used a more closed-minded writing style, contained less emotional expression and fewer social references, and focused more on eating-related contents than did the recovery blogs.[50] There is no single cause of eating disorders.[51] Many people with eating disorders also have body image disturbance and a comorbid body dysmorphic disorder (BDD), leading them to an altered perception of their body.[52][53] Studies have found that a high proportion of individuals diagnosed with body dysmorphic disorder also had some type of eating disorder, with 15% of individuals having either anorexia nervosa or bulimia nervosa.[52] This link between body dysmorphic disorder and anorexia stems from the fact that both BDD and anorexia nervosa are characterized by a preoccupation with physical appearance and a distortion of body image.[53] There are also many other possibilities such as environmental, social and interpersonal issues that could promote and sustain these illnesses.[54] Also, the media are oftentimes blamed for the rise in the incidence of eating disorders due to the fact that media images of idealized slim physical shape of people such as models and celebrities motivate or even force people to attempt to achieve slimness themselves.[55] The media are accused of distorting reality, in the sense that people portrayed in the media are either naturally thin and thus unrepresentative of normality or unnaturally thin by forcing their bodies to look like the ideal image by putting excessive pressure on themselves to look a certain way. While past findings have described eating disorders as primarily psychological, environmental, and sociocultural, further studies have uncovered evidence that there is a genetic component.[56] Numerous studies show a genetic predisposition toward eating disorders.[57][58] Twin studies have found a slight instances of genetic variance when considering the different criterion of both anorexia nervosa and bulimia nervosa as endophenotypes contributing to the disorders as a whole.[54] An individual who is a first degree relative of someone who has had or currently has an eating disorder is seven to twelve times more likely to have an eating disorder themselves.[59] Twin studies also show that at least a portion of the vulnerability to develop eating disorders can be inherited, and there is evidence to show that there is a genetic locus that shows susceptibility for developing anorexia nervosa.[59] About 50% of eating disorder cases are attributable to genetics.[60] Other cases are due to external reasons or developmental problems.[61] There are also other neurobiological factors at play tied to emotional reactivity and impulsivity that could lead to binging and purging behaviors.[62] Epigenetics mechanisms are means by which environmental effects alter gene expression via methods such as DNA methylation; these are independent of and do not alter the underlying DNA sequence. They are heritable, but also may occur throughout the lifespan, and are potentially reversible. Dysregulation of dopaminergic neurotransmission due to epigenetic mechanisms has been implicated in various eating disorders.[63] Other candidate genes for epigenetic studies in eating disorders include leptin, pro-opiomelanocortin (POMC) and brain-derived neurotrophic factor (BDNF).[64] There has found to be a genetic correlation between anorexia nervosa and OCD, suggesting a strong etiology.[65][66][67] First and second relatives of probands with OCD have a greater chance of developing anorexia nervosa as genetic relatedness increases.[67] Eating disorders are classified as Axis I[68] disorders in the Diagnostic and Statistical Manual of Mental Health Disorders (DSM-IV) published by the American Psychiatric Association. There are various other psychological issues that may factor into eating disorders, some fulfill the criteria for a separate Axis I diagnosis or a personality disorder which is coded Axis II and thus are considered comorbid to the diagnosed eating disorder. Axis II disorders are subtyped into 3 "clusters": A, B and C. The causality between personality disorders and eating disorders has yet to be fully established.[69] Some people have a previous disorder which may increase their vulnerability to developing an eating disorder.[70][71][72] Some develop them afterwards.[73] The severity and type of eating disorder symptoms have been shown to affect comorbidity.[74] There has been controversy over various editions of the DSM diagnostic criteria including the latest edition, DSM-V, published in 2013.[75][76][77][78][79] Comorbid Disorders Axis I Axis II depression[80] obsessive–compulsive personality disorder[81] substance abuse, alcoholism[82] borderline personality disorder[83] anxiety disorders[84] narcissistic personality disorder[85] obsessive–compulsive disorder[86][87] histrionic personality disorder[88] Attention-deficit hyperactivity disorder[89][90][91][92] avoidant personality disorder[93] Attentional bias may have an effect on eating disorders. Attentional bias is the preferential attention toward certain types of information in the environment while simultaneously ignoring others. Individuals with eating disorders can be thought to have schemas, knowledge structures, which are dysfunctional as they may bias judgement, thought, behaviour in a manner that is self-destructive or maladaptive.[94] They may have developed a disordered schema which focuses on body size and eating. Thus, this information is given the highest level of importance and overvalued among other cognitive structures. Researchers have found that people who have eating disorders tend to pay more attention to stimuli related to food. For people struggling to recover from an eating disorder or addiction, this tendency to pay attention to certain signals while discounting others can make recovery that much more difficult.[94] Studies have utilized the Stroop task to assess the probable effect of attentional bias on eating disorders. This may involve separating food and eating words from body shape and weight words. Such studies have found that anorexic subjects were slower to colour name food related words than control subjects.[95] Other studies have noted that individuals with eating disorders have significant attentional biases associated with eating and weight stimuli.[96] There are various childhood personality traits associated with the development of eating disorders, such as perfectionism and neuroticism.[66][67][97] These personality traits are found to link eating disorders and OCD.[66][67][97] During adolescence these traits may become intensified due to a variety of physiological and cultural influences such as the hormonal changes associated with puberty, stress related to the approaching demands of maturity and socio-cultural influences and perceived expectations, especially in areas that concern body image. Eating disorders have been associated with a fragile sense of self and with disordered mentalization.[98] Many personality traits have a genetic component and are highly heritable. Maladaptive levels of certain traits may be acquired as a result of anoxic or traumatic brain injury, neurodegenerative diseases such as Parkinson's disease, neurotoxicity such as lead exposure, bacterial infection such as Lyme disease or parasitic infection such as Toxoplasma gondii as well as hormonal influences. While studies are still continuing via the use of various imaging techniques such as fMRI; these traits have been shown to originate in various regions of the brain[99] such as the amygdala[100][101] and the prefrontal cortex.[102] Disorders in the prefrontal cortex and the executive functioning system have been shown to affect eating behavior.[103][104] People with gastrointestinal disorders may be more risk of developing disordered eating practices than the general population, principally restrictive eating disturbances.[6] An association of anorexia nervosa with celiac disease has been found.[105] The role that gastrointestinal symptoms play in the development of eating disorders seems rather complex. Some authors report that unresolved symptoms prior to gastrointestinal disease diagnosis may create a food aversion in these persons, causing alterations to their eating patterns. Other authors report that greater symptoms throughout their diagnosis led to greater risk. It has been documented that some people with celiac disease, irritable bowel syndrome or inflammatory bowel disease who are not conscious about the importance of strictly following their diet, choose to consume their trigger foods to promote weight loss. On the other hand, individuals with good dietary management may develop anxiety, food aversion and eating disorders because of concerns around cross contamination of their foods.[6] Some authors suggest that medical professionals should evaluate the presence of an unrecognized celiac disease in all people with eating disorder, especially if they present any gastrointestinal symptom (such as decreased appetite, abdominal pain, bloating, distension, vomiting, diarrhea or constipation), weight loss, or growth failure; and also routinely ask celiac patients about weight or body shape concerns, dieting or vomiting for weight control, to evaluate the possible presence of eating disorders,[105] specially in women.[106] Child abuse which encompasses physical, psychological, and sexual abuse, as well as neglect, has been shown to approximately triple the risk of an eating disorder.[107] Sexual abuse appears to double the risk of bulimia; however, the association is less clear for anorexia. The risk for individuals developing eating disorders increases if the individual grew up in an invalidating environment where displays of emotions were often punished. Abuse that has also occurred in childhood produces intolerable difficult emotions that cannot be expressed in a healthy manner. Eating disorders come in as an escape coping mechanism, as a means to control and avoid overwhelming negative emotions and feelings. Those who report physical or sexual maltreatment as a child are at an increased risk of developing an eating disorder.[107] Social isolation has been shown to have a deleterious effect on an individual's physical and emotional well-being. Those that are socially isolated have a higher mortality rate in general as compared to individuals that have established social relationships. This effect on mortality is markedly increased in those with pre-existing medical or psychiatric conditions, and has been especially noted in cases of coronary heart disease. "The magnitude of risk associated with social isolation is comparable with that of cigarette smoking and other major biomedical and psychosocial risk factors." (Brummett et al.) Social isolation can be inherently stressful, depressing and anxiety-provoking. In an attempt to ameliorate these distressful feelings an individual may engage in emotional eating in which food serves as a source of comfort. The loneliness of social isolation and the inherent stressors thus associated have been implicated as triggering factors in binge eating as well.[108][109][110][111] Waller, Kennerley and Ohanian (2007) argued that both bingeing–vomiting and restriction are emotion suppression strategies, but they are just utilized at different times. For example, restriction is used to pre-empt any emotion activation, while bingeing–vomiting is used after an emotion has been activated.[112] Parental influence has been shown to be an intrinsic component in the development of eating behaviors of children.[113] This influence is manifested and shaped by a variety of diverse factors such as familial genetic predisposition, dietary choices as dictated by cultural or ethnic preferences, the parents' own body shape, how they talk about their own body, and eating patterns,[114] the degree of involvement and expectations of their children's eating behavior as well as the interpersonal relationship of parent and child.[113] It is also influenced by the general psychosocial climate of the home and whether a nurturing stable environment is present. It has been shown that maladaptive parental behavior has an important role in the development of eating disorders. As to the more subtle aspects of parental influence, it has been shown that eating patterns are established in early childhood and that children should be allowed to decide when their appetite is satisfied as early as the age of two. A direct link has been shown between obesity and parental pressure to eat more.[115] Coercive tactics in regard to diet have not been proven to be efficacious in controlling a child's eating behavior. Affection and attention have been shown to affect the degree of a child's finickiness and their acceptance of a more varied diet.[116][117][118][119][120][113] Adams and Crane (1980), have shown that parents are influenced by stereotypes that influence their perception of their child's body. The conveyance of these negative stereotypes also affects the child's own body image and satisfaction.[121] Hilde Bruch, a pioneer in the field of studying eating disorders, asserts that anorexia nervosa often occurs in girls who are high achievers, obedient, and always trying to please their parents. Their parents have a tendency to be over-controlling and fail to encourage the expression of emotions, inhibiting daughters from accepting their own feelings and desires. Adolescent females in these overbearing families lack the ability to be independent from their families, yet realize the need to, often resulting in rebellion. Controlling their food intake may make them feel better, as it provides them with a sense of control.[122] Negative parental body-talk, meaning when a parent comments on their own weight, shape or size, is strongly correlated with disordered eating in their children. Children whose parents engage in self-talk about their weight frequently are three times as likely to practice extreme weight control behaviors such as disordered eating, than children who do not overhear negative parental body-talk. Additionally, negative body-talk from mothers is explicitly correlated with disordered eating in adolescent girls.[123][124] In various studies such as one conducted by The McKnight Investigators, peer pressure was shown to be a significant contributor to body image concerns and attitudes toward eating

person with a low BMI and an individual with anorexia nervosa.[54][206] Gut bacteria and immune system: studies have shown that a majority of patients with anorexia and bulimia nervosa have elevated levels of autoantibodies that affect hormones and neuropeptides that regulate appetite control and the stress response. There may be a direct correlation between autoantibody levels and associated psychological traits.[207][208] Later study revealed that autoantibodies reactive with alpha-MSH are, in fact, generated against ClpB, a protein produced by certain gut bacteria e.g. Escherichia coli. ClpB protein was identified as a conformational antigen-mimetic of alpha-MSH. In patients with eating disorders plasma levels of anti-ClpB IgG and IgM correalated with patients' psychological traits[209] Infection: PANDAS is an abbreviation for the controversial Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections hypothesis. Children with PANDAS are postulated to "have obsessive-compulsive disorder (OCD) and/or tic disorders such as Tourette syndrome, and in whom symptoms worsen following infections such as strep throat". (NIMH) PANDAS and the broader PANS are hypothesized to be a precipitating factor in the development of anorexia nervosa in some cases, (PANDAS AN).[210][211][212] Lesions: studies have shown that lesions to the right frontal lobe or temporal lobe can cause the pathological symptoms of an eating disorder.[213][214][215] Tumors: tumors in various regions of the brain have been implicated in the development of abnormal eating patterns.[216][217][218][219][220] Brain calcification: a study highlights a case in which prior calcification of the right thalumus may have contributed to development of anorexia nervosa.[221] Somatosensory homunculus: is the representation of the body located in the somatosensory cortex, first described by renowned neurosurgeon Wilder Penfield. The illustration was originally termed "Penfield's Homunculus", homunculus meaning little man. "In normal development this representation should adapt as the body goes through its pubertal growth spurt. However, in AN it is hypothesized that there is a lack of plasticity in this area, which may result in impairments of sensory processing and distortion of body image". (Bryan Lask, also proposed by VS Ramachandran) Obstetric complications: There have been studies done which show maternal smoking, obstetric and perinatal complications such as maternal anemia, very pre-term birth (less than 32 weeks), being born small for gestational age, neonatal cardiac problems, preeclampsia, placental infarction and sustaining a cephalhematoma at birth increase the risk factor for developing either anorexia nervosa or bulimia nervosa. Some of this developmental risk as in the case of placental infarction, maternal anemia and cardiac problems may cause intrauterine hypoxia, umbilical cord occlusion or cord prolapse may cause ischemia, resulting in cerebral injury, the prefrontal cortex in the fetus and neonate is highly susceptible to damage as a result of oxygen deprivation which has been shown to contribute to executive dysfunction, ADHD, and may affect personality traits associated with both eating disorders and comorbid disorders such as impulsivity, mental rigidity and obsessionality. The problem of perinatal brain injury, in terms of the costs to society and to the affected individuals and their families, is extraordinary. (Yafeng Dong, PhD)[222][223][224][225][226][227][228][229][230][231][232] Symptom of starvation: Evidence suggests that the symptoms of eating disorders are actually symptoms of the starvation itself, not of a mental disorder. In a study involving thirty-six healthy young men that were subjected to semi-starvation, the men soon began displaying symptoms commonly found in patients with eating disorders.[204][233] In this study, the healthy men ate approximately half of what they had become accustomed to eating and soon began developing symptoms and thought patterns (preoccupation with food and eating, ritualistic eating, impaired cognitive ability, other physiological changes such as decreased body temperature) that are characteristic symptoms of anorexia nervosa.[204] The men used in the study also developed hoarding and obsessive collecting behaviors, even though they had no use for the items, which revealed a possible connection between eating disorders and obsessive–compulsive disorder.[204] According to Pritts and Susman "The medical history is the most powerful tool for diagnosing eating disorders".[234] There are many medical disorders that mimic eating disorders and comorbid psychiatric disorders. Early detection and intervention can assure a better recovery and can improve a lot the quality of life of these patients. In the past 30 years eating disorders have become increasingly conspicuous and it is uncertain whether the changes in presentation reflect a true increase.[235] Anorexia nervosa and bulimia nervosa are the most clearly defined subgroups of a wider range of eating disorders. Many patients present with subthreshold expressions of the two main diagnoses: others with different patterns and symptoms.[236] As eating disorders, especially anorexia nervosa, are thought of as being associated with young, white females, diagnosis of eating disorders in other races happens more rarely. In one study, when clinicians were presented with identical case studies demonstrating disordered eating symptoms in Black, Hispanic, and white women, 44% noted the white woman's behavior as problematic; 41% identified the Hispanic woman's behavior as problematic, and only 17% of the clinicians noted the Black woman's behavior as problematic (Gordon, Brattole, Wingate, & Joiner, 2006).[237] The diagnostic workup typically includes complete medical and psychosocial history and follows a rational and formulaic approach to the diagnosis. Neuroimaging using fMRI, MRI, PET and SPECT scans have been used to detect cases in which a lesion, tumor or other organic condition has been either the sole causative or contributory factor in an eating disorder. "Right frontal intracerebral lesions with their close relationship to the limbic system could be causative for eating disorders, we therefore recommend performing a cranial MRI in all patients with suspected eating disorders" (Trummer M et al. 2002), "intracranial pathology should also be considered however certain is the diagnosis of early-onset anorexia nervosa. Second, neuroimaging plays an important part in diagnosing early-onset anorexia nervosa, both from a clinical and a research prospective".(O'Brien et al. 2001).[215][238] Eating Disorder Specific Psychometric Tests Eating Attitudes Test[239] SCOFF questionnaire[240] Body Attitudes Test[241] Body Attitudes Questionnaire[242] Eating Disorder Inventory[243] Eating Disorder Examination Interview[244] After ruling out organic causes and the initial diagnosis of an eating disorder being made by a medical professional, a trained mental health professional aids in the assessment and treatment of the underlying psychological components of the eating disorder and any comorbid psychological conditions. The clinician conducts a clinical interview and may employ various psychometric tests. Some are general in nature while others were devised specifically for use in the assessment of eating disorders. Some of the general tests that may be used are the Hamilton Depression Rating Scale[245] and the Beck Depression Inventory.[246][247] longitudinal research showed that there is an increase in chance that a young adult female would develop bulimia due to their current psychological pressure and as the person ages and matures, their emotional problems change or are resolved and then the symptoms decline.[248] Several types of scales are currently used – (a) self-report questionnaires –EDI-3, BSQ, TFEQ, MAC, BULIT-R, QEWP-R, EDE-Q, EAT, NEQ – and other; (b) semi-structured interviews – SCID-I, EDE – and other; (c) clinical interviews unstructured or observer-based rating scales- Morgan Russel scale[249] The majority of the scales used were described and used in adult populations. From all the scales evaluated and analyzed, only three are described at the child population – it is EAT-26 (children above 16 years), EDI-3 (children above 13 years), and ANSOCQ (children above 13 years). It is essential to develop specific scales for people under 18 years of age, given the increasing incidence of ED among children and the need for early detection and appropriate intervention. Moreover, the urgent need for accurate scales and telemedicine testing and diagnosis tools are of high importance during the COVID-19 pandemic (Leti, Garner & al., 2020). There are multiple medical conditions which may be misdiagnosed as a primary psychiatric disorder, complicating or delaying treatment. These may have a synergistic effect on conditions which mimic an eating disorder or on a properly diagnosed eating disorder. Lyme disease is known as the "great imitator", as it may present as a variety of psychiatric or neurological disorders including anorexia nervosa.[250][251] Gastrointestinal diseases,[6] such as celiac disease, Crohn's disease, peptic ulcer, eosinophilic esophagitis[105] or non-celiac gluten sensitivity,[252] among others. Celiac disease is also known as the "great imitator", because it may involve several organs and cause an extensive variety of non-gastrointestinal symptoms, such as psychiatric and neurological disorders,[253][254][255] including anorexia nervosa.[105] Addison's disease is a disorder of the adrenal cortex which results in decreased hormonal production. Addison's disease, even in subclinical form may mimic many of the symptoms of anorexia nervosa.[256] Gastric adenocarcinoma is one of the most common forms of cancer in the world. Complications due to this condition have been misdiagnosed as an eating disorder.[257] Hypothyroidism, hyperthyroidism, hypoparathyroidism and hyperparathyroidism may mimic some of the symptoms of, can occur concurrently with, be masked by or exacerbate an eating disorder.[258][259][260][261][262][263][264][265] Toxoplasma seropositivity: even in the absence of symptomatic toxoplasmosis, toxoplasma gondii exposure has been linked to changes in human behavior and psychiatric disorders including those comorbid with eating disorders such as depression. In reported case studies the response to antidepressant treatment improved only after adequate treatment for toxoplasma.[266] Neurosyphilis: It is estimated that there may be up to one million cases of untreated syphilis in the US alone. "The disease can present with psychiatric symptoms alone, psychiatric symptoms that can mimic any other psychiatric illness". Many of the manifestations may appear atypical. Up to 1.3% of short term psychiatric admissions may be attributable to neurosyphilis, with a much higher rate in the general psychiatric population. (Ritchie, M Perdigao J,)[267] Dysautonomia: a wide variety of autonomic nervous system (ANS) disorders may cause a wide variety of psychiatric symptoms including anxiety, panic attacks and depression. Dysautonomia usually involves failure of sympathetic or parasympathetic components of the ANS system but may also include excessive ANS activity. Dysautonomia can occur in conditions such as diabetes and alcoholism. Psychological disorders which may be confused with an eating disorder, or be co-morbid with one: Emetophobia is an anxiety disorder characterized by an intense fear of vomiting. A person so impacted may develop rigorous standards of food hygiene, such as not touching food with their hands. They may become socially withdrawn to avoid situations which in their perception may make them vomit. Many who have emetophobia are diagnosed with anorexia or self-starvation. In severe cases of emetophobia they may drastically reduce their food intake.[268][269] Phagophobia is an anxiety disorder characterized by a fear of eating, it is usually initiated by an adverse experience while eating such as choking or vomiting. Persons with this disorder may present with complaints of pain while swallowing.[270] Body dysmorphic disorder (BDD) is listed as an obsessive-compulsive disorder that affects up to 2% of the population. BDD is characterized by excessive rumination over an actual or perceived physical flaw. BDD has been diagnosed equally among men and women. While BDD has been misdiagnosed as anorexia nervosa, it also occurs comorbidly in 39% of eating disorder cases. BDD is a chronic and debilitating condition which may lead to social isolation, major depression and suicidal ideation and attempts. Neuroimaging studies to measure response to facial recognition have shown activity predominately in the left hemisphere in the left lateral prefrontal cortex, lateral temporal lobe and left parietal lobe showing hemispheric imbalance in information processing. There is a reported case of the development of BDD in a 21-year-old male following an inflammatory brain process. Neuroimaging showed the presence of a new atrophy in the frontotemporal region.[271][272][273][274] Prevention aims to promote a healthy development before the occurrence of eating disorders. It also intends early identification of an eating disorder before it is too late to treat. Children as young as ages 5–7 are aware of the cultural messages regarding body image and dieting.[275] Prevention comes in bringing these issues to the light. The following topics can be discussed with young children (as well as teens and young adults). Emotional Bites: a simple way to discuss emotional eating is to ask children about why they might eat besides being hungry. Talk about more effective ways to cope with emotions, emphasizing the value of sharing feelings with a trusted adult.[276][irrelevant citation] Say No to Teasing: another concept is to emphasize that it is wrong to say hurtful things about other people's body sizes.[277][irrelevant citation] Intuitive Eating: emphasize the importance of listening to one's body. That is, eat when you are hungry, pay attention to fullness, and choose foods that make you feel good. Children intuitively grasp these concepts. Additionally, parents can reinforce intuitive eating by removing value judgments of food as "good" or "bad" from conversations about food.[276][irrelevant citation][278][279][280] Positive Body Talk: family members can help prevent eating disorders by not making negative comments about themselves. When children hear family members complain that they are fat or about the proportions of their bodies, this influences their own body image and is a contributing factor to the development of eating disorders.[281][282] Fitness Comes in All Sizes: educate children about the genetics of body size and the normal changes occurring in the body.[283] Discuss their fears and hopes about growing bigger. Focus on fitness and a balanced diet.[284][irrelevant citation] Internet and modern technologies provide new opportunities for prevention. Online programs have the potential to increase the use of prevention programs.[285] The development and practice of prevention programs via online sources make it possible to reach a wide range of people at minimal cost.[286] Such an approach can also make prevention programs to be sustainable. Parents can do a lot for their children at a young age to impede them from ever seeing themselves in the eyes of an eating disorder. The parents who are actively engaged in their children's lives' often contribute to fostering a stronger sense of self-love in them. Treatment varies according to type and severity of eating disorder, and often more than one treatment option is utilized.[287] Various forms of cognitive behavioral therapy have been developed for eating disorders and found to be useful. If a person is experiencing comorbidity between an eating disorder and OCD, exposure and response prevention, coupled with weight restoration and serotonin reputake inhibitors has proven most effective.[288] Other forms of psychotherapies can also be useful.[289] Family doctors play an important role in early treatment of people with eating disorders by encouraging those who are also reluctant to see a psychiatrist.[290] Treatment can take place in a variety of different settings such as community programs, hospitals, day programs, and groups.[291] The American Psychiatric Association (APA) recommends a team approach to treatment of eating disorders. The members of the team are usually a psychiatrist, therapist, and registered dietitian, but other clinicians may be included.[292] That said, some treatment methods are: Cognitive behavioral therapy (CBT),[289][293][294][295] which postulates that an individual's feelings and behaviors are caused by their own thoughts instead of external stimuli such as other people, situations or events; the idea is to change how a person thinks and reacts to a situation even if the situation itself does not change. See Cognitive behavioral treatment of eating disorders. Acceptance and commitment therapy: a type of CBT[296] Cognitive behavioral therapy enhanced (CBT-E): the most widespread cognitive behavioral psychotherapy specific for eating disorders[289][297] Cognitive remediation therapy (CRT), a set of cognitive drills or compensatory interventions designed to enhance cognitive functioning.[298][299][300][301] Exposure and Response Prevention: a type of CBT; the gradual exposure to anxiety provoking situations in a safe environment, to learn how to deal with the uncomfortableness The Maudsley anorexia nervosa treatment for adults (MANTRA), which focuses on addressing rigid information processing styles, emotional avoidance, pro-anorectic beliefs, and difficulties with interpersonal relationships.[289][302] These four targets of treatment are proposed to be core maintenance factors within the Cognitive-Interpersonal Maintenance Model of anorexia nervosa.[303] Dialectical behavior therapy[289][304] Family therapy[289][305] including "conjoint family therapy" (CFT), "separated family therapy" (SFT) and Maudsley Family Therapy.[306][307] Behavioral therapy: focuses on gaining control and changing unwanted behaviors.[289][308] Interpersonal psychotherapy (IPT)[289][309] Cognitive Emotional Behaviour Therapy (CEBT)[310] Nutrition counseling[311] and Medical nutrition therapy[312][313][314] Self-help and guided self-help have been shown to be helpful in AN, BN and BED;[295][315][316][317] this includes support groups and self-help groups such as Eating Disorders Anonymous and Overeaters Anonymous.[318][319] Having meaninful relationships are often a way to recovery. Having a partner, friend or someone else close in your life may lead away from the way of problematic eating according to professor Cynthia M. Bulik.[320] psychoanalytic psychotherapy[289] Inpatient care There are few studies on the cost-effectiveness of the various treatments.[289][321] Treatment can be expensive;[322][323] due to limitations in health care coverage, people hospitalized with anorexia nervosa may be discharged while still underweight, resulting in relapse and rehospitalization.[324] Research has found comorbidity between an eating disorder (e.g., anorexia nervosa, bulimia nervosa, and binge eating) and OCD does not impact the length of the time patients spend in treatment,[288] but can negatively impact treatment outcomes.[67] For children with anorexia, the only well-established treatment is the family treatment-behavior.[325] For other eating disorders in children, however, there is no well-established treatments, though family treatment-behavior has been used in treating bulimia.[325] A 2019 Cochrane review examined studies comparing the effectiveness of inpatient versus outpatient models of care for eating disorders. Four trials including 511 participants were studied but the review was unable to draw any definitive conclusions as to the superiority of one model over another.[326] A variety of barriers to eating disorder treatment have been identified, typically grouped into individual and systemic barriers. Individual barriers include shame, fear of stigma, cultural perceptions, minimizing the seriousness of the problem, unfamiliarity with mental health services, and a lack of trust in mental health professionals.[327] Systemic barriers include language differences, financial limitations, lack of insurance coverage, inaccessible health care facilities, time conflicts, long waits, lack of transportation, and lack of child care.[327] These barriers may be particularly exacerbated for those who identify outside of the skinny, white, affluent girl stereotype that dominates in the field of eating disorders,[328] such that those who do not identify with this stereotype are much less likely to seek treatment.[327] Conditions during the COVID-19 pandemic may increase the difficulties experienced by those with eating disorders, and the risk that otherwise healthy individuals may develop eating disorders. The pandemic has been a stressful life event for everyone, increasing anxiety and isolation, disrupting normal routines, creating economic strain and food insecurity, and making it more difficult and stressful to obtain needed resources including food and medical treatment.[329][330][331][332] The COVID-19 pandemic in England exposed a dramatic rise in demand for eating disorder services which the English NHS struggled to meet. The National Institute for Health and Care Excellence and NHS England both advised that services should not impose thresholds using body mass index or duration of illness to determine whether treatment for eating disorders should be offered, but there were continuing reports that these recommendations were not followed.[333] In terms of access to treatment, therapy sessions have generally switched from in-person to video calls. This may actually help people who previously had difficulty finding a therapist with experience in treating eating disorders, for example, those who live in rural areas. Studies suggest that virtual (telehealth) CBT can be as effective as face-to-face CBT for bulimia and other mental illnesses.[330][289] To help patients cope with conditions during the pandemic, therapists may have to particularly emphasize strategies to create structure where little is present, build interpersonal connections, and identify and avoid triggers.[330] Orlistat is used in obesity treatment. Olanzapine seems to promote weight gain as well as the ability to ameliorate obsessional behaviors concerning weight gain. zinc supplements have been shown to be helpful, and cortisol is also being investigated.[334][335][336][337][338][339] Two pharmaceuticals, Prozac[340] and Vyvanse,[341] have been approved by the FDA to treat bulimia nervosa and binge-eating disorder, respectively. Olanzapine has also been used off-label to treat anorexia nervosa.[342] Studies are also underway to explore psychedelic and psychedelic-adjacent medicines such as MDMA, psilocybin and ketamine for anorexia nervosa and binge-eating disorder.[343] For anorexia nervosa, bulimia nervosa, and binge eating disorder, there is a general agreement that full recovery rates range between 50% and 85%, with larger proportions of people experiencing at least partial remission.[318][344][345][346] It can be a lifelong struggle or it can be overcome within months. Miscarriages: Pregnant women with a binge eating disorder have shown to have a greater chance of having a miscarriage compared to pregnant women with any other eating disorders. According to a study done, out of a group of pregnant women being evaluated, 46.7% of the pregnancies ended with a miscarriage in women that were diagnosed with BED, with 23.0% in the control. In the same study, 21.4% of women diagnosed with Bulimia Nervosa had their pregnancies end with miscarriages and only 17.7% of the controls.[347] Relapse: An individual who is in remission from BN and EDNOS (Eating Disorder Not Otherwise Specified) is at a high risk of falling back into the habit of self-harm. Factors such as high stress regarding their job, pressures from society, as well as other occurrences that inflict stress on a person, can push a person back to what they feel will ease the pain. A study tracked a group of selected people that were either diagnosed with BN or EDNOS for 60 months. After the 60 months were complete, the researchers recorded whether or not the person was having a relapse. The results found that the probability of a person previously diagnosed with EDNOS had a 41% chance of relapsing; a person with BN had a 47% chance.[348] Attachment insecurity: People who are showing signs of attachment anxiety will most likely have trouble communicating their emotional status as well as having trouble seeking effective social support. Signs that a person has adopted this symptom include not showing recognition to their caregiver or when he/she is feeling pain. In a clinical sample, it is clear that at the pretreatment step of a patient's recovery, more severe eating disorder symptoms directly corresponds to higher attachment anxiety. The more this symptom increases, the more difficult it is to achieve eating disorder reduction prior to treatment.[349] Impaired Decision Making: Studies have found mixed results on the relationship between eating disorders and decision making. Researchers have continuously found that patients with anorexia were less capable of thinking about long-term consequences of their decisions when completing the Iowa Gambling Task, a test designed to measure a person's decision-making capabilities. Consequently, they were at a higher risk of making hastier, harmful choices.[350] Anorexia symptoms include the increasing chance of getting osteoporosis. Thinning of the hair as well as dry hair and skin are also very common. The muscles of the heart will also start to change if no treatment is inflicted on the patient. This causes the heart to have an abnormally slow heart rate along with low blood pressure. Heart failure becomes a major consideration when this begins to occur.[351] Muscles throughout the body begin to lose their strength. This will cause the individual to begin feeling faint, drowsy, and weak. Along with these symptoms, the body will begin to grow a layer of hair called lanugo. The human body does this in response to the lack of heat and insulation due to the low percentage of body fat.[352] Bulimia symptoms include heart problems like an irregular heartbeat that can lead to heart failure and death may occur. This occurs because of the electrolyte imbalance that is a result of the constant binge and purge process. The probability of a gastric rupture increases. A gastric rupture is when there is a sudden rupture of the stomach lining that can be fatal. The acids that are contained in the vomit can cause a rupture in the esophagus as well as tooth decay. As a result, to laxative abuse, irregular bowel movements may occur along with constipation. Sores along the lining of the stomach called peptic ulcers begin to appear and the chance of developing pancreatitis increases.[352] Binge eating symptoms include high blood pressure, which can cause heart disease if it is not treated. Many patients recognize an increase in the levels of cholesterol. The chance of being diagnosed with gallbladder disease increases, which affects an individual's digestive tract.[352] Death rates from eating disorders, OWID Eating disorders result in about 7,000 deaths a year as of 2010, making them the mental illnesses with the highest mortality rate.[353] Anorexia has a risk of death that is increased about 5 fold with 20% of these deaths as a result of suicide.[354] Rates of death in bulimia and other disorders are similar at about a 2 fold increase.[354] The mortality rate for those with anorexia is 5.4 per 1000 individuals per year. Roughly 1.3 deaths were due to suicide. A person who is or had been in an inpatient setting had a rate of 4.6 deaths per 1000. Of individuals with bulimia about 2 persons per 1000 persons die per year and among those with EDNOS about 3.3 per 1000 people die per year.[354] It is a common misconception that eating disorders are restricted only to women, and this may have skewed research disproportionately to study female populations.[355] In the developed world, binge eating disorder affects about 1.6% of women and 0.8% of men in a given year.[1] Anorexia affects about 0.4% and bulimia affects about 1.3% of young women in a given year.[1] Up to 4% of women have anorexia, 2% have bulimia, and 2% have binge eating disorder at some point in time.[10] Anorexia and bulimia occur nearly ten times more often in females than males.[1] Typically, they begin in late childhood or early adulthood.[2] Rates of other eating disorders are not clear.[1] Rates of eating disorders appear to be lower in less developed countries.[15] In the United States, twenty million women and ten million men have an eating disorder at least once in their lifetime.[352] Rates of anorexia in the general population among women aged 11 to 65 ranges from 0 to 2.2% and around 0.3% among men.[356] The incidence of female cases is low in general medicine or specialized consultation in town, ranging from 4.2 and 8.3/100,000 individuals per year.[356] The incidence of AN ranges from 109 to 270/100,000 individuals per year.[356] Mortality varies according to the population considered.[356] AN has one of the highest mortality rates among mental illnesses.[356] The rates observed are 6.2 to 10.6 times greater than that observed in the general population for follow-up periods ranging from 13 to 10 years.[356] Standardized mortality ratios for anorexia vary from 1.36% to 20%.[357] Bulimia affects females 9 times more often than males.[358] Approximately one to three percent women develop bulimia in their lifetime.[358] About 2% to 3% of women are currently affected in the United States.[359] New cases occur in about 12 per 100,000 population per year.[360] The standardized mortality ratios for bulimia is 1% to 3%.[357] Reported rates vary from 1.3 to 30% among subjects seeking weight-loss treatment.[361] Based on surveys, BED appears to affect about 1-2% at some point in their life, with 0.1-1% of people affected in a given year.[362] BED is more common among females than males.[361] There have been no published studies investigating the effects of BED on mortality, although it is comorbid with disorders that are known to increase mortality risks.[362] Since 2017, the number of cost-effectiveness studies regarding eating disorders appears to be increasing in the past six years.[363] In 2011 United States dollars, annual healthcare costs were $1,869 greater among individuals with eating disorders compared to the general population.[364] The added presence of mental health comorbidities was also associated with higher, but not statistically significant, costs difference of $1,993.[364] In 2013 Canadian dollars, the total hospital cost per admission for treatment of anorexia nervosa was $51,349 and the total societal cost was $54,932 based on an average length of stay of 37.9 days.[365] For every unit increase in body mass index, there was also a 15.7% decrease in hospital cost.[365] For Ontario, Canada patients who received specialized inpatient care for an eating disorder both out of country and in province, annual total healthcare costs were about $11 million before 2007 and $6.5 million in the years afterwards.[366] For those treated out of country alone, costs were about $5 million before 2007 and $2 million in the years afterwards.[366] Evolutionary psychiatry as an emerging scientific discipline has been studying mental disorders from an evolutionary perspective. If eating disorders have evolutionary functions or if they are new modern "lifestyle" problems is still debated.[367][368][369] Eating disorders in Chinese women Eating disorder not otherwise specified Fatphobia Feeding disorder ^ a b c d e f g h i j k l m n o p q American Psychiatric Association (2013). Diagnostic and Statistical Manual of Mental Disorders (5th ed.). Arlington, VA: American Psychiatric Association. pp. 329–354. ISBN 978-0-89042-555-8. ^ a b c d e f g h i j "What are Eating Disorders?". NIMH. Archived from the original on 23 May 2015. Retrieved 24 May 2015. ^ "Eating Disorders". Clevelandclinic. Retrieved 9 June 2022. ^ a b c Rikani AA, Choudhry Z, Choudhry AM, Ikram H, Asghar MW, Kajal D, et al. (October 2013). "A critique of the literature on etiology of eating disorders". Annals of Neurosciences. 20 (4): 157–161. doi:10.5214/ans.0972.7531.200409. PMC 4117136. PMID 25206042. ^ Arcelus J, Witcomb GL, Mitchell A (March 2014). 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