Published in final edited form as:

J Dev Behav Pediatr. 2012 June ; 33(5): 431–440. doi:10.1097/DBP.0b013e3182599295.

Suicide Risk in Youth with Intellectual Disability: The Challenges of Screening

Erica Ludi, BS,

Office of the Clinical Director, National Institute of Mental Health, Bethesda Maryland

Elizabeth D. Ballard, MA,

Department of Psychology, Catholic University, Washington, DC

Rachel Greenbaum, PhD,

Children's Mental Health Team, Surrey Place Centre, Toronto, Ontario, Canada

Maryland Pao, MD,

Office of the Clinical Director, National Institute of Mental Health, Bethesda Maryland

Jeffrey Bridge, PhD,

The Research Institute, Nationwide Children's Hospital, Columbus, OH

William Reynolds, PhD, and

Department of Psychology, Humboldt State University, Arcata, CA

Lisa Horowitz, PhD, MPH

Office of the Clinical Director, National Institute of Mental Health, Bethesda, MD

Abstract

Children and adolescents with intellectual disabilities (ID), often diagnosed with co-morbid psychiatric disorders, are a vulnerable population who may be at risk for developing suicidal thoughts and behaviors. Previous research has demonstrated that direct suicide screening can rapidly and effectively detect suicide risk and facilitate further clinical evaluation and management. Currently, there are no measures that screen for suicide risk designed specifically for individuals with ID. A review of the literature was conducted: 1) to estimate the prevalence of suicidal thoughts, behaviors and deaths by suicide in children and adolescents with ID; 2) to describe associations between youth with ID and suicide risk; 3) to identify the limitations of commonly used suicide screening measures developed for non-ID youth. The literature review confirms that suicide risk exists in this population; youth with ID think about, attempt and die by suicide. Standardized suicide risk screening is challenged by the lack of measures developed for this population. A summary of the findings is followed by a discussion of the practical clinical considerations surrounding the assessment of suicide risk in youth with ID.

Keywords

youth suicide; intellectual disability; developmental delay; suicide screening; assessment

---

Corresponding author: Lisa Horowitz National Institute of Mental Health Clinical Research Center Building 10, Room 6-5340 Bethesda, MD 20892 Phone: 301-435-6052 Fax: 301-402-2588 horowitzl@mail.nih.gov.

COI: There are no conflicts of interest to report.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

INTRODUCTION

Youth who present with suicidal thoughts and behaviors create high anxiety for clinicians. When the child or adolescent has comorbid ID, like Johnny, the clinician's concern is heightened. Triage and management of emergency situations, like the above vignette, require specially trained multidisciplinary staff to manage the crisis together with patients and family. When screening patients with ID, clinicians often find themselves at a loss as to how to directly ask the patient about current suicidal thoughts, past suicidal behavior, plan formulation and access to means. Suicide screening measures developed specifically for youth with intellectual disability do not exist.

At one time, it was suggested that lower levels of intellectual functioning protected individuals from suicidal thoughts and behaviors.¹ However, studies and case reports have suggested that young people with ID think about, attempt and die by suicide. The purpose of this paper is threefold: 1) To summarize the literature on prevalence rates of suicidal ideation and suicidal behaviors in children and adolescents with ID; 2) To identify risk factors, including comorbid psychiatric disorders and immediate psychosocial stressors that are associated with suicidal ideation/suicidal behavior (SI/SB) in children and adolescents with ID; and 3) To discuss practical strategies for assessing suicide risk in the ID population, including the limitations of suicide assessment instruments developed for non-ID youth.

Definition and prevalence of Intellectual Disability

The American Association on Intellectual and Developmental Disabilities (formerly the American Association on Mental Retardation) defines an Intellectual Disability (ID) (formerly termed mental retardation) as “a disability characterized by significant limitations in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills...originating before age 18.”² It is estimated that 1-3% of the population, or seven to eight million Americans, have an Intellectual Disability³ with approximately 614,000 persons, ages 3-21 years, requiring special education in school.^{4,5} Typically, the ID population is divided into four categories: mild (85%), moderate (10%), severe (3-4%) or profound (1-2%).⁶ The ID population is widely divergent in level of intellectual functioning as well as developmental strengths, including social interaction and verbal expression. On one end of the spectrum, people with mild ID (IQ 55-70) can achieve academic skills in the sixth grade range and can generally work, marry and raise families. In contrast, individuals with profound ID (IQ < 25) are characterized by pervasive cognitive, motor and communicative impairments and usually require complete care throughout life.⁶ Of note, language usage has changed over the last four decades. Many terms have been used to describe this population: “intellectual disability,” “mental retardation (MR),” “retardate,” “developmental delay” and “developmental disability (DD).” “Mental retardation” and “retardate” are no longer acceptable terms. For this paper, the term intellectual disability will be used, with the exception of the description of a few older studies.

A Population at Risk for Comorbid Mental Health Problems

Children and adolescents with ID are vulnerable to developing comorbid psychiatric conditions. Studies have shown that 30-64% of children and adolescents with ID develop comorbid mental health disorders, a rate of 2.8-4.5 times that of their peers in the general population, including higher rates of depression, anxiety and psychosis.⁷⁻¹¹ Persons with ID have been reported to experience more abuse, neglect, social disadvantage, challenging family circumstances, stigma, peer neglect and peer exclusion than persons without such disabilities.¹²⁻¹⁴ The “dual diagnosis¹⁵” of mental illness and ID is often missed by clinicians due to a general under-identification of emotional and mental health problems in persons

with ID^{16,17} Given the common occurrence of this diagnostic overshadowing along with the cognitive, physical and psychiatric vulnerabilities outlined above, persons with ID are likely to be at increased risk for undetected suicidal thoughts and behaviors.

Suicide Risk in non-ID Youth

Suicide is the third leading cause of death for youth worldwide. In 2007, in the United States, 4,324 young people under the age of 24 years killed themselves.¹⁸ Even more common than death by suicide are suicidal thoughts and behavior. The latest Center for Disease Control and Prevention survey data revealed that 14% of high school students seriously considered killing themselves and 6% attempted suicide in the previous year, 2% requiring medical attention.¹⁹ Some of the most common risk factors for suicide are previous attempt, mental illness, interpersonal discord and poor physical health.²⁰ There are a plethora of studies examining suicide risk in youth. However, the majority do not specifically address the issue of suicide risk in youth with ID; in fact, many times youth with ID are excluded.

Screening for Suicide Risk

The American Association of Pediatrics and the National Strategy for Suicide Prevention suggest screening for suicide risk as a method of suicide prevention in the general population.²¹⁻²³ Screening may identify children and adolescents at risk for suicide and connect them with critical mental health treatments.^{21,24} Screening instruments typically query for critical risk factors such as current and past suicidal thoughts and behavior, since these are predictive of future suicide attempts²⁵⁻²⁷ and death by suicide.²⁸⁻³¹ Yet, the risk factors for youth with ID may not be the same as those established with a non-ID population. Assessment in the ID population may look different. It is unclear how to best screen youth with ID for suicide risk given the lack of guidance that exists.

In summary, youth with ID are a heterogeneous group of individuals with varying levels of intellectual and adaptive functioning. They tend to develop co-morbid psychopathology at higher rates than their peers in the general population. Since no suicide screening instruments have been created specifically for this population, youth with ID are at risk for undetected suicidal thoughts and behaviors. This paper seeks to raise awareness of suicide risk in youth with ID by summarizing prevalence reports, identifying risk factors, and evaluating current suicide screening measures.

LITERATURE SEARCH STRATEGY

In order to report the prevalence of SI/SB in youth with ID and to identify reported associations and correlations, a review of the literature was conducted by using language (English) and year restrictions (1960 to present) in six widely-used electronic databases: PubMed, Scopus, OVID, PsycInfo, Web of Science and Cochrane Library. Combinations of the following key words were utilized: “suicide,” “suicidal,” “youth,” “children,” “adolescents,” “intellectual disability,” “developmentally delayed,” “mentally retarded” and “mental retardation.” Studies that focused on adults or non-suicidal self-injury were excluded because self-injurious behavior with intent to die was the focus of this review. The results were synthesized with data from the literature on suicide screening in non-ID youth and assessment of psychopathology in youth with ID.

Prevalence of SI/SB in Youth with ID

The search strategies identified 188 articles. Of those, 175 (93%) were excluded because they focused on adults, did not specifically address SI/SB in youth with ID or focused on self-injury without intent to die. Therefore, 13 articles were identified that describe suicidal

ideation and behavior in children and adolescents with ID: one comprehensive literature review,³² three prospective studies, three chart reviews and six published case reports. For a summary of key findings from the prospective studies, chart reviews and case reports, see Tables 1, 2 and 3, respectively.

Table 1 presents the prospective studies. Overall, reported prevalence of SI/SB was limited to youth with psychiatric comorbidities and estimated to be between 17-60%. Two of the prospective studies directly assessed the youth with ID.^{33,34} The two studies revealed rates of SI between 22-60%, compared with approximately 20% in the general population at the concurrent time period.³⁵ They report history of behaviors to be between 17- 48%, as compared to 8% in the general population.³⁵ In contrast, Koskentausta found that none of the parents of children with ID reported “suicidal talks” as a problem behavior for their children.³⁶ The chart reviews in Table 2 estimate the prevalence of SI/SB to be around 20-42%. Two chart reviews^{37,38} do not discuss how the patients were assessed for suicide risk and found a prevalence of approximately 20%. The third chart review looked at parent report and measured prevalence of SI and “gestures” to be 42%.³⁹ Overall, the prospective studies and the chart reviews suggest that SI/SB are present at a higher rate in samples of adolescent psychiatric patients with “MR” or ID, but reports vary by source and assessment method.

The six published case reports of patients with ID and SB are summarized in Table 3. Three⁴⁰⁻⁴² describe attempt methods and stressors similar to those seen in the general adolescent suicide literature (i.e. hanging, cutting, etc)²⁰ and three^{1,43,44} report on more unusual attempts (i.e. biting electrical wire, swallowing coins, refusing to eat). The case reports in this review highlight the varied manifestations of SI/SB in this population. The description of some unusual behaviors indicates that suicidal intent or the wish to die may present in a more atypical manner in this population. Such differences in clinical presentations would have important implications for the development of a screening instrument.

Variables Correlated with Suicide Risk in Youth with ID

The prospective studies and chart reviews cited in this paper identify variables associated with suicide risk in youth with ID. The most commonly reported are higher IQ, co-morbid Axis I disorders and recent psychosocial stressors.^{33,34,37,38,39}

Association with Intelligence Quotient (IQ)—A number of studies have found that higher levels of intellectual and adaptive functioning can be associated with suicidal ideation and behavior in samples of individuals with ID.^{1,33,37,38,40} For instance, Carlson et al.³³ compared IQ scores of suicidal versus non-suicidal adolescents and found that performance IQ of the suicidal adolescents was an average of 12 points higher than the non-suicidal individuals ($p=.025$). Similarly, Sternlicht et al.,⁴⁰ who reviewed medical files of patients with “MR” at a psychiatric institution, found that the average IQ of their suicidal patients was within the “mildly retarded” range. However, some of the IQ scores (range: 16-79) of the suicidal adolescents and adults in their study fell within the “profoundly retarded” range (25 or below). Therefore, the findings are somewhat inconclusive as to whether there is a clear association with higher IQ.

Occurrence of SI/SB and Comorbid Axis I Disorder in patients with ID—Similar to youth in the general population, comorbid psychiatric disorders, like depressive disorders, post traumatic stress disorder (PTSD) and oppositional defiant disorder (ODD), have been found to correlate with SI and SB in psychiatric patients with ID.^{33,37,38} Carlson et al.³³ observed that 67% of a sample of adolescents with MR and DD who expressed SI met

criteria for a mood disorder; whereas, none in the non-suicidal group could be classified as having a mood disorder ($p < .001$). Similarly, Hardan et al.³⁷ found sadness, somatization and eating disturbances were observed significantly more frequently in the suicidal group versus the non-suicidal group ($p = .001$, $p = .033$, $p < .01$, respectively).

Association with Immediate Stressors—Specific immediate stressors have been associated with individuals with ID expressing SI or manifesting SB. Walters et al.³⁸ found that 36.7% of their suicidal population had experienced significant familial loss, including death, adoption or out of home placement. They also discovered that a substantial proportion of the suicidal patients had been abused physically (46%), sexually (10.5%) or both (26%). Other studies examining psychosocial stressors in suicidal versus non-suicidal individuals with ID reported that suicidal individuals experienced less family and social support, less reciprocity in relationships, greater rejection, more comorbid physical disabilities, greater stress, loneliness and isolation.^{5,41,45,46} These findings are limited by the use of correlation analyses, consequently the direction or causality of the relationship is difficult to extrapolate. However, as a result of this research, it has been suggested that screening procedures and suicide prevention include a focus on family bereavement, abuse and interpersonal distress.⁵

Evaluation of Existing Suicide Screening Instruments

Suicide screening measures designed specifically for the ID population do not exist. In an effort to examine current resources for clinicians wanting to assess suicide risk in their clients with ID, six commonly utilized suicide screening instruments and three sets of suicide screening items from longer depression evaluations for non-ID youth were identified through comprehensive assessment review articles.^{47,48} Evaluation criteria were established through discussion with suicide risk assessment researchers, child psychiatrists and pediatric psychologists. Each measure was evaluated for application in an ID population using the following six factors: the number of items, validated age range, response format, grammatical tense, time recall period and exclusion of individuals with ID from validation studies. Published validation studies and information from the comprehensive reviews were utilized to extract content for the evaluation. Moreover, each instrument developer was contacted by e-mail to confirm details about participant inclusion/exclusion and language of questions. Results are presented in Table 4. Specifically, many instruments are written in the past tense and have response formats with 4 or more choices. Moreover, several validation studies were done with adolescents in 6th grade or higher and did not include individuals with ID. The following section outlines the instrument limitations in more detail.

Suicide Screening Instrument Limitations—Clinicians wanting to screen youth with ID for SI/SB utilizing instruments developed for non-ID youth are challenged by the following characteristics of the measures:

Reading Comprehension Level: Many screening questionnaires require the individual to be at an advanced grade level (6th grade or higher), requesting that the individual read the questions or statements to themselves and respond accordingly. This can be problematic since many children and adolescents experience delays and limitations in oral language development and reading capacity and tend to read and comprehend at an elementary grade level.⁶³

Receptive language skills: Even if an assessment is read aloud, it may include complex sentences and vocabulary. Long sentences and polysyllabic words can be difficult for an individual with ID to understand. Furthermore, many self-report measures are not intended to be read aloud, which in turn, could affect the responses.

Complex response formats: Suicide assessments often contain elaborate response formats in order to determine the timing or the severity of a suicidal thought or behavior. The participant is often asked to choose between 4 or more response options. For some instruments, the response format changes throughout the questionnaire, which can be confusing. Many individuals with ID can complete multiple choice tests, but do best with fewer and consistent choice options (2 to 3).⁶⁴⁻⁶⁶

Abstract thinking: As discussed previously, it is known that past suicidal ideation and behavior predict future behavior.^{25,26,28-30} Such an assessment requires recollection of discrete past events and thoughts. Many assessments ask questions in past tense or may require an understanding of the abstract concept of time. Memory skill deficits may inhibit retrieval of past thoughts and behaviors since individuals with ID tend to be more oriented to present time and place.⁶³

Informant component: Sometimes the warning signs for youth with ID can present differently than the signs for youth without ID. For instance, a regression in functional skill level or outward behaviors that differ from one's usual temperament can signal distress in a person with ID.⁶⁷ Stereotypic and repetitive behaviors also tend to increase in frequency with agitated or irritable mood in this population. It is essential for the clinician to obtain as much information as possible regarding the individual's baseline personality, affect, behavior, capacity and skill level in order to accurately assess the divergence.⁶⁸ Many times, behavioral changes or functional regression are more easily observed. Therefore, it is important to conduct behavior change assessments in this population that utilize an objective informant, such as a parent/guardian or teacher. For the above reasons, existing instruments created for non-ID youth appear to be severely limited for use in children and adolescents with ID at this time.

CONCLUSION

Children and adolescents with ID present some unique challenges for suicide risk assessment. A review of the literature suggests that children and adolescents with ID are at risk for suicidal thoughts, behaviors and death by suicide, with rates as high as 42%. Studies have identified slightly higher IQ, co-morbid psychiatric disorders and recent psychosocial stressors as correlates of suicide risk in the ID population. Previous studies and reviews have suggested healthcare providers routinely assess for suicide risk and depression in youth with ID;^{32,37} however, standardized evaluation of suicidal thoughts and behaviors is challenged by the lack of appropriate measures.

CLINICAL GUIDANCE

Some guidance for clinicians on generally assessing psychopathology in persons with ID has been developed. For example, in 2007, the National Association for the Dually Diagnosed published the *Diagnostic Manual-Intellectual Disability: A Clinical Guide for Diagnosis of Mental Disorders in Persons with Intellectual Disability*. In this manual, clinicians adapted the DSM-IV-TR for adults with ID highlighting similarities and differences in symptomatology for each disorder. Chapters for mood disorders like Major Depressive Disorder and Bipolar I Disorder are included; however, assessment of suicidal ideation is briefly discussed in one paragraph of a chapter on assessment. The paragraph emphasizes the importance of exploring self-threatening statements and behavior and limiting access to lethal means such as guns and pills, but does not provide guidance on the specific language to utilize during the suicide assessment. In addition, a number of mental health screening measures have been developed to assess psychopathology in individuals with ID. Some of the most commonly used are the Reiss Scales for Children's Dual Diagnosis,⁶⁹ Nisonger

Child Behavior Rating Form,^{70,71} the Mini Psychiatric Assessment Schedule for Adults with Developmental Disability (Mini-PAS-ADD),⁷² the Diagnostic Assessment for the Severely Handicapped-II (DASH-II)⁷³ and the Assessment of Dual Diagnosis⁷⁴ (ADD).^{75,76} While some of these measures allude to self-injurious behavior, they assess for non-suicidal self-injury such as biting or picking at wounds. The Nisonger Form is a parent-report questionnaire. Out of 66 items, there are two items assessing self-harm, asking the parent to rate “threatens to harm self” or “physically harms or hurts self on purpose” on a four-point problem scale.⁷⁰

When assessing youth with ID for psychopathology in general, the parent or caregiver is commonly considered the most reliable primary data source.⁷⁷ While parent corroboration is important, it may not be sufficient, as sometimes suicidal behavior and thoughts are unrecognized by caregivers. For example, in a study of SI/SB in adults with ID, the majority (16/23 or 70%) of the suicidal patients were not identified as suicidal by relatives or caregivers.⁷⁸ This could in part be due to the fact that warning signs for youth with ID (i.e. changes in normal behavior, rather than verbalized statements) can be harder to distinguish and are not directly assessed. Therefore, an instrument that captures both patient and caregiver points of view on SI/SB and abnormal behaviors is critical in a population with ID.

FUTURE DIRECTIONS

A suicide risk screening instrument specifically designed to evaluate children and adolescents with ID would greatly aid clinicians in a variety of settings. Developing a single measure will be a challenge given the wide range of cognitive abilities seen in this population. While such a measure is perhaps best utilized in a group with an IQ in the mild to moderate range (IQ 75-45), clearly more advanced expressive/verbal abilities make it easier to assess the child. It is possible that an IQ subscale measure such as verbal reasoning or comprehension as compared to a performance measure, such as block design, may be a predictor of the feasibility of a suicide measure.

In general, a suicide screening instrument developed for youth with ID in the future would ideally include simplified verbal self-report, short yes or no questions read aloud or modified statements from the Childhood Depression Inventory.⁵³ Questions or statements would be more oriented to current time and place. Moreover, it will need to include informant components (from teachers and caregivers) that collectively assess current and past suicidal ideation and behavior (any past attempts). Parent/guardian observation of troubling behavior changes or regression of functional skill level (over the past 2 to 3 months) would also be an important component (such as language from the Vineland).⁷⁹ While an instrument that takes into consideration all these limitations will be helpful, clinical judgment will still be necessary, as is the case assessing any population. Careful clinical studies will need to be done with trained clinicians familiar with the uneven intellect and challenging emotional and social development seen in these youth to understand these complicated assessments. Importantly, suicide screening in youth with ID is only a first step. Careful consideration of how healthcare providers will manage patients who endorse suicidal thoughts or behaviors on a screening instrument is imperative. With a suicide screening instrument designed specifically for individuals with ID, perhaps Johnny, the case example described above, could have proactively received a more comprehensive assessment and earlier intervention before his situation became a clinic emergency.

Acknowledgments

Disclosure: This work was supported in part by the National Institute of Mental Health.

REFERENCES

1. Kaminer Y, Feinstein C, Barrett RP. Suicidal behavior in mentally retarded adolescents: an overlooked problem. *Child Psychiatry Hum Dev*. 1987; 18(2):90–94. [PubMed: 3436176]
2. Brown, I. What is meant by intellectual and developmental disabilities.. In: Brown, I.; Percy, M., editors. *A comprehensive guide to intellectual and developmental disabilities*. Brookes; Baltimore: 2007. p. 3-15.
3. American Association on Intellectual and Developmental Disabilities. 2009. <http://www.aamr.org>
4. U.S. Department of Education. Twenty-sixth annual report to congress on the implementation of the individuals with disabilities education act. Autor; Washington, DC: 2006.
5. Harris, JC. *Intellectual disability: Understanding its development, causes, classification, evaluation, and treatment*. Oxford University Press; New York, NY: 2006.
6. King, BH.; Toth, KE.; Hodapp, RM.; Dykens, EM. Intellectual disability.. In: BJ Sadock, BJ.; V. A. Sadock, VA.; Ruiz, P., editors. *Comprehensive textbook of psychiatry*. 9th ed.. Lippincott Williams & Wilkins; Philadelphia: 2009. p. 3444-3474.
7. Einfeld SL, Ellis LA, Emerson E. Comorbidity of intellectual disability and mental disorder in children and adolescents: a systematic review. *Journal of Intellectual and Developmental Disabilities*. 2011; 36(2):137–43.
8. Bregman JD. Current developments in the understanding of mental retardation. Part II: Psychopathology. *J Am Acad Child Adolesc Psychiatry*. 1991; 30(6):861–72. [PubMed: 1757434]
9. King NJ, Josephs A, Gullone E, et al. Assessing the fears of children with disability using the Revised Fear Survey Schedule for Children: a comparative study. *Br J Med Psychol*. 1994; 67(Pt 4): 377–86. [PubMed: 7888400]
10. Bakken TL, Helverschou SB, Eilertsen DE, et al. Psychiatric disorders in adolescents and adults with autism and intellectual disability: a representative study in one county in Norway. *Res Dev Disabil*. 2010; 31(6):1669–77. [PubMed: 20493660]
11. Bradley EA, Ames CS, Bolton PF. Psychiatric conditions and behavioural problems in adolescents with intellectual disabilities: correlates with autism. *Can J Psychiatry*. 2011; 56(2):102–9. [PubMed: 21333037]
12. Martorell A, Tsakanikos E, Pereda A, et al. Mental health in adults with mild and moderate intellectual disabilities: The role of recent life events and traumatic experiences across the life span. *The Journal of Nervous and Mental Disease*. 2009; 197:182–186. [PubMed: 19282685]
13. Sinason V. Treating people with learning disabilities after physical or sexual abuse. *Advances in Psychiatric Treatment*. 2002; 8:424–431.
14. Ryan R. Posttraumatic stress disorder in persons with developmental disabilities. *Community Mental Health Journal*. 1994; 30(1):45–54. [PubMed: 8149722]
15. Matson JL, Sevin JA. Theories of dual diagnosis in mental retardation. *Journal of Consulting and Clinical Psychology*. 1994; 62:6–16. [PubMed: 8034830]
16. Reiss S, Levitan GW, McNally RJ. Emotionally disturbed mentally retarded people: An underserved population. *American Psychologist*. 1982; 37:361–367. [PubMed: 7103238]
17. Reiss S, Levitan GW, Szyszko J. Emotional disturbance and mental retardation: Diagnostic overshadowing. *American Journal of Mental Deficiency*. 1982; 86:567–574. [PubMed: 7102729]
18. Centers for Disease Control and Prevention. Web-based Injury Statistics Query and Reporting System (WISQARS) [Online]. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (producer); 2008. Available from: URL: www.cdc.gov/ncipc/wisqars. [2011 Dec 6]
19. Eaton DK, Kann L, Kinchen S, et al. Youth risk behavior surveillance - United States, 2009. *MMWR: Surveillance Summaries*. 2010; 59(5):1–142.
20. Bridge JA, Goldstein TR, Brent DA. Adolescent suicide and suicidal behavior. *Journal of Child Psychology and Psychiatry*. 2006; 3/4(47):372–394. [PubMed: 16492264]
21. Pena JB, Caine ED. Screening as an approach for adolescent suicide prevention. *Suicide and Life-Threatening Behavior*. 2006; 36(6):614–637. [PubMed: 17250467]
22. American Academy of Pediatrics; Committee on Pediatric Emergency Medicine; American College of Emergency Physicians and Pediatric Emergency Medicine Committee. *Pediatric mental*

- health emergencies in the emergency medical services system. *Pediatrics*. 2006; 118:1764–1767. [PubMed: 17015573]
23. US Public Health Service. National Strategy for Suicide Prevention: Goals and Objectives for Action. US Department of Health and Human Services; Rockville, Md: 2001.
  24. King CA, O'Mara RM, Hayward CN, et al. Adolescent suicide risk screening in the emergency department. *Academic Emergency Medicine*. 2009; 16:1–8. [PubMed: 19007346]
  25. Lewinsohn P, Rohde P, Seeley J. Adolescent suicidal ideation and attempts: Prevalence, risk factors and clinical implications. *Clinical Psychology: Science and Practice*. 1996; 3:25–46.
  26. Goldston DB, Daniel SS, Reboussin DM, et al. Suicide attempts among formerly hospitalized adolescents: A prospective naturalistic study of risk during the first 5 years after discharge. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1999; 38:660–671. [PubMed: 10361783]
  27. Fergusson DM, Woodward LJ, Horwood LJ. Risk factors and life processes associated with the onset of suicidal behaviour during adolescence and early adulthood. *Psychological Medicine*. 2000; 30:23–39. [PubMed: 10722173]
  28. Brent DA, Baugher M, Bridge J, et al. Age- and sex-related risk factors for adolescent suicide. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1999; 38:1497–1505. [PubMed: 10596249]
  29. Cash SJ, Bridge JA. Epidemiology of youth suicide and suicidal behavior. *Current Opinion in Pediatrics*. 2009; 21:613–619. [PubMed: 19644372]
  30. Shaffer D, Gould MS, Fisher P, et al. Psychiatric diagnosis in child and adolescent suicide. *Archives of General Psychiatry*. 1996; 53:339–348. [PubMed: 8634012]
  31. Marttunen MJ, Aro HM, Lonnqvist JK. Adolescent suicide: Endpoint of long-term difficulties. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1992; 31:649–654. [PubMed: 1644727]
  32. Merrick J, Merrick E, Morad M, et al. Adolescents with intellectual disability and suicidal behavior. *The Scientific World Journal*. 2005; 5:724–728.
  33. Carlson GA, Asarnow JR, Orbach I. Developmental aspects of suicidal behavior in children and developmentally delayed adolescents. *New Directions in Child Development*. 1994; 64:93–107.
  34. Pack RP, Wallander JL, Browne D. Health risk behaviors of African American adolescents with mild mental retardation: prevalence depends on measurement method. *Am J Ment Retard*. 1998; 102(4):409–20. [PubMed: 9475948]
  35. Centers for Disease Control and Prevention. Trends in the Prevalence of Suicide-Related Behaviors, 1991-2009. [online]. 2011. Available from: http://www.cdc.gov/healthyouth/yrbs/pdf/us_suicide_trend_yrbs.pdf
  36. Koskentausta T, Iivanainen M, Almqvist F. CBCL in the assessment of psychopathology in Finnish children with intellectual disability. *Res Dev Disabil*. 2004; 25(4):341–54. [PubMed: 15193669]
  37. Hardan A, Sahl R. Suicidal behavior in children and adolescents with developmental disorders. *Research in Developmental Disabilities*. 1999; 20(4):287–296. [PubMed: 10425656]
  38. Walters AS, Barrett RP, Knapp LG, et al. Suicidal behavior in children and adolescents with mental retardation. *Research in Developmental Disabilities*. 1995; 16(2):85–96. [PubMed: 7792410]
  39. Johnson CR, Handen BL, Lubetsky MJ, Sacco KA. Affective disorders in hospitalized children and adolescents with mental retardation: a retrospective study. *Res Dev Disabil*. 1995; 16(3):221–31. [PubMed: 7652203]
  40. Sternlicht M, Pustel G, Seutsch MR. Suicidal tendencies among institutionalized retardates. *Journal of Mental Subnormality*. 1970; 16:93–102.
  41. Coulter DL. The unfairness of life for children with handicaps. *Journal of the American Medical Association*. 1980; 244(11):1207–1208. [PubMed: 6447806]
  42. Fernandez A, Toms S, Stadler M, et al. A multidisciplinary approach to the treatment of major depressive disorder with psychotic features. *Mental Health Aspects of Developmental Disabilities*. 2005; 8(2):45–51.

43. Menolascino FJ, Lazer J, Stark JA. Diagnosis and management of depression and suicidal behavior in persons with severe mental retardation. *Journal of the Multihandicapped Person*. 1989; 2(2):89–103.
44. Skinner SR, Ng C, McDonald A, Walters T. A patient with autism and severe depression: medical and ethical challenges for an adolescent medicine unit. *The Medical Journal of Australia*. 2005; 183(8):422–424. [PubMed: 16225449]
45. Howell A, Hauser-Cram P, Kersh JE. Setting the stage: Early child and family characteristics as predictors of later loneliness in children with developmental disabilities. *American Journal on Mental Retardation*. 2007; 112(1):18–30. [PubMed: 17181387]
46. Hurley AD. Two cases of suicide attempt by patients with Down's syndrome. *Psychiatric Services*. 1998; 49(12):1618–1619. [PubMed: 9856628]
47. Goldston D. Assessment of suicidal behaviors and risk among children and adolescents. 2000 Technical report submitted to NIMH under Contract No, 263. MD-909995.
48. Meyer RE, Salzman C, Youngstrom EA, et al. Suicidality and risk of suicide--definition, drug safety concerns, and a necessary target for drug development: a consensus statement. *J Clin Psychiatry*. 2010; 71(8):e1–e21. [PubMed: 20797373]
49. Beck, A.; Steer, R. *Manual for the Beck Scale for Suicidal Ideation*. Psychological Corporation; San Antonio, TX: 1991.
50. Steer RA, Kumar G, Beck AT. Self reported suicidal ideation in adolescent psychiatric inpatients. *Journal of Consulting and Clinical Psychology*. 1993; 61:1096–1099. [PubMed: 8113489]
51. Kumar G, Steer RA. Psychosocial correlates of suicidal ideation in adolescent psychiatric inpatients. *Suicide and Life-Threatening Behavior*. 1995; 25(3):339–346. [PubMed: 8553414]
52. Shaffer, D.; Wilcox, H.; Lucas, C., et al. The development of a screening instrument for teens at risk for suicide.. Poster presented at the meeting of the Academy of Child and Adolescent Psychiatry; New York, NY. 1996;
53. Osman A, Downs W, Kopper B, et al. The Reasons for Living Inventory for Adolescents (RFL-A): Development and psychometric properties. *Journal of Clinical Psychology*. 1998; 54:1063–1078. [PubMed: 9840778]
54. Horowitz LM, Wang PS, Koocher GP, et al. Detecting suicide risk in a pediatric emergency department: Development of a brief screening tool. *Pediatrics*. 2001; 107(5):1133–1137. [PubMed: 11331698]
55. Cotton C, Range L. Suicidality, hopelessness, and attitudes toward life and death in children. *Death Studies*. 1993; 17:185–191.
56. Reynolds WM, Mazza J. Assessment of suicidal ideation in inner-city children and young adolescents: reliability and validity of the Suicidal Ideation Questionnaire-JR. *School Psychology Review*. 1999; 28:17–30.
57. Posner K, Brown GK, Stanley B, et al. The Columbia-Suicide Severity Rating Scale: initial validity and internal consistency findings from three multisite studies with adolescents and adults. *Am J Psychiatry*. 2011; 168(12):1266–77. [PubMed: 22193671]
58. Beck, A.; Steer, R. *Manual for the Beck Depression Inventory*. Psychological Corporation; San Antonio: 1987.
59. Larsson B, Ivarsson T. Clinical characteristics of adolescent psychiatric inpatients who have attempted suicide. *European Child and Adolescent Psychiatry*. 1998; 7:201–208. [PubMed: 9879842]
60. Radloff L. The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*. 1977; 1:385–401.
61. Kovacs M. The Children's Depression Inventory (CDI). *Psychopharmacology Bulletin*. 1985; 21:995–998. [PubMed: 4089116]
62. Chartier G, Lassen M. Adolescent depression: Children's Depression Inventory norms, suicidal ideation, and (weak) gender effects. *Adolescence*. 1994; 29:859–864. [PubMed: 7892796]
63. Daily DK, Ardinger HH, Holmes GE. Identification and evaluation of mental retardation. *American Family Physician*. 2000; 4(61):1059–1067. 1070. [PubMed: 10706158]
64. Reynolds WM. The utility of multiple-choice test formats with mildly retarded adolescents. *Educational and Psychological Measurement*. 1979; 39:325–331.

65. Masi G, Brovedani P, Mucci M, Favilla L. Assessment of anxiety and depression in adolescents with mental retardation. *Child Psychiatry and Human Development*. 2002; 32(3):227–237. [PubMed: 11893172]
66. Duoma JCH, Dekker MC, Verhulst FC, Koot HM. Self-reports on mental health problems of youth with moderate to borderline intellectual disabilities. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2006; 45(10):1224–1231. [PubMed: 17003668]
67. Magnuson KM, Constantino JN. Characterization of depression in children with autism spectrum disorders. *Journal of Developmental and Behavioral Pediatrics*. 2011; 32:332–340.
68. Charlot, L.; Fox, S.; Silka, VR., et al. Mood disorders.. In: Fletcher, R.; Loschen, E.; Stavrakaki, C.; First, M., editors. *Diagnostic Manual-Intellectual Disability: A clinical guide for diagnosis of mental disorders in persons with intellectual disabilities*. NIADD Press/National Association for the Dually Diagnosed; Kingston, NY: 2007. p. 157-186.
69. Reiss S, Valenti-Hein D. Development of a psychopathology rating scale for children with mental retardation. *Journal of Consulting and Clinical Psychology*. 1994; 62:28–33. [PubMed: 8034825]
70. Aman MG, Tassé MJ, Rojahn J, et al. The Nisonger CBRF: A child behavior rating form for children with developmental disabilities. *Research in Developmental Disabilities*. 1994; 17:41–57. [PubMed: 8750075]
71. Tassé MJ, Aman MG, Hammer D, et al. The Nisonger Child Behavior Rating Form: Age and gender effects and norms. *Research in Developmental Disabilities*. 1996; 17:59–75. [PubMed: 8750076]
72. Prosser, H.; Moss, S.; Costello, H., et al. The mini PAS-ADD: An assessment schedule for the detection of mental health needs in adults with learning disability (mental retardation). Hester Adrian Research Centre, University of Manchester; Manchester, UK: 1997.
73. Matson, JL. *Diagnostic Assessment for the Severely Handicapped-II*. Scientific Publishers; Baton Rouge, LA: 1994.
74. Matson JL, Bamburg JW. Reliability of the Assessment of Dual Diagnosis (ADD). *Research in Developmental Disabilities*. 1998; 19:89–95. [PubMed: 9472137]
75. Rush KS, Bowman LG, Eidman SL, et al. Assessing psychopathology in individuals with developmental disabilities. *Behavior Modification*. 2004; 28:621–637. [PubMed: 15296521]
76. Myrbakk E, von Tetzchner S. Screening individuals with intellectual disability for psychiatric disorders: Comparison of four measures. *American Journal on Mental Retardation*. 2008; 113(1): 54–70. [PubMed: 18173300]
77. Matson JL, Shoemaker ME. Psychopathology and intellectual disability. *Current Opinion in Psychiatry*. 2011; 24:367–371. [PubMed: 21150621]
78. Lunskey Y. Suicidality in a clinical and community sample of adults with mental retardation. *Research in Developmental Disabilities*. 2004; 25:231–243. [PubMed: 15134790]
79. Sparrow, SS.; Cicchetti, DV.; Balla, DA. *Vineland Adaptive Behavior Scales*. 2nd ed.. American Guidance Service; Circle Pines, MN: 2005.

CASE VIGNETTE

A 16 year old boy, Johnny, with moderate intellectual disability (ID) tells his mother that he wants to jump off a bridge and runs towards the front door of the house. As he pulls on the door, he stomps his feet and yells "I want to die" repetitively. With the physical appearance and strength of a man, Johnny behaves in a way that is difficult for his mother to manage safely when he is upset. After an hour, she is finally able to coax him into the car and bring him to the community health center where he has been in psychotherapy for the past three months. He continues to say that he wants to jump off a bridge and tries to extricate himself from his mother's grip. The front desk personnel are unable to reach the child's usual therapist. As a result, the psychiatry attending on call, security officers, and social workers are contacted emergently to assess and manage the treatment of this adolescent. The mother reports a recent death in the family and that her son has experienced prolonged episodes of screaming and crying that are atypical for him. He has become increasingly irritable and aggressive over the past week, culminating in an attack on a classmate and a teacher's aid, with whom he normally gets along well. Soon after, Johnny began threatening to hurt himself, saying the whole family would be better off without him. Review of Johnny's chart reveals recordings of irritability and depression but no information on previous suicide assessment. It is difficult for the clinicians to gain a clear idea of whether Johnny understands death or the concept of killing himself, but they recognize that he is experiencing a significant amount of emotional distress. The clinicians begin the challenging process of formulating a realistic safety-management plan for Johnny.