In: Youth Suicide Prevention: Everybody's Business ISBN: 978-1-63483-786-6
Editor: Hatim A Omar © 2015 Nova Science Publishers, Inc.

No part of this digital document may be reproduced, stored in a retrieval system or transmitted commercially in any form or by any means. The publisher has taken reasonable care in the preparation of this digital document, but makes no expressed or implied warranty of any kind and assumes no responsibility for any errors or omissions. No liability is assumed for incidental or consequential damages in connection with or arising out of information contained herein. This digital document is sold with the clear understanding that the publisher is not engaged in rendering legal, medical or any other professional services.

Chapter 11

DISABILITY AND SUICIDE

Divya Nagraj and Hatim Omar*

Division of Adolescent Medicine and Young Parent Programs,
Kentucky Clinic, Department of Pediatrics, Kentucky Children's Hospital,
University of Kentucky College of Medicine, Lexington, Kentucky, US

ABSTRACT

We provide a systematic review of suicide among adolescents with physical disabilities, intellectual disability and learning disability. A search was performed of English articles published prior to December 2014 in the PubMed database for studies examining suicide, suicidal behavior and suicidal ideation among adolescents with and without varied disabilities. Nine studies were retrieved, of which two studies examined adolescent populations with physical disabilities, three looked at suicide in adolescents with intellectual disability and four studies examined adolescents with learning disabilities. There were consistent results to prove that these adolescents with special needs had an increased tendency to commit suicide and had expressed increased suicidal ideation Conclusions: An increased risk of suicide among adolescents with physical disabilities, intellectual disability and learning disability relative to those without suggests the need for innovative diagnostic and prevention strategies for this population. Future research which determine factors associated with suicide among adolescents with different disabilities are essential to reduce the disproportionate suicide risk in this population.

INTRODUCTION

Suicide is an important health issue due to its significant burden on mortality in the world today. Approximately 1 million people die because of suicide worldwide (1). Suicide is a leading cause of death especially in the youth. The rate of suicide in youth has increased

* Corresponding author: Hatim A Omar, MD, FAAP, Professor of Pediatrics and Obstetrics/Gynecology, Children's Miracle Network Chair, Chief, Division of Adolescent Medicine and Young Parents Program (L412), Kentucky Children's Hospital, UK Healthcare, Department of Pediatrics, University of Kentucky College of Medicine, Lexington, KY 40536, United States. E-mail: haomar2@uky.edu.

tremendously from 2 in 100,000 in 1960 to 12 in 100,000 by 1992 (2). Suicide in youth has been deeply linked to recent stressful life events and precipitating factors associated with, principally, interpersonal and legal problems, and to a lesser extent, work and financial issues (3). The incidence and prevalence of suicidal symptoms and suicide attempts among United States adolescents is difficult to estimate due to the absence of central public health recording registries. Eighty three percent of the self-inflicted injuries occurred between the ages of 15 and 19 years (4). There are various risk factors for youth suicide. It ranges from a myriad of factors from psychiatric diagnoses like mood disorders, conduct disorders, affective disorder and depression (5). Apart from the most common causes of depression and psychiatric illnesses, stress and disruptive family events were closely associated with suicide in children and adolescents (6). In spite of the paramount importance of suicide in adolescents at risk, there are no acceptable standardized diagnostic strategies. Successfully proven methods of prevention have not yet been researched by us.

Disability is defined as a restriction or inability to perform an activity in the manner or within the range considered normal for a human being, mostly resulting from impairment (7) or as the inability to carry out independently specific roles or activities within a given environment (8). Aside from the usual challenges of adolescence, those with physical disabilities face several difficult problems which ensue from the nature of the very physical disability. As an example, individuals with physical disabilities are more likely to have drug use issues, mental disorders and suicide risk as compared to those without physical disabilities (9, 10). On reviewing literature on suicide in adolescents with physical disability, there is remarkably little written as is on suicide in these adolescents.

Today, intellectual disability and mental retardation are interchangeable terms. Intellectual disability (ID) is a disability characterized by significant limitations in both intellectual functioning and inadaptive behavior, which covers many everyday social and practical skills originating before the age of 18 as defined by intellectual and developmental disability according to the American Association on Intellectual and Developmental disabilities (AAIDD). There is surprisingly very little literature on suicide in this vulnerable group of adolescents. Kaminer, Feinstein, and Barnett (11) speculated that "mental retardation" by virtue of its concomitant intellectual and adaptive limitations, has been mistakenly viewed as a “buffer” against suicidal behavior. One of the few case reports (11) showed that a 16 year old adolescent diagnosed with schizoaffective disorder threatened to kill himself if he was not helped to overcome his “seeing and hearing of scary things.” Sternlicht et al. (12) reviewed the charts for all residents of a state school for persons with ID and found that 12 adolescents (mean IQ 63, range 48–79) had attempted suicide or revealed suicidal ideation. This demonstrated that children and adolescents with intellectual disability and psychiatric illnesses are definitely susceptible to, if not more than the normal population, the ideation, attempt and completion of suicide. To add to that, due to staggeringly little information on suicide in this group, new conclusions have to be drawn.

There has been ample amount of studies done to show that suicide is closely linked to depression and other psychiatric diagnoses of mood disorders, conduct disorders, eating disorders, substance abuse and anxiety disorders (13-15). But we have excluded such studies as it does not specify mental retardation. Addressing suicide in adolescents with physical and intellectual disabilities is a pressing issue given that this vulnerable group has been given little importance in view of this increasing cause of death. The purpose of this study is to review the extant literature to determine the associations between physical and intellectual disability

and suicide. The results of our review will be important in recommending the need for more research on how to prevent this cause of mortality in this delicate group.

METHODS

This systematic review was conducted in compliance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines (16). A comprehensive search of the PubMed database was conducted using the following keywords: Adolescent OR Teen OR Children AND Disability OR Handicap OR physical disability OR mental retardation OR intellectual disability AND suicide OR self-harm. The search was limited to English language articles that addressed physical disabilities, mental retardation and suicide among adolescents and were published prior to December 2014. A histrionic search of the references of relevant articles was further conducted. Selection criteria for articles included those that employed a quantitative research methodology with clearly specified definitions of physical disability, intellectual disability, suicide and suicidal attempts. Studies were excluded if they were review studies (17, 18), case-reports (11), assessed only psychiatric diagnoses like schizophrenia (19), conduct disorder, panic disorder, PTSD, substance abuse (20,21) without accounting for intellectual disability or deficiency in IQ, excluded adolescents with mental retardation (22), reviewed specific neurological disorders like epilepsy but not necessarily including intellectual disability (23), or did not examine suicide as the primary outcome (24), or did not have a non-disability comparison group (25, 26). Studies that examined adolescents with learning disability and suicide were included (27-29). In addition, only studies that included children and adolescents below the age of 18 were considered eligible.

Applying the key word search terms initially obtained 800 hits. A total of 26 studies were eligible based on inclusion/exclusion criteria. However, after removing duplicates and examining the references of the initially retrieved articles, nine studies were eligible for our review. Due to the heterogeneity in the definitions of physical disabilities, intellectual disabilities, suicidal ideation and suicidal attempts in the studies, meta-analytic techniques could not be fully performed.

RESULTS

The studies retrieved from the literature search represent findings from a total accumulated population of 1,100,316 persons of which six studies were from populations in the United States, one was from Canada, one was from Norway, one from Denmark. Table 1 presents a description of the study participants in terms of demographics, physical and intellectual disability status, and suicide. Three studies were based on suicidal attempts (30-32), four studies included suicidal ideation and threats along with suicidal attempts (28, 33-35) and two studies dealt with completed suicide which was reported (27, 29).

This review includes two studies that include physical disability (30, 31), three studies that are based upon mental retardation (IQ measurement and varied scales) (33-35) and four studies that look at learning disability (27-29, 32). Four studies employed longitudinal designs, one was a cohort study and three used a case-control design. Five studies employed a cross-sectional study design.

Table 1. Studies assessing suicidality among adolescents with physical disabilities, intellectual and learning disability

Authors, Year	Purpose	Type of study	Indicator and Outcome variables	Sample (by gender, age, race and country)	Measures (disability type)	Results (main outcomes and gender differences)
Physical disabilities						
Epstein et al., 2009 (31)	To examine the association between four domains of risk factors (alcohol/drug use, aggression, HIV risk-related behaviors, and health problems) and indicators of suicidality.	Cross-sectional	**Indicator:** Physical disability. **Outcome :** Suicidal attempts	N = 13,917, grades 9 to 12, United States, n=10,441 (with physical disability)	**Indicator:** Asked if they had a physical disability or health problem (Yes/No) **Outcome:** 3 indicators of suicidality. 1) Serious attempt consideration (yes/no) 2) Plan and how (yes/no). 3) Number of attempts (0 times versus 1 or more times)	Adolescents with physical disability were significantly more likely to attempt suicide as compared to those without (OR = 3.01, 95% CI: 2.18-4.17)
Christoffersen et al., 2003 (30)	To investigate predictors for adolescents and young adults suicide.	Case-control study	**Indicator :** Physical disability **Outcomes:** Attempted suicide	N = 1,062,608, 14 to 17 years old, Denmark. Number with physical disability not specified	**Indicator :** Adolescents and young adults who had severe handicap or chronic disease. **Outcome:** Suicide attempts : 1) Attempts that led to Hospitalization 2) Self-mutilation 3) Trauma and poisoning.	There was an increased rate of attempted suicide in cases as compared to the controls (8.7% vs 2.9%, OR= 3.5, 95% CI: 2.7-4.4)
Mental retardation						
Hardan & Sahl, 1999 (33)	To examine suicidality in a clinically referred sample of children with developmental disabilities and/or intellectual disability	Cross-sectional	**Indicator:** Attempted suicide **Outcome:** Mental retardation	N= 233 , United States n = 2 (with intellectual disability)	**Indicator:** A suicidality data form documenting self-destructive ideation, threatened or attempted suicide. **Outcome:** IQ measured by a WISC-R or the Stanford-Binet (Fourth edition).	Among those with attempted suicide, a significant proportion have symptoms of psychomotor retardation as compared to those without suicidal ideation (4.2% vs 0%, p = 0.052).

Authors, Year	Purpose	Type of study	Indicator and Outcome variables	Sample (by gender, age, race and country)	Measures (disability type)	Results (main outcomes and gender differences)
Pack et al., 1998 (34)	Health risk behaviors of 194 14-to-17 year old African American urban adolescents with intellectual disability from special education classes.	Cross-sectional	**Indicator:** Mental retardation **Outcome:** Health risk behaviors including suicidal ideation.	N = 2474, 13 to 16 years, African Americans, United States. n = 194 with intellectual disability . n = 2281 without intellectual disability ,	**Indicator:** Adolescents enrolled in a mental retardation special education program. **Outcome:** Suicidal ideation which included serious thought of suicide, plan, attempt, attempt & treatment.	There was a greater proportion of suicidal attempts among adolescents with mental retardation as compared to State and national rates (17% vs 10% vs 8%)
Walters et al., 1995 (35)	To document the existence of suicidal behavior among 90 consecutive admissions to a specialty unit for dually diagnosed children and adolescents in a medical school affiliated children's psychiatric hospital.	Cross-sectional	**Indicator:** Suicidal behavior **Outcome:** Mental retardation	N = 19, mean age = 15.75, United States n = 18 with intellectual disability	**Indicator:** Verbatim descriptions of suicidality coded according to the following classification: 1. Ideation 2. Threat 3. Behavior **Outcome :** Mental retardation based on IQ (mean = 59), a mean Vineland Composite Standard score of 48.	94.7% of those with suicidal behavior had low to severe mental retardation.
Learning disability						
Daniel et al., 2006 (28)	To examine the risk of suicidal ideation and suicide attempts among youth with poor reading in comparison to youth with typical reading.	Cohort	**Indicator :** Adolescents with poor reading ability **Outcome :** Suicidal ideation and suicidal attempt.	N = 188, United States. n = 94 Poor readers, n = 94 typical readers	**Indicator :** The Letter–Word Identification (LWID) subtest of the Woodcock-Johnson Psychoeducational Battery–Revised (WJ-R; Woodcock & Johnson, 1990 was used to identify adolescents with poor and typical single word reading ability. **Outcome :** Self-reported suicidal ideation or suicidal attempts.	There were significantly increased rates of suicidal ideation/suicide in poor readers compared to typical readers (25.2 vs 8.5%,OR = 3.38, p = 0.004)

Table 1. (Continued)

Authors, Year	Purpose	Type of study	Indicator and Outcome variables	Sample (by gender, age, race and country)	Measures (disability type)	Results (main outcomes and gender differences)
Svetaz et al., 2000 (32)	To identify differences in emotional wellbeing among adolescents with and without learning disabilities.	Cross-sectional study	**Indicator:** Learning disability **Outcome:** Suicide attempt	N = 20,780 , United States n = 19,479 without learning disabilities, n = 1,301 with learning disability	**Indicator:** LD was defined as an affirmative response of parents to two questions: (a) Does your adolescent have a LD and (b) has he or she ever been in special education classes? **Outcome:** Suicide "Have you attempted suicide in the last year?" (yes/no)	Adolescents with learning disabilities had significantly increased risk of suicidal attempts as compared to their peers (Females: 9% vs 5%, $p < 0.001$; Males: 4% vs 2%, $p < 0.01$)
Mc.Bride & Seigel 1997 (27)	To investigate the hypothesis that learning disabilities (LD) play a part in adolescent suicide.	Case-control	**Indicator:** Suicide **Outcome:** Learning disabilities	N = 27, Age: 11 to 21 years, Ontario	**Indicator :** Reading disabled if students scored below the 25th percentile on either the Woodcock Word Attack subtest of the Woodcock Reading Mastery Tests (Woodcock, 1973) or the Wide Range achievement Test-Revised (WRAT-R; Jastak & Wilkinson,1984) **Outcome:** Suicide reported in Ontario.	The results showed that 89% of the 27 adolescents who committed suicide had significant deficits in spelling and handwriting that were similar to those of the adolescents with LD, and they were significantly more impaired than the non-LD.
Kjelsberg et al., 1994 (29)	To investigate the incidence of suicide among psychiatric adolescents in an in-patient setting.	Case-control	**Indicator:** Learning disability in psychiatric in-patient adolescents. **Outcome:** suicide	N = 70, Norway n =23 with learning disabilities	**Indicator:** Psychiatric in-patient adolescents. Diagnoses based on hospital records according to DSM-III-R criteria. **Outcome:** Those who had committed suicide.	17 cases with learning difficulties were found to have committed suicide as compared to 7 controls (49% vs 20%, OR = 3.8, $p = 0.01$).

Studies that were based on physical disability

As compared to adolescents without physical disabilities, adolescents with physical disabilities were significantly more likely to commit suicide or have suicidal behavior. In a study among 85,765 students in Denmark, Christoffersen, Poulsen, Nielsen (30) found that adolescents who had been hospitalized for severe handicap or chronic disease had an increased rate of attempted suicide as compared to those were not physically disabled (8.7% vs 2.9%). In a cross-sectional study conducted in 13,917 adolescents from the 50 states and the District of Columbia, Epstein and Spirito (31) reported that adolescents with physical disabilities and health problems were significantly more likely to attempt suicide as compared to those without (OR = 3.01, CI: 2.18-4.17). Hence, the limited number of studies that took a look at suicide in physically disabled adolescents, it was found that adolescents with physical disabilities were more likely to attempt suicide as compared to those did not have physical disabilities.

Studies that were based on intellectual disability

Three studies examined suicide and suicidal behavior among adolescents with intellectual disability. Hardan and Sahl (33) in their study in 1999 with 233 adolescents in the United States found that 4.2% of the adolescents with developmental disabilities (measured low IQ) were more likely to attempt suicide as compared to 0% of those without suicidal ideation. Pack, Wallander and Browne (34) in their study in 1998 looked at 14 to 17 year old African American urban adolescents with mild intellectual disability. They found that those with intellectual disability were more likely to attempt suicide as compared to their national counterparts without intellectual disability (17% vs 8%). In another cross-sectional study, with 90 adolescents in the United States in 1995, Walters, Barrett, Knapp and Borden (35) reported that adolescents with intellectual disability had a high percentage of adolescents likely to attempt suicide (21%). They further described suicidality in regards to suicidality during, before and after hospitalization, lethality of threats and behaviors and types of suicidal acts. Hence, the studies that dealt with intellectual disability (based on IQ measurement) and suicide reflected that there is an increased tendency to commit suicide among these adolescents.

Studies that were based on learning disabilities

Four studies examined suicide and suicidal behavior among adolescents with learning disabilities (LD). Daniel, Walsh, Goldston et al. (28) in their study in 2006 with 188 adolescents in the United States found that there is an increased rate of suicide or suicidal ideation in those adolescents with learning disabilities as compared to those without. Kjelsberg, Neegaard and Dahl (29) in their study in 1994 in Norway looked at the records of 70 adolescents who were hospitalized for psychiatric illnesses. At follow-up they found that those with learning disability were more likely to attempt suicide as compared to their counterparts without learning disability (49% vs 20%). In another case-control study, McBride and Siegel in their study with 294 adolescents in the Canada in 1997 reported that

89% of the 27 adolescents who committed suicide had significant deficits in spelling and handwriting that were similar to those of the adolescents with LD, and they were significantly more impaired than the non-LD (27). Svetaz, Ireland and Blum (32) in 2000 conducted a cross-sectional study with 20,780 adolescents in the United States looking at adolescents with and without learning disabilities. They reported that those with learning disabilities had a significantly increased risk of suicidal attempts as compared to their peers. (Females: 9% vs 5%, Males: 4% vs 2%). Studies that examined adolescents with learning disability suggested that there was a significantly increased risk of suicide in adolescents with learning disability as compared those without.

DISCUSSION

It is important to find out if certain specific subgroups of adolescents at risk, such as those with physical disabilities, intellectual and learning disability have an increased tendency for suicide. Our review found that adolescents with physical disabilities were significantly more likely to attempt suicide as compared adolescents without physical disabilities. Our findings were similar and consistent in regards to adolescents with intellectual disability and learning disability. There were increased tendencies for suicide and suicidal attempts in these groups of adolescents with special needs as compared to those without.

Among adults, studies have found that those with physical disabilities are more prone to suicide than those without. In 2009, Russell, Turner and Joiner using data from an ethnically diverse and representative sample of disabled and nondisabled adults (n = 1,768) reveal that physical disability is associated with a greater risk of lifetime suicidal ideation (36). In a literature review by Giannini, Bergmark, Kreshover et al. (37) concluded that the highest rates of suicide were reported among persons with multiple sclerosis, followed by persons with spinal cord injury, and then individuals with intellectual disability (37). However, Chan, Liu, Chau and Chang (38) statistically examined the correlates of suicidal ideation among a large sample of Taiwanese adults and disability (difficulties in carrying out day to day activities) and they found a strongly positive association between suicidal ideation with disability (38).

Meltzer, Brugha, Dennis et al. (39) researched the influence of disability on suicidal behavior in adults and found that. Those with some form of disability were four times more likely to have attempted suicide as compared to those without (39). Though there a good number of studies in adults inspecting suicide in those with physical and intellectual disability and most show and increased rate of suicide among the disabled, more research is warranted to solidify results and find associated factors and preventive measures.

Studies have found gender differences in suicide among adolescents (40). This is why it was important to assess gender differences in suicide among adolescents with disabilities. However, only one study (32) in our review disaggregated suicide in adolescents with learning disability by gender. A significantly greater proportion of female adolescents with disabilities attempted suicide as compared to those without (9% vs. 5%); and similar findings were seen among male adolescents (4% vs 2%). As only a few studies have examined gender differences in suicide among adolescents with physical disabilities, intellectual disabilities and learning disability, more studies are required in the future to understand the influence of gender in suicidal attempt, ideation and completion in this population.

The reasons for suicide among youth with disabilities can be varied. Adolescents with disabilities may have greater stressors and face issues of social isolation and discrimination (41, 42). Studies have found that negative health related behaviors, is often associated with greater perceived discrimination (43). Causes of suicide in adolescents include relationship breakdowns, other interpersonal problems, parental problems and financial difficulties (3). Suicide in adolescents with physical disabilities and intellectual disability are intricately connected to psychiatric diagnoses and substance abuse (44). However, further studies are needed to further understand psycho-social factors that uniquely determine suicide in adolescents with various types of disabilities.

There are a few important limitations that need to be considered in interpreting the findings of our review. First, there are a limited number of studies found that were respectively specific to physical disabilities, intellectual and learning disability. Second, physical disability, intellectual and learning disability were defined in various ways in all the studies. As a result, the findings may have been affected by differences in the samples obtained which precluded full meta-analytic techniques. More studies are essential to examine differences in specific groups of adolescents with physical and intellectual disabilities; for example, suicide among adolescents with motor vehicle injury related disability may be different as compared to adolescents with congenital disabilities and suicide rates among adolescents with different grades of mental retardation may be strikingly different. Finally, the majority of the studies in our review were based on self-report questionnaires asking suicidal ideation, threats and behaviors. It is not a given, that these adolescents at risk would have completed their attempt successfully and there is no definite method to measure such ideations.

CONCLUSION

It is important to address risk behaviors, especially suicide, in this vulnerable and often neglected population. This review suggests an increased risk of suicide among adolescents with disabilities derived from nationally representative samples. This increased risk indicates the need for innovative diagnostic and prevention strategies to be researched. Our findings lend support for the necessity of interventions that could be tailored to the specific needs of adolescents with specific disabilities. Such interventions may include early identification of risk factors in these disabled adolescents. Cessation interventions should be developed in such a way to appeal precisely to these adolescents and be based on their developmental needs. Interventions are also needed to assess for and address suicidal ideation in pediatric settings. Such interventions would require that pediatric health care providers be trained in the use of evidence based suicidal ideas identification approaches for adolescents with special needs.

REFERENCES

[1] Nock MK, Borges G, Bromet EJ, Cha CB, Kessler RC, Lee S. Suicide and suicidal behavior. Epidemiol Rev 2008; 30(1): 133-54.

[2] Rosenberg ML, Smith JC, Davidson LE, Conn JM. The emergence of youth suicide: An epidemiologic analysis and public health perspective. Annu Rev Public Health 1987; 8(1): 417-40.

[3] Beautrais AL, Joyce PR, Mulder RT. Precipitating factors and life events in serious suicide attempts among youths aAged 13 through 24 years. J Am Acad Child Adolesc Psychiatry 1997; 36(11): 1543-51.

[4] Guyer B, Lescohier I, Gallagher SS, Hausman A, Azzara CV. Intentional Injuries among children and adolescents in Massachusetts. N Engl J Med 1989; 321(23): 1584-9.

[5] Brent DA, Kolko DJ, Wartella ME, Boylan MB, Moritz G, Baugher M, Zelenak, JP. Adolescent psychiatric inpatients' risk of suicide attempt at 6-month follow-up. J Am Acad Child Adolesc Psychiatry 1993; 32(1): 95-105.

[6] Cohen-Sandler R, Berman AL, King RA. Life stress and symptomatology: Determinants of suicidal behavior in children. J Am Acad ChildPsychiatry 1982; 21(2): 178-86.

[7] Barbotte E, Guillemin F, Chau N. Prevalence of impairments, disabilities, handicaps and quality of life in the general population: a review of recent literature. Bull World Health Organ 2001; 79(11): 1047-55.

[8] Freedman VA, Martin LG, Schoeni RF. Recent trends in disability and functioning among older adults in the United States: A systematic review. JAMA 2002; 288(24): 3137-46.

[9] Pompili M. Serafini G, Innamorati M, Biondi M, Siracusano A, Di Giannantonio M, Möller-Leimkühler A. Substance abuse and suicide risk among adolescents. European Arch Psychiatr Clin Neurosci 2012; 262(6): 469-85.

[10] Turner RJ, Lloyd, DA, Taylor J. Physical disability and mental health: An epidemiology of psychiatric and substance disorders. Rehabil Psychol 2006; 51(3): 214-23.

[11] Kaminer Y, Feinstein C, Barrett R. Suicidal behavior in mentally retarded adolescents: An overlooked problem. Child Psychiatr Hum Dev 1987; 18(2): 90-4.

[12] Sternlicht M, Pustel G, Deutsch MR. Suicidal tendencies among institutionalized retardates. Br J Ment Subnorm 1970; 16(31): 93-102.

[13] Andrews JA, Lewinsohn PM. Suicidal attempts among older adolescents: Prevalence and co-occurrence with psychiatric disorders. J Am Acad Child Adolesc Psychiatry 1992; 31(4): 655-62.

[14] Kelly TM, Cornelius JR, Clark DB. Psychiatric disorders and attempted suicide among adolescents with substance use disorders. Drug Alcohol Depend 2004; 73(1): 87-97.

[15] Kuperman S, Black DW, Burns TL. Excess mortality among formerly hospitalized child psychiatric patients. Arch Genl Psychiatry 1988; 45(3): 277-82.

[16] Liberati A, Altman, DG, Tetzlaff J, Mulrow C, Götzsche, PC, Ioannidis JPA, Moher D. The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. PLoS Med, 2009; 6(7): e1000100.

[17] Bender WN, Rosenkrans CB, Crane MK. Stress, depression, and suicide among students with learning disabilities: Assessing the risk. Learn Disabil Quart 1999; 22(2): 143-56.

[18] Merrick J, Merrick E, Morad M, Kandel I. Adolescents with intellectual disability and suicidal behavior. ScientificWorldJournal 2005; 5: 724-28.

[19] Fennig S, Horesh N, Aloni D, Apter A, Weizman A, Fennig, S. Life events and suicidality in adolescents with schizophrenia. Eur Child Adolesc Psychiatry 2005; 14(8): 454-60.

[20] Bridge JA, Goldstein TR, Brent, DA. Adolescent suicide and suicidal behavior. J Child Psychol Psychiatry 2006; 47(3-4): 372-94.

[21] Fergusson DM, Lynskey MT. Childhood circumstances, adolescent adjustment, and suicide attempts in a New Zealand Birth Cohort. J Am Academy Child Adolesc Psychiatry 1995;34(5):612-22.

[22] Larsson B, Ivarsson T. Clinical characteristics of adolescent psychiatric inpatients who have attempted suicide. Eur Child Adolesc Psychiatry 1998; 7(4): 201-8.

[23] Nickels KC, Grossardt BR, Wirrell EC. Epilepsy-related mortality is low in children: A 30 year population-based study in Olmsted County, MN. Epilepsia 2012; 53(12): 2164-71.

[24] Carlson G, Asarnow J, Orbach I. Developmental aspects of suicidal behavior in children and developmentally delayed adolescents. New Direct Child Dev 1994; 64: 93-107.

[25] Hollar D. Risk Behaviors for varying categories of disability in NELS:88. J Sch Health 2005; 75(9): 350-8.

[26] Nash AA, Britt MT, Lovell DJ, Passo MH, Rosenthal SL. Substance use among adolescents with juvenile rheumatoid arthritis. Arthritis Rheuma 1998;11(5):391-6.

[27] McBride HE, Siegel LS. Learning disabilities and adolescent suicide. J Learn Disabil 1997; 30(6): 652-9.
[28] Daniel SS, Walsh AK, Goldston DB, Arnold EM, Reboussin BA, Wood FB. Suicidality, school dropout, and reading problems among adolescents. J Learn Disabil 2006; 39(6): 507-14.
[29] Kjelsberg E, Neegaard E, Dahl AA. Suicide in adolescent psychiatric inpatients: incidence and predictive factors. Acta Psychiatr Scand 1994; 89(4): 235-41.
[30] Christoffersen MN, Poulsen HD, Nielsen A. Attempted suicide among young people: risk factors in a prospective register based study of Danish children born in 1966. Acta Psychiatr Scand 2003; 108(5): 350-8.
[31] Epstein JA, Spirito A. Risk factors for suicidality among a nationally representative sample of high school students. Suicide Life Threat Behav 2009; 39(3): 241-51.
[32] Svetaz MV, Ireland M, Blum R. Adolescents with learning disabilities: risk and protective factors associated with emotional well-being: findings from the National Longitudinal Study of Adolescent Health. J Adolesc Health 2000; 27(5): 340-8.
[33] Hardan A, Sahl R. Suicidal behavior in children and adolescents with developmental disorders. Res Dev Disabil 1999; 20(4): 287-96.
[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 1997; 102(4): 409-20.
[35] Walters AS, Barrett RP, Knapp LG, Borden MC. Suicidal behavior in children and adolescents with mental retardation. Res Dev Disabil 1995; 16(2): 85-96.
[36] Russell D, Turner RJ, Joiner TE. Physical disability and suicidal ideation: A community-based study of risk/protective factors for suicidal thoughts. Suicide Life Threat Behav 2009; 39(4): 440-51.
[37] Giannini MJ, Bergmark B, Kreshover S, Elias E, Plummer C, O'Keefe E. Understanding suicide and disability through three major disabling conditions: Intellectual disability, spinal cord injury, and multiple sclerosis. Disabil Health J 2010; 3(2): 74-8.
[38] Chan, HL, Liu CY, Chau YL, Chang, CM. Prevalence and association of suicide ideation among Taiwanese elderly—a population-based cross- sectional study. Chang Gung Med J 2011; 34(2): 197-204.
[39] Meltzer H, Brugha T, Dennis MS, Hassiotis A, Jenkins R, McManus S, Bebbington, P. The influence of disability on suicidal behaviour. ALTER - Eur J Disabil Res 2012;6(1):1-12.
[40] Lewinsohn PM, Rohde P, Seeley JR, Baldwin CL. Gender differences in suicide attempts from adolescence to young adulthood. J Am Acad Child Adolesc Psychiatry 2001; 40(4): 427-34.
[41] Lindsay S, McPherson AC. Experiences of social exclusion and bullying at school among children and youth with cerebral palsy. Disabil Rehabil 2012; 34(2): 101-9.
[42] Salmon N. 'We just stick together': how disabled teens negotiate stigma to create lasting friendship. J Intellect Disabil Res 2013; 57(4): 347-58.
[43] Pascoe EA, Smart Richman L. Perceived discrimination and health: A meta-analytic review. Psychol Bull 2009; 135(4): 531-54.
[44] Gould MS, King R, Greenwald S, Fisher P, Schwab-Stone M, Kramer R, Shaffer D. Psychopathology associated with suicidal ideation and attempts among children and adolescents. J Am Acad Child Adolesc Psychiatry 1998; 37(9): 915-23.