Research brief

The epidemiology of child suicides in the City of Cape Town Metro West region

Authors: Mathews S, Denga G, Marco J, Delany A (Children's Institute, University of Cape Town) and Martin LJ (Division of Forensic Medicine and Toxicology, University of Cape Town)

Suicide is the second leading cause of death amongst young people aged 15 – 29 years old globally, yet it is preventable[1]. Little is known about suicide amongst children under the age of 15 years in low- and middle-income countries[2,3]. Although suicide is considered a rare event among young adolescents (10 – 14 years)[4], evidence both locally and internationally shows that it is a growing problem[5,6,7]. The only data on adolescent suicide in South Africa is from the National Injury Mortality Surveillance Study and shows that suicide accounts for 1.6% of deaths in the 10 – 14 year age group and increases to 8.4% in the 15 – 19 year age group, but this data is from 2007[8]. While suicide is not the leading cause of non-natural deaths amongst children in South Africa[9], it is an indicator of the burden of mental health distress among young people.[10] The World Health Organisation highlights the importance of monitoring suicide through routine surveillance as the first step to prevent suicide as this allows you to understand the magnitude of the problem and to identify vulnerable groups to be targeted [11].

The Child Death Review Project

The Child Death Review (CDR) project initiated by the Children's Institute, University of Cape Town, in partnership with the Division of Forensic Medicine and Toxicology, University of Cape Town, is one such monitoring tool. The aim of the CDR project is to foster an intersectoral, collaborative approach to gather data systematically for each child death presenting to a medico-legal laboratory (mortuary) at the selected sites. At the core of the process is the multidisciplinary team with representatives from law enforcement, social services, health, forensic pathology and prosecution services who meet retrospectively to share case-specific information and review the circumstances of child deaths.[12]

In this research brief we explore the routine retrospective data collected by the Salt River Mortuary (SRM) CDR team for children under the age of 18 years[13]. SRM is the largest mortuary in the Western Cape and its catchment area includes all the informal settlements, suburbs and townships that extend from Atlantis to Kommetjie and Camps Bay to Mitchells Plain[14]. Although the numbers reported in the brief are relatively small, they provide important insights into the pattern of suicide among children in an urban context.

Although this data only represents the City of Cape Town (CCT) Metro West, it nevertheless is important as it can provide an understanding of the patterns of child suicides. We present the mortuary-specific rates of suicide for the CCT Metro West and compare this to data for the CCT Metro and Western Cape Provincial rates of suicide for the years under investigation. The data for the Western Cape province is derived from the routine mortality surveillance data collected by the Western Cape Department of Health. Furthermore, we present the pattern of suicide by gender and age count differences, methods of suicide, and associated case narratives to develop an understanding of the emerging contributing factors to suicide among children.

Suggested citation:

Mathews S, Denga G, Marco J, Delany A & Martin LJ (2018) *The epidemiology of child suicides in the City of Cape Town Metro West region*. Cape Town: Children's Institute, University of Cape Town. [Research brief]

For further information contact:
Prof Shanaaz Mathews, Children's Institute, UCT: shanaaz.mathews@uct.ac.za

© 2018
Children's Institute, University of Cape Town

DST-NRF Centre of Excellence in Human Development
Individual and Society

Funded by the DST-NRF Centre of Excellence in Human Development.

Definitions (CDC, 2011)

Suicide: Death caused by self-directed injurious behaviour with an intent to die as a result of the behaviour.

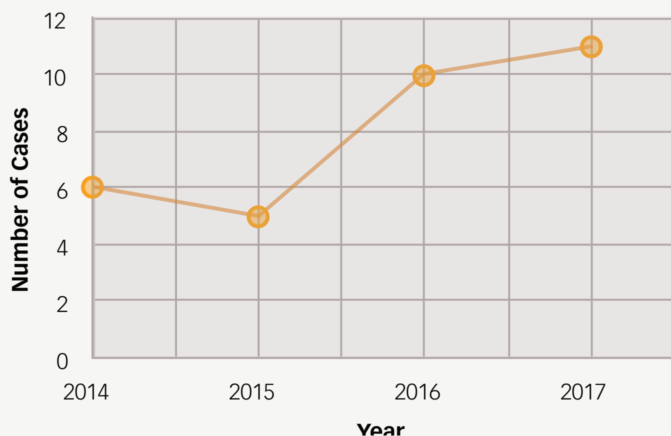
Suicide attempt: A non-fatal, self-directed, potentially injurious behaviour with any intent to die as a result of the behaviour. A suicide attempt may or may not result in injury.

Suicidal Ideation: Thinking about or considering killing oneself or planning suicide.

Results

We found a total of 32 suicide cases over the four-year study period. Figure 1 shows that suicide among children and adolescents doubled from a low of five cases in 2015 to 10 cases in 2016 and increased to 11 cases by 2017.

Figure 1: Number of suicide cases by year at Salt River Mortuary (n=32)



*Metro and provincial data not available for 2017

This observed increase in suicide among children 10 – 17 years old is confirmed by the mortuary-specific rates which nearly doubled over the four-year period from 3.2 per 100 000 in 2014 to 6.0 per 100 000 children aged 10 – 17 years old in 2017. This increase appears to be driven by an increase in suicide among younger adolescents aged 10 – 14 years, which doubled from 2.6 per 100 000 in 2014 to 5.2 per 100 000 children aged 10 – 14 years old in 2017. The increase in suicides among older adolescents were not as marked from 4.3 per 100 000 in 2014 to 7.3 per 100 000 children aged 15 – 17 years old in 2017.

The overall CCT Metro rate for adolescents (10 – 17 years) ranged from a low of 3.8 to 6.1 per 100 000 children aged 10 – 17 years old, which is somewhat higher than 5.5 per 100 000 children 10 – 17 years old for 2016 for CCT Metro West. The overall metro rates are higher (6.1/100 000) than the provincial rates (5.1/100 000), which appear to be driven by higher rates of suicide in the metro.

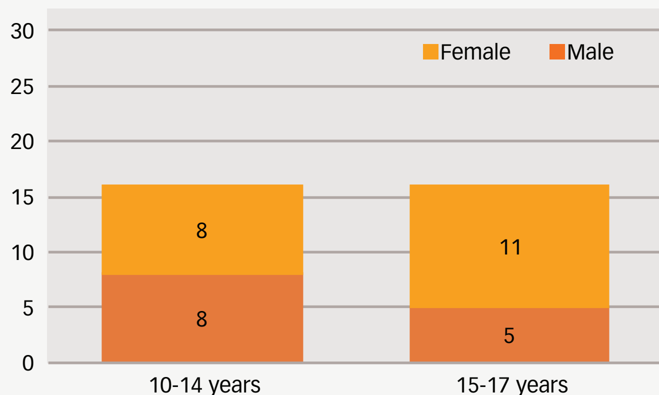
Table 1: Child and adolescent suicide rates in CCT Metro West compared to overall CCT Metro and Western Cape suicide rate over four years

Year	Total CCT Metro West mortuary-specific child suicide rate 10 – 17 years *(per 100 000)*	Mortuary-specific (Metro West) child suicide rate 10 – 14 years *(per 100 000)*	Mortuary-specific (Metro West) adolescent suicide rate 15 – 17 years *(per 100 000)*	City of Cape Town (Metro) child suicide rate 10 – 17 years *(per 100 000)*	City of Cape Town (Metro) child suicide rate 10 – 14 years *(per 100 000)*	City of Cape Town (Metro) adolescent suicide rate 15 – 19 years *(per 100 000)*	Western Cape Provincial child suicide rate 10 – 17 years (per 100 000)	Western Cape Provincial child suicide rate 10 – 14 years *(per 100 000)*	Western Cape Provincial adolescent suicide rate 15 – 19 years *(per 100 000)*
2014	3.2	2.6	4.3	3.8	1.3	6.1	4.3	1.4	5.4
2015	2.7	2.6	2.9	7.5	1.3	14.7	6.5	1.3	8.6
2016	5.5	3.5	8.7	6.1	1.6	11.7	5.1	1.6	6.9
2017	6.0	5.2	7.3		-	-	-	-	-

Patterns of child and adolescent suicide

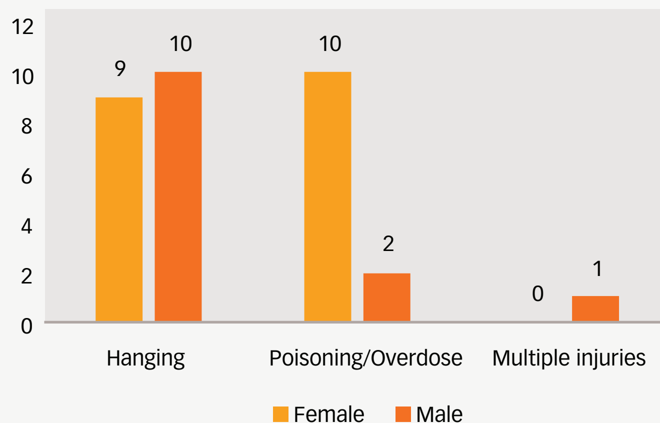
We had more females (n=19) compared to males (n=13) who committed suicide over the four-year period. There were no gender differences among younger adolescents, but in the older age group (15 – 17 years) there were more than double the number of female suicide cases (n=11) than male cases (n=5).

Figure 2: Number of suicide cases by gender and age category



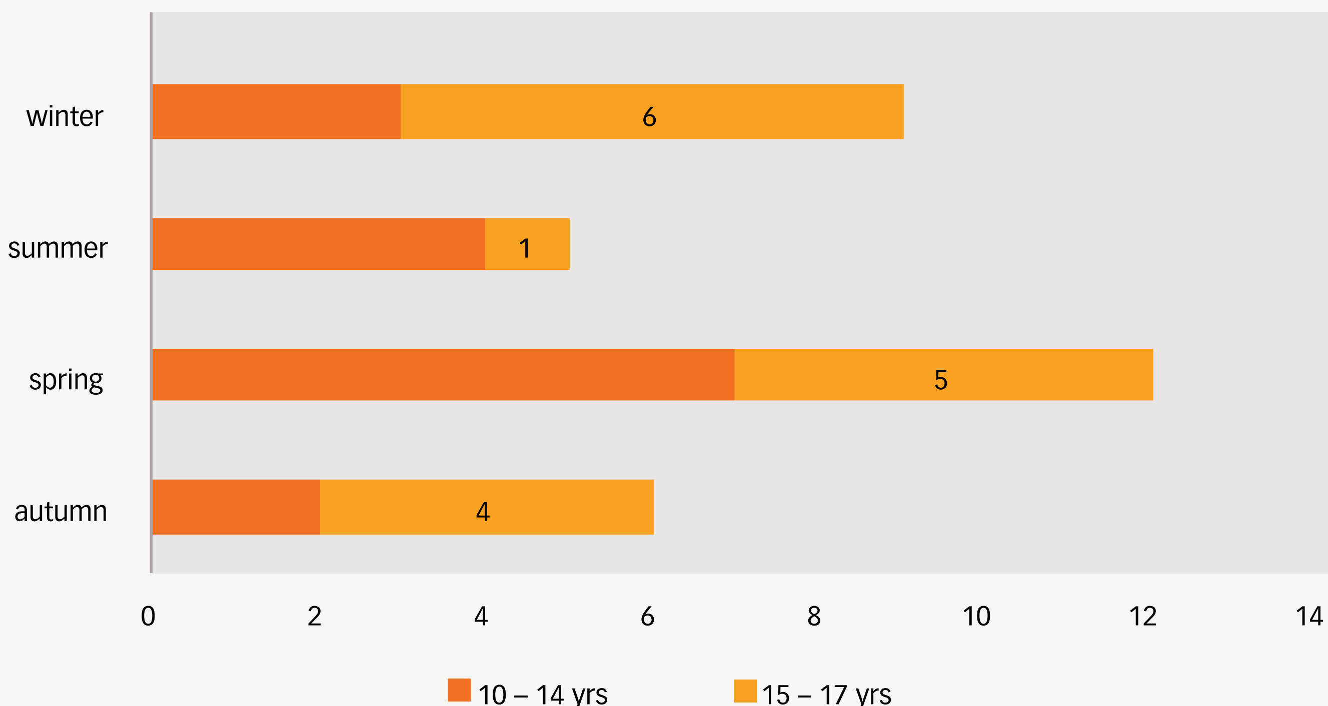
Over the four-year period, the leading method of death was hanging (n=19), followed by overdose or poisoning (n=12), and only one child died of multiple injuries due to jumping off a building (see Figure 3). Comparing method of death by gender, the most common method used by male children was hanging (n=10) with a similar number (n=9) of female children also using hanging as a method of death. However, a gender difference was noted for overdose and poisonings cases, which was the most common method of death among female children (n=10).

Figure 3: Method of suicide by gender



Importantly, all suicides occurred at home. Figure 4 shows that nearly one in four (n=12) suicides occurred in Spring, with more younger adolescents (n=7) than older adolescents (n=5) committing suicide during this season. While the least number of cases occurred in Summer (n=5) and Autumn (n=6).

Figure 4: Suicide by season and age category



Circumstances preceding suicide

The CDR process adopts a social autopsy approach, where the social contributors to a child's death are discussed alongside the medical cause of death. The review process gathers information about all factors and events contributing to a child's death based on the medical history, police investigation, and additional information obtained from social worker investigations or the school. Each death is considered a sentinel event from which lessons can be derived to improve the health and child protection systems.

Case histories compiled through the CDR process were reviewed to develop an understanding of the factors that contributed to these suicidal deaths. In 13 cases (40%), families had no idea what contributed to the child's suicide and no suicide notes were left by the child, making it difficult to identify any contributing factors. In these cases families, friends, and educators where unaware of any emotional struggles the child might have been experiencing. Research from developed countries note that suicide in the absence of an underlying, overt psychiatric disorder is not unusual among children.[15] A state of hopelessness among children and adolescents has been found to be a predictor of suicide and depression.[16] When faced with a crisis, the child or adolescent who may have limited problem-solving capacity, considers suicide as the only solution. This may also be the explanation in the seven cases (22%) where arguments or conflict at home or school preceded the child's suicide with no known co-morbid psychiatric diagnosis (see cases studies 2 and 3). Emotional distress or mental health struggles were identified in nearly a third (32%) of cases; five children were treated for depression and in another five cases the family knew the child was depressed or had emotional struggles (see case study 1), but the child was not receiving any counselling support. In two cases (6%), loss in the form of a relationship breakup and the death of a close relative contributed to the suicide event (see case study 4). Depression is a major predictor of suicide[17], but little is known about the prevalence of mental health among children and adolescents in South Africa. Research suggests that a previous suicide attempt combined with depression are critical predictors for completed suicide.

Case study 1: Family conflict

A 13-year-old female had an argument with her mother in the morning. Her mother claims that their argument escalated and the child became disrespectful. She physically punished the child and left to run errands shortly thereafter. The child was left at home with an older brother. When the mother returned home the child was sleeping in her room. Later that afternoon when the mother went looking for her, she was found under her bed unresponsive. The mother found her empty blood pressure medication container in the child's bedroom. The family and school maintained that the child was well adjusted with no mental health issues, yet on inquiry she attempted suicide a few months prior to this incident. The child and family were not referred for any counselling with the suicide attempt and the mother claims that the child promised her not to do it again. This highlights the importance of strengthening relationships between parents and children with a focus on communication, while also increasing the coping skills of young people to prevent further suicide attempts.

Case study 2: Unidentified emotional distress of children

A young women found her 14-year-old brother hanging in the outside toilet at their home. She had returned from school when she found his body. She reported that he had not been attending school due to an argument with a friend at school, but was too afraid to tell his mother. He was scared that his mother would find out about him playing truant and that she would punish him. The day before his death he posted on Facebook that he was planning to commit suicide. When a young person finds themselves in the midst of a major crisis, suicide is considered as a viable option when they are unable to see another way out. Importantly, all threats of suicide should be taken seriously. Encouraging open, non-threatening communication between a caregiver and child is important to provide children with the necessary support to deal with a crisis.

Discussion

We found an increase in child and adolescent suicides at Salt River Mortuary for the 2014 – 2017 period. Globally, suicide rates have increased over the past few decades with South Africa showing a similar increase.[18] Although our sample size is small, it provides important insights into child suicides, which is a neglected area of investigation. Overall, suicides among female adolescents were more common than males in the City of Cape Town Metro West. This is different to findings from global studies [19,20,21], but this requires further exploration once full provincial coverage by the CDR project has been reached.

The most common method of suicide was hanging, which is consistent with findings from other local and international studies[21,22,23]. An overdose of tablets or toxic substances like pesticides were found to be more common among females, which is supported by the National Injury Mortality Mortuary Survey data and a comparative study across 101 countries among young people[25]. The method of suicide is thought to be related to access to the means, thus the use of organophosphate poison for pest control by the City of Cape Town over the study period might be related to the increase in the use of the substance in a few suicide cases. Accessibility has been shown to be the most important link to method of suicide and therefore important to consider in reducing the risk of suicide.

Circumstances preceding suicide are illuminated by the case histories and highlights the complex nature of suicide. We found two distinct patterns. The first is the suicides with no obvious contributing factor and no suicide note left behind to offer an explanation. Research into adolescent suicide suggests that where no clear contributing factor is identified, the developmental phase of adolescents is important in understanding such suicides. It is not unusual for a life crisis to lead a young person to consider suicide without a co-morbid psychiatric condition as an option. The lack of problem-solving ability and the inability to talk to others about their problems can lead to suicide being viewed as the only way to ease their pain and resolve the problem[26]. Increasing coping and problem-solving skills is particularly important given the barriers to accessing mental health services in South Africa. Secondly, the narratives also highlighted the link between mental health (particularly depression), previous suicide attempts, history of sexual abuse, and family conflicts. The association between depression, mood disorders, and substance use disorders is well established for suicidality and suicidal ideation in children[27,28,29,30]. Unmet mental health needs have been highlighted, with a number of young people in therapy at the time of the incident, but of concern are the few cases where children had attempted a previous suicide and were not receiving professional help. A previous suicide attempt is considered an important predictor for a completed suicide and these children should be considered high-risk. Suicidal ideation reflects underlying conflicts that require urgent attention and careful follow-up to prevent a completed suicide. In addition, loss and relationship conflicts have been highlighted in a few cases; this shows the need to promote interventions to support the coping skills of young people.

Case study 3: Depression and anxiety in the context of child sexual abuse

A 16-year-old female was diagnosed with depression and anxiety at age 11 years and has been receiving treatment at a child mental health service for the past five years. She has a history of sexual abuse at the age of five years and the length and duration of the abuse is unclear. The parents were separated and the child was in the care of her father with the support of her grandmother. She had attempted suicide twice and was not taking her medication regularly. At her last counselling session, she was very depressed and requested admission, but her family felt she could be managed as an outpatient. She was discharged into their care with a two-week follow-up appointment. Three days later she was found in bed by her grandmother and had taken an overdose of her depression medication. Adequately managing depression in young people in the context of previous suicide attempt/s is critical to prevent the risk for suicide completion.

Case study 4: Loss and untreated depression in young people

A mother found her 17-year-old, grade 12 student "snoring" in the late afternoon. Her daughter was last seen when she returned from school earlier that afternoon. She was rushed to the day hospital and transferred to the nearest large hospital where she was treated for an overdose of high blood pressure and anxiety medication, but died a day later. The family reported that she became very depressed, started self-harming behaviour and lost weight after her father's death two months prior to this incident. She also lost her grandfather over the past year and reportedly had relationship problems with her boyfriend. Her mother felt helpless in the face of trying to deal with her own grief. When a young person finds themselves facing a life crisis such as the death of a loved one, this can result in feelings of hopelessness and depression, which can lead to suicidal ideation. Access to mental health services and support to increase coping skills is critical to prevent suicide.

Recommendations

The CDR project has identified key areas to strengthen efforts to reduce preventable child and adolescent suicidal deaths. Interventions to reduce suicides should be multi-pronged to address risk and protective factors.

- The CDR data has highlighted the importance of focussing on child and adolescent suicide as it provides us with insight into the problems facing this vulnerable age group. South Africa lacks a systematic exploration into this phenomenon for children; the routine analysis of mortality surveillance data will provide us with accurate estimates, but it needs to be combined with qualitative data to increase our understanding of the factors contributing to suicide among children.
- Suicide is a complex and multi-faceted phenomenon with devastating consequences if inadequately managed. We found that many children suffered with mental health problems, but community mental health services are limited. It is important for a range of professionals to be skilled to identify and manage at-risk young people. There is the potential to use standardised suicide risk identification tools and to develop guidelines on depression management in primary care facilities for children and adolescents as a point of entry for use by a range of social services practitioners. In the meantime, specialist services should be working in partnership with community-based services to manage high-risk individuals in a task-sharing approach.
- Prevention efforts should focus on early detection of children in need of support and include targeted approaches to increase awareness of the suicide risk and its early warning signs. Educators, parents, and the wider community should be targeted with a community-wide suicide prevention programme led by government in collaboration with community-based advocacy groups such as the South African Depression Group and Childline South Africa, among others.
- Early intervention efforts should target at-risk children and adolescents to increase their coping skills and overall life skills. The potential exists to develop partnerships with the Department of Basic Education to strengthen the life orientation curriculum to tackle issues such as relationship breakups, exam pressure, failing at school, and peer pressure. Children should also be given information on the alternative places they could seek help from within the community. In addition, peer support programmes in the school and community have the potential to identify warning signs and patterns of behaviour in a supportive environment and to refer at-risk children appropriately.
- The family can be both a source of support and distress for a young person. Families need to be made aware of the real risk of adolescent suicide particularly when a child suffers with mental health problems. Fostering open and continuous communications between parents and children is important to promote feelings of social connectedness which can serve as a protective factor in preventing suicide among young people.
- A combination of individual, relationship, societal, and cultural factors increase the risk for a child to commit suicide. These include: a history of abuse, previous suicide attempt(s), history of mental disorders (particularly depression), feelings of hopelessness, impulsive or aggressive tendencies, social isolation, loss of a loved one, and barriers to accessing mental health treatment. It is therefore important to strengthen protective factors such as increasing problem-solving capabilities in young people whilst promoting the development of supportive family and school environments.

Helplines

SADAG
The South African Depression and Anxiety Group
0800 21 22 23 / www.sadag.org

Life Line 0861 322 322/ 011 728 1347 / lifelinesa.co.za

Child Line
0800 055 555 / www.childlinesa.org

References: (1) *Preventing suicide: A global imperative* (2014) World Health Organisation. Viewed 2018: http://apps.who.int/iris/bitstream/handle/10665/131056/9789241564779_eng.pdf;jsessionid=9244A5D59B6E994B72EF47E8BA088912?sequence=1. (2) Schlebusch L (2012) Suicidal behaviour. *In:* Van Niekerk A, Suffla S & Seedat M (eds) *Crime, violence and injury in South Africa: 21 century solutions for child safety.* Johannesburg: PsySSA Press. (3) Kõlves K & De Leo D (2014) Suicide rates in children aged 10 – 14 years worldwide: Changes in the past two decades. *The British Journal of Psychiatry*, 205(4):283-285. (4) Mathews S, Martin LJ, Scott C, Coetzee D & Lake L (2015) *Every child counts: Lessons learned from the South African Child Death Review pilot.* A research brief. Cape Town: Children's Institute, University of Cape Town. (5) Hong M, Cho H, Kim A, Hong H & Kweon Y (2017) Suicidal deaths in elementary school students in Korea. *Child and Adolescent Psychiatry and Mental Health*, 11:53. http://doi.org/10.1186/s13034-017-0190-3. (6) Mathews S, Martin LJ, Coetzee D, Scott S & Brijmohun Y (2016) Child deaths in South Africa: Lessons from the child death review pilot. *South African Medical Journal,* 106(9):851-852. (7) Tishler CL, Reiss NS & Rhodes AR (2007) Suicidal Behavior in Children Younger than Twelve: A diagnostic challenge for emergency department personnel. *Academic Emergency Medicine,* 14(9): 810-818. (8) Donson H (2008) Suicide. In: Matzopoulos R (ed) *A profile of fatal injuries in South Africa: 9th annual report of the National Injury Mortality Surveillance System*. South Africa: Medical Research Council/UNISA. (9) See no. 2 above. (10) Mars, B., Burrows, S., Hjelmeland, H., & Gunnell, D. (2014). Suicidal behaviour across the African continent: a review of the literature. *BMC Public Health*, 14, 606. (11) See no. 1 above. (12) See no. 6 above. (13) This study used the United Nations Convention on the Rights of the Child definition of a child as a person aged <18 years. (14) See no. 4 above. (15) Greydanus DE, Bacopoulou F & Tsalamanios E (2009) Suicide in adolescents: A worldwide preventable tragedy. *The Keio Journal of Medicine*, 25;58(2):95-102. (16) Maris RW (2001) Suicide. *The Lancet*, 360(9329):319-326. (17) See no. 15 above. (18) See no. 2 above. (19) University of Manchester (2017) *Suicide by children and young people*. (The National Confidential Inquiry into Suicide and Homicide by People with Mental Illness). Manchester: University of Manchester. (20) Beautrais AL (2001) Child and young adolescent suicide in New Zealand. *Australian and New Zealand Journal of Psychiatry*, 35(5):647-53. (21) Freuchen A, Kjelsberg E, Lundervold AJ & Groholt B (2012) Differences between children and adolescents who commit suicide and their peers: A psychological autopsy of suicide victims compared to accident victims and a community sample. *Child and Adolescent Psychiatry and Mental Health*, 6:1. (22) See no. 8 above. (23) See no. 2 above. (24) See no. 19 above. (25) Kõlves K & De Leo D (2017) Suicide methods in children and adolescents. *European Journal of Child and Adolescent Psychiatry*, 26:155-164. (26) See no. 15 above. (27) Miché M, Hofer PD, Voss C, Meyer AH, Gloster AT, Beesdo-Baum K & Lieb R (2017) Mental disorders and the risk for the subsequent first suicide attempt: Results of a community study on adolescents and young adults. *European Child and Adolescent Psychiatry*, 27(7):839-848. (28) Shilubane HN, Ruiter RA, van den Borne B, Sewpaul R, James S & Reddy PS (2013) Suicide and related health risk behaviours among school learners in South Africa: Results from the 2002 and 2008 national youth risk behaviour surveys. *BMC Public Health*, 13(1):926. (29) Soole R, Kõlves K & De Leo D (2015) Suicide in Children: A systematic review. *Archives of Suicide Research*, 19(3):285-304. (30) See no. 19 above.