

SUICIDE ATTEMPTS AMONG ADULTS WITH FETAL ALCOHOL SPECTRUM DISORDERS: CLINICAL CONSIDERATIONS

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People diagnosed with fetal alcohol spectrum disorders (FASD) have neuropsychological deficits that may contribute to increased risk for suicide. This paper describes clinical profiles of eleven individuals with FASD and differentiates six who attempted suicide from five who did not, with regard to risk and protective factors. Attempters were more likely to have mental health disorders, substance abuse disorders, a history of trauma or abuse, financial stress, and unstable social support compared to non-attempters. We discuss ways in which clinicians can reduce risk among individuals with FASD by modifying standard suicide assessment and intervention protocols to accommodate the person's deficits.

Keywords: intellectual disability, FAS, fetal alcohol spectrum effects, suicide, psychiatric, depression, impulsivity, prenatal

People with fetal alcohol spectrum disorders (FASD) have organic brain damage that results in neurodevelopmental deficits, including impaired judgment, insight, impulse control, mood regulation, and executive functioning skills which are all critical for problem-solving and decision-making.^{6,10,22,27,35,45} The confluence of these deficits may contribute to psychosocial and mental health problems at every developmental stage.^{2,11,28,40,46} Suicide attempts are among the most serious of these potential problems.^{23,43}

Streissguth and colleagues⁴³ conducted a large scale clinical study of 415 subjects diagnosed with either fetal alcohol syndrome (FAS) or fetal alcohol effects (FAE), and found that knowledgeable informants reported that 3% (5/162) of subjects age 6 to 11 years, 12% (21/163) of subjects age 12 to 20 years, and 23% (21/90) of adults age 21 to 51 years attempted suicide. The adult rate of 23% is five times higher than the general U.S. population rate of 4.6% published in the National Comorbidity Study.²¹ In another clinical study, Lemoine and Lemoine²³ found that 9% (7/77) of a French adult sample with FAS or FAE had attempted suicide.

Some individuals with the developmental disability of FASD have IQs below 70 and thus have a concurrent intellectual disability. Suicidality (threats, statements of suicide, or suicidal attempts/gestures) can occur among people of all ages with an intellectual disability.³⁰ In an outpatient psychiatry clinic sample, 6% of adults with an intellectual disability reported

suicidality.¹⁹ Studies on the frequency of suicide attempts or harmful actions (separate from suicidal ideation and threats) report rates of 3% to 13% for children and adolescents in clinical samples, and 11% for adults in a mixed clinical and community sample.^{17,26,48} In the Streissguth *et al.*⁴³ clinical study described above, only two of the 47 individuals with FAS or FAE (4%) who attempted suicide had an intellectual disability and both were adolescents. Most of the study participants who attempted suicide had an IQ \geq 85 (64%) and 32% had an IQ in the borderline to low average range (IQ = 70 to 84). No information about the method or severity of the attempt was collected.

The purpose of this paper is twofold: 1) to examine how risk factors for suicide compare with the clinical characteristics of FASD; and 2) to describe clinical profiles of a small group of individuals diagnosed with FASD so as to differentiate the six who made suicide attempts from the five who did not. These profiles may help clinicians to recognize patterns that signal the potential for suicide, and to identify modifiable areas for intervention.

METHODS

Participants

The eleven subjects described in this report were diagnosed with FASD,⁵ an umbrella term that encompasses FAS and FAE, at a University of Washington diagnostic clinic between 1991 and 1995. They participated in our large-scale clinical

study (N=415) describing the life course of individuals with FAS/FAE. From these subjects we later recruited a convenience sample to pilot-test a battery of neuropsychological and psychiatric instruments for a population-based study investigating the long-term effects of prenatal alcohol exposure, including suicidality. Sample selection for the pilot was based on the following criteria: previous diagnosis of FAS or FAE, as outlined in Streissguth *et al.*⁴²; current age between 18 and 30 years; IQ greater than 70; geographic proximity to our research office; familiarity with the research team; confirmed contact information; and availability between January through March, 2000. We identified eleven subjects who met these criteria: three males (one with FAS, two with FAE) and eight females (five with FAS, and three with FAE); average age 23 years (range 18 to 29); average IQ of 88 (range 72 to 113). Institutional Review Board approval was obtained from the University of Washington and informed, signed consent was obtained from all subjects. We have altered some of the information in clinical vignettes below to protect the identity of the subjects.

Procedures

Subjects completed an extended clinical research interview (3-5 hours), administered by one of two licensed clinical psychologists who received training in interview techniques appropriate for individuals with FASD from a psychiatrist who specializes in working with this population (KOM). The interview included the following measures:

- *Lifetime Parasuicide/Suicide Attempt Count (LPS)*: A brief structured interview designed to obtain a lifetime history of parasuicidal (self-harm) behaviors and suicide attempts.²⁴ The interview elicits information about the methods of self-harm used, frequency, level of medical treatment required, and intent. Using categorization criteria proposed by Jacobs *et al.*,²⁰ we evaluated risk of suicide as low, moderate, or severe based on the type of self-destructive behavior, the lethality of the method, and intent.
- *Young Adult Self-Report (YASR)*: A 124-item self-report questionnaire that assesses social, emotional, and behavior problems in young adulthood.³ The YASR has eight problem scales and a Total Problems summary scale. Higher scores indicate higher levels of psychosocial

problem behaviors (mean = 50; SD = 10). Scale reliability coefficients range from 0.72 to 0.89.

- *Structured Clinical Interview for DSM-IV Diagnosis (SCID I and SCID II)*: A standardized structured clinical interview used to assess current and past psychiatric disorders (Axis I) and the presence of personality disorders (Axis II). The overall reliability of the SCID has been established relative to DSM-III-R and is fair to good in psychiatric patient samples (overall weighted kappa = 0.61) but poor in non-patients (overall kappa = 0.37). A computer-administered version of the SCID-IV was used for this study.^{12,13}
- *Current Status Report*: A research questionnaire asking subjects about their current status with respect to school, job, living situation, finances, legal trouble, and future plans.

The Surgeon General's 1999 **Call to Action to Prevent Suicide** is a useful framework for broadly assessing suicide risk that identifies sixteen specific suicide risk factors.⁴⁷ We assessed how these risk factors align with the clinical characteristics of FASD as drawn from the FASD research literature, and we evaluated information from subjects' clinical interviews to determine the presence or absence of each risk factor.

RESULTS

Clinical Profiles

According to the information they provided on the LPS, six of the eleven subjects had attempted suicide at some point, while five had not. For purposes of this paper we will refer to these as the "attempters" and the "non-attempters." Their demographic and psychosocial characteristics are listed on Table 2. There was an approximately even distribution between attempters and non-attempters by FAS/FAE diagnosis, age, and education. The attempters included the two people who were non-white, and the one with an IQ greater than 100.

YASR scores indicate that both attempters and non-attempters had a greater number of psychosocial problem behaviors than is typical for their age. Their Total Problems scores averaged approximately one SD above the mean (59.8 and 59.4, respectively). (See Table 2) Five of the six attempters and three of the five non-attempters reported a history of physical/sexual abuse or domestic violence.

TABLE 1. COMPARISON OF SURGEON GENERAL'S SUICIDE RISK FACTORS AND THE CLINICAL CHARACTERISTICS OF FASD

Suicide Risk Factors⁴⁷		Clinical Characteristics of FASD
<i>Biopsychosocial</i>		
1.	Mental disorders (particularly mood disorders, schizophrenia, anxiety disorders and certain personality disorders)	Mental health problems include mood disorders, anxiety disorders, PTSD, attention-deficit disorders and impulse control disorders; schizophrenia and other psychotic disorders occur but are less frequent. ^{7,9,11,15,32,34}
2.	Alcohol and other substance use disorders	Substance abuse problems are frequently comorbid with FAS/FAE. ¹¹ Thirty-five percent of subjects (12 years and older) with FAS/FAE (N=253) reported alcohol and drug problems. ⁴⁴ Prenatal alcohol exposure is significantly associated with alcohol problems at age 21 independent of family history of alcohol problems. ⁴
3.	Hopelessness	Not studied in FASD population.
4.	Impulsive and/or aggressive tendencies	Impulsivity is a common neuropsychological deficit associated with prenatal alcohol exposure. ²⁹
5.	History of trauma or abuse	Sixty-seven percent of subjects (age 6 to 51) with FAS/FAE (N=415) reported experiencing either physical or sexual abuse and/or domestic violence. ⁴⁴
6.	Some major physical illnesses	Not studied in FASD population.
7.	Previous suicide attempt	Not studied in FASD, but 23% of subjects (age 21 to 51) with FAS/FAE (N=162) reported a suicide attempt. ⁴³
8.	Family history of suicide	Not studied in FASD population.
<i>Environmental</i>		
9.	Job or financial loss	Intellectual deficits, learning/language disabilities, delayed adaptive functioning contribute to limited occupational options and problems with employment. ^{39,43}
10.	Relational or social loss	Prenatal alcohol exposure is associated with significant impairments in psychosocial and interpersonal functioning. ^{37,46,49} Language deficits associated with FASD can also contribute to social relationship difficulties. ³¹
11.	Easy access to lethal means	Not studied in FASD population.
<i>Sociocultural</i>		
12.	Local clusters of suicide that have a contagious influence	Not studied in FASD population.
13.	Lack of social support and sense of isolation	Clients with FASD commonly report feeling socially isolated due to their disability. Their social support can be limited due to difficulties forming/sustaining interpersonal relationships (see Risk Factor #10 above).
14.	Stigma associated with help-seeking behavior	Not studied in FASD population.
15.	Barriers to accessing health care, especially mental health and substance abuse treatment	Financial limitations and the fact that many mental health professionals are unfamiliar with FASD result in people having difficulty accessing appropriate treatment. ^{14,41}
16.	Certain cultural and religious beliefs; exposure to influence of others who have died by suicide	Not studied in FASD population.

TABLE 2. DEMOGRAPHIC AND PSYCHOSOCIAL CHARACTERISTICS OF SUBJECTS WITH FASD		
	Suicide Attempters (N=6)	Non-Attempters (N=5)
Diagnosis		
FAS	3	3
FAE	3	2
Female Gender	5	3
Age (mean yrs)	24.1	23.2
Race		
White	4	5
Non-white	2	0
Education (mean yrs)	12.5	11.8
IQ (mean)	90.5	85.0
IQ (range)	72-113	79-92
YASR Scales (mean)		
Anxious/depressed	63.7	56.0
Withdrawn	60.8	58.0
Somatic	57.5	63.6
Thought Problems	61.5	58.2
Attention Problems	60.0	62.4
Intrusive	52.8	54.6
Aggressive Behavior	58.5	55.8
Delinquent Behavior	53.7	54.6
Total Problems	59.8	59.4
SCID		
Current Axis I diagnosis	4	4 *
Current Axis II diagnosis	6	1 **
* Four (4) non-attempters had valid Axis I interviews and one (1) was not completed due to subject's time constraints.		
** Two (2) non-attempters had valid Axis II interviews; one (1) could not be completed due to the subject's time constraints, and two (2) were judged invalid because of discrepant information reported by subject.		

Four attempters had co-occurring current Axis I and Axis II disorders, compared to only one of the five non-attempters. The other two attempters had both a current Axis II diagnosis and a history of recurring Axis I disorder (severe major depression). Two attempters, but no non-attempters, had an alcohol and/or other substance use disorder. One non-attempter had schizophrenia; none of the attempters had a psychotic disorder. None of these differences are statistically significant in a population of eleven. None of the attempters' first suicide attempts received medical or psychological attention,

although three were considered moderate risk (according to the categories proposed by Jacobs *et al.*²⁰) Five of the six had a subsequent suicide attempt that was categorized as serious or moderate-risk: three resulted in emergency room (ER) medical treatment; two of these received subsequent psychiatric hospitalization and the third was placed under ER suicide observation for a few hours.

All five non-attempters had reliable family or state financial support but only three of the six attempters had. All subjects seemed to have some

measure of positive social support, but among two of the attempters support was inconsistent.

Suicide Risk Factors

In examining the Surgeon General's suicide risk factors, we found that nine of the sixteen risk factors align with clinical characteristics of FASD (Table 1). The remaining seven factors have not been studied specifically in the FASD population. Compared to the non-attempters, attempters were more likely to have the following current or past risk factors: mental health disorders, alcohol or other substance use disorders, history of trauma or abuse, job or financial loss, lack of social support, and "certain cultural and religious beliefs."

Vignettes: Suicide Attempters

- *Subject 1* is a 25-year-old female with FAS who is married, works part-time, and has strong family support. Her first suicide attempt occurred at age 17 when she took a dozen pills; her most serious attempt was at age 21 when she cut her wrists with a knife. Both attempts were in response to relationship distress (with a family member, and with an intimate partner). In both cases, intent was ambivalent and the method was of minimum lethality. Neither attempt received medical intervention. She stated she thought she had a "ruined brain."
- *Subject 2* is a 23-year-old single female with FAE who works full time and is in close contact with her family. She refused to provide details about her first suicide attempt. Her most serious attempt was at age 22 when she reported being depressed and having problems with a female relative. She expressed ambivalent intent, yet overdosed on dozens of pills. She was treated in the ER, followed by psychiatric hospitalization.
- *Subject 3* is a 26-year-old mother of three with FAE. Her primary source of income is public assistance, and she has an alcohol and substance abuse history. She has inconsistent and poorly coordinated non-family social support. At age 8 she slit her wrists in imitation of a family member who cut on himself. In the interview with us she stated, "It seemed normal to me." Her most serious attempt, with intent to kill herself, was an alcohol overdose at age 20 in response to being overwhelmed. She called 911, received ER treatment, and was psychiatrically hospitalized.
- *Subject 4* is a 29-year-old with FAS who is supported by her husband's income. At age 8 she reported intending to hurt herself by head

banging. Her most serious incident, at age 23, was in response to problems with her boyfriend and was ambivalent in intent. She slammed her head on the floor enough to induce swelling, but was reluctant to seek medical help.

- *Subject 5* is a 23-year-old female with FAS who lives with her boyfriend and has two part-time jobs. Her first and only attempt was at age 19; she was confused about her life and cut her wrist with a razor, without intent to kill herself. She did not seek medical treatment nor did she discuss her attempt with her counselor at the time.
- *Subject 6* is a homeless 22-year-old male with FAE and alcohol dependence. At age 13, following the death of a parent, he cut his wrists with a knife with the intent to kill himself. He received no medical care. His most severe incident occurred at age 21 during a fight with a girlfriend. He banged his head against a window causing the glass to shatter; he claimed no intent to hurt himself. He went to the ER where he received stitches and was held for suicide observation.

Vignettes: Non-Attempters

- *Subject 7* is a 24-year-old female with FAS who is employed and has a stable family.
- *Subject 8* is a 24-year-old male with FAS. He has a full-time job and strong family support. He spontaneously explained that he would never commit suicide because "I wouldn't go to heaven."
- *Subject 9* is a 29-year-old male with FAE, stable part-time employment, Social Security income, and strong family support.
- *Subject 10* is an 18-year-old female with FAS, stable Social Security income and dependable relatives involved in her life. She stated, "I'm happy how I am."
- *Subject 11* is a 22-year-old woman with FAE who has two children and is supported by her spouse's income. During administration of the suicide assessment measures she spontaneously stated, "I wouldn't do it because of my kids."

DISCUSSION

All eleven subjects in this report had FASD, and half of them self-reported making at least one suicide attempt. Our findings represent a surprisingly high rate of suicide attempts, and in conjunction with data from previous studies, suggest that individuals with FASD are at risk for suicide. One explanation for the increased risk for suicide may be found in the substantial overlap between characteristics of FASD and known

suicide risk factors in the biopsychosocial, environmental and sociocultural domains. Over half the suicide risk factors identified by the Surgeon General are congruent with the central clinical features of FASD. The remaining factors, while not specifically studied in the FASD population, may contribute to an individual's suicide risk profile (e.g., family history of suicide).

Protective factors for suicide must also be taken into consideration. Ten factors associated with protective effects for suicide have been identified by the American Psychiatric Association¹: children in the home; sense of responsibility to family; pregnancy; religiosity; life satisfaction; reality testing ability; positive coping skills; positive problem-solving skills; positive social support; and positive therapeutic relationship. Among people with FASD, two of these in particular are unlikely to be modifiable because of the very nature of the disability: a person with executive functioning impairment does not have reliable problem-solving skills or reality testing ability. Depending on the individual with FASD and the support available, "children in the home" and "pregnancy" may not carry a protective effect because of the complexities and responsibilities of parenting. Other factors are modifiable and could be introduced or addressed through therapy or improved environment. Our non-attempters specifically described having a sense of responsibility to family, religious beliefs, life satisfaction, and consistent positive social support.

Limitations of our study methodology should be considered. Other than IQ, we do not know the specific type or severity of the subjects' neuropsychological deficits, which limits our understanding of how these subjects' cognitive abilities interact with environmental factors to solve problems. Careful efforts were made to train our interviewers to accommodate the language, reasoning, and memory problems characteristic of individuals with FASD, but we do not know the accuracy of the subjects' self-report or whether there was any systematic bias (false negative). None of the subjects in our study had an IQ of 70 or below, so we do not have information about suicide attempts for those with FASD and an intellectual disability. In this study we did not formally assess reasons for living. Although people who have FASD are at risk for suicide, most do not make attempts. We suggest that future studies of people with FASD explore reasons for living, modeled after Linehan and colleagues.²⁵

Guidelines for Clinicians Working With Individuals Who Have FASD

Standard protocols for assessing and intervening with people at risk for suicide are not necessarily different for those who are diagnosed with FASD with or without a concurrent intellectual disability. However, such protocols must be administered while taking care to consider communication impairments and avoid the problem of "diagnostic overshadowing," that is, underestimating psychiatric and emotional disturbance in someone with a developmental disability because of significant cognitive deficits.^{30,36,38} This problem is complex when assessing people with FASD since most do not have an intellectual disability but instead have low average intellectual abilities combined with neuropsychological deficits that compromise functioning.^{8,18,42,44}

Assessment

Whether or not someone presents with suicidal behavior, an important initial step is to conduct a suicide assessment and evaluate current presentation of suicidality; psychiatric illnesses; history; psychosocial situation; and individual strengths and vulnerabilities.¹ Comorbidities such as learning disabilities, language disorders and neuropsychological deficits in memory and reasoning can complicate the evaluation. Individuals who have FASD may not remember salient details about past events, mental health problems, or medications, or may not be able to convey through language the true level of their current or past distress. They may also have difficulty apprehending abstract terms or have idiosyncratic meanings for words, and may therefore have problems answering questions that are routine in a standard assessment, or independently completing traditional self-report assessment measures. For example, "Is *death* something you've thought about recently?" "How does the *future* look to you?" "Have you ever felt *down* or *blue*?" "Did you *intend* to kill yourself?" may be confusing. To minimize confusion and enhance the likelihood of accuracy, use concrete terms and avoid words with double meanings or idioms. Check consistently for understanding by asking the person to explain his/her understanding of the question rather than relying on simple verbal affirmation. As with any suicide risk evaluation, it is essential to obtain collateral information from family, friends, or service providers to ensure that the initial assessment is

correct, and that subsequent interventions are appropriate and effective.

In reviewing history of suicide attempts, it is important to keep in mind that anyone who attempts suicide can challenge conventional clinical wisdom and judgment because the seriousness of the suicidal behavior does not always link with the level of intention to die.^{1,20} This disconnect may be more pronounced among individuals with FASD due to their impaired ability to cognitively link cause and effect and their unpredictable impulsivity. For example, Subject 6 unexpectedly smashed his head through a glass window and was at risk for killing himself, although he denied intent to die. Conversely, in our experience, a non-serious suicidal act (e.g., using a butter knife to slash wrists) does not necessarily mean that the individual with FASD does not intend to die.

Impulsivity merits special consideration because, in combination with easy access to guns or other lethal methods, it carries high risk for a completed suicide. For someone with FASD, impulsivity is not easily modified because of its basis in organic brain damage, but access to lethal means can be reduced when the therapist works in cooperation with caregivers. None of the six attempters received medical or psychological intervention in response to their first attempts; five of these people made subsequent attempts. This reinforces the importance of thorough assessment and follow-up monitoring in response to first attempts (no matter how benign) to prevent self-harm becoming a regular coping mechanism and to reduce the risk of a subsequent attempt.

Intervention

Standard suicide intervention involves reducing risk factors and enhancing protective factors. The resulting treatment plan is targeted to each person's unique risk profile and can include brief hospitalization, outpatient psychotherapy, family therapy, participation in support groups, and medication. An individual with FASD can benefit from each of these interventions if they are modified to accommodate the patient's neuropsychological deficits which may vary considerably from person to person. For example, individual psychotherapy can be helpful when it is structured and problem-focused, uses predominantly close-ended vs. open-ended questions, teaches skills, uses concrete strategies such as role-playing, and presents information in

a multi-modal form. The aim of treatment should be to stabilize or improve presenting problems vs. trying to "cure" the organic brain damage.

Psychiatric consultation should be sought for anyone who may have a mental health need. Medication can be used to control mental health symptoms and allow the individual to participate in other treatment modalities. Due to their organic brain damage, patients with FASD are particularly vulnerable to side effects of medicines and may require low doses and more careful increases in medication dosing.^{16,33,34} It is ideal to locate a psychiatric clinician with experience treating individuals with FASD or other developmental disabilities.

In implementing interventions with individuals with FASD, the therapist should continue to pay careful attention to language use and choice of words. The following strategies may enhance therapeutic effectiveness: giving simple step-by-step guidelines; supplementing verbal instructions with illustrations and material written at about a fifth grade level; re-teaching important points at each visit; and not assuming that skills will generalize to other situations.

Consistency in appointment times, locations, and the people providing care is particularly important. If the primary therapist must change, an extended transition period is beneficial in which the current and new therapist work together with the individual.

The therapist is in an ideal position to identify environmental conditions that can be altered to reduce suicide risk. This involves locating community service providers who are willing to be educated about the disability and tailor services to the needs of the person. Whenever possible, family members or close friends should be recruited to provide emotional and practical support. To establish a foundation for improving quality of life and preventing crises, the following are examples of supports that can be put into place over time: obtaining some financial stability in the form of state and local disability agency support, Social Security Income, or appropriate employment; securing safe, stable housing; assisting in obtaining inpatient or outpatient substance abuse treatment and supportive aftercare as necessary; evaluating family planning needs and choosing a contraceptive method.¹⁴

The therapist cannot alter the permanent organic brain damage associated with a diagnosis of FASD or the difficult life circumstances individuals with FASD experience. However, an

informed and committed clinician can take steps to reduce suicide risk by modifying standard suicide assessment and intervention protocols to accommodate an individual's deficits.

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