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Special Feature Article

Prevention of Suicide Reattempts among Children and Adolescents: Consideration based on the Risk and Protective Factors

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Abstract

A history of a prior suicide attempt is one of the greatest predictors of completed suicide. Clarification of the clinical characteristics of young suicide attempters will therefore facilitate the development of preventive interventions for suicide reattempts, which will in turn reduce the number of completed suicides. This review focused on therapeutic interventions aimed at preventing suicide reattempts in children and adolescents, based on risk and protective factors.

Suicide attempters are normally transported to Emergency Departments (EDs) in hospitals. The medical interventions at EDs can be an opportunity to provide mental health care and prevent suicide reattempts among children and adolescents.

It is important to reduce risk factors and strengthen protective factors to prevent suicide reattempts. Among these risk factors, there are only a limited number of factors that can be intervened upon. First, clinicians should prioritize the management of the life stressors that triggered the suicide attempt. Second, when family problems seem to be the psychosocial factors associated with suicide attempts, it is necessary to consider such problems not only as precipitating events, but also as long-standing psychosocial predisposing factors. In such cases, regardless of the psychiatric diagnosis or the need for medication, it would be preferable for clinicians to pay attention to each person's upbringing and understand the fact that the person may not

have had much experience seeking help from those close to them since childhood. These may act as psychosocial predisposing factors responsible for suicide and interventions for suicide prevention should be provided after taking them into account. Finally, when interventions are provided for mental disorders with the aim of preventing suicide reattempts, clinicians should keep in mind the presence of autism spectrum disorder in suicide attempters.

School and home can be protective factors for suicide if young individuals can experience a sense of belonging to each of these places. The young individuals will have a sense of belonging to their families when the family members are emotionally attached to each other. Clinicians need to provide interventions for the psychosocial predisposing factors of each individual accordingly. Thus, this intervention will contribute not only to reducing risk factors but also to strengthening protective factors for suicide reattempts. In addition, clinicians need to establish strong partnerships with community facilities. Such collaboration will lead to the strengthening of protective factors by ensuring that the youth feel safe.

Keywords: children and adolescents, suicide reattempt prevention, risk factor, protective factor, psychosocial predisposing factor for suicide

Introduction

In Japan, suicide is the leading cause of death for both males and females in the 15-19 age group[24], and this trend has continued since 2012. Looking back over the past 40 years or so, the number of suicides among those under 20 years of age in Japan has generally been on a downward trend, peaking at 919 per year in 1979, but has not fallen below 500 per year since 1997[23]. The number exceeded 700 per year in 1998, and has remained at around 600 per year since 2003[23]. By 2020, the number exceeded 700 per year for the first time in 22 years since 1998[23]. While the overall number of suicides in Japan has been on a downward trend since 2009, no such downward trend can be found in the number of suicides among those under 20 years of age for the past 20 years[23].

In order to reduce the number of suicides among children and adolescents, the clinical characteristics of suicide cases in this age group must be recognized, and thorough observational studies (cross-sectional and follow-up studies) are needed to understand these characteristics. In Europe and the U.S., the number of

suicides among young people has increased since the 1970s, and observational studies have been conducted since the 1980s, mainly in the U.S., U.K., Australia, and Northern Europe. In the 1990s, the results of these observational studies were almost complete, and after 2000, intervention studies aimed at suicide prevention and the prevention of suicide reattempts began. According to the results of these observational studies, the greatest risk factor for completed suicide is a history of suicide attempts[9)16)42)]. If this is the case, preventing children and adolescents who have attempted suicide from attempting it again is an important measure to reduce the number of suicide attempters. In Japan, since 2000, cross-sectional studies of suicide attempters among children and adolescents have been gradually accumulating, and their clinical characteristics are becoming clearer.

In order to reduce the number of children and adolescents who attempt suicide, it is desirable to understand the clinical characteristics of suicide attempters. Psychological autopsies of suicide attempters are necessary to understand the characteristics of suicide attempters; however, interviews with bereaved family members and friends are difficult to conduct. Since the clinical profiles of suicide attempters are similar, such as psychiatric disorders[4)15)], understanding the clinical characteristics of suicide attempters among children and adolescents could lead to the development of measures to prevent suicide attempts, which in turn can reduce the number of suicide attempters.

This paper discusses therapeutic interventions for children and adolescents to prevent suicide reattempts based on risk and protective factors. In this paper, "youth" is used as a generic term for children and adolescents.

I. Crisis Intervention in Emergency and Critical Care Units

1. Role of Emergency and critical care units

Suicide attempters are usually transported to an emergency room for physical treatment. For many youths, transport to an emergency room for suicide attempts provides a valuable opportunity to experience psychiatric care[3)]. In our report, a high percentage of male patients and patients with autism spectrum disorder (ASD) who attempted suicide had no history of psychiatric treatment[36)]. The transport to the emergency room provided an opportunity to become involved with psychiatric care, and for the youth, this crisis intervention in the emergency and critical care unit was considered to be an important beginning in the

prevention of subsequent suicide attempts[36].

2. Evaluation of Suicide Attempts

The psychiatric evaluation of youths in an emergency and critical care unit is not much different from that of adults; however, the medical treatment procedures and interview methods need to be modified[35]. First, the youth should be evaluated to determine whether or not the individual is attempting suicide. This decision is important because the subsequent response will differ depending on whether the youth is attempting suicide or not. After improvement in consciousness, it is important not to hesitate to check for suicidal ideation, even in youths.

Next, the degree of urgency of the suicide reattempt should be evaluated. The degree of urgency is the same as that for adults, evaluating active suicidal ideation, intention to actually carry out the suicide, method and plan of suicide, and persistence of suicidal ideation. However, in many cases of young suicide attempters, the suicide plan is poor and ambiguous, and even if the plan is not concrete, if the intention to carry it out is clear, the degree of urgency should be evaluated as high.

In addition to this evaluation of suicide, an interview with the parents is essential in the case of a youth attempting suicide. In addition to the usual assessment of current and past medical history, comorbidities, family history, history of psychiatric visits, and family structure, we also check the child's condition at home and school, school attendance, and child-rearing environment (presence and relationship with parents, financial situation, etc.). Furthermore, actual psychiatric symptoms are evaluated. If the patient continues to be treated after discharge from the hospital, it is recommended that the crisis intervention at the emergency and critical care unit be viewed as an opportunity to establish a therapeutic relationship and to confirm the youth's history during hospitalization. If possible, risk factors for suicide and protective factors should be assessed as described below.

3. Evaluation-based Response

According to our report, a high percentage of youths who attempted suicide had no history of suicide attempts or psychiatric visits (especially in male individuals)[30][36]. Therefore, even if the patient is physically able to return home, the youth should be admitted to an emergency and critical care unit to prevent suicide reattempt. During hospitalization, the patient's bed should be within reach of medical personnel, hazardous materials should be removed from the surrounding area, and the patient should always be

accompanied by a medical personnel when leaving the hospital bed. When listening to the patient's story while in the emergency room, try to organize the story so that it does not take an unnecessarily long time. Setting a time and place for listening can reduce feelings of inadequacy for both the patient and the health care provider.

When a youth is discharged from an emergency and critical care unit after a suicide attempt, make sure that (i) the youth does not have suicidal ideation, (ii) the youth does not have obvious depression, (iii) the youth can promise to see a psychiatrist if suicidal ideation develops, (iv) the youth is accompanied by a guardian, and (v) the guardian is expected to protect the youth. If the above (i) to (v) are satisfied, an immediate outpatient psychiatric consultation is recommended, and if not, admission to a psychiatric hospital should be considered. Since there are few psychiatric hospitals and clinics that can handle cases involving youths, social caseworkers should be involved from the beginning of hospitalization to determine where the patient should be seen or hospitalized after discharge from the hospital.

II. Risk Factors and Protective Factors for Suicide

Emergency and critical care units play an important role in preventing suicide reattempts in youths. On the other hand, after discharge from emergency and critical care units, psychiatric care, government, schools, and private support groups work together to play a central role in the prevention of suicide attempts. In therapeutic intervention aimed at preventing youths from attempting suicide again, risk factors that promote suicide and protective factors that deter suicide need to be fully evaluated.

1. Risk Factors

1) Gender and Means of Attempt

Outside of Japan, a higher percentage of men than women complete suicide[9)16)], and the situation is similar in Japan[23)]. This is because men have multiple risk factors, such as a higher rate of coexisting depression and substance/alcohol dependence, higher aggressiveness, and more lethal means of attempts[9)16)]. On the other hand, a higher percentage of women attempt suicide[9)16)], and the same is true in Japan (Table 1). In Japan, overmedication was the most common means of attempted suicide, followed by jumping off a building (Table 1).

2) Psychiatric Disorders

Outside of Japan, more than 90% of youths who attempt suicide have some form of psychiatric disorder[9)16)], and the younger the age, the lower the rate[16)]. Depression is the most common

psychiatric disorder, and is found in 50-60% of suicide attempters[6)42)]. Substance dependence/abuse, including alcohol, is also an important risk factor, with older men at greater risk.[16)]. In addition, the coexistence of substance dependence/abuse and depression is also highly prevalent[6)42)].

In Japan, more than 90% of suicide attempters have a psychiatric disorder, with depression and adjustment disorder together accounting for the highest percentage (Table 2), which is similar to previous studies outside Japan[9)16)]. On the other hand, substance dependence/abuse is internationally agreed to be an important risk factor for suicide[9)16)], but the proportion of substance dependence/abuse tends to be low when observed in the population of attempted suicide cases among youths as a domestic characteristic (Table 2).

In domestic studies, a certain number of cases with borderline personality disorder (BPD) were found (Table 2). In contrast to adults, there are few reports showing the characteristics of suicidal cases among youths with BPD. When the study is expanded to suicide-related behaviors (suicidal behaviors and suicidal ideation), BPD itself is a risk factor for suicide-related behaviors[18)43)50)] and symptoms, especially emotional instability of BPD, are relevant[10)]. In our study focusing on suicide attempt cases in youths, a higher proportion of BPD cases had a history of suicide attempts and had no events prompting suicide attempts immediately before the attempt[21)]. In addition, a higher proportion of BPD patients had comorbid depression, and they had more serious physical conditions and prolonged hospitalization after suicide attempts[21)].

Furthermore, in our cross-sectional study, ASD was found in more than 10% of cases of suicide attempts in youths.[31)] In representative review articles of juvenile suicide in the early 2000s, there was no mention of suicide in ASD cases[9)16)]. We were the first to publish a case study[29)] and a cross-sectional study[31)] of suicide attempts in ASD[17)]. We were also the first to publish a cross-sectional study of suicide attempts in adults with ASD[22)].

In our experience of suicide attempts in youths and adults with ASD, we found that (i) a higher proportion of patients chose lethal means of attempt, (ii) a higher proportion had no history of psychiatric hospital visit, (iii) a higher proportion had no history of suicide attempts [from (i)-(iii), ASD patients were more likely to complete suicide at the first attempt], (iv) a higher proportion of ASD patients had no preceding event prompting a suicide attempt, (v) there was a lower proportion of classical autism cases, and (vi) comorbidity of adjustment disorders

as well as depression was a risk factor for suicide. In addition, especially in the case of youths, the following characteristics were found: (vii) ASD in more than 10% of suicide attempt cases (in nearly 40% of male suicide attempt cases), (viii) a history of being bullied, (ix) a significantly low self-esteem due to repeated interpersonal failures, (x) family conflicts that exist from childhood[17)22)29)31)33)34)36)44)]. Clinicians who encounter cases of attempted suicide in youths, especially in male patients, should always keep in mind the possibility of ASD.

3) History of Suicide Attempts and Psychiatric Hospital Visits

A history of suicide attempts is one of the most important risk factors for completed suicide[9)16)42)]. The risk of suicide reattempts is highest in the first 3 to 6 months after the attempt and remains high for 2 years[11)25)]. In our cases, more than half of the youths with a history of suicide attempts were admitted for the current episode within 6 months of the previous attempt[30)]. In addition, 60.0% of females and 25.0% of males (55.9% overall)[30)] had a history of suicide attempts, and the sex-specific trends were similar to those in previous studies outside of Japan[8)]. A history of psychiatric hospitalization was found in 76.9% of female patients and 42.9% of male patients (70.2% overall)[36)].

4) Family History

Family history of suicide is a risk factor, especially the influence of previous suicide attempts by mothers[2)]. A family history of mental illness is also a risk factor for suicide, with depression and substance dependence/abuse being particularly important[7)]. In the self-examined cases, 5.9% had a history of suicide attempts in first-degree relatives[30)]. Including suspected cases, 26.5% of patients had a history of mental illness in first-degree relatives. Depression was the most common cause, followed by psychotic disorders and alcohol dependence[30)]. Alcohol dependence/abuse and mood disorders in first-degree relatives are important risk factors[7)], and the results of our own study were similar to those of previous studies in other countries[30)].

5) Psychosocial Factors

Stressful life events such as abuse[20)], loss due to bereavement, divorce, or separation of parents[2)], romantic breakup, disciplinary action[14)], and school maladjustment[49)] are risk factors for suicide among youths. In addition, poor communication[14)] between youths and their parents and unstable family functioning[1)] with little emotional interaction among family members are also risk factors. According to domestic clinical studies, family problems account for a high percentage of psychosocial factors (Table 1). Furthermore, we have considered the

lack of experience in seeking appropriate help from close relatives, from childhood to the present, as a psychosocial predisposing factor for suicide[27)28)32)36)].

In addition, cluster suicides due to imitation and propagation are a notable phenomenon among young suicide cases[12)13)], and those cluster suicides have been experienced in Japan as well[47)]. This sporadic suicide is thought to be influenced by the way the media reports. Suicide reporting should be cautious, not overly repetitive, not detailing the means or location, and not treating suicide as a sensational, natural, or positive act[41)48)].

2. Protective Factors

Close ties with school and family, and the individual's sense of emotional security, work to deter youths from committing suicide[5)39)]. The primary role of schools is to foster students' learning proficiency and a sense of camaraderie among students[5)]. If students can have a sense of fulfillment in these aspects, they will feel a sense of closeness to school personnel and a sense of belonging to the school, and the school will become a protective factor for the students themselves[5)]. In addition, a cohesive family, i.e., a family that spends a lot of time together, has a lot of emotional interactions among family members, and where the youth feels that they enjoy emotional support, is a protective factor for the student[5)26)39)40)]. Thus, a sense of belonging at school and at home can deter youths from committing suicide.

III. Therapeutic Intervention for the Prevention of Suicide Attempts

1. Reduction of Risk Factors

1) Triggering Life Events

It is important to reduce risk factors in order to prevent youths from making another suicide attempt. Among the risk factors for suicide described above, there are only a limited number of risk factors that can be actually intervened for the purpose of preventing suicide reattempts. When a youth's suicide attempt is directly triggered by a life event such as family problems, school problems, or the breakup of a romantic relationship as a psychosocial factor, crisis intervention for the life event that triggered the attempt should be given top priority in order to prevent the youth from making a next attempt.

2) Psychosocial Predisposing Factors for Suicide

According to domestic clinical studies, psychosocial factors of suicide tend to include a high percentage of family problems (Table 1). We have considered that when the psychosocial factor of suicide is family problems, family problems should be reevaluated not only as a direct life event but also as a

psychosocial predisposing factor for suicide that has existed for many years, and therapeutic intervention for this factor is necessary[27)28)31)32)36)].

Youths with family conflicts do not easily discuss suicidal ideation and suicide-related stressors with their parents. The starting point for psychotherapy aimed at preventing suicidal reattempts is for the therapist, the youth, and the guardian to share the understanding that the inability to discuss serious matters, such as suicidal ideation, with the guardian is a problem in itself. However, because the individuals have grown up with limited experience in seeking appropriate help from their guardians since childhood, the therapist's mere encouragement of the patient to seek help from those close to them does not easily lead the patient to seek help.

In the course of individual psychotherapy with such a person, the therapist needs to carefully organize the person's upbringing history together with the parents. In other words, the therapist needs to unravel the relationship between the youth and the people with whom the youth has been involved, and carefully trace the process that led to the individual's hesitancy in expressing their problems and honest feelings to those close to them, beginning in childhood. As a result, the therapist should share with the patient and the guardian that the patient's lack of experience in seeking appropriate help from those close to them, from childhood to the present, is an important background for suicide attempts, i.e., a psychosocial predisposing factor for suicide.

This sorting out of the upbringing history is a sorting out of "the relationship between oneself and one's family" for the patient and "how a guardian raised one's child" for the guardians. The therapist should take these results seriously as subjective family experiences from the perspective of both the patient and the guardian, and reevaluate them as psychosocial predisposing factors for suicide. This is a painful and frustrating process for the patient and their guardian because sorting out the upbringing history does not necessarily resolve the problems that the family has been facing. However, if youths gradually ask for help from their parents through such a steady process, and if parents accept the request, there will be room for interaction between youths and their parents, and this will lead to a reduction in the youth's feeling of isolation. On the other hand, the patient and the guardian may give up on building a relationship through this process. However, whether or not they are able to come to terms with the results of their efforts to organize their upbringing

history together with the therapist has a significant impact on the future relationship between them.

Thus, regardless of the psychiatric diagnosis or the need for pharmacotherapy, the role of the therapist for patients who attempt suicide due to psychosocial factors, such as family problems, is to sort out each youth's upbringing history and to understand the psychosocial predisposing factors for suicide together with youths and their guardians. Sorting out the upbringing history is itself a therapeutic intervention for psychosocial predisposing factors for suicide, in addition, the therapist needs to provide strong interaction-promoting interventions for both the youth and the guardian based on this history, aiming to establish a smooth emotional interaction relationship between the youth and the guardian. Thus, intervention for psychosocial predisposing factors for suicide not only reduces risk factors, but also strengthens protective factors by facilitating family functioning, and is therefore extremely important as a therapeutic intervention for the prevention of suicide reattempts.

3) Psychiatric Disorders

More than 90% of youths who attempt suicide have some form of psychiatric disorder[16] (Table 2), and psychotherapy and pharmacotherapy based on appropriate diagnosis and evidence can contribute to the prevention of suicide attempts. When intervening in psychiatric disorders, therapists should of course consider depression and adjustment disorders, which account for a high proportion of suicides in youths, but ASD also should not be overlooked, especially in male patients. In our experience of suicide attempters with ASD, understanding the unique characteristics of ASD based on the upbringing history of the youth and the family, together with the therapist, contributed to the prevention of suicide attempts[29)33)36)44)].

2. Strengthening Protective Factors

1) Connection with School and Family

In order to prevent youths who have attempted suicide from making another attempt, it is important to strengthen their protective factors in addition to reducing risk factors. In order to strengthen protective factors, it is necessary to establish a good relationship with the school and family. In other words, if the youths are able to recognize that they have a place at school and at home, this sense of belonging may work to deter suicide. In order to build a good connection with school, the youth needs support in terms of relationships with peers and teachers, learning proficiency, and so on[5)]. For this purpose, therapists need to

collaborate with the school to promote treatment.

In addition, if each family member interacts emotionally and the family functions smoothly, the youth will develop a sense of belonging to the family. Such stable family functioning acts as a protective factor for youths[5)26)39)40)]. The importance of therapeutic intervention for psychosocial predisposing factors for suicide has been described in detail in order to establish a smooth emotional exchange relationship between the youth and the guardian. However, when family functioning is very weak, therapeutic intervention for psychosocial predisposing factors for suicide is a heavy burden on the family and has no therapeutic significance. In such cases, collaboration with local government organizations is essential.

2) Cooperation with Local Facilities

In youths, as in adults, a history of suicide attempts is the greatest risk factor for attempted suicide[9)16)42)]. Prevention of suicide attempts is not an easy task. If treatment providers take on the responsibility of preventing reattempts alone, they will not be able to carry the weight of this responsibility. Therefore, treatment providers need to strengthen cooperation with community facilities and increase the number of supporters for the youth.

Regional facilities include schools, child consultation centers, local government departments, and private support groups. In order to cooperate with these facilities, the therapist should take the lead, and all parties concerned should meet and confirm the division of roles. In particular, since a good relationship with the school is a protective factor for the youth who attempted suicide[5)39)], a strong collaboration with school personnel is necessary. However, in cases where it is difficult to establish a relationship with the school, the therapist should seek relationships with the child consultation center, local government departments, and private supporting organizations. In addition, therapists need to keep in mind that there are families in which it is difficult to strengthen the protective factors for the youths due to weak family functions, and in such cases, it is necessary to establish a system to support the family itself in cooperation with the local government department in charge.

Through such cooperation and the appropriate division of roles, all parties involved should work as one to secure a psychological place for the youth, which in turn will lead to the strengthening of the protective factors for the youth. Social caseworkers and mental health social workers are not only indispensable for cooperation among facilities, but also play an important

role as direct supporters of youths and their families.

Conclusion

In order to reduce the number of suicides among youths, the government, educational institutions, private supporting groups, and medical care providers must work together to prevent suicides and reattempts. Psychiatrists can contribute to this effort by providing therapeutic intervention to prevent youths who have attempted suicide from attempting it again. To prevent youths from reattempting suicide, it is important to reduce risk factors and strengthen protective factors. In cases of suicide attempts in which family problems are a psychosocial factor, the therapist must work with youths and their families to examine each yout"s upbringing history and consider the yout"s inability to seek appropriate help from those close to them, from childhood to the present, as a psychosocial predisposing factor for suicide. Therapeutic intervention for psychosocial predisposing factors based on this upbringing history contributes to both reducing risk factors for suicide and strengthening protective factors, and is therefore extremely important for treatment aimed at preventing youths from attempting suicide again.

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表 1　自殺未遂者の性差，自殺企図手段，心理社会的問題

	渡辺ら[46] (N＝112)	土岐ら[45] (N＝15)	本田ら[19] (N＝12)	成重ら[38] (N＝56)	三上ら[30] (N＝34)	Murase, et al.[37] (N＝8)
施設	東京都立小児医療センター 児童思春期精神科	広島大学病院高度救命救急センター	福岡大学病院救命救急センター	日本医科大学付属病院高度救命救急センター	東海大学医学部付属病院高度救命救急センター	中京病院救命救急センター
対象年齢層，平均年齢	10～18 歳，15.1 歳	15～19 歳，17.0 歳	12～19 歳，16.9 歳	13～18 歳，16.4 歳	14～19 歳，男性 17.5 歳，女性 16.8 歳	13～19 歳，16.0 歳
女性（%）	66.1	80.0	41.7	75.0	88.2	75.0
自殺企図手段（%）	過量服薬 31.3 飛び降り 22.3 身体刺創 21.4 縊首 8.9	過量服薬 93.3 飛び降り 6.7	飛び降り 58.3 薬物中毒 33.3 縊首 8.3	—†	過量服薬 79.4 飛び降り 14.7 腹部刺創 2.9 CO 中毒 2.9	過量服薬 87.5 服毒 12.5
心理社会的問題（%）	家庭 27.7 学校 23.2 友人 13.4 恋愛 7.1 その他 21.4*	家庭 26.7 恋愛 26.7 健康 20.0 友人 20.0 学業 13.3 職業 6.7 その他 20.0	対人 33.3 学業 25.0 男女 25.0 家庭 16.7 職業 16.7 その他 25.0	健康‡ 87.5 家庭 32.1 恋愛 19.6 学校 17.9 職業 3.6 経済 3.6 その他 30.4 不明 1.8	家庭 50.0 対人 32.4 学業 17.6 恋愛 17.6 その他 2.9	家庭 87.5 友人 62.5 健康 50.0 学校 25.0 職業 25.0 経済 12.5

文献 47）表 2 を参考に著者作成．文献は公表時期が新しい順序で記載，＊将来の不安と不明を含み，計 24 名として計算，†文献に記載なし，‡成重ら[38]は，健康問題に精神疾患を含み，身体疾患の 1 名を除くすべての健康問題は精神疾患の問題．したがって，他施設同様に精神疾患を心理社会的問題から除外すると，家庭問題の割合が最も高くなる．

Table 1: Gender, Means of Suicide Attempt, and Psychosocial Problems Among Suicide Attempters

Watanabe et al.[46] (N=112) Toki et al.[45] (N=15)

Honda et al.[19] (N=12)

Narushige et al.[38] (N=56)

Mikami et al.[30] (N=34)

Murase, et al.[37] (N=8)

Institution

Tokyo Metropolitan Children's Medical Center Department of Child and Adolescent Psychiatry

Hiroshima University Hospital Advanced Emergency and Critical Care Center
Fukuoka University Hospital Emergency and Critical Care Center
Nippon Medical School Hospital Emergency and Critical Care Center
Tokai University Hospital Emergency and Critical Care Center
Chukyo Hospital Emergency and Critical Care Center

Age Group, Average age
10-18 years old, 15.1 years old
15-19 years old, 17.0 years old
12-19 years old, 16.9 years old
13-18 years old, 16.4 years old
14-19 years old, Male 17.5 years old, Female 16.8 years old
13-19 years old, 16.0 years old

Female (%)
66.1
80.0
41.7
75.0
88.2
75.0

Means of Suicide (%)
Overdose 31.3
Jumping 22.3
Physical stab wounds 21.4
Hanging 8.9

Overdose 93.3
Jumping 6.7

Jumping 58.3 Drug poisoning 33.3
Hanging 8.3
-†
Overdose 79.4
Jumping 14.7

Abdominal stab wounds 2.9
CO poisoning 2.9

Overdose 87.5
Poisoning 12.5

Psychosocial problems (%)
Family 27.7
School 23.2
Friends 13.4
Romance 7.1
Other 21.4*

Family 26.7
Romance 26.7
Health 20.0
Friends 20.0
Academic 13.3
Occupation 6.7
Others 20.0

Interpersonal 33.3
Academic 25.0
Gender 25.0
Family 16.7
Occupation 16.7
Other 25.0

Health‡ 87.5
Family 32.1
Romance 19.6
School 17.9
Occupation 3.6
Economy‡ 3.6
Other 30.4
Unknown 1.8

Family 50.0
Personal 32.4
Academic 17.6
Romance 17.6
Other 2.9

Family 87.5
Friends 62.5
Health 50.0
School 25.0
Occupation 25.0
Economy 12.5

Prepared by the author based on Ref. [47] Table 2. References are listed in the order of publication date. *Including uncertainty about the future and unknown, calculated as 24 persons in total. †Not listed in the literature. ‡Narushige et al.[38] included mental illness in health problems, and all health problems except one person with a physical illness were problems of mental illness. Therefore, if mental illness is excluded from psychosocial problems as in other institutions, the proportion of family problems is the highest.

表 2　精神医学的診断

	Mikami, et al.[36] (N＝94)	渡辺ら[46] (N＝112)	土岐ら[45] (N＝15)	本田ら[19] (N＝12)	成重ら[38] (N＝56)	Murase, et al.[37] (N＝8)	集積データ (N＝297)
対象	19 歳以下	18 歳以下	19 歳以下	19 歳以下	18 歳以下	19 歳以下	
精神疾患（%）	92.6 *	99.1 *	100.0	91.7 *	89.3 *	100.0	94.9
抑うつ障害群，双極性障害および関連障害群（%）	30.9	16.1	6.7	33.3	35.7	75.0	26.3
不安症群（%）	19.1	1.0 ‖	0	— **	1.8 ‖	0	7.0 §§
物質関連障害群（%）	6.4	0	0	0	3.6	0	2.7
精神病性障害群（%）	14.9	17.9	0	8.3	12.5	12.5	14.5
解離症群（%）	— †	6.3	20.0	— **	3.6	12.5	6.8 §§
適応障害（%）	36.2	27.7	33.3	50.0 **	8.9	12.5	27.6
自閉スペクトラム症（%）	12.8	14.3	13.3	0	3.6	0	10.8
摂食障害群（%）	4.3	2.7	6.7	0	3.6	25.0	4.0
境界性パーソナリティ障害（%）	9.6 ‡	1.8 ‡	26.7 ‡	0	26.8 ‡	50.0 ‡	11.4
その他（%）	7.4 §	12.5 ¶	0	8.3 ††	16.1 ‡‡	0	10.4

文献 47）表 2 を参考に著者作成．本表では DSM-5 の診断名に統一，表 1 の三上ら[30]の結果は，Mikami, et al.[36]と同一施設の結果のため除外．文献は公表時期が新しい順序で記載，* 診断なしと診断不明を除外した割合，†文献に記載なし，‡Mikami, et al.[36]と土岐ら[45]は境界性パーソナリティ障害の割合．成重ら[38]は ICD-10 F6 の割合．Murase, et al.[37]は，4 名中境界性パーソナリティ障害 3 名，特定不能のパーソナリティ障害 1 名，§診断なし 5 名，診断不明 2 名，‖強迫症（本表では便宜上不安症群に含めた），¶ICD-10 F7 1 名，IDC-10 F9 12 名，診断不明または診断なし 1 名，**ICD-10 F4（文献には，F4 のほとんどが適応障害と記載されているため，本表では適応障害を 50%とし，不安症群と解離症群は文献に記載なしとした），††診断不明 1 名，‡‡ICD-10 F7 2 名，ICD-10 F9 1 名，診断不明または診断なし 6 名，§§不安症群，解離症群が判明した施設のみ集計（不安症群：20/284，解離症群：13/190）．

Table 2: Psychiatric Diagnoses

Mikami, et al.[36] (N=94)

Watanabe, et al.[46] (N=112)

Toki, et al.[45] (N=15)

Honda, et al.[19] (N=12)

Narushige, et al.[38] (N=56)

Murase, et al.[37] (N=8)

Aggregate data (N=297)

Subjects

19 years old or younger

18 years old or younger

19 years old or younger

19 years old or younger

18 years old or younger

19 years old or younger

Psychiatric disorders (%)

92.6* 99.1* 100.0 91.7* 89.3* 100.0 94.9

Depressive disorders, bipolar, and related disorders (%)

30.9 16.1 6.7 33.3 35.7 75.0 26.3

Anxiety disorders (%)
19.1 1.0‖ 0 -** 1.8‖ 0 7.0§§

Substance-related disorders (%)
6.4 0 0 0 0 0 3.6 0 2.7

Psychotic disorders (%)
14.9 17.9 0 8.3 12.5 12.5 14.5

Dissociative disorders (%)
-† 6.3 20.0 -* 3.6 12.5 6.8§§

Adjustment disorder (%)
36.2 27.7 33.3 50.0** 8.9 12.5 27.6

Autism spectrum disorder (%)
12.8 14.3 13.3 0 3.6 0 10.8

Eating disorders (%)
4.3 2.7 6.7 0 3.6 25.0 4.0

Borderline personality disorder (%)
9.6‡ 1.8‡ 26.7‡ 0 26.8‡ 50.0‡ 11.4

Others (%)
7.4§ 12.5¶ 0 8.3†† 16.1‡‡ 0 10.4

Prepared by the authors based on Ref. [47] Table 2. The results of Mikami et al.[30] in Table 1 are excluded because the results were obtained at the same institution as those of Mikami, et al.[36]. *Percentage excluding no diagnosis and unknown diagnosis. †Not mentioned in literature. ‡Percentage of patients with borderline personality disorder. Mikami, et al.[36] and Toki, et al.[45] showed percentage of borderline personality disorder, Narushige, et al. [38] reported that of ICD-10 F6, and, Murase, et al.[37] reported that of 3 borderline personality disorder, and 1

personality disorder not otherwise specified. §Five no diagnosis, and 2 diagnosis unknown. ‖‖Obsessive-compulsive disorder (included in the anxiety group for convenience in this table). ¶Number of ICD -10 F7 was 1, that of IDC-10 F9 was 12, and that of diagnosis unknown or not known was 1. **ICD-10 F4 (Since most of the F4s are listed as adjustment disorder in the literature, in this table, adjustment disorder is considered 50%, and the anxiety and dissociative disorder groups are included in the anxiety group for convenience.). ††One person with unknown diagnosis. ‡‡ Number of ICD-10 F7 was 2, and that of ICD-10 F9 was 1, and that of diagnosis unknown or no diagnosis was 6. §§Anxiety group and dissociative disorder group were identified only in the institutions (Anxiety group: 20/284, Dissociative disorder group: 13/190).