

FACTORS RELATED TO SUICIDAL BEHAVIOR IN ADOLESCENTS AT THE VIETNAM NATIONAL CHILDREN'S HOSPITAL FROM 2020 - 2022

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This is a prospective study on 32 children with suicidal behavior who came to the National Children's Hospital for examination and treatment from February 2020 to September 2022. There were more girls than boys (71.9% vs 28.1%). There is a relationship between the child -parents, father-mother with the child's suicidal behavior. The main events leading to children's suicidal behavior are mainly related to the family and school environment, accounting for 87.5%, 62.5% children are introverted, 28.1% children have suicidal ideation and behavior and 18.8% of cases had self-destructive behavior. 81.2% of children showed warning signs before committing suicide. Suicide is more common in girls. Family relationships between parents and children are related to children's suicidal behavior. The main events associated with suicidal behavior are primarily in the home and school settings. We recommend that children should be examined when they show warning signs related to suicide.

Keywords: Relevant factors, suicide, children, Vietnam National Children's Hospital.

I. INTRODUCTION

Suicide is the intentional act of self-inflicted death, including the following levels: suicidal ideation, suicide attempt, and suicidal behavior. Suicide can occur in any age group but is more common in adults than in children. According to the World Health Organization (WHO), suicide is the second leading cause of death for the 15 to 29 age group (next to traffic accidents). Currently, suicide is on the rise among adolescents and is one of the leading causes of death in this age group worldwide.^{1,2} According to a 2019 survey in the US, 18.8% of high school students had suicidal ideation and 8.9% had attempted suicide.³ According to Miron, the cause of increased suicide in this age group can be attributed to psycho-psychiatric disorders as well as substance abuse more common in

adolescents than in young children.⁴

According to the WHO report, adolescent suicide in Vietnam is on the rise and WHO believes that measures should be taken to prevent this problem since suicide not only leads to the death of the child, but also causes negative psychosocial effects.⁵ Therefore, understanding the risk factors leading to suicidal behavior in adolescents is essential for effective prevention measures and strategies. At this time, there is no study evaluating these risk factors for suicide in Vietnamese adolescents. Therefore, we conducted the study "Various factors related to suicidal behavior in adolescents at the Vietnam National Children's Hospital from 2020 to 2022".

II. METHODS

1. Objectives

Patients with suicidal behavior came to the National Children's Hospital for examination and treatment.

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Inclusion criteria

- The patients committed suicide before coming to the Vietnam National Children's Hospital.

- Age: from 10 to 19 years old.

Exclusion criteria

- There are no evidence in patient who commit suicide.

- Patient who commit suicide and dead before admit to hospital.

- Incomplete patient history and data.

2. Methods

Duration and place of research

From February 2020 to September 2022 at the Vietnam National Children's Hospital

Study design: cross-sectional description, prospective, convenience sampling with the attempted suicides admitted to the hospital from 2020 to 2022.

Proceeding steps: Patients with suicidal behavior came to the Vietnam National Children's Hospital for examination and treatment. We collect from relatives including: family (father, mother, brothers, relatives), friends, teachers... information related to the patient's suicidal behavior. Besides, we exploit information directly from the patients when the patients were awake, cooperating and agreeing to talk.

Variables

+ Gender: male, female.

+ Adolescent stage.

+ Cohabitation status and relationship

between children and parents.

+ Education level of parents.

+ Child's personality.

+ Personal - family history.

+ Factors related to family and school environment.

+ Warning signs before suicidal behavior includes unstable behavior or emotion, suicidal - related behaviors (suicide notes, saying goodbye...), retain suicidal's materials/tools.

Data analysis

The Statistical Package for Social Science (SPSS) version 18.0 was used to analyze the data. Statistical analysis, including descriptive statistics (Frequencies, Chi-square test (χ^2) to compare ratios with significant $p < 0.05$.), was used for each item to describe the sample characteristics and distribution of responses.

3. Research ethics

The study was approved by the parents or guardians and the patients themselves. The study does not affect the patient's health and the patient's personal information is kept confidential.

III. RESULTS

In this study from February 2020 to June 2022, we collected 32 patients with suicidal behavior who came for examination and treatment at the Vietnam National Children's Hospital.

1. General characteristics of research subjects

Table 1. Some common characteristics

	Characteristics	n (%)	p
Sex	Male (Boy)	9 (28.1%)	< 0.5
	Female (Girl)	23 (71.9%)	
Area	Countryside	7 (21.9%)	< 0.05
	Town	25 (78.1%)	

Characteristics		n (%)	p
Academic ability	Bad	7 (21.9%)	> 0.05
	Medium	10 (31.2%)	
	Good – Very good	15 (46.9%)	
Adolescent stage	Early	13 (40.6%)	> 0.05
	Middle	19 (59.4%)	
Mean age ($\bar{x} \pm SD$) (Smallest-oldest age)		14 \pm 11.2 (years) (11 - 16)	

Females (Girls) are more than males (boys) with the rate of 71.9% and 28.1% with the difference having statistical significance ($p < 0.05$). Urban areas are higher than rural areas with the rates of 78.1% and 21.9%. In terms of academic performance, mainly good

and very good achievement accounted for the highest percentage (46.9%) and there was no difference in academic attainment levels ($p > 0.05$). The average age is 14 \pm 11.2 years old and the youngest is 11, the oldest is 16 years old.

2. Factors associated with suicidal behavior

Table 2. Some characteristics of the family environment

Characteristics		n (%)	p
Father's education level	High school or below high school	6 (18.8%)	> 0.05
	College - University	14 (43.6%)	
	Post graduate	12 (37.6%)	
Mother's education level	High school or below high school	5 (15.6%)	> 0.05
	College - University	16 (50%)	
	Post graduate	11 (34.4%)	
Cohabitation status	Living with parents	17 (53.1%)	> 0.05
	Living with only father or mother	11 (34.4%)	
	Not living with parents	4 (12.5%)	
Parents' relationship	Harmony	13 (40.6%)	< 0.05
	Conflict	19 (59.4%)	
Child's relationship with parents	Harmony	10 (31.3%)	< 0.05
	Conflict	22 (68.7%)	

The educational level of parents is mainly from college - university or higher and there is no statistically significant difference compared with the group of upper secondary school (high

school) or below high school ($p > 0.05$). The percentage of children living with their parents accounted for the highest rate (53.1%). The relationship of conflicting parents is higher than

that of compatible harmonic parents (59.4% and 40.6%) with the difference between the two groups having statistical significance ($p < 0.05$). The percentage of children with a conflicting

relationship with their parents was higher than that of a concord (68.7% and 31.3%) with the difference being statistically significant ($p < 0.05$).

Table 3. Key events related to suicidal behavior

	Events	n	%
Family environment	Family violence	8	25.0%
	Conflict with family	5	15.6%
	Other factors	1	3.1%
School environment	School violence	5	15.6%
	Study pressure	4	12.5%
	Relationship with Teachers-friends	5	15.6%
Other events		4	12.5%

The main events leading to children's suicidal behavior are mainly related to the family and school environment, accounting for

87.5%. The rate of family violence and school violence is quite high (25% and 15.6%).

Table 4. Patient's personal - family history

	The characteristics	n	%
Personally	Introverted personality	20	62.5%
	Extroverted personality	12	37.5%
	Having a mental illness	3	9.4%
	Substance use	2	6.3%
	Ever having suicidal ideation and behavior	9	28.1%
	Ever having self-destructive behavior	6	18.8%
Family	Having a relative with a mental disorder	4	12.5%
	Having a relative commit suicide	2	6.3%

Most children are introverted, accounting for 62.5. The proportion of children with a history of mental disorders or substance use is low, only 9.4% and 6.3%. There were 28.1% of cases ever had suicidal ideation and behavior and

18.8% of cases had ever had self-destructive behavior. In the family history, only 12.5% had a relative with a mental disorder and 6.3% had a history of suicide.

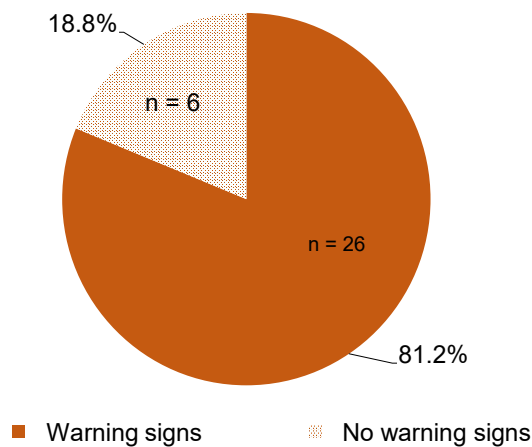


Figure 1. Some warning signs of suicide

Most children showed warning signs before committing suicide with behavioral and emotional changes in 26 cases, accounting for 81.2% of cases.

IV. DISCUSSION

Regarding gender, in our study, female met more than males with the rate of 71.9% and 28.1% with statistical significance difference ($p < 0.05$). In some studies abroad, the proportion of men is often higher than that of women.^{6,7} However, these studies refer to cases of suicide in the community unlike our study in patients who were taken to the hospital for examination and treatment at the Vietnam National Children's Hospital. In terms of age, the patients in the study were mainly in the early and mid-adolescent stages, from 10 - 16 years old. According to the research results, we found that the proportion of patients in urban areas is higher than in rural areas and there is no difference between the patient's academic levels.

In our study, the education level of the parents, as well as the cohabitation status (the child lives with the parents or not) is not a factor associated with the child's suicidal behavior (p

> 0.05). Meanwhile, the relationship between parents - as well as the relationship of children with parents - is the relevant factor ($p < 0.05$) (Table 2). This shows that family relationships have an influence on children's suicidal behavior, consistent with the statements of other domestic and foreign researches. Bridge JA 's study found that 50% of adolescent suicides are related to family factors. The limitation or difficulty in communication between everyone in the family, the conflicting relationship between parents and children or direct conflict between parents are also factors that greatly affect the Child's suicidal behavior, especially family violence. Children living in such a family environment led to psychological disorders which is a influential factor related to the child's suicidal behavior.⁸⁻¹¹ In our study, the percentage of children in the family with someone who had committed suicide or had a relative with a mental disorder accounted for 3.8% and 12.5%, respectively, lower than in studies abroad. This may be because the sample size in our study was small and only patients who came for examination and treatment at the Hospital were selected. Meanwhile, foreign studies conducted in the general community showed that child suicide

is related to families where someone has committed suicide, especially parents. The child's behavior may be related to genetic factors and to the child's imitation behavior.^{12,13}

In our study, the main events leading to children's suicidal behavior were mainly related to the family and school environment (87.5%) (Table 3), in which, family violence and school violence account for a significant proportion (25% and 15.6%). Similarly, foreign studies also suggest that children being bullied and abused are risk factors for suicidal behavior in adolescents.^{14,15} In fact, the activities in the lives of children and adolescents are mainly in the home and school environment. Therefore, in order to understand the factors related to suicidal behavior, it is necessary to gather information from these two environments and to take note to family violence and school violence.

Results also show a higher proportion of introverted personality than extroverted (62.5% and 37.5%). Children with introverted personality often have a harder time coping with and adapting to life's stressors than extroverts. Suicide is more common in children with poorer problem-solving skills than their peers. For adolescents, suicidal behavior, suicidal ideation, and suicide attempts often occur suddenly in connection with the child's impulsivity. Children's inability to cope and deal with life events along with difficulties in emotional control often leads to loss of behavioral control and suicide, especially in children with a perfectionist personality.¹⁶⁻¹⁸

In our study, the rate of children using drugs is low (9.4% and 6.3%) compared to foreign studies. This may have to do with cultural differences between Vietnam and other countries. We found that most of the children who commit suicide are spontaneous and

have no significant association with mental illness. This is different from some other foreign studies that show a high rate of child suicide with mental problems. According to foreign studies, adolescence is a period when children go through a process of psycho-physiological as well as physical changes, so they are vulnerable and suffer from mental health problems. In addition, substance abuse, specifically alcohol abuse, is also associated with increased risk of suicide, especially in male.⁷⁻⁹ In our study, 28.1% of children had previous suicidal ideation or behavior and 18.8% of children had self-destructive behavior. Similarly, many studies have also found an association between previous suicide attempts or a history of self-harm and suicidal behavior. Children who have attempted suicide have a higher risk of suicide than other children.^{11,19} Therefore, in our opinion, this is a risk factor and needs to be detected early to help prevent children's suicidal behavior in the future.

In our study, most of the children showed warning signs before committing suicide, accounting for 81.2% of cases with behavioral and emotional changes (Figure 1). There were 22 cases of acts suggesting death, accounting for 68.7%, especially 4 cases of writing suicide letters. Children often send messages to their loved ones, maybe their parents, friends, family members, etc. with expressions suggestive of suicide such as saying goodbye, giving last advice to loved ones, wearing nice clothes, etc. In addition, the expression of emotional changes including boredom and disappointment accounted for 10 cases 31.3%. Therefore, in our opinion, it is necessary to recognize early warning signs of emotional-behavioral changes as above so that we can offer interventions and prevent children's suicidal behavior. However, we find that the warning signs are sometimes

very discreet and difficult to detect and there is need to explore all the children's relationships related to the family and school environment. Similarly, author Van Heeringen K suggests that adolescent suicide is preventable by recognizing the warning signs early. According to the author, most suicide deaths are preceded by warning signs such as suicidal threats, suicide attempts, depression, obsessive thoughts about death, or preparation for death.¹⁷

In terms of risk factors, studies suggest that many factors can contribute to adolescent suicide and are due to the interplay of genetic, biological, psychological and social factors. Mental disorders, previous suicide attempts, personality traits, genetic and family environment factors, psychological stressors, imitation of suicidal behavior, means of suicide availability are major risk factors for adolescent suicidal behavior. Therefore, prevention efforts mainly affect factors: the young individual, the child's relationship, the community and society.¹⁷ Improving the family environment, especially the relationship between parents and children, is one of the important factors to prevent children from committing suicide.¹¹

V. CONCLUSION

Suicide is more common in girls than in boys. Family relationships between parents and children are related to children's suicidal behavior. The main events associated with suicidal behavior are primarily in home and school environment. Most children show warning signs when committing suicide and need to be examined when there are warning signs related to suicide.

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