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Suicide among children and adolescents: a review

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It's a fact that suicide is one of the top three causes of death among 15-to-24 years old around the world. Due to this, and in spite of the inherent difficulties in this type of studies, many researches have been put into place, with the primary intention of identifying its etiopathogenesis, in order to establish suicide prevention strategies and provide effective mental health care.

To date, the main risk factors, among others, known to be associated with suicidal behavior in this age group are depression, hopelessness, dysfunctional families, substance abuse, school failure and harassment.

This review highlights the fact that the sociological characteristics of postmodernity are influencing the phenomenology of the suicidal behavior among children and adolescents today.

Keywords: Suicide, Children, Adolescents, Risk factors, Internet

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El suicidio infanto-juvenil: una revisión

Es un hecho que el suicidio está siendo una de las tres principales causas de muerte entre los jóvenes de 15 a 24 años en el mundo. Como consecuencia de ello, multitud de investigaciones científicas se han puesto en marcha, a pesar de las dificultades inherentes al estudio de este fenómeno, para dilucidar su etiopatogenia fundamentalmente, y elaborar así protocolos de prevención e intervención clínica eficaces.

Hasta el momento, los principales factores de riesgo que se ha podido comprobar que están más frecuentemente asociados a las conductas suicidas en este grupo etario son la depresión, la desesperanza, la familia disfuncional, el abuso de sustancias tóxicas, el fracaso escolar, y el acoso moral, entre otros.

Esta revisión destaca el hecho de que las peculiaridades sociológicas propias de la postmodernidad están influyendo sobre la fenomenología de las conductas suicidas entre los niños y adolescentes de hoy en día.

Palabras clave: Suicidio, Niños, Adolescentes, Factores de riesgo, Internet

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INTRODUCTION

If suicide in adults is disconcerting for those closest to them, this sentiment is much more intense and generalized in the case of a child or adolescent. We tend to relate this stage in life with concepts of vitality, carefree living and desires for the future,¹ during which young people try to implement their personal projects without stopping to think about any barriers. For this reason, it is so difficult to understand and accept the phenomenon of suicide in this age group,¹ and it inevitably leads healthcare professionals and educators to consider what future proposals are being offered to young people today.²

There has always been an attempt to hide or deny suicide among children and adolescents, either out of fear of directly blaming the families,³ or because it is considered a reprehensible fact under Christianity, the dominant religious belief in central and southern Europe since the 4th century. As a historical development, due to the recent increase in suicide at an early age, and thanks to the boom in divulgence of information through the mass media, today suicide is not only considered and accepted as a real and irrefutable fact, but it is also the object of widespread epidemiological tracing and scientific research.^{1,4,6-22,26,27,38-43,46-49}

This paper will review suicide rates, the most common methods used and the conceptual delimitation of suicide, drawing conclusions, some of which have been expressed as a representative number of scientific publications. It also includes an analysis of the reasons for the increase in suicide among children and adolescents, according to the characteristics of the society in which we have to live.

PREVALENCE

It is estimated that suicide is one of the top causes of death among adolescents around the world,⁴ and that its prevalence in this age group has quadrupled in recent decades.⁵ It is consequently being acknowledged in the scientific community as one of the major public health issues in the world. As an orientation, in 2002 there were 877,000 suicides in the world, of which approximately 200,000 were adolescents and young adults.⁶ Of the four million attempted suicides taking place each year, around 90,000 occur in people aged between 10 and 19.⁴ Examined by gender (given that successful suicide is between two and five times more common in males²), the global suicide rates per 100,000 inhabitants in the year 2000 was 0.4 for females and 1.5 for males aged between 5 and 14, and 4.9 for females and 22 for males aged between 15 and 24.⁷

Fortunately, it seems that the rates for Spain are below these global figures. According to official figures issued by

the National Institute of Statistics,⁸ the rate of successful suicide per 100,000 inhabitants for the year 2010 was 0.141 for the 10-14 year old age-group, 1.258 for those aged between 15 and 19, and 3.645 for those aged between 20 and 24. It is worth noting that for the data obtained since the 1980s there were no reported cases of suicide in the under 5 year olds (Table 1). Similarly, it is interesting to observe a consistency in the frequency of suicide in recent years, the figures for which increased slightly over the ten-year period from 1985 to 1995 approximately, and then turned downwards (ranges marked in bold on Table 1). The reasons for this trend have not as yet been identified in available literature on the subject.

In a study completed in Switzerland⁹ examining preferences in suicide methods among a sample population of 333 young people aged between 0 to 19 years enrolled between 1998 and 2007, the conclusion was reached that the chosen lethal routes bore a significant relation to availability and ease of access, and to the *copycat* phenomenon. In line with the above, the main suicide methods in young males were firstly the use firearms, followed by hanging, throwing oneself on a railway line and jumping from heights; the preferred methods among females in this age group were throwing themselves on railway lines, followed by jumping from heights, hanging and medical overdoses. Inhalation of exhaust fumes was not customary in this population group, poisoning by domestic gas was obsolete given the detoxification process carried out in the country prior to the completion of the study, and drowning was frowned upon, as in Switzerland schoolchildren traditionally train very hard in swimming.

RISK FACTORS

So: What is the reason for a young person who is apparently socially capable to decide to end his or her life? According to published data, there seems to be a consensus on the risk factors – i.e. the social circumstances and personal characteristics leading to suicide in children and adolescents.^{2,4,6,10-22}

- Firstly, most of the research agrees that depression is the risk factor most commonly involved in suicidal behavior among young people. However, many authors also insist on *hopelessness* as a more accurate predictor. According to Beck, the state of hopelessness is defined as a system of cognitive patterns with the common denominator of negative future prospects.²³ Under these circumstances, suicidal thoughts may be understood as an extreme expression of the desire to escape from what seem to be unsolvable problems, or an intolerable situation.²⁴ Indeed, adolescence is a critical period during which stressful changes take

Table 1												
Deaths by suicide and self-inflicted injuries, by age and gender. Results for Spain. Units: Individuals. Source: Instituto Nacional de Estadística. ⁸												
Year	Age 5 - 9			Age 10 - 14			Age 15 - 19			Age 20 - 24		
Sex	M*	F**	T***	M	F	T	M	F	T	M	F	T
1980	0	0	0	6	1	7	41	13	54	93	20	113
1981	2	0	2	15	3	18	51	13	64	108	25	133
1982	1	0	1	11	2	13	56	16	72	84	28	112
1983	1	0	1	11	3	14	51	20	71	123	25	148
1984	0	0	0	14	4	18	77	18	95	119	32	151
1985	1	0	1	7	1	8	60	15	75	116	28	144
1986	1	0	1	19	9	28	82	24	106	145	30	175
1987	0	0	0	17	2	19	78	24	102	138	44	182
1988	1	0	1	20	1	21	101	17	118	183	42	225
1989	0	0	0	18	6	24	81	26	107	203	34	237
1990	0	0	0	19	6	25	82	20	102	158	34	192
1991	1	0	1	19	5	24	80	23	103	158	48	206
1992	0	0	0	6	3	9	71	15	86	154	27	181
1993	1	0	1	15	2	17	71	21	92	175	32	207
1994	0	0	0	10	2	12	70	20	90	183	36	219
1995	0	0	0	8	1	9	100	21	121	187	44	231
1996	0	1	1	5	7	12	81	25	106	197	45	242
1997	0	0	0	9	5	14	81	29	110	176	41	217
1998	0	0	0	4	4	8	62	16	78	187	28	215
1999	0	0	0	2	0	2	68	25	93	150	36	186
2000	0	0	0	6	3	9	71	18	89	158	25	183
2001	0	0	0	7	4	11	37	12	49	157	28	185
2002	0	0	0	7	1	8	46	20	66	150	26	176
2003	0	0	0	2	1	3	47	16	63	144	40	184
2004	0	0	0	11	1	12	35	19	54	140	37	177
2005	0	1	1	4	2	6	52	14	66	112	24	136
2006	0	0	0	2	3	5	37	13	50	116	25	141
2007	0	0	0	7	5	12	22	9	31	92	21	113
2008	0	0	0	2	2	4	30	11	41	108	19	127
2009	0	0	0	7	1	8	41	6	47	98	26	124
2010	0	0	0	3	0	3	22	6	28	77	17	94

*Males; **Females; ***Total

place, such as the adaptation to physical changes, adopting a definitive role in life, the creation of a motivating life project and the development of a process of autonomy with the resulting distancing from figures of authority. On occasions all this results in feelings of loneliness, frustration and anxiety,²⁵ in turn justifying a greater propensity towards hopelessness.

- Problematic families: Family dynamics play a key role in the emotional stability of its members, and more specifically in adolescents, as they need stronger emotional support in order to resolve stressful life events and to alleviate the feelings inherent to this stage in life as described above. Poor intra-family communication, ongoing, highly emotionally charged

arguments, and a lack of affection and cohesion between family members are the main contributing factors to suicidal behavior among children and adolescents. Furthermore, numerous studies have demonstrated that subjects with a family history of suicide or attempted suicide are at greater risk of self-harm, via genetic transmission *per se*, inherited mental health disorders, or due to sharing the same harmful environmental factors.^{26,27}

- Consumption of toxic substances: Substance abuse may result in overall inefficiency of coping mechanisms (common among potentially suicidal individuals), and can act as a bridge between depression and suicidal behavior due to its powers of inhibition and/or may generate feeling of hopelessness and powerlessness, which have the same end result.²
- Peer relationships: The phenomenon known as bullying (from the word *bull*) is closely linked to suicide. In fact, the portmanteau *bullycide* has been created to denote this connection.²⁸ The term bullying is understood to mean "the psychological, moral and/or physical abuse inflicted at schools, where one student exerts power over another in a systematic way with the intention of causing harm."²⁹ The avalanche of press articles and television programs in this country over recent years is partly the result of the death, in 2004, of Jokin, a 14-year-old lad who threw himself off a wall in Hondarribia, after suffering a whole year of aggression and teasing from classmates. One of the reasons for the bullying was that he was the only one of his group who didn't hide a letter sent by camp monitors to their parents, informing them that they had been found smoking cannabis. Hours before he committed suicide, the boy posted a message on the internet saying "*Freedom, oh, freedom. My eyes will live on even though they stop my feet.*"³⁰ It is important to note another form of moral bullying emerging over the internet, known as "*cyber-bullying*," where a bully can insult others anonymously using specific websites (such as "formspring," that reached 135 million followers, or the Mexican site "lajaula.net").^{31,32}
- Academic failure in itself is not a trigger; but when it is associated with intense academic pressure, personal dissatisfaction with results at school and an insufficient social support network (in particular in the family), it does affect the risk of suicidal behaviour.² With regard to academic pressure, Cobo is also of the opinion that "sometimes, school life is harder than adult life. Only school children go through the process of being regularly classified and examined at least once a year: how many adults could withstand that?"³³
- Other associated risk factors are, fundamentally: dissatisfaction with one's body,^{12,21} frequent changes of residence,²⁰ emotional dysregulation,¹⁰ impulsiveness,¹⁷ attentional deficit hyperactivity disorder,²² shortage of money,¹³ chronic illness,⁴ traumatic experiences (particularly war, and sexual/physical abuse),⁴ and conflict over sexual identity.⁴

DEFINITIONS AND TYPOLOGY

Everyone knows that a certain level of cognitive maturity is required to understand the concept of death, and therefore for this to be the purpose of self-harm.^{1,2} According to research by Nagy,³⁴ there are three stages in the process of acceptance during childhood:

- Children under the age of five are generally not able to distinguish between life and death. For this reason they reject the irreversibility of death, comparing it to a journey or a dream.
- Children aged between five and nine acknowledge death, but they personify it, i.e. they consider it to be "someone bad who can come and get you." It is understood as an avoidable status, that also may even alternate repeatedly with life.
- Only after the age of nine does a child understand death as an inevitable and universal process, the result of which is the definitive ceasing of life within the body.

Given that the understanding of death varies according to the child's stage of development, two suicides of a similar nature (jumping from a height) in two children of different ages (4 and 9 years old) can have quite different reasons: the former is probably the object of a fantasy (for example, the child expects to be able to fly, like a hero he particularly admires),² and the latter case is probably the result of a state of desperation (e.g. suffering from bullying at school).

According to Mardomingo,³⁵ the spectrum of suicidal behavior in children and adolescents covers the following sections:

- Successful suicide attempts cover all voluntary acts of self-harm resulting in the actual death of the minor. Diagnosis is not always easy, as there is often doubt as to whether it is an act of suicide, carelessness or reckless behavior.
- Attempted suicide, also known as parasuicide, is an act a young person deliberately inflicts on himself, but not resulting in death. This definition does not include the underlying purpose of the act (i.e. whether the individual wished to die or manipulate his or her environment).

- Under the concept of suicidal thoughts we can broadly include ideas such as non-specific ones about the worthlessness of life, planning suicide or threats towards others, among others.

This author³⁵ believes that there is an open debate about whether suicidal behavior is a continuum moving from suicidal thoughts to attempts and/or threats, eventually reaching actual suicide, or whether individuals who commit suicide have different characteristics from the rest. Under the second of these two theories, there are two different subgroups among self-harming children and adolescents:

- One with a poorer prognosis (because they use more lethal methods and are more likely to achieve suicide), characterized by the presence of psychiatric disorders and negative environmental factors, who do not act on a clear trigger but react against an ongoing adverse situation;
- and another group for whom family disruption or psychiatric background are not relevant, but who act impulsively and without pre-meditation on a stressful life event, in order to change their environment.

In any event, and as Cobo's work insists, "[...] any suicidal act, however banal or blackmailing it may seem, should be taken very seriously. The fact that a young person turns to self-harm (in a different category to a tantrum) in order to put an end an unbearable situation shows great vulnerability and must be carefully supported."³³

LIMITATIONS INHERENT TO THE STUDY OF SUICIDE

Research into suicide continues to be affected today by a series of methodological issues relating to the deception surrounding it that sometimes underestimates the scale of the problem.^{1,3,36} Firstly, the reason behind the suicide often cannot be established, because those around the victim may act as cover, given the social condemnation of this type of behavior. In the case of suicide among children and adolescents, as we have mentioned, parents may even be fearful that they will be held responsible in some way for the act.³

Another of the key difficulties when compiling information is that, given that the affected population cannot be studied directly, sometimes doubt arises as to whether the end result is a suicide, an accident,³ or an act of recklessness. An example of this is what is known as the "choking game," a high risk practice among teenagers consisting of tying a scarf to a solid structure (a bed leg, a door handle or a window frame), wrapping the other end around their neck, to cause a drop in the blood supply to the

brain, achieving feelings of ecstasy or light-headedness, with the intention of untying the scarf in time.³⁷

Bureaucratic and administrative difficulties when registering the cause of death with the authorities can also have a negative influence on the collection of epidemiological data.³⁶

CONCLUSIONS

In this situation, it is to be expected that the scientific community has made great efforts in recent years to research this phenomenon. A review of articles on the subject published in high-impact scientific journals^{4,6,9-22,38-43} reveals that:

1. Firstly, there is considerable alarm among researchers and clinicians about the current figures and the increase in cases in recent years.
2. Secondly, as a result of the above, there is an overall tendency to search for and classify the risk factors and the psychopathological aspects involved in suicide.
3. For the majority of authors, suicide among children and adolescents is related to a morbid process of neurobiological ethiopathology, rather than the desires of the individuals themselves.
4. There is notable concern, and great scientific controversy about the fact that SSRIs can trigger suicidal thoughts in children and adolescents, since the alarm was raised in 2003 by both the United States Food (FDA), and the United Kingdom Department of Health.³⁸
5. It is once again stressed that people who harm themselves must not be underestimated, regardless of how ever manipulative and purpose-based the act may seem, as they are highly likely to commit suicide in future years.
6. It is also highlighted that the more we limit children and adolescent's access to toxic substances, firearms, railway lines, bridges, etc. the greater number of suicides we can prevent.
7. The main objective is to be able to draw up reliable protocols for early diagnosis, and to develop effective primary, secondary and tertiary prevention methods.

DISCUSSION

It must be considered that in their historical context, adolescents today show behavior and ways of living reality that differ greatly from those of a few decades ago.² Suicide is more common among individuals of an increasingly lower

age, not only due to the risk factors mentioned above, but as a result of the sociological characteristics of the post-modern era.

Firstly, the vertiginous technological developments of recent years have revolutionized practically every aspect of our lives. The globalization of information exchange so easily accessed by minors has thus probably accelerated their evolutionary development, and the meaning of death is now understood at an increasingly younger age. This would explain the fact that both suicidal ideas and behaviors, historically seen in adults, are occurring at an earlier age in our society.

Furthermore, as described by Bauman, these new technologies have changed the way in which we forge relationships.⁴⁴ Today, all we need to do is connect to a social network or chat room, using one of the many computers that surround us, or even a mobile telephone, to find out the finer details of other people's lives, without even the need for a conversation. Paradoxically, the fact that someone can communicate with dozens of others from the solitude of their bedroom has deepened the fragility of making personal connections and social isolation, as our resulting "relationships" are more and more superficial and short-lived.

Another key aspect is that the ability for public or private information to be divulged over the internet has amplified the "Werther effect," a term coined by the sociologist David P. Phillips in 1974, referring to the imitation of suicidal tendencies. This name is taken from the Goethe's 1774 novel "The Sorrows of Young Werther,"⁴⁵ in which the main character, a young man in despair over a woman who is in love with someone else, commits suicide with a firearm. After the publication of the book, there was a wave of suicides across Europe, characterized by the same method and clothing (blue jacket, open shirt, yellow waistcoat, white trousers, high boots and bowler hat), resulting in the work being banned in a number of countries. It is clear that today the Internet is being used as a platform for publishing information about methods of self-harm or making suicide pacts.^{46,47} An example of this is the fact that certain urban gangs such as the member of the Gothic subculture⁴⁸ or the "Emo" subculture (teenagers with a languid, anorexic appearance, whose make-up highlights their pale features and who wear their hair over their faces as they are not keen on being seen or having social contact), may be using the Internet to upload videos in which they show their self-destructive habits, and to share the music they listen (mainly rock and punk sub-genres), that is also associated with greater vulnerability to suicide.⁴⁹ Another example of the "Werther Effect" is the fact that, as we saw in the case of Jokin, suicide notes are starting to be published and disseminated over the net.

Another sociological factor that may be encouraging this "disappointment with life" among young people is the fact that there is a lack of solid reference points for new generations to identify with, caused by two situations arising almost on a daily basis:

1. Cases of fraud (ideological, values, legal, etc.) continuously reported in the media,² that on the other hand result in a generalized discrediting of world leaders.
2. The delegitimization of the great stories that used to govern world society, a key post-modern characteristic, and the consequences of this, as explained by Lyotard: "Narrative function is losing its fundamentals; the great hero, the great dangers, the great voyages and the great overall purpose. It has dispersed into clouds of narrative linguistic elements, etc. each one bringing with it its own pragmatic valence. Each of us live on the crossroads of many of them."⁵⁰

Finally, the current world economic crisis is limiting professional prospects and the desire for independence in ever better qualified young people, thus contributing to an increase in widespread psychological discomfort.

The present review is intended to emphasize that given that suicide among children and adolescents becoming prevalent and more frequent around the world, it is necessary to remove the taboo that historically envelops this phenomenon and complete more studies on the prevalence, prevention and early detection of suicidal thoughts, in order to offer patients appropriate treatment and thus reduce the number of cases.

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