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LONGITUDINAL EXPLORATORY STUDY ON PERSONALITY CHARACTERISTICS IN ADOLESCENTS WITH SUICIDAL BEHAVIORS ADMITTED TO PEDIATRIC EMERGENCY DEPARTMENT

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Abstract

Background The suicide among young people, is one of the leading causes of death, with a large difference in mortality levels between boys and girls. Nearly 46,000 adolescents die from suicide every year. The rate of deaths by suicide in Italy is 2.3 (3.1 for males and 1.5 for females) for children aged between 15 and 19. Mood disorders, such as major depression and bipolar disorder, can significantly increase the risk of suicidal behaviors. Personality can also play a role in suicide risk. Individual's personality traits can influence how they respond to stress, adversity, and emotional challenges, which can in turn affect their risk of suicide. We deep investigated the pathological personality traits of adolescents with suicidal behaviors. **Methods** The sample analyzed in this study includes 78 adolescents and pre-adolescents admitted to the pediatric emergency room of Pediatric ward (Hospital S. Maria della Misericordia, Udine). All the subjects involved in the study were visiting the emergency room for the first time for suicidal behavior. The instrument used were: K-SADS-PL (psychopathology), PID-5, SCID-5-PD (personality), C-SSRS, MIS (suicidality). Subjects were analyzed in three different moments T0, T1 after 2/3 months and T2 after 6/7 months. **Results** The sample studied is mainly composed of female people (80,8% of the sample), with an average age of 15 (SD 1,07). 50% have exhibited suicidal behavior and 50% have been known to have significant suicidal ideation. Following the first evaluation, 50% of subjects were hospitalized, 37,2% were subjected to observation in the emergency room, while 12,8% were discharged with scheduled multi-week outpatient visits. Following the in-depth psycho diagnostic examination, 52,6% began pharmacological therapy and 83,3% psychotherapy. Finally, the 26,9% of subjects involved in study had already been known or followed at the Neuropsychiatry department. At follow up motivational suicidality psychache (MIS) correlate with anedhonia, depressivity, distractibility, irresponsibility, withdrawal, detachment and disinhibition; Pessimism (MIS) correlate with depressivity, irresponsibility, risk taking, withdrawal and disinhibition. **Conclusions** Our results, in spite of being constrained by a sample size that precludes generalizing certain findings, showed that the in-depth analysis of adolescent's personality traits can contribute to a better understanding of the phenomenon of suicide. It is necessary to expand the reference sample to identify which dimensional variables more accurately predict suicide risk. Furthermore, the opportunity to delve into personality aspects can aid in identifying early therapeutic interventions.

1 – Introduction

Suicide is "a leading cause of premature death". Every year it claims around 700,000/800.000 victims worldwide, with a rate of 10.7 per 100,000 people in 2019. The World Health Organization describes suicide as a "serious global public health problem", affecting individuals of both sexes, of all ages, throughout the world (1). However, suicide is a preeminent cause of death in adolescence. A research conducted by the World Health Organization estimated suicide as the fourth cause of death among young people between 15 and 29 years for both sexes, while, analyzing individually the statistics for respectively for females and males, has emerged as the third and fourth cause of death (1). The same research also highlighted how at an epidemiological level, in 2019 the global suicide rate standardized by age was 9 per 100,000 inhabitants, with variations from less than 2 in some countries to more than 80 in others. The number of suicides worldwide was higher in males (12.6 per 100,000) than in females (5.4 per 100,000), in fact the age-standardized rate was 2.3 times higher in males, with minimal differences depending on economic level of the country (low-income countries: 2.9; low-middle income countries: 1.8; middle-high income countries: 2.6). The greatest number of deaths by suicide occurred in low-middle income countries (77%), where the majority of the world's population lives, but the standardized suicide rate was higher in high-income countries (10.9 per 100,000), followed by low-middle income (10.1 per 100,000), low-income (9.9 per 100,000) and high-middle income (7.3 per 100,000) countries; it is therefore possible to observe how suicide is a phenomenon that does not only concern the most economically advanced countries.

Taking into consideration the situation in Italy, according to "Istituto Nazionale di Statistica (ISTAT) data from "Survey on the causes of death", in 2016, the last year for which data are available, in Italy 3780 people died by suicide. The rates are calculated using the population aged 15 and over as a reference. 78.8% of those who died by suicide are men. The death rate from suicide for men was 11.8 per 100,000 population and for women it was 3.0 per 100,000. Mortality rates from suicide are higher in Northern Italy and, particularly for men, in the North-Eastern Regions. For both men and women, the lowest values of the suicide rate are recorded

in the Regions of Southern Italy (2). Suicide rates among men are also inversely proportional to population density, possibly because men are more vulnerable to adverse social and economic factors associated with lower population density (3). Analyzing the different age groups it can be seen that although the mortality rates from suicide are higher among the elderly, it is among young people aged 15-29 that suicide represents, similarly to what is recorded worldwide, one of the most frequent causes of death. The weight of suicides on total deaths is greater among young men: among 15-29 year old suicides represent 14.7% of total deaths, they drop to 7.2% among 30-54 year old, to 1.6 % among 55-69 year old and represent 0.3% among the elderly over 70. For young women aged 15-29, deaths by suicide account for 8.3% of all deaths recorded in that age group; they drop to 3.2% among 30-54 year old, to 0.7% among 55-69 year old and represent just 0.1% of the total deaths among over 70 year old (4). Comparing the data available for the last 9 years (2011-2019), in our country a decrease in the annual number of suicides of approximately 10% emerges; However, the trend that sees the male sex more represented remains constant, in a proportion, on average, of approximately 3,4:1 (M:F), and over the years the age group most affected has remained the same (35-64 years). The most widespread way to commit suicide was hanging/suffocation, followed by precipitation, for both male and female individuals; a significant difference between the sexes is visible in the "firearm and explosives" mode, used by males 30 times as much.

The study of the suicidal phenomenon, however, cannot ignore, in recent years, the study relating to the psychological, social and economic outcomes due to the Covid-19 pandemic.

The Covid-19 pandemic was a stressful event that it has certainly weakened and sharpened the situation appearance of psychological distress and disorders psychiatric disorders in subjects who up to that point had shown good ability to adaptation (see for example Pitch-Loeb R et al) (5). From a very recent Italian study, it would seem that although there has been an important and significant increase in psychological distress in some sections of the population such as adolescents (see for example Marin et al) (6), the number of deaths by suicide appears to be stable. During the Covid-19 pandemic, therefore, it would seem that suicide rates non-significantly decreased in most age groups; an increase, although not statistically significant, was found among males and females aged ≥ 75 years. Suicide deaths reduced mainly in Central-

Southern areas and the Islands, while they slightly increased in the North especially among males (7).

2 – The phenomenon of suicide

2.1 Suicidal behaviors and nomenclature

Given the extent of the phenomenon and its repercussions on a social level, scientific literature has long been engaged in the study of the various aspects (intrapersonal, social, cognitive and biological) that can affect the cause of this phenomenon. An important step forward in the study of suicidal behavior was to find a uniformity sufficiently shared by the scientific community with respect to the nomenclature of suicidal phenomena In this work, according with Silverman and colleagues (8) **suicidal behavior** indicates the set of ideations, communications and behaviors which, operating jointly, lead the subject to lethal self-harm. The researchers evidenced that these actions must be based on the initiative of the individual and which may vary according to the presence or absence of the will to die (in the absence of this will we speak of self-harm). The term **Suicidal ideation** is used to describe a range of contemplations, wishes, and preoccupations with death and suicide and can be classified as active or passive. According with Mc Cullumsmith (9) active suicidal ideation denotes experiencing current, specific, suicidal thoughts. Active suicidal ideation is present when there is a conscious desire to inflict self-harming behaviors, and the individual has any level of desire, above zero, for death to occur as a consequence. Passive suicidal ideation refers to a general wish to die but when there is no plan of inflicting lethal self-harm to kill oneself. Passive suicidal ideation includes indifference to an accidental death, which would occur if steps are not taken to maintain one's own life (10). The term **attempted suicide** refers to an action which: a) is self-induced and potentially dangerous b) is oriented towards causing the death of the person who performs it c) does not have a fatal outcome (8). Finally, the term "**completed suicide"** refers to cases in which suicidal ideation occur ends with the subject's death.

2.2 Models of suicide behavior

In recent years, models that try to explain suicidal behavior have a common denominator. The concept of a series of predisposition factors (diasthesis) (familial and genetic) on which a series of precipitating factors (stressors) then act. Furthermore,

personological factors act as mediating events. Last but not least, a series of cultural, social and economic factors also play a mediating role. For this reason, suicidality is currently considered, in a non-simplistic framework, as the product of the interaction between different factors such as cognition, emotions and interpersonal and intrapersonal conditions (11), within a multifactorial and stadial model that consider the development of suicidal behavior as the final outcome of a process in which distal, genetic and bio-psycho-social factors, in the presence of proximal factors, can lead to the genesis of suicidal ideation, which can turn into an intent that can precipitate in the presence of particular conditions up to the concrete act (12). Research has made it possible to describe with increasing accuracy the specific weight that the various risk factors associated with suicide have in determining the evolution of the suicidal process: in particular, distal risk factors would exert a long-term influence, preparing the ground on which the suicidal process can graft and develop, while the proximal ones would intervene immediately as triggers determining the transition from the first stages of conception to those of will, planning and implementation of suicidal behaviors (13). One satisfactory example of model for suicide is the biopsychosocial model (Figure 1), presented by Turecki and colleagues, (14) which describes the interactions of genetic, experiential, psychological, clinical, sociological and environmental factors in the development of suicide risk. This model postulates that suicidary risk varies based on the number and the weight that every factor affects on each subject.

This model is compatible with the multiple phenotypes along the suicide spectrum that are observed in practice. According with this model, risk factors are classified as distal, developmental and proximal according to their temporal relationship to suicide.
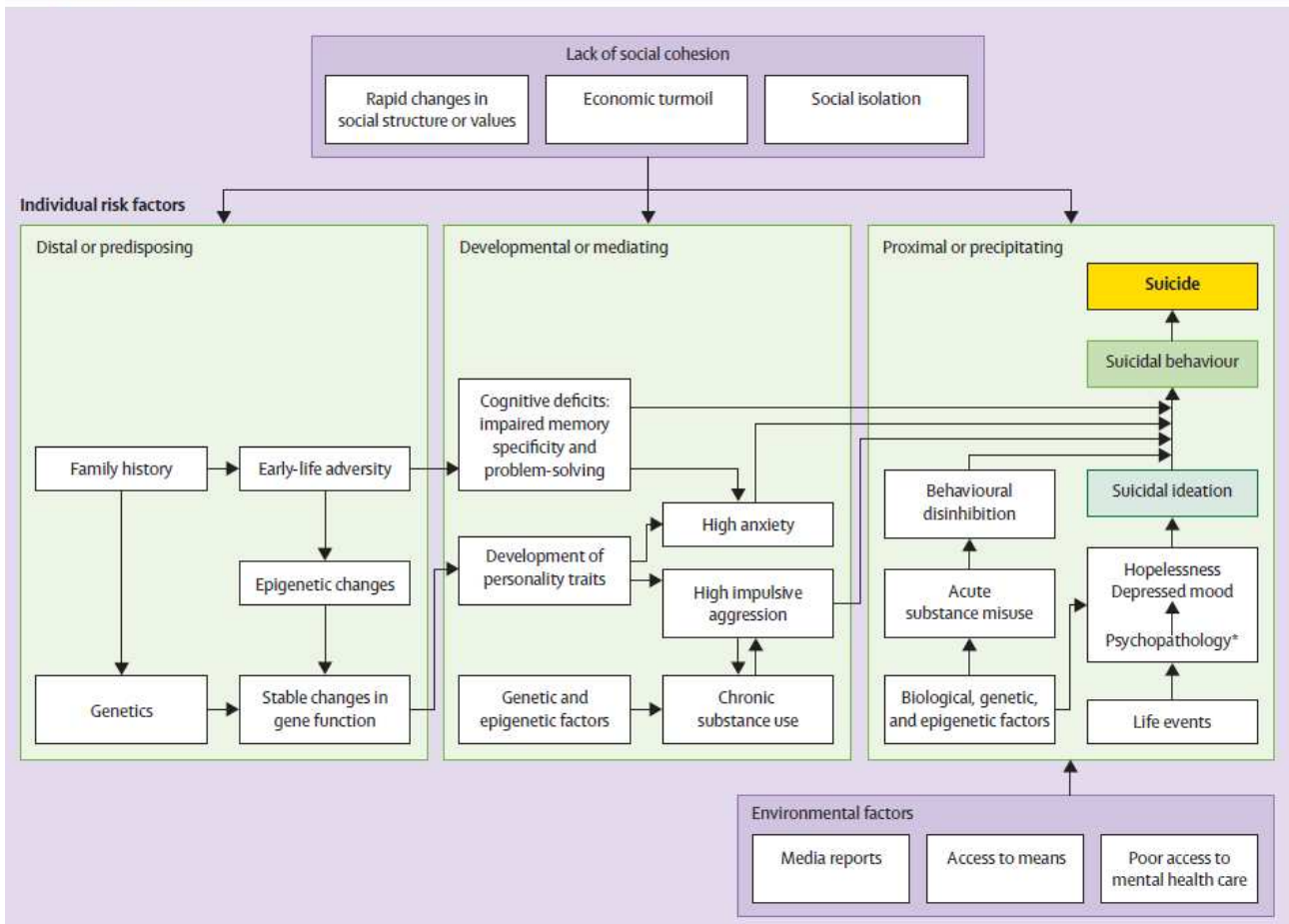
Figure 1 The main risk factors relating to suicidal behavior are summarized in the graph above which was presented by Turecki and Brent (14).

2.2.1 Predisposing factors

The genetic model assigns a central role to **genes** and heredity. Genetic epidemiology data indicate that suicide and suicide attempts could be considered part of the same clinical phenotype (15).

Both of these clinical entities have a significant hereditary component as demonstrated by studies on families, on pairs of twins and from adoption studies. Literature shown that some genetic determinants such as polymorphisms of the gene coding for tryptophan hydroxylase 1 (TPH1) and tryptophan hydroxylase 2 (TPH2) are associated with suicide attempts and with completed suicides (16, 17). These results are in line with the existing association between an altered serotonergic activity in the brain and suicide (18). Some studies explored the association between genes of the serotonergic

system and suicide. Nevertheless a meta-analysis of studies conducted on the gene coding for the receptor serotonergic 2A (5-HT2A) has not reported any association between localized polymorphisms in the 5-HT2A sequence and suicide (19). By contrast a very recent study of meta analysis that examined the association of *TPH1* polymorphisms with the risk of suicide behavior evidenced that the A218C polymorphism of *TPH1*gene could be a possible risk factor of suicide behavior (20). Further molecular analyzes of the completed suicide phenotype in disorders of mood were performed through the use of microarrays and have highlighted the role of a gene, spermidine/spermine N1-acetyltransferase (SSAT1) encoding an enzyme of the polyamine cascade, one system metabolic involved in the regulation of responses to environmental stresses maintenance of homeostasis of the organism (21). These micro array studies conducted on brain tissue of depressed and non-depressed patients who died by suicide e compared with patients who died of other causes, they showed a reduced expression of the gene coding for the SSAT1 enzyme in different brain areas (22). The reduction of SSAT1 expression was more significant in depress subjects who have completed suicide and, in the comparison between different cerebral areas, more marked in the posterior cingulate gyrus of depressed patients than to non-depressed patients. This data suggests that this gene may have a role not only in suicide but also in depression.

A **family history** of suicide is known to increase the risk of suicidal behavior in children. As described in the previous paragraph, the role of genetics plays an important role. Nonetheless, different studies (adoption, twin, and family) support the hypothesis that the etiology of familial transmission of suicidal behavior is at least in part genetic and may be mediated by transmission of intermediate phenotypes. It was found that parental suicide attempt conveyed a nearly 5-fold increased risk of offspring attempt, even controlling for the familial transmission of mood disorder. Impulsive aggression was an important precursor of mood disorder and could be targeted in interventions designed to prevent youth at high familial risk from making a suicide attempt (23).

Many studies have shown a significant correlation between suicidal behavior and **exposure to early-life adversity**, defined as childhood neglect, physical, sexual or emotional abuse. For example, a study conducted by Turecki and colleagues (24)

using a procedure called a "psychological autopsy" (that use a life course approach) out of a number of 214 suicide cases found that a number of risk factors in the first 10 years of the life course appear to be common to all suicides, irrespective of observed trajectory, and more widely, predictive of a broad range of disorders. For example, close to 40% of both subgroups (44% for Trajectory 1 and 36% for Trajectory 2) were victims of physical and/or sexual abuse during the first 10 years of their lives.

Another study involving 215 adult psychiatric patients, using a path analysis model to examine the role of different types of childhood maltreatment on suicidal ideation, have shown that emotional abuse was related to suicidal ideation through the mediating role of dissociation. Furthermore, emotional neglect was related to suicidal ideation through the mediating role of hopelessness. Finally, sexual abuse directly affected suicidal ideation, whereas physical abuse and neglect were not associated directly or indirectly with suicidal ideation (25). Some studies highlight how early life traumatic experiences express themselves through epigenetic changes, including DNA methylation and histone modifications. The increase of methylation in individuals, who experienced severe abuse during childhood, is evidenced in a region of hippocampus that regulates the NR3C1 (encoding the glucocorticoid receptor), compared with either people who were not abused or to psychiatric healthy controls. This dysregulation does not allow regular management of cortisol, presumably due to increased cortisol secretion and the development of anxiety traits.

2.2.2 Mediating risk factors

A risk factor is a variable that divides a population into individuals at higher and lower risk for suicidal behavior. Distal risk factors are those that create a long-term propensity for suicidal behavior.

One of the variables that combine predisposing factors and precipitating factors is **personality disorder**. Some personality disorders have been associated with suicidal risk more than others. Among these, the personality disorders of cluster "B" according to the DSM V nomenclature are the most studied. As will be described later, Borderline Personality Disorder (BPD) (characterized by a pervasive pattern of instability and

hypersensitivity in interpersonal relationships, instability in self-image, extreme mood fluctuations, and impulsivity) is the disorder most at risk of suicidal behavior.

A study proposed by McGirr and collaborators (26) recruited the family members of 51 individuals who died by suicide in the context of major depressive disorder, as identified by psychological autopsy. Families recruited were likely to be representative of depressed suicide attempters who had comparable demographic, clinical, and comorbid characteristics with other samples of individuals who died by suicide in the context of major depression. The results highlighted that comorbidity with cluster B personality pathology was more common among depressed attempters who committed suicide. Personality trait comparisons revealed differences in scores for the evaluation of impulsivity, aggressiveness, hostility and harm avoidance. Statistical analysis remonstrated that depressed subjects who committed suicide and nonsuicidal depressed attempters had higher scores than community comparison attempters on the scales measuring impulsivity, aggressiveness, hostility and harm avoidance but no significant differences were found between depressed attempters who committed suicide and nonsuicidal depressed attempters. These results demonstrate that the familial liabilities to suicide and major depression are distinct. An important result of the study is the demonstration of cluster B traits as intermediate phenotypes of suicide. Using an aggregate measure of cluster B traits consisting of commonly used measures of impulsive aggression and cluster B personality psychopathology, the study indicates that familial aggregation of suicide is partly and significantly explained by the transmission of cluster B traits. However, this study indicates that impulsive-aggressive traits act as intermediate phenotypes.

Another variable that has been considered as a distal factor and which has a predisposing role in suicidal risk is **anxiety**. Anxiety is a stressful and unpleasant emotional state of nervousness and discomfort; its causes are still partially unclear. Anxiety is less about the timing of a threatening situation; it can be anticipatory of a threat, persist after a danger has escaped or can occur in the absence of a clear threat. Anxiety is often accompanied by physical changes and behaviors similar to those caused by fear. Some studies have shown how anxiety can be a predisposing factor for suicide attempts (27). An interesting paper proposed by Sareen and colleagues (28) demonstrated that the presence of an anxiety disorder evaluated as a trait was a risk factor for subsequent onset of suicidal behaviors, even after adjusting for common mental disorders.

Several works have evidenced how **cognitive deficits** may represent a vulnerability factor to suicidal behavior. A recent study proposed by Sorberg and colleagues evidenced how poor academic performance in compulsory school, at age 16, was a robust predictor of suicide attempt past young adulthood and seemed to account for the association between lower childhood IQ and suicide attempt (29). This lack of cognitive capacity may render these individuals more sensitive to their environment and/or less likely to respond advantageously to changes in this environment. Cognitive functions that have been correlated with a greater risk of suicidal behavior are disadvantageous decision-making, diminished problem-solving ability, impaired memory and decreased positive future thinking.

Addiction is a biological and psychosocial phenomenon. It has repercussions on the body and psyche of the individual, on his environment and on his social integration. It arises due to subjective predispositions, but also as a result of various social and cultural factors. When we talk about addiction we are referring to the strongest and most harmful form of consumption. The typical symptoms of an addiction are mainly the unstoppable impulse to consume ("craving"), the reduced ability to control consumption, withdrawal symptoms, the development of tolerance or the neglect of various areas of life due to consumption. Some studies showed that alcohol use disorder severity serve as distal risk factors for suicide attempts. See for example Roy and Janal, 2007 (30). Moreover, co-occurring drug use and drug use disorders stand out as the indicators of alcohol use disorders severity that has been most consistently demonstrated to represent a distal risk factor for suicidal behavior among individuals.

2.2.3 Precipitating risk factors

The precipitating risk factors are those temporally associated with suicidal behavior. Among these risk factors, the most predictive factor is the presence of **psychopathology**. An important meta-analysis carried out on studies relating to subjects who died by suicide highlighted that 87.3% had been diagnosed with a mental disorder prior to their death (31). In the review presented by Arsenault-Lapierre and colleagues (31), a total of 3275 suicides were included in the study. The origin of the

subjects studied was Europe, Israel, North America, Australia and Asia. The mean percentage of suicides with a psychiatric diagnosis was 87.3%. On average, 43.2% (SD 18.5%) of suicide cases were diagnosed with any affective disorders (including depressive and bipolar disorders) and 25.7% (SD 14.8%) with other substance problems. In these groups, respectively, depressive disorders and alcohol problems were the most frequent. Finally, personality disorders represented 16.2% (SD 8.6%) of the suicide diagnoses and psychotic disorders, including schizophrenia accounted for 9.2% (SD 10.2%).

Psychological autopsy is an impartial investigation of the psychological aspects of a specific death (motivational and intentional). It consists of a series of interviews and examines personal documents and other materials that may be relevant to the psychological assessment of the individual's role in relation to their death. A review study using this technique highlighted that the median proportion of cases with mental disorder was 91% (95% CI 81–98%) in the case series. In the case–control studies the figure was 90% (88–95%) in the cases and 27% (14–48%) in the controls. Co-morbid mental disorder and substance abuse also preceded suicide in more cases (38%, 19–57%) than controls (6%, 0–13%). The population attributable fraction for mental disorder ranged from 47–74% in the seven studies in which it could be calculated. The effects of particular disorders and sociological variables have been insufficiently studied to draw clear conclusions (32). Many studies show that **depression** is a determining factor in the risk of suicide. Up to 15% of patients with mood disorders (major depression and bipolar I and II disorder) die by suicide and half of them make at least one suicide attempt during their lifetime. Suicidal behavior in patients with mood disorders occurs almost exclusively during an acute and severe major depressive episode, less frequently during a mixed affective episode or in dysphoric mania, and very rarely during euphoric mania. This suggests that suicidal behavior in patients with mood disorders is a state- and severity-dependent phenomenon. Since the prevalence of unipolar major depressive episode is 12%-17% and of bipolar I and II disorders of 1.3%-5% over the course of a lifetime (33), these are among the most frequent psychiatric pathologies and also those potentially more life-threatening.

Among mood disorders, **bipolar disorder**, is a serious and disabling problem. Those affected tend to alternate between depressive phases followed by hypomanic or manic phases (bipolarity). Generally, the depressive phases of bipolar depression tend to last

longer than the manic or hypomanic phases. They usually last from a few weeks to a few months, while manic or hypomanic phases last one to two weeks. A very low mood, a feeling that nothing is able to give pleasure anymore and a general sadness characterize the depressive phases in bipolar disorder. In general, the depressive phases do not differ from the depressive episodes of unipolar major depression. During these phases of bipolarity, therefore, sleep and appetite can be easily altered; the ability to concentrate and remember may be much poorer. The prevalence of suicide deaths in patients with bipolar disorder can exceed 20–30 times higher than in the common population (34). Roughly half of patients with bipolar disorder have attempted suicide at least once in their lifetime. About 15–20 % complete suicide, which amounts to a 30–60 times higher prevalence than in the common population (35). Moreover, approximately 59% of patients with bipolar disorder have suicidal ideation, which is equivalent to 20–30 times the risk of the general population (34). In general, suicidal ideation, suicide attempts, and suicide deaths are all at a very high risk of occurrence among patients with bipolar disorder than among the general people.

Among the "Axis I" disorders it is also important to mention **schizophrenia**. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (36), schizophrenia is characterized by the presence of at least two of the symptoms present for a significant portion of the time during the period of one month. Symptoms are delusions, hallucinations, disorganized speech, grossly disorganized or catatonic behavior, negative symptoms (decreased expression or emotions, or abulia). For a significant portion of time after the onset of the disorder, the level of functioning in one or more of the main areas, such as work, relationships interpersonal, or self-care is markedly below the level previously achieved of the debut. Continuing signs of the disorder persist for at least 6 months. This period of 6 months must include at least 1 month of symptoms meeting criterion previously exposed, including periods of prodromal or residual symptoms. The literature of recent years agrees that schizophrenia is a psychiatric disorder, which has high rates of premature mortality and has a significant link with suicide. Suicide is considered one of the leading causes of premature death among those suffering from schizophrenia (37). Suicidal behavior, in general, in schizophrenic patients vary based on several factors, including sex, age, country of origin, the type of residence (urban or rural), the comorbidity of schizophrenia with other types of disorders. A recent meta-analysis (37) that included

35 studies with 16,747 people affected by schizophrenia found that the lifetime prevalence of suicide attempts was 26%, at 1 year from the onset of the disorder it was 3%, at 1 month it was 2%, at 6 months it was 38%, while the prevalence of suicide attempts at the onset of the disease was 45%. They therefore found that suicide attempts are very common in schizophrenic subjects, especially in those with an early onset of the disorder; while individuals with onset disorder later showed more developed skills and social functioning and less violence and impulsivity. Furthermore, they highlighted that the prevalence of suicide attempts was higher in high-risk countries income compared to that of low- and/or middle-income countries. Furthermore, schizophrenic subjects, had a risk of premature death approximately 3.7 times higher than the general population overall, and had a lifetime suicide rate of approximately 5%.

Furthermore, it emerged that clinical factors such as severity of the disorder, its comorbidity with other illnesses, stigma and discrimination related to the disorder could contribute to the higher risk of attempted suicides. In their meta-analysis they found no gender difference in the subjects suffering from schizophrenia, no association between young age and risk of suicide attempts, no difference in the prevalence of suicide attempts among hospitalized schizophrenic subjects and community (37).

As regards **addictions**, the literature is quite unambiguous in highlighting a correlation between the use of certain substances (alcohol, cannabinoids, cocaine and polyabuse) and an increased probability of suicidal behavior. Nonetheless, as happens in the study of other phenomena, it is very clear that the use of psychotropic substances is often associated with psychopathology and personality disorders. For example, in a prospective study of 1237 alcohol dependent subjects, Preuss and colleagues (38) found that factors predicting future suicide attempts included younger age, being divorced or separated, other drug dependence, the index of sever dependence of alcohol and psychiatric disorders. Even in adolescence, the risk of suicide increases in subjects who use alcohol or drugs. A review by Pompili and colleagues (39) evidenced that only some of the studies included in the review showed an association between alcohol use disorders and suicidal risk. For example in 2008, Innamorati and colleagues performed a cross-sectional study of 340 young adults and reported that 24.1% were drinkers. Alcohol misuse was significantly associated with reasons for

living, hopelessness, suicidal attitudes and depression. After multiple regression analysis, the Drug Abuse Screening Test was a positive predictor of suicide risk.

2.2.4 Suicide Risk factors in Adolescence

As presented in the previous paragraph, as well as in general population, even for teenagers, suicidality behaviors are the end products of a complex interplay between genetic, biological, psychiatric, psychological, social, and cultural factors. Nonetheless, some important differences deserve attention. Among **socio-demographic and educational factors**, a first fact to take into account concerns **sex**. In fact, the studies about the risk of suicidal behaviors among adolescents and young adults evidenced that females had an almost twofold higher risk of suicide attempts than males, while males had an almost threefold higher risk of dying by suicide than females (40). A meta-analysis has identified specific risk factors for male and female. Female adolescent and young adult with internalizing symptoms and victims of dating violence are at a higher risk of attempting suicide. Male adolescents tend to have slightly more symptoms of externalizing problems, such as aggressive, delinquent, and antisocial behavior, which may act as mediators for suicidal behaviors (41).

Another variable that has been studied in recent years concerns **sexual orientation**. Research shows that Lesbian Gay Bisexual Transgender (LGBT) young individuals are especially likely to experience interpersonal rejection from friends and family and this is associated with mental health problems. A meta analysis proposed by Williams and colleagues found that victimization among LGBT young people was associated with experiences of self-harm, suicidal ideation, or suicide attempts (42). Another recent meta analysis revealed a significant association between minority stressors and suicidal ideation and suicide attempts for LGBT adolescents and young adults. Although overall effect sizes were small, adolescents and young adults who experienced LGBT bias-based victimization, general victimization, bullying, or negative family treatment were more likely to report suicidal ideation and suicide attempts (43).

Individual negative life events and family adversity are another set of variables that have an important impact on the predisposition and development of suicidal behavior in

adolescents and young adults. As already described in the previous paragraph, adverse childhood experiences, history of physical or sexual abuse and family history of suicidal behavior are crucial variables to understand suicidal behavior. For this age group, however, other factors can have a significant impact. One of these is **parental separation or divorce**. For example Lizardi and colleagues (44) showed the relationship of childhood parental divorce and gender of parent lived with post divorce on adult offspring suicide attempt controlling for parental depression in a large, nationally representative US sample. The findings indicate that parental divorce is a significant risk factor for suicide attempts in the whole sample, and when males and females were considered separately, even after controlling for parental divorce. The findings also suggest that females living with their fathers had a significantly higher risk of suicide attempt than females living with their mothers.

Another variable studied among the risk factors of suicidal behavior in adolescents' concerns **parental death and parental history of suicidal behavior**. A review aimed to examine the risk of suicidal behaviors among adolescents who have experienced a death. Results showed that young people who had lost one biological parent showed a significantly increased risk of attempting suicide. Losing the remaining parent nearly doubled the risk. Experiencing the death of one or both biological parents increased the risk of suicide attempts in young people. Relative risk was moderated by high income of the father (45).

As for adults, **psychiatric and psychological factors** are key factors for understand and prevent suicidal behaviors. Depression, anxiety disorders, and substance abuse are most commonly described, although attention deficit hyperactivity disorder (ADHD) and conduct disorder are also common. A review showed a rate of previous suicide attempts that stood at around 16% in the adult ADHD age group; however, almost one-tenth of adolescents with ADHD had a previous suicide attempt. Results did not find a difference between men and woman. Finally, an association seems to exist between ADHD, conduct disorders, and suicidal behavior, which suggests that ADHD increases the risk of suicidal behavior in male adolescents through its effect on the severity of comorbid disorders such as depression and conduct disorder (46).

2.3 Suicidality and COVID-19

In March 2020, the World Health Organization declared the COVID-19 pandemic. This condition has been a challenge for both society and individuals, in many areas around the world. There has been a growing body of evidence of an elevated level of symptoms related to anxiety and depression in different areas of the population (47). Specific risk factors related to the COVID-19 pandemic include social distancing, alcohol consumption, domestic violence, restriction of personal freedoms, fear of contagion, reduction of services dedicated to the prevention and treatment of mental illness and suicide or reduction of personnel dedicated to them economic crisis with the consequent increase in unemployment and precariousness and reduction of income. Literature about suicidality during the COVID-19 pandemic is debated. If some studies have not shown significant changes in the suicide death rates compared to pre pandemic periods, other studies found an increase of suicidality in some groups. A recent meta analysis that assessed the changes in the prevalence of suicidal ideation, suicide attempt, and rate of death by suicide before and during the COVID-19 pandemic across populations, using intertemporal data from repeated cross-sectional retrospective, longitudinal, and retrospective studies, found that compared with the pre-pandemic period, the prevalence of suicidal ideation and suicide attempt increased significantly during the COVID-19 pandemic among both non-clinical and clinical samples, while the rate of death by suicide remained mostly unchanged (48).

About **adolescence**, at present, there is still little literature data to clearly state that there has been an increase in suicidal behavior during the COVID-19 pandemic. A recent meta-analysis that included quantitative studies that reported summary rates of suicide, suicidal behaviors, and suicidal ideation during the COVID-19 pandemic among under 19-year-old people have been made (49). Among the data that have been highlighted, it can be seen that, in studies relating to the general population, after a period of stability with respect to suicide rates (4.9/100,000) in the second phase of the epidemic (starting from August 2020) there was an increase in deaths. Furthermore, it appears that about 1 out of 33 adolescents (3%; 95% CI: 1 –13%) in different population-based settings (schools, online surveys, non-governmental organizations) attempted suicide or manifested suicidal behaviors, while 1 out of 6 (17%; 95% CI: 11 –25%) presented at least suicidal ideation during COVID-19

pandemic. In the psychiatric setting, compared to the pre-COVID19 period, no statistically significant changes were observed for the suicidal outcomes in this specific setting, however an increase of 15% in suicidal ideation was reported by studies collecting 2020–2021 data. The same pattern could be observed also for suicidal behavior, without reaching the statistical significance. For example Thompson and colleagues (50) compared adolescents admitted to a psychiatric inpatient unit during Covid pandemic (N=142) with a sample (N=196) previously admitted to the same department in the year prior to spread of the pandemic (2019). During the pandemic period, 47.2% (n=67) of adolescents reported suicidal ideation in relation to Covid pandemic, while 52.8% (n=75) denied the presence of suicidal thoughts related to a pandemic.

An important fact, observed by some authors, is that while at the beginning of the pandemic there was a slight decrease in the observations of suicidal behavior, subsequently a growth of all mental-causes and suicidal presentations have been registered from Summer 2020 until the end of the Winter 2021. Some authors argued that during the first phase of the pandemic there was an important decline in assessments. This was conjugate with an increase in the proportion of certain mental health concerns, such as depression and self-harm, and a decrease in the proportion of others, such as disruptive and aggressive behavior and risk of injury to others.

Summing up, the literature highlights that an increase in the number of ideations, attempts and completed suicide has been associated to a relatively limited percentage and prevalent in those adolescents who already had at-risk situations or who lived in disadvantaged or vulnerable situations.

Regarding the study about completed suicides, there is less evidence. It will probably be necessary to wait for future review studies to fully understand the phenomenon.

2.4 Suicidality and adolescence

UNICEF Italy has dedicated World Children and Adolescents Day on 20 November 2022 to the theme of mental health and psychosocial well-being. Worldwide, 1 in 7 adolescents between 10 and 19 suffer from mental health problems. Worldwide, most of the 800,000 people who die by suicide every year are young: suicide is the fifth leading cause of death for young people aged between 15 and 19, the second leading

cause in Europe. Worldwide, nearly 46,000 adolescents die from suicide every year. Nearly half of all mental health problems begin by age 14 and 75% of all mental health problems develop by age 24. As far as Italy is concerned, Istat data show lower suicide rates than the rest of Europe: the rate of deaths by suicide in our country is 0.4 per 100,000 inhabitants for young people of both sexes between 10 and 14 years old, and 2.3 (3.1 for males and 1.5 for females) for children aged between 15 and 19. Even in Italy the suicide among young people, similarly to what is recorded worldwide, is one of the leading causes of death, with a large difference in mortality levels between boys and girls (51).

Why are suicide attempts more frequent in adolescents than in adults? The answer to this question needs to delve deeper into the main biological, psychological and social changes that affect each adolescent. In this phase of life, one change that has a crucial role in the psycho-physical development of the person is the puberty. Puberty is the stage of life when a child becomes sexually mature. Puberty is associated with emotional and hormonal changes, as well as physical changes such as breast development in females (thelarche), pubic hair development (pubarche), genital changes in males, voice changes, an increase in height, and the onset of menstruation (menarche). Moreover, in this phase, a great neuroplasticity and neural development occurs. Structural and functional changes occur in cortical and subcortical brain areas through two phenomena: synaptic pruning and myelination. These processes improve the information processing efficiency and communication speed of neurons. Different parts of the human brain have different development rates as they grow. The prefrontal cortex and in particular the dorsolateral one is the last cortical area to reach definitive thickness, around the age of 30 (52). The frontal lobe is the most anterior portion of the brain, it is much larger in humans than in other species and is responsible for a series of high-level cognitive functions, the executive functions: it allows you to reason critically and judiciously, control impulses and inhibit inappropriate attitudes, plan events, make thoughtful decisions, define priorities and organize thoughts, understand the intentions and points of view of others. All skills that appears lacking in adolescents.

Social skills are also refined in adolescence. Specific circuits of the prefrontal cortex underlie empathy, or the ability to feel and recognize the emotions of others, which allows us to predict the behavior of the other and take it into account in the interpersonal relationship. Likewise, the ability to put oneself in an other's perspective

is also developing. For these reasons, adolescents have difficulty making decisions based on the emotions of others and considering points of view different from their own. In essence, the last part of the brain to mature is the one involved in those skills considered more "mature and rational" useful in particular in new situations in which the use of routine behaviors and skills is no longer sufficient.

On the other hand, greater activity occurs in the limbic areas. The limbic system includes a series of subcortical structures, including the amygdala, located in the deepest and oldest part of the telencephalon and is responsible for emotional regulation and primitive and instinctual reactions. This evidence explains the outbursts of anger, impulsive behavior and the emotional roller coaster that teenagers experience. At the same time as biological changes, we are witnessing changes at a psychological and social level as well as temperamental and personological ones.

3 – Personality and suicide

3.1 Personality and personality development

The term "personality" refers to constant cognitive, emotional, motivational and behavioral patterns that are activated in particular circumstances.

Personality is considered a stable construct over time. Nonetheless, some authors have underlined how personality differences, in a transaction with environmental circumstances, manage to organize behaviors in a dynamic way in time (53). Personality traits develop through an elaboration process that allows for certain temperamental characteristics (which are part of the individual's genetic inheritance) to acquire consistency through reinforcement repeated, and develop into affective and cognitive representations that come rapidly and frequently activated. Personality traits aggregate into a central construct when the temperamental characteristics of the child, through their evolution and interact with the environment, begin to build the recurring story of internal, cognitive, affective and relational experiences. Some authors believe that personality traits acquire their own organization similar to that of adults from school age. A few years ago a provocative article was written entitled "Personality disorder in adolescence: The diagnosis that dare not speak its name" (54). The article was about a 16-year-old girl with Borderline Personality Disorder. The authors reflected on the reluctance they had long encountered in making a diagnosis of a personality disorder at a young age. To date, the debate on this topic is still open, although, as demonstrated by the 2021 manual written by Sharp and Tackett (Handbook of Borderline Personality Disorder in Children and Adolescents) that the topic of the development of personality disorders in developmental age is no longer a taboo. An important review proposed by Roberts and Del Vecchio (55) shows that the evolving personality progresses by acquiring a stabilization of traits and of a central unitary structure around the age of thirty but some elements continue to vary in response to relational experiences up to around the age of fifty. Many researchers argue that the instability of personality dimensions in which one aggregate personality traits lasts throughout life but, around the age of fifty, the maximum stabilization index would be observed.

An important contribution in understanding personality disorders was provided by theorists of attachment theory. This theory describes how individuals manage their most intimate relationships with attachment figures: parents, children, and romantic partners. Ainsworth's pioneering studies using the "Strange Situation" have made it possible to identify three different attachment patterns in infant behavior, which are: secure (63% of the children observed), anxious/resistant or ambivalent (16%) and avoidant (21%). Studies on attachment styles in adults are: secure/autonomous (58% of the non-clinical population), avoidant/distancing (23%), and anxious/preoccupied (19%) (56). Although it is now clear that there is a contribution of genetic factors in the predisposition of attachment styles, to the extent that environmental factors can be measured, these would appear to have the greatest influence in the development of attachment. Studies highlight that the most important factor is the safe presence of an effective primary caregiver, capable of responding effectively to the child's physical and emotional needs. Some longitudinal studies highlight how children with a history of secure attachment develop greater resilience, autonomy and are more oriented towards socialization. They also have greater self-esteem and empathy. For example some studies evidenced that attachment patterns of subjects with cluster B personality disorders (DSM-IV) had higher rates of avoidant attachment than the general population.

Another important factor that increases the possibility of developing personality disorders is physical abuse during childhood. Individuals who were physically abused during childhood are more likely to develop antisocial, borderline, dependent, passive-aggressive, and schizoid personality disorders (57). Talking about personality disorder in developmental age involves a revisiting of the concept of developmental psychopathology and specific attention to the possibility of understanding the meaning of the aggregations of personality traits at different moments of the evolutionary stages. In this sense, a careful weight evaluation would be necessary functional specificity of some personality traits with respect to the specific evolutionary demands of the development phase. The evolutionary significance of the single trait must be constantly considered based on the various functions it performs in relation to the internal representation of the single individual and to the social representation of the individual within the his relational world. From this we can deduce that the decisive element for understanding the path towards the stabilization of the personality disorder lies in the relationship with the outside world, in the relational history.

Personality disorders have a high morbidity and mortality rate. According to the DSM-V there are three cluster of personality disorders. Cluster "A" include: paranoid, schizoid and schizotypal. Some studies that have used the psychological autopsy method have reached quite different conclusions. Schneider and colleagues (58) found that 19% of the sample they studied met the criteria for paranoid personality disorder, approximately 12% met the criteria for schizoid personality disorder, while 5% met the criteria for schizotypal personality disorder. Isometsa and collaborators (59), contrary to the previous study, did not find subjects who met the criteria for cluster A personality disorders. There is certainly greater agreement regarding cluster "B" personality disorders. In fact, many studies, including reviews, highlight how borderline personality disorder (BPD) has the highest rate of suicidal behavior compared to other personality disorders. In epidemiological studies of adults in the USA, prevalence for BPD were between 0·5% and 5·9% in the general population (60). In clinical populations, BPD is the most common personality disorder, with a prevalence of 10% of all psychiatric outpatients and between 15% and 25% of inpatients (61).

3.2 Borderline Personality Disorder (BPD) and suicide

According with DSM-V, BPD is characterized by a pervasive pattern of instability and hypersensitivity in interpersonal relationships, instability in self-image, extreme mood fluctuations, and impulsivity. For a diagnosis of borderline personality disorder, patients must have a persistent pattern of unstable relationships, self-image, and emotions (i.e., emotional dysregulation), and pronounced impulsivity.

This persistent pattern is shown by 5 or more of the following: I) Desperate efforts to avoid abandonment (real or imagined); II) Unstable and intense relationships that alternate between idealizing and devaluing the other person; III) An unstable self-image or sense of self Impulsivity in ≥ 2 areas that could harm oneself (eg, unsafe sex, binge eating, reckless driving); IV) Repeated suicidal behaviors and/or gestures or threats or self-harm; V) Rapid changes in mood, usually lasting only a few hours and rarely lasting more than a couple of days; VI) Persistent feelings of emptiness; VII) Improperly intense anger or anger control problems; VII) Temporary paranoid thoughts or severe dissociative symptoms triggered by stress. This personality disorder is often associated with suicidal behavior and hospitalization.

Among the results of a very recent meta-analysis which analyzed 34 studies, it highlighted that there is a correlation, within BPD, the interpersonal factors included historical events (e.g., childhood trauma, attachment style, school bullying) as well as current, contextual interpersonal factors (e.g., romantic status or satisfaction, shame proneness) and coping styles. Fourteen of the 19 results indicated a significant association between BPD and suicide-related outcomes (62).

The BPD deserves further investigation. In fact, it is the most studied personality disorder and most correlated with suicidal behavior and suicides. As can be seen from the previous paragraph, when this disorder is diagnosed, one of the symptoms that are used to make diagnosis are the suicidal behaviors and/or gestures or threats or self-harm. The literature reports that 3-6% up to 10% of patients with BPD commit suicide (63). Naturally, as very often happens, the use of different diagnostic tools and the type of study carried out have a final impact on the percentages calculated. From a clinical point of view, some factors predictive of high risk have been highlighted suicidal: presence of intense feelings of anger, comorbidity for major depression and substance abuse. A recent overview, carried out in different countries has highlighted that within the community, BPD occupies fourth place among the most personality disorders widespread (64). Indeed, BPD patients make up approximately 15-28% of all outpatient clinic patients psychiatric or hospital visits, 6% of primary care visits and 10-15% of all visits to the emergency room. Differently, between patients admitted to hospital and psychiatric facilities and followed patients on an outpatient basis, BPD is the most common personality disorder.

3.3 Suicidality risk behavior and personality in adolescence

Although psycho-pathological disorders play a preponderant function as a risk factor in suicide, personality disorders also play an important role. As highlighted in the previous paragraph, researchers have only recently been studying developmental personality disorders. As reported by Kongerslev and colleagues in a recent review (65), few studies have investigated the prevalence of personality disorder in adolescence, and virtually none have looked at its prevalence in childhood. The prevalence of personality disorders in adolescent community samples and primary care settings generally ranges from 6% to 17% across studies. If, however, we observe what happens in clinical populations, the percentages more closely resemble those of the adult population. In

fact the prevalence range from 41% to 64% and from 36% to 88% in juvenile justice samples. The peak prevalence for personality disorders is reported to occur during early and middle adolescence.

A recent review proposed by Moselli and colleagues (66) collects all the studies that have dealt with suicidal behavior and personality disorders in adolescence. The main results presented show that only one study included in the review focused on the relationship between personality disorder and suicidal ideation, showing how the diagnosis of any personality disorder was significantly associated with the severity of suicidal ideation on a longitudinal basis. Another study evidenced that the prevalence of diagnoses of any personality disorder in the general population is lower than that characterizing the adolescent suicidal clinical population. In fact, in the samples of adolescents with suicidal behaviors, the prevalence amounted to 19.5–22.8% among attempters and 29.6–42.1% among victims. As reported in the article by Moselli and colleagues, there are no studies that highlight the prevalence of suicidal behavior in adolescence categorized into personality disorders (as they are represented in the DSM V). Some studies have highlighted which personality traits may be most correlated with suicidal behavior. Between these we could mention psychotic, represented by paranoid personality disorder, impulsive-dysregulated, represented by dissocial and emotionally dysregulated personality disorder, and anxious, represented by dependent and anankastic personality disorder. In particular, impulsive-dysregulated personality pathology has been found to be over-represented among suicidal patients.

As for adults, BPD also deserves particular attention for adolescents. Suicidal behaviors are considered fundamental elements of BPD and constitute a diagnostic criterion. Crowell and collaborators (67) postulated a longitudinal model for understanding BPD. According to this model, trait impulsivity and emotional dysregulation are the key characteristics underlying the development of this personality disorder. According to the author, emotional dysregulation is considered the risk factor for maladaptive strategies such as suicide attempts. According to this model, adaptive emotion regulation is fundamental in multiple domains and begins to develop from childhood in the context of attachment relationships. The adolescence phase becomes crucial as the individual may begin to use these skills or deficits may emerge or become more evident. For this reason, adolescence can represent a crucial developmental period for the emergence of behaviors such as self-harm and suicidal behaviors.

In recent years, diagnostic tools have also been modified to study personality characteristics in adolescents in more depth. Among these tools is the Personality Inventory Disorders 5 (which will be presented below as it was used in the project of this thesis). A study presented in 2016 by Somma and collaborators (68) demonstrated the clinical usefulness of the PID-5 in a sample of adolescent inpatients. The data suggested that PID-5 scales may capture reliable variation in maladaptive personality traits and domains among clinically referred adolescents, showing meaningful associations with personality disorder symptoms. However in the study the association between life-threatening suicide attempts in adolescence and adolescent's reports of feelings of being down, miserable, and/or hopeless was selectively mediated by the number of DSM-5 Section II BPD features that were met by each adolescent. These findings are consistent with previous reports suggesting a central role of hopelessness/helplessness feelings in the clinical management of BPD.

3.4 Suicidal ideation and suicide attempts

A field of research that in recent years has made an important contribution to understanding suicidal behavior has been that relating to the comparison between suicide attempters and suicide ideators. As also described previously, a considerable amount of literature data describes a series of factors that correlate with suicidal behavior. A series of authors have focused on trying to understand which factors are most involved in differentiating those people who actually attempt suicide. First of all, many studies highlight how both in the normal and in the psychiatric population, there are many more people who have suicidal thoughts but not all of them carry out anti-conservative behaviors. A World Mental Health survey conducted by Nock et al (69) included 17 countries in Africa, the Americas, Asia and the Pacific, Europe and the Middle East. All surveys were conducted face-to-face by trained lay interviewers. The total sample size was 84850. Suicidal ideation, plans, and attempts were assessed using the "WHO Composite International Diagnostic Interview". The estimated lifetime prevalence of suicidal ideation, plan, and attempt in the overall cross-national sample is 9.2%. Among suicide ideators, the conditional probability of ever making a suicide plan is 33.6% (0.7) and of ever making a suicide attempt is 29.0% (0.6). The probability of attempt among ideators with a plan is 56.0% (1.2) but only 15.4% (0.6) among those

without a plan. Within-country prevalence estimates show substantial variability, with the cross-national estimate outside the 95% CI in 13 of the 17 countries for suicidal ideation, and 12 of the 17 for suicide plans and attempts. Prevalence estimates in developing countries are similar to those in developed countries for: suicidal ideation (3.1% to 12.4% versus 3.0% to 15.9%, respectively), suicide plan (0.9% to 4.1% vs. 0.7% to 5.6%, respectively), and suicide attempt (0.7% to 4.7% vs. 0.5% to 5.0%, respectively). Even in the psychiatric population it has been shown that there is a very large population that shows suicidal thoughts but fewer subjects then have suicidal behavior. In summary, while for aggressive suicidal behavior a suicidal thought is always present, this does not occur in the case of many people who may have suicidal thoughts but never act on them.

Klonsky and collaborators (70) have proposed a review with the aim of understanding what could be the factors that differentiate subjects who have suicidal thoughts from those who instead act out suicidal behavior. To do this, they took into consideration 12 variables which are: gender, education, race, marital status, depressive disorder, depression severity, anxiety disorder, PTSD, alcohol use disorder, drug use disorder, sexual abuse history, and hopelessness.

The results show that none of the 12 variables examined were substantially more common among suicide attempters compared to suicide ideators, even though 3 of the 12 were substantially higher in suicide ideators compared to those who had never been suicidal: a depressive diagnosis, the severity of depression, and PTSD. 4 of the 12 variables had small to moderate effects in differentiating attempters from ideators. Anxiety disorders, PTSD, drug use disorders and sexual abuse, were moderately more common among attempters compared to ideators. Some variables provide little to no information about being an ideator (female gender, caucasian race, marital status, alcohol problems, low educational attainment, depression and hopelessness). The results of this meta analysis highlight how to date there is no theoretical framework that manages to explain the transition from suicidal thought to suicidal action in a sufficiently accurate manner. Although numerous studies have been presented regarding psychopathological disorders and suicidal risk, it would seem that this variable does not differentiate subjects with ideation from those who act.

Given the important difference in operationalizing the suicidal process, it is particularly complex to estimate the prevalence of suicidal ideation, since this varies considerably depending on the definition adopted, which can be more or less broad. For example, in

some studies, deliberate suicide planning is considered as part of ideation, while in others it is considered to be a middle stage between ideation and attempts (71). However, suicidal thoughts represent a heterogeneous phenomenon. As highlighted in some studies, the magnitude and the characteristics of suicidal ideation vary dramatically. It's varies in duration, intensity and character (72).

For all these reasons it is difficult to obtain a realistic estimate of how many people may have suicidal thoughts over the course of their lives and how many of these people actually engage in suicidal behavior.

4 – Aim of the study

The study aims:

I)   to assess the personality and psychopathological characteristics of a population of adolescents who exhibit suicidal thoughts and/or behaviors. The quality and quantity of suicidal thoughts and behaviors are such as to require specialized intervention (at the Emergency Department).

II)   To assess the motivation to commit suicide in adolescents using a novelty semi-structured interview

III)   to present a model that can explain which variables are primarily responsible for suicidal ideation and behavior not in the acute phase (at the 6/7-month follow-up);

IV)   to investigate differences in personality traits between individuals attempters and individuals only ideators.

5 - Materials and Methods

5.1 Sample characteristics

The sample analyzed in this study includes 78 adolescents and pre-adolescents admitted to the pediatric emergency room of Pediatric ward (Hospital S. Maria della Misericordia, Udine) or emergency neuropsychiatry clinics who showed anti-conservative thoughts or had acted out suicidal behavior. All the subjects involved in the study were visiting the emergency room for the first time for suicidal behavior. However, all study subjects had adequate proficiency in the Italian language. The sample is made up of 63 females and 15 males and the average age is 15,6 for males and 15,3 for females. Table 1 shows the demographic characteristics of the sample studied. The data collection period was from September 2021 to august 2023.

The Neuropsychiatry service in Udine is an outpatient service that provides consultations to patients of developmental age who access the emergency room.

The intervention protocol provides that if the pediatrician detects suicidal behavior, he/she requests advice from a neuropsychiatrist and/or psychologist. After the first global assessment (of the patient and the family), a decision is made whether to propose hospitalization, or 24-48 hour monitoring, or to opt for discharge but with multi-weekly monitoring in a dedicated clinic.

Once the acute phase is over, all subjects are sent to the outpatient clinics for continued treatment.

5.2 Diagnostic process

The clinical evaluation of the patients was carried out jointly as a neuropsychiatrist and psychologist with proven clinical experience. Patients were assessed through clinical interviews, semi-structured interviews and self-administered questionnaires. All subjects were evaluated after clinical stabilization in order to guarantee the validity of the data collected. The records, the clinical reports and semi-structured interviews were consulted for the formulation of consensus-based diagnosis.

For this study, it was decided to propose three evaluation times. The T=0 corresponds to the first assessment made acutely (and in the following days, based on the clinical

progress of the subject), the T=1 corresponds to 2/3 months from the first assessment, while the T=2 corresponds to the assessment carried out 6/7 months from T=0.

5.3 Assessment of suicidal behavior

The procedures for assessing suicidal behavior were as follows: for attempted suicide is meant any intentional act that resulted in self-inflicted physical harm precise self-harming desire. The act had to be recognized by the subject as an attempt to end one's life. Self-harming behaviors not intended to end one's own life were not considered as attempted suicides. Suicidal ideation was defined as any thoughts related to putting an end to own life.

To delve deeper into the psychopathological aspects, in addition to the clinical interview, we used the semi-structured K-SADS interview. To delve deeper into personality aspects we used two tools: the semi-structured SCID-5 PD interview and the PID-5 questionnaire. As regards the evaluation of suicidal behaviors and motivations linked to the anti-conservative act, we used the C-SSRS and the MIS.

All these diagnostic tools were used at T=0, T=1 and T=2 with the exception of the semi-structured SCID-5 PD interview which was used only at T=0.

Below is the presentation of the psychodiagnostic tools used.

5.3.1 K-SADS-PL

The K SDAS PL is a semi-structured diagnostic interview that is used to evaluate current and previous psychopathological disorders in children and adolescents. The interview follows the DSM IV criteria. The K-SADS-PL is administered by interviewing the parent or child. Subsequently, an overall score is assigned which includes all the information obtained from the various available sources. As regards the use of the interview in the present study, some of the main psychopathological diagnoses have been chosen. more precisely, the primary diagnoses evaluated were: major depressive disorder, maniac episode, psychosis, panic disorder, separation anxiety disorder, avoidant disorder/social phobia, specific phobias, generalized anxiety, obsessive compulsive disorder, enuresis, encopresis, anorexia nervosa, bulimia nervosa, attention deficit hyperactivity disorder, oppositional defiant disorder, tic disorder,

cigarette use, alcohol abuse, substance abuse, post traumatic stress disorder. For our purpose we utilized the Italian version (73).

5.3.2 Structured Clinical Interview for DSM-5 Personality Disorders

The SCID-5-PD (74) is a semi-structured diagnostic interview for personality disorders (PD) as defined by DSM-5. This procedure allows the clinician to identify the construct represented in the diagnostics criteria of the 10 personality disorders (Avoidant PD, Dependent PD, Obsessive-Compulsive PD, Paranoid PD, Schizotypal PD, Schizoid PD, Histrionic PD, Narcissistic PD, Borderline PD and Antisocial PD). After having submitted the interview, for each category, the clinician, first indicates whether the categorial threshold has been met for a particular personality disorder, subsequently the interviewer indicates the presence of sub-clinical scores for each item of PD. A "0" rating is made when the pattern of internal or behavioral experience described in the criterion is clearly absent. A "1" rating is made when the pattern of internal experience or behavior described in the criterion is present but falls below the diagnostic threshold in terms of severity, persistence, or pervasiveness. A "2" rating is made when the pattern of internal experience or behavior described in the criterion is present at a threshold or pathological level of severity.

5.3.3 Personality Inventory for DSM-5 (PID-5)

PID-5 is a 220-item inventory built to asses the pathological dimensions of personality and it was developed based on section III of the DSM-5 (75). The 220 item are organized into 25 facets (anedhonia, anxiousness, attention seeking, callousness, deceitfulness, depressivity, distractibility, eccentricity, emotional lability, grandiosity, hostility, impulsivity, intimacy avoidance, irresponsibility, manipulativeness, perceptual dysregulation, perseveration, restricted affectivity, rigid perfectionism, risk taking, separation insecurity, submissiveness, suspiciousness, unusual beliefs and perceptions, withdrawal), which contribute to form 5 domains (negative affectivity, detachment, antagonism, disinhibition and psychoticism). We use the Italian adolescent version. The subject is asked to read the statements and answer on a scale from 0 (always or often false) to 3 (always or often true) how much he agrees or disagrees with what is described in the question. For our study, the Italian version was

used (76). Although there is still a certain reticence in the study of personality in adolescents, it has been demonstrated the validity of a dimensional trait perspective in youth explored in different ways how proposed PID-5 trait measure for adults may also serve as a viable tool for describing adolescent manifestations of personality pathology by examining a number of psychometric and validity characteristics. PID-5 demonstrated good reliability coefficients for the majority of the trait constructs suggest that adolescents are adequate self-reporters and are able to preserve a response consistency across items that belong to the same scale (77).

5.3.4 Columbia Suicide Severity Rating Scale (C-SSRS)

The C-SSRS (78) is a brief, semi structured interview designed to screen for the presence and intensity of suicidal ideation. In research and clinical settings, the C-SSRS is used to determine the level of suicide risk and to inform safety planning. The C-SSRS has been found to be reliable in predicting suicide risk and can be administered by multidisciplinary professionals (e.g. psychologists, physicians, research staff). The scale assesses the individual degree of suicidal ideation, differentiating between the domains of suicidal ideation and those of suicidal behavior. In particular, four constructs are measured: (1) The severity of the ideation on a 5-point Likert scale where 1= desire to be dead; 2= nonspecific active suicidal thoughts; 3= methodical suicidal thoughts; 4= suicidal intent; 5= suicide intent with a plan; (2) The intensity of ideation which investigates frequency, duration, controllability, deterrents and reasons for ideation; (3) Suicidal behavior discriminated against for actual, interrupted or abandoned attempts, preparatory acts and non-suicidal self-harm; (4) The lethality of the gesture, which ranges from 0= the subject did not suffer physical damage to 5 = death, and provides a measure of potential lethality where 0 = the behavior was not likely to result in physical harm to 2 = the behavior was likely to result in death despite available medical care.

5.3.5 Motivational Interview for Suicidality (MIS)

In 2021, following an in-depth review of the literature, an interview was published that includes all the main causes of suicidal behavior. The MIS is a semi-structured

interview that was built on the basis of clinical experience and empirical research, which investigates the motivation to commit suicide in adolescents. Motivations were collected into a number of motivational domains and related subdomains. These are: 1) **Illness motivated attempts** (that refers to a specific pathological condition that leads to unsustainable pain and possibly to a strong feeling of impotence for the limitations to personal functioning; sub area domains: Psychache, Hopelessness); 2) **Feeling of vulnerability and self-devaluation caused by chronic pessimistic self criticism** (that refers to a sensation of continuous ruminations and self-accusations that may represent a strategy of regulation and moderation of anxiety or unbearable frustrations; sub area domains: Pessimism, Perfectionism); 3) **Life crisis due to events that threatens cohesion of identity and personal status area**; 4) **Relational area** (motivations that directly call the other into question, as a specific cause of internal pain, or in attempt to affect others and change a relationship; sub area domains: Interpersonal influence, Closeness seeking, Burdensomeness, Low Belongingness); 5) **Sense of defeat and entrapment** (that is a feeling of having lost every strategy to face somebody's life and being trapped in oneself without any way out, so the suicide is the only way left; sub area domains: Escape fantasy, Problem Solving); 6) **Extreme case** (it refers, for example, to someone presenting a clearly delusional thought; sub area domain: Atypical); 7) **Dyscontrol area** (is not specifically referred to motivations, because impulsivity and low fear of pain are more trigger than motivations; sub area domains; Extreme case, Impulsivity, Low fear). After conducting the interview, the clinician rates the relevance of each motivational domain and subdomain on a "Likert scale" from 0 (not important/not present) to 4 (predominant/recurrent) (78).

5.4 Statistical analysis

Non-parametric bivariate correlations were used to test the significance of the associations between the suicidality variables (suicidal ideation, suicidal behavior, lethality of suicide attempts), motivation suicidality, demographic variables, psychopatology and personality characteristics.

Analysis of Variance (ANOVA) and Paired T-Test and correlations were used to test suicidality variables across time, the differences between attempters and ideators

subjects and to describe the relation between psychopatology, personality characteristics, motivation suicidality, suicidal ideation and suicidal behavior.

To test the significance of suicidality variables (suicidal ideation and suicidal behavior) and personality characteristics, four separate linear regressions with suicidal behavior or suicidal ideation as dependent variable were carried out.

Correlational and linear regression analyses were performed using SPSS for Windows version.

6 - Results

6.1 T=0

As can be seen in Table 1, the sample studied is mainly composed of female people (80,8% of the sample), with an average age of 15 (SD 1,07). With regards to the reason for the diagnostic study, 50% have exhibited suicidal behavior and 50% have been known to have significant suicidal ideation. Following the first evaluation, 50% of subjects were hospitalized, 37,2% were subjected to observation in the emergency room, while 12,8% were discharged with scheduled multi-week outpatient visits. Following the in-depth psycho diagnostic examination, 52,6% began pharmacological therapy and 83,3% psychotherapy. Finally, the 26,9% of subjects involved in study had already been known or followed at the Neuropsychiatry department.

Table 2 reports all the average values obtained during the evaluations at T=0, T=1 and T=2.

6.1.1 T=0 Suicidality

The C-SSRS allows the assessment of suicidal ideation and its intensity as well as suicidal behaviors and their severity. The average scores obtained on this scales highlight: ideation (min=1 max = 5) (M=3,31 SD=1,06), intensity of ideation (min=1 max=25) (M=17,12 SD=3,48), suicidal behavior (min=1 max=6) (M=1,83 SD=1,24), medical damage (min=0 max=5) (M=0,79 SD=0,99) and potential lethality (min=0 max=2) (M=0,81 SD=0,87).

The motivation for suicide was studied using the MIS interview, which allows us to collect information relating to the reason why a subject would like to end his or her life. For each Likert scale, a score from 0 to 4 was given, identifying a maximum of the 4 main reasons that each subject reported regarding their behavior or ideation. The main reason was given a score of 4, the second reason was 3, the third reason was 2 and the fourth reason was given one point. The remaining scales were assigned a score of 0. Regarding the motivation for suicide, the highest scores we gathered in our sample are related to psychache (M=2,42 SD=1,37) variable followed by pessimism (M=1,42 SD=1,45), impulsivity (M=1.04 SD=1,23), low belongingness (M=0,83 SD=1,35), problem solving (M=0,71 SD 1,12), burdensomeness (M=0,55 SD=1,22), extreme case

(M=0,53 SD=1,16), life crisis (M=0,52 SD=1,15), closeness seeking (M=0,52 SD=1,09), Perfectionism (M=0,39 SD=0,9), Hopelessness (M=0,36 SD=0,91), interpersonal influence (M=0,36 SD=1,01), escape fantasy (M=0,27 SD=0,96), low fear (M=0,15 SD=0,46) and atypical case (M=0,05 SD=0,45).

Correlating the scores obtained on the C-SSRS and those obtained on the MIS shows that the intensity of suicidal ideation correlates positively with psychache (r(78)=.294 p= 0.009) and negatively with atypical case (r(78)=-.564 p=<0.001). Suicidal behavior, correlates positively with impulsivity (r(78)=.344 p= 0.002).

Regarding the scores obtained on the K-SADS, with respect to the intensity of suicidal ideation, it is highlighted that correlates positively with depressive symptomatology (r(78)=.334 p= 0.003), psychosis (r(78)=.262 p= 0.020) and social phobia (r(78)=.360 p= 0.001). Suicidal behavior, correlates positively with mania (r(78)=.314 p= 0.005). Medical damage and potential lethality of the act correlates positively with ADHD symptomatology (respectively (r(78)=.273 p= 0.016) and (r(78)=.308 p= 0.006)).

The scores showed positive correlation between the intensity of suicidal ideation and the scores obtained on the SCID-5 PD schizotypal personality (r(78)=.305 p= 0.007). However, taking into consideration the PID-5 subscales we found a correlation with PID-5 anedhonia (r(78)=.399 p= <0.001), anxiousness (r(78)=.364 p= 0.001), depressivity (r(78)=.595 p= <0.001), perceptual dysregulation (r(78)=.397 p= <0.001), distractibility (r(78)=.393 p=< 0.001), eccentricity (r(78)=.370 p= 0.001), emotional lability (r(78)=.342 p= 0.002), perseveration (r(78)=.295 p=0.009), withdraw (r(78)=.401 p=< 0.001). Suicidal behavior, correlates positively with borderline personality disorder according with SCID-5-PD (r(78)=.340 p=0.002) and with PID-5 eccentricity (r(78)=.333 p=0.003), PID-5 impulsivity (r(78)=.314 p=0.005), PID-5 emotional liability (r(78)=.296 p= 0.008), PID-5 perseveration (r(78)=.401 p=< 0.001) PID-5 perseveration (r(78)=.316 p=0.005). The PID-5 domain disinhibition correlate with suicidal behavior, medical damage and potential lethality (respectively (r(78)=.367 p=0.001) (r(78)=.325 p= 0.004) (r(78)=.295 p=0.009)).

6.1.2 T=0 - Psychopathology

Regarding the perspective study, table 2 reported descriptive information's about psychological and psychopathological variables assessed at T=0, T=1 and T=2. At T=0

the percentage of subjects who showed depressive symptoms was 98.71. It must be kept in mind, however, that in the K-SADS interview, among the factors that determine depressive symptoms, suicidal thoughts and actions are included, therefore, with the exception of one subject, all the others presented this characteristic. The only subject, who was excluded from this diagnosis, was categorized, after careful analysis, as paraxonia.

The sample studied reported high scores of generalized anxiety (57.69%), social phobia (43.58%), panic disorder (26.92%) and specific phobia (15.38%). Furthermore, approximately 20% of the sample reported post-traumatic stress disorder (PTSD), 2.56% a psychotic disorder and 5.13% maniac disorder. As regards eating disorders, 10.26% of the sample was made up of subjects with anorexia nervosa, while 7.69% of subjects with bulimia nervosa. Regarding externalizing disorders, in the sample we observed that 12.82% fell within the diagnosis of ADHD, 11.54 in Oppositional Defiant Disorder and approximately 7% in conduct disorder.

6.1.3 T=0 Personality

As regards the study of personality, two different instruments was used, the semi-structured interview SCID-2 and the PID-5 questionnaire. The subjects in the sample who reached the criteria for diagnosing a personality disorder according to the SCID-5 PD interview criteria were a total of 18 (23.07%). More precisely, 7 subjects met the criteria for avoidant personality disorder, 4 borderline personality disorders, 3 schizoid personality disorders, 3 histrionic personality disorder and 1 schizotypal personality disorder.

The PID-5 questionnaire does not allow subjects to be classified into specific personality categories but offers an overview of the personality characteristics of each subject. The mean and standard deviation of each subscales (higher scores indicates greater disturbance; min=0 max=3) were: emotional lability (M=2,24 SD=0,66), depressivity (M=2,19 SD=0,59), distractibility (M=2,09 SD= 0,64), anxiousness (M=2,06 SD=0,65) anedhonia (M=1,86 SD=0,59), suspiciousness (M=1,80 SD=0,56), eccentricity (M=1,76 SD=0,78), impulsivity (M=1,72 SD=0,72), hostility (M=1,71 SD=0,69), perceptual dysregulation (M=1,61 SD=0,75), separation insecurity (M=1,59 SD 0,89), perseveration (M=1,57 SD=0,62), risk taking (M=1,57 SD=0,54), withdrawal (M=1,54 SD=0,74), submissiveness (M=1,53 SD=0,74), restricted affectivity (M=1,40

SD=0,66), irresponsibility (M=1,39 SD=0,62), callousness (M=1,32 SD=0,57), rigid perfectionism (M=1,26 SD=0,8), unusual beliefs and perceptions (1,23 SD=0,83), intimacy avoidance (M=1,23 SD=0,69), deceitfulness (M=1,17 SD=0,73), attention seeking (M=1,13 SD=0,78), manipulativeness (M=0,99 SD=0,82), grandiosity (M=0,63 SD=0,69) and 5 domains: negative affectivity (M=1,95 SD=0,56), disinhibition (M=1,73 SD=0,52), psychoticism (M=1,55 SD=0,74), detachment (M=1,54 SD=0,53) and antagonism (M=0,94 SD=0,65).

6.1.4 Attempter vs Ideator

In our sample the analysis of variance (ANOVA) highlighted significant differences in gender ($F_{(1, 76)}$=7.125 p=0.009) and in the use of psychopharmacology ($F_{(1, 76)}$=4.287 p=0.042) between the group "attempters" vs "ideators". Females present more suicidal behavior and more psychopharmacology were used in subjects who exhibit anti-conservative behavior compared to those who only have suicidal ideation.

The analysis of the differences in the aspects of psychopathology, measured through the K-SADS highlighted significant differences in the "mania" category ($F_{(1, 76)}$= 4.343 p=0.041) and "Attention Deficit Hyperactivity Disorder" ($F_{(1, 76)}$= 7.896 p=0.006).

As regards the semi-structured interview SCID-2 PD, the results highlight a significant difference in paranoid symptomatology (the subjects who mostly present this characteristic are the "ideators") ($F_{(1, 76)}$=4.497 p=0.037. It is also highlighted a trend towards significance in "borderline" characteristics in favor of the "attempters" group ($F_{(1, 76)}$=3.142 p=0.08).

On the PID-5 questionnaire, the ANOVA highlights significant differences in the subscales "separation insecurity" ($F_{(1, 76)}$=12.487 p=0.001), "distractibility" ($F_{(1, 76)}$=3.738 p=0.05), "impulsivity" ($F_{(1, 76)}$=11.366 p=0.001) and in the domains "negative affectivity" ($F_{(1, 76)}$=4.997 p=0.028) and "disinhibition" ($F_{(1, 76)}$= 9.303 p=0.003).

As regards the scale for measuring suicidal behavior (C-SSRS), the difference we have highlighted concerns the scales of behavior ($F_{(1, 76)}$ = 36.013 p = 0.001), of the actual damage suffered and of the lethality of the act ($F_{(1, 76)}$= 72.235 p=0.001) and (F(1,

76)= 85.589 p=0.001) respectively). There were no significant differences between the two groups in the subscales relating to ideation and intentionality of ideation.

6.2 T=1 and T=2

As previously described, the study subjects were re-evaluated 2/3 months from T=0 (T=1) and 6/7 months from T=0 (T=2). At T=1, a total of 70 subjects were evaluated. At T=2, 63 subjects were evaluated. The missing subjects did not want to participate in the second evaluation. None of the subjects evaluated at T=0 died.

The statistical analysis using the "paired simple t-test" has revealed a significant reduction between T=0 and T=1 and T=2 in all indices of the C-SSRS. More specifically, C-SSRS ideation (T=0 vs T=1 $t(69)=3,937$ p=.001) and (T=0 vs T=2 $t(62)=5,73$ p=.001), intensity of ideation (T=0 vs T=1 $t(69)=4,496$ p=.001) and (T=0 vs T=2 $t(62)=6,884$ p=.001), suicidal behavior (T=0 vs T=1 $t(69)=7,233$ p=.001) and (T=0 vs T=2 $t(62)=5,458$ p=.001), medical damage (T=0 vs T=1 $t(69)=6,048$ p=.001) and (T=0 vs T=2 $t(62)=5,16$ p=.001) and potential lethality (T=0 vs T=1 $t(69)=5,624$ p=.001) and (T=0 vs T=2 $t(62)=5,686$ p=.001).

6.2.1 T=1 and T=2 - Psychopathology

As can be seen in Table 2, from the point of view of psychopathology, at T=1 and T=2 the percentage of subjects who showed depressive symptoms was respectively 90 and 71,43. Paired sample t test showed a significant decrease from T=0 to T=2 ($t=4,787$; p=<.001). As regards disorders related to the sphere of anxiety, the sample studied evidenced still high scores of generalized anxiety (T=1 58.57%), (T=2 53.96%) (Paired sample t test didn't show any significant improvement from T=0 to T=1 and T=2) but less symptomatology related to social phobia (T=1 31.43%), (T2= 26,98%) (Paired sample t test showed a significant decrease from T=0 to T=1 ($t=3,191$; p=.002) and from T=2 ($t=3,380$; p=.001)), panic disorder (T=1 12.85%), (12.7%) (Paired sample t test showed a significant decrease from T=0 to T=1 ($t=2,045$; p=.045) but not from T=2) and specific phobia (T=1 11.43%) (T=2 6.35%) (Paired sample t test didn't show any significant improvement from T=0 to T=1 and T=2). Post-traumatic stress disorder

(PTSD) symptomatology remained stable (T=1 18.57%) (T=2 17.46%) (Paired sample t test didn't show any significant improvement from T=0 to T=1 and T=2). Symptoms relating to psychosis (T=1 1.43%) (T=2 3.17%), obsessive compulsive disorder (T=1 2.86%) (T=2 3.17%), manic disorder (T=1 8.57%) (T=2 3.17%), anorexia nervosa (T=1 11.43%) (T=2 12.7%) and bulimia (T=1 7.14%) (T=2 4.76%) also remained relatively stable (Paired sample t test didn't show any significant improvement from T=0 to T=1 and T=2).

Regarding externalizing disorders, in the sample we observed a stability respect to T=0. Deeply, ADHD (T=1 12.85%) (T=2 11.84%), Oppositional Defiant Disorder (T=1 14.28%) (T=2 12.7%). and conduct disorder (T=1 8.57%) (T=2 4.76%) (Paired sample t test didn't show any significant improvement from T=0 to T=1 and T=2).

6.2.2 T=1 and T=2 - Personality

About the PID-5 questionnaire, the mean and standard deviation of each subscales (higher scores indicates greater disturbance; min=0 max=3) were: anedhonia (T=1 M=1,61 SD=0,59) (T=2 M=1,51 SD=0,58), anxiousness (T=1 M=1,77 SD=0,59) (T=2 M=1,74 SD=61), attention seeking (T=1 M=1,03 SD=0,75) (T=2 M=1,09 SD=0,72), callousness (T=1 M=0,93 SD=0,63) (T=2 M=0,82 SD=0,56), deceitfulness (T=1 M=1,10 SD=0,63) (T=2 M=1,01 SD=0,54), depressivity (T=1 M=1,97 SD=0,67) (T=2 M=1,85 SD=0,77), distractibility (T=1 M=2,07 SD=0,63) (T=2 M=1,96 SD=0,57), eccentricity (T=1 M=1,58 SD=0,76) (T=2 M=1,54 SD=0,76), emotional liability (T=1 M=2,13 SD=0,62) (T=2 M=2,06 SD=0,66), grandiosity (T=1 M=0,55 SD=0,59) (T=2 M=0,50 SD=0,59), hostility (T=1 M=1,65 SD=0,69) (T=2 M=1,57 SD=0,58), impulsivity (T=1 M=1,68 SD=0,61) (T=2 M=1,65 SD=0,54), intimacy avoidance (T=1 M=1,21 SD=0,59) (T=2 M=1,20 SD=0,53), irresponsibility (T=1 M=1,30 SD=0,55) (T=2 M=1,25 SD=0,44), manipulativeness (T=1 M=1,03 SD=0,62) (T=2 M=0,94 SD=0,76), perceptual dysregulation (T=1 M=1,49 SD=0,73) (T=2 M=1,39 SD=0,64), perseveration (T=1 M=1,51 SD=0,54) (T=2 M=1,47 SD=0,52), restricted affectivity (T=1 M=1,33 SD=0,64) (T=2 M SD), rigid perfectionism (T=1 M=1,21 SD=0,76) (T=2 M=1,13 SD=0,71), risk taking (T=1 M=1,43 SD=0,48) (T=2 M=1,27 SD=0,32), separation insecurity (T=1 M=1,52 SD=0,82) (T=2 M=1,58 SD=0,82), submissiveness (T=1

M=1,37 SD=0,80) (T=2 M=1,33 SD=0,7), suspiciousness (T=1 M=1,54 SD=0,49) (T=2 M=1,38 SD=0,43), unusual beliefs and perceptions (T=1 M=1,12 SD=0,84) (T=2 M=1,04 SD=0,77), withdrawal (T=1 M=1,52 SD=0,66) (T=2 M=1,42 SD=0,69), and 5 domains: negative affectivity (T=1 M=1,82 SD=0,48) (T=2 M=1,81 SD=0,51) (Paired sample t test showed a significant decrease from T=0 to T=1 (t=2,753; p=.008) and from T=2 (t=2,984; p=.004)), detachment (T=1 M=1,44 SD=0,50) (T=2 M=1,39 SD=0,48) (Paired sample t test showed a significant decrease from T=0 to T=1 (t=2,277; p=.026) and from T=2 (t=2,383; p=.020)), antagonism (T=1 M=0,89 SD=0,59) (T=2 M=0,81 SD=0,55) (Paired sample t test showed a significant decrease from T=0 to T=2 (t=2,687; p=.009)), disinhibition (T=1 M=1,70 SD=0,52) (T=2 M=1,62 SD=0,42) (Paired sample t test showed a significant decrease from T=0 to T=2 (t=2,35; p=.022)), and psychoticism (T=1 M=1,39 SD=0,70) (T=2 M=1,33 SD=0,66) (Paired sample t test showed a significant decrease from T=0 to T=1 (t=2,938; p=.004) and from T=2 (t=4,376; p=<.001)).

6.2.3 T=1 and T=2 Suicidality

In T=1 and T=2 we measured a decrease in the intensity and suicidal behaviors (C-SSRS). The average scores obtained on this scales highlight: ideation (min=1 max = 5) (T=1 M=2,55 SD=1,28), (T=2 M=2,13 SD=1,47), intensity of ideation (min=1 max=25) (T=1 M=14,34 SD=5,44), (T=2 M=11,86 SD=6,87), suicidal behavior (min=1 max=6) (T=1 M=0,78 SD=0,89), (T=2 M=0,89 SD=1,28), medical damage (min=0 max=5) (T=1 M=0,1 SD=0,39), (T=2 M=0,95 SD=0,35) and potential lethality (T=1 M=0,18 SD=0,46), (T=2 M=0,12 SD=0,42).

Regarding the motivation to commit suicide (using the MIS interview), the average scores obtained are as follows: Psychache (T=1 M=1,64 SD=1,41) (T=2 M=1,43 SD=1,50), Hopelessness (T=1 M=0,28 SD=0,78) (T=2 M=0,19 SD=0,69), Pessimism (T=1 M=1,14 SD=1,39) (T=2 M=1,02 SD=1,35), Perfectionism (T=1 M=0,27 SD=0,78) (T=2 M=0,32 SD=0,84), life crisis (T=1 M=0,31 SD=0,88) (T=2 M=0,47 SD=1,08), interpersonal influence (T=1 M=0,24 SD=0,81) (T=2 M=0,11 SD=0,63), help seeking (T=1 M=0,58 SD=1,19) (T=2 M=0,24 SD=0,74), burdensomeness (T=1 M=0,34 SD=1,05) (T=2 M=0,26 SD=0,85), low belongingness (T=1 M=0,5 SD=1,07) (T=2 M=0,29 SD=0,95), escape fantasy (T=1 M=0,13 SD=0,51) (T=2 M=0,18 SD=0,80), problem solving (T=1 M=0,46 SD=1,08) (T=2 M=0,16 SD=0,52), extreme case (T=1

M=0,22 SD=0,80) (T=2 M=0,31 SD=0,97), atypical cases (T=1 M=0,57 SD=0,48) (T=2 M=0,13 SD=0,71), impulsivity (T=1 M=0,51 SD=1,06) (T=2 M=0,53 SD=1,11) and low fear (T=1 M=0,08 SD=0,33) (T=2 M=0,03 SD=0,25).

Correlating the scores obtained on the C-SSRS T=1 and those obtained on the PID-5 T=0 shows that the intensity of suicidal ideation at T=1 correlates positively with reduced affectivity (r(70)=.372 p= 0.002), anhedonia (r(70)=.362 p= 0.002), depressivity (r(70)=.358 p= 0.002), insensibility (r(70)=.321 p= 0.007), withdrawal (r(70)=.471 p= <0.001) and detachment (r(70)=.435 p= <0.001). The correlation between intensity of suicidal ideation of C-SSRS T=2 and PID-5 T=0 evidenced significative correlations with restricted affectivity (r(63)=.292 p= 0.020), anhedonia (r(63)=.312 p= 0.013), depressivity (r(63)=.421 p= 0.001), withdrawal (r(63)=.329 p= 0.009), submissiveness (r(63)=.328 p= 0.009) and detachment (r(63)=.404 p= 0.001).

The correlation between the C-SSRS T=1 relating to the suicidal behavior scales and the PID-5 carried out at T=0 we observe positive correlations with the subscales: restricted affectivity (r(70)=.352 p= 0.003), avoidance of intimacy (r(70)=.356 p= 0.002), Deceitfulness (r(70)=.329 p= 0.005), irresponsibility (r(70)=.403 p= 0.001), withdrawal (r(70)=.318 p= 0.007), risk taking (r(70)=.281 p= 0.018) and detachment (r(70)=.426 p= <0.001). The correlation between the C-SSRS T=2 and PID-5 T=0 evidenced positive associations with restricted affectivity (r(63)=.278 p= 0.028), deceitfulness (r(63)=.310 p= 0.014), withdrawal (r(63)=.255 p= 0.044).

As regards the motivation for suicidal behavior, the correlation analyzes between the scores obtained on the MIS T=1 and the values obtained on the PID-5 T=1 highlight positive correlations between psychache (MIS) - anedhonia (r(69)=.331 p= 0.005) depressivity (r(69)=.266 p= 0.027) - intimacy avoidance (r(69)=.264 p= 0.030) and detachment (r(69)=.316 p= 0.008); pessimism (MIS) with withdrawal (r(70)=.235 p= 0.05) and detachment (r(70)=.243 p= 0.043); fearless (MIS) – unusual beliefs and perceptions (r(70)=.262 p= 0.028), irresponsibility (r(70)=.364 p= 0.002), deceitfulness (r(70)=.282 p= 0.018), manipulativeness (r(70)=.296 p= 0.013), attention seeking (r(70)=.257 p= 0.021) and antagonism (r(70)=.309 p= 0.009); impulsivity (MIS) with separation insecurity (r(70)=.327 p= 0.006), impulsivity (r(70)=.291 p= 0.015) and dishinibition (r(70)=.398 p= 0.009). We found negative correlations between perfectionism (MIS) and distractibility (r(70)=-.296 p= 0.013), emotional liability

(r(70)=.260 p= 0.030), impulsivity (r(70)=-.264 p= 0.027) and disinhibition (r(70)=-.306 p= 0.001).

As regards the motivation for suicidal behavior, the correlation analyses between the scores obtained on the MIS T=2 and the values obtained on the PID-5 T=2 highlight positive correlations between Psychache (MIS) and anedhonia (r(63)=.515 p= <0.001), anxiousness (r(63)=.347 p= 0.006), depressivity (r(63)=.430 p= 0.001), distractibility (r(63)=.432 p= 0.001), irresponsibility (r(63)=.388 p= 0.002), withdrawal (r(63)=.290 p= 0.023), detachment (r(63)=.469 p= <0.001) and disinhibition (r(63)=.384 p= <0.001); Pessimism (MIS) and anedhonia (r(63)=.505 p= <0.001), depressivity (r(63)=.470 p=< 0.001), irresponsibility (r(63)=.363 p= 0.004), risk taking (r(63)=.434 p= <0.001), withdrawal (r(63)=.394 p= 0.002), and disinhibition (r(63)=.346 p= 0.006); Impulsivity (MIS) and irresponsibility (r(63)=.406 p= 0.001) and disinhibition (r(63)=.288 p= 0.024).

Finally, a linear stepwise regression model was run to verify which personality dimension contributes to explain the variance of the suicidal behavior indexes.

The value obtained by the subjects in the CSSRS T=2 "suicidality ideation" was used as the dependent variable. In the first model the chosen predictors were T=0 PID Depressivity (B=.094 p=.730), T=0 PID Withdrawal (B=.095 p=.722) and T=0 PID restricted affectivity (B=.180 p=.530) since they were significant in the previous analyses; the presence of a mood disorder in T=2 (B=1,673 p=<.001) because is typically indicated in the literature, and the presence of histrionic personality disorder (B=.083 p=.045), to consider its effect. Mood disorder and histrionic personality disorder are the only predictor of C-SSRS T=2 suicidal ideation R^2=.0429 (F=8,561; p=>.001).

In the second model we still use as a dependent variable the CSSRS T=2 "suicidality ideation". The predictors were T=0 PID detachment (B=0,387 p=.193), T=0 restricted affectivity (B=-.015 p=.953), the presence of a mood disorder in T=2 (B=1,665 p=<.001) and the presence of histrionic personality disorder (B=.088 p=.031). Again, mood disorder and histrionic personality disorder are the only predictor of C-SSRS T=2 suicidal ideation R^2=.0430 (F=10,920; p=>.001).

In the third model we still use as a dependent variable the CSSRS T=2 "suicidality ideation". The predictors were T=0 PID restricted affectivity (B=-.015 p=.965), T=0 depressivity (B=.166 p=.622), T=0 anedhonia (B=-.031 p=.937), T=0 callousness (B=.335 p=.211), T=0 withdrawal (B=.113 p=.674), the presence of a mood disorder in

T=2 (B=1,551 p=<.001) and the presence of histrionic personality disorder (B=.086 p=.040). Again, mood disorder and histrionic personality disorder are the only predictor of C-SSRS T=2 suicidal ideation R^2=.0445 (F=6,3; p=>.001).

Finally, we used the dependent variable T=2 CSSRS intensity of ideation and as predictors T=0 PID anhedhonia, T=0 PID insensitivity, T=0 PID perseveration, T=0 PID withdrawal, T=0 PID submission, T= 0 PID depressivity, T=0 PID reduced affectivity and the presence of histrionic personality disorder. In this latter analysis none of the predictors reached statistical significance.

7 - Discussion

The study we presented aimed to evaluate how the personality characteristics of adolescent subjects are intertwined with suicidal ideation and behavior. To do this we collected a sample of adolescent patients attending the Pediatric Emergency Department and followed them for approximately 6 months. The sample we studied was composed mostly of females (about 80%). This data is in line with the literature that has highlighted this apparent paradox. That is, females show greater suicidal behavior while death rates by suicide are characterized by a significant imbalance in favor of adolescent boys. Specifically, a recent meta analysis estimated the risk of suicidal behaviors among adolescents and young adults and found that females had an almost twofold higher risk of suicide attempts than males, while males had an almost threefold higher risk of dying by suicide than females (80).

As can be seen from Table 1, approximately half of the subjects who attended the emergency room were then hospitalized, while for the others, discharge after an observation period of 24-48 hours was considered more functional. The average age at the time of hospitalization is around 15 years, without substantial gender differences. Data collection for our study began in 2021, the pandemic Covid-19 period. For this reason it is important to keep in mind that the sample we studied must be considered within this framework. A study already published (6), and one in submission (*Pediatric Emergency Department mental health assessments in the 2 years following the COVID-19 outbreak reveal higher vulnerability for eating disorder and suicide risk*), carried out in collaboration between Neuropsychiatry and Pediatrics of the "Azienda Sanitaria Universitaria Friuli Centrale", have studied the effects of the Covid-19 pandemic on hospitalizations and emergency room visits of adolescents comparing the two years before Covid-19 and the two years of the pandemic. The data highlighted a higher risk of suicidal behavior during the pandemic phase. COVID-19 has profoundly affected the mental health of adolescents, leading to greater levels of distress caused by distance learning, conflictual relationships with parents. However, they experienced prolonged distance from their peers for the first time. All these elements have increased mental suffering, which has growth the number of adolescents with suicidal behavior. This data is also supported by the fact that more than 70% of the subjects studied had never accessed any Neuropsychiatry service.

Analyzing the C-SSRS scores, it is evident that there is a significant decrease in suicidal behaviors and suicidal thoughts between T=0 and T=1 and T=2. It is important to note that all the subjects involved in the study were offered care by the neuropsychiatry service. It is likely that psychological and neuropsychiatric care leads to a reduction in suicidal behaviors and suicidal thoughts even though, in comparison to ideation, the scores remain quite high. These data are in line with literature (see for example Mendez and colleagues) (81) that highlights how psychotherapy can reduce suicidal thoughts. Psychotherapy, particularly therapies specifically designed to manage suicidal thoughts, such as Cognitive-Behavioral Therapy (CBT) and Dialectical Behavior Therapy (DBT), are often used to help individuals manage and address their suicidal thoughts.

These types of interventions focus on understanding and managing the thoughts and emotions that may lead to suicidal thoughts, promoting healthier coping strategies, and teaching skills to deal with emotional distress. Often, therapy aims to improve communication, build a social support network, and work on underlying issues that may contribute to suicidal thoughts.

Regarding the motivation for suicide, the highest scores we gathered in our sample are related to the "psychache" variable, followed by "pessimism", "impulsivity" and "low belongingness."

"Psychache" describe intense emotional or psychological pain and suffering. It is often associated with feelings of despair, hopelessness, and anguish. People experiencing psychache may have overwhelming emotional distress and a sense of unbearable psychological pain. The literature reports many articles that associate this condition with suicide. A recent meta-analysis (82) emphasizes in its conclusions that psychache is a core clinical element for understanding suicide, both in the patients with depression and non-depression. However, a strong correlation was found between psychache and previous suicide attempt. Another important result highlighted in the review, evidenced that psychache can also be found on the relationship between childhood trauma and suicide attempts.

"Pessimism" refers to a negative expectation regarding future events or outcomes. Individuals with a pessimistic mindset may view their future as bleak and hopeless, which can contribute to thoughts of suicide. The relationship between psychache and pessimism is significant, especially in the context of suicidal thoughts and behaviors. In fact, pessimism can exacerbate psychache and increase the risk of suicidal ideation (83). Individuals with a pessimistic outlook may view their future as bleak and without the

possibility of improvement, which can intensify their emotional suffering and desire to escape it through self-destructive means. Low belongingness refers to a feeling of disconnection, isolation, or a lack of social support and meaningful relationships. When individuals experience low belongingness, they often feel disconnected from others and perceive a lack of social support. This social isolation can contribute to feelings of loneliness and emotional pain, which are components of psychache.

In our sample, we found a significant difference between 'attempters' (those who have made a suicide attempt) and 'ideators' (those who have only had suicidal thoughts) on the 'negative affectivity' scale. This result may suggest that individuals with higher levels of negative emotional states are more inclined to make a suicide attempt compared to those who have only experienced suicidal thoughts. Negative affectivity can amplify the emotional pain experienced as psychache. Individuals with a strong disposition toward negative emotions may find it more challenging to cope with emotional distress, intensifying their feelings of hopelessness and despair.

Another factor that differentiates the two groups (attempters vs. ideators) and is reported as motivation for suicidal behavior is impulsivity. Impulsivity is a significant factor associated with suicide, particularly in the context of suicidal behaviors and attempts. Impulsivity can lead to impulsive suicidal behaviors, where individuals act on their thoughts of self-harm or suicide without careful consideration of the consequences. Research has shown that individuals with high levels of impulsivity are more likely to engage in self-harming actions and suicide attempts, as they may act on their suicidal thoughts without much hesitation (84). Impulsivity often co-occurs with other mental health issues, such as mood disorders, which can further increase the risk of suicide (85).

There is a relationship between impulsivity and negative affectivity. High levels of negative affectivity can lead to increased emotional distress, which may, in turn, influence impulsive reactions. Emotional distress and heightened negative emotions can contribute to impulsive decision-making, as individuals seek to alleviate emotional pain or seek immediate gratification (86). When combined, they can heighten the risk of engaging in risky or impulsive actions.

From the point of view of psychopathology, the sample highlighted, in addition to depressive symptoms (as already explained previously, in the K-SADS interview, among the factors that determine depressive symptoms, suicidal thoughts and actions

are included), important internalizing characteristics. More precisely, approximately half of the subjects analyzed reported generalized anxiety (more than 50% of the sample), social phobia (43,58%), panic disorder (about 27%), specific phobia (15%). One possible reason is that females are more prone to show internalizing disorders (e.g., anxiety, mood disorders) (87). Another possible explanation is that, these high levels of anxiety may mediate the association with suicidal thoughts and behaviors, in line with the results of Mars and colleagues that found a strong association between suicidal self-harm and anxiety disorder (88). Approximately 20% of the subjects suffered from PTSD, while roughly 10% of the sample was diagnosed with an externalizing disorder.

As regards the personality assessment, two different tools were used, the SCID-5-PD interview which allows a categorical diagnosis of personality disorder to be made and a PID-5 questionnaire which instead allows us to delve deeper into the personological characteristics of each subject (dimensional diagnoses). Concerning the procedure of the SCID-5 PD, the literature and the authors suggest that its use should occur after the age of 18. In fact, even the construction, the required symptoms and the characteristics for each disorder reflect a construct used for an adult person. For this reason, probably, reaching all the criteria to be able to diagnose some "personality disorder" in adolescents and even more so in pre-adolescents can be difficult. Using the semi-structured interview, 18 (23% of the sample) subjects with personality disorder were diagnosed in our sample. In this study we used the PID-5 questionnaire precisely because it was specifically constructed for a population of subjects aged between 11 and 17 years.

The correlation analysis between the 5 domains of the PID-5 questionnaire and the variables related to SCID-5-PD, C-SSRS, and MIS revealed that 'negative affectivity' domain (PID-5) positively correlates with 'suicidal ideation' on the C-SSRS. There is a well-documented correlation between negative affectivity and suicidal ideation (see for example Chioqueta, 2005) (89). Negative affectivity refers to negative emotional states such as sadness, anxiety, despair, and hopelessness, which can be a significant trigger for suicidal thoughts. These negative emotional states can amplify emotional distress and lead people to consider suicide as a possible solution to their problems.

"The personality domain 'detachment' of PID-5 appears to correlate with avoidant, schizoid, and schizotypal personality disorders, as well as with the intensity of suicidal ideation. Moreover, personality traits can influence a person's tendency to develop

certain characteristics or behaviors, including suicidal thoughts. Individuals with detachment personality traits, who tend to be emotionally cold, distant, or indifferent, may have a higher likelihood of experiencing distortions in their perception of reality and a tendency to avoid social contact. These personality traits may be associated with mental health issues such as schizotypal, schizoid, or avoidant personality disorders. Suicidal ideation can arise when individuals with these personality traits feel isolated, disconnected from others, and unable to find adequate ways to cope with their emotional distress.

The 'antagonism' domain of the PID-5 personality questionnaire positively correlates with BPD. This personality trait can include behaviors such as hostility, impulsivity, aggressive behaviors, and difficulties in interpersonal relationships. BPD is a personality disorder characterized by a range of symptoms, including emotional instability, impulsivity, unstable interpersonal relationships, and a distorted self-perception.

Individuals with antagonistic personality traits may have a higher likelihood of developing BPD or experiencing similar symptoms. People with BPD often struggle with emotional and relational instability, may have frequent episodes of anger and impulsivity, and may exhibit self-harming or suicidal behaviors.

The personality trait "disinhibition" from the PID-5 questionnaire correlates with BPD, as well as with suicidal behavior and the lethality of suicidal acts. In this context, "disinhibition" refers to a lack of self-control, impulsivity, and a tendency to engage in risky actions without considering the consequences. Individuals with disinhibited personality traits may be more inclined to exhibit impulsive behaviors, including suicidal behavior. This can include self-harm and suicide attempts. Furthermore, the degree of disinhibition can influence the lethality of suicidal acts. People with a higher degree of disinhibition may be more likely to engage in more lethal suicidal behaviors.

BPD is often associated with suicidal behaviors, including self-harm and suicide attempts. Individuals with BPD may experience significant emotional instability, and suicidal behavior can be a response to these intense emotions.

Finally, personality trait "psychoticism" is associated with schizotypal personality disorder as well as with suicidal ideation and behavior.

This study must be seen considering its limitations. Due to the complex nature of acute psychiatric manifestations, especially among youth populations, there is the possibility that the symptoms could have been more pronounced or intensified. In addition, only

those subjects who have access to the pediatric emergency department were evaluated in this study. Consequently, those who have direct access to the outpatient clinics of the Neuropsychiatry department have not been evaluated. Among the strengths of the study is the large sample size and the good portion of participants attending the follow up interviews (>80%), which reduced risk for potential attrition bias.

8 – Conclusion

The association between mood disorders and suicide risk is well documented (31-32). Mood disorders, such as major depression and bipolar disorder, can significantly increase the risk of suicidal thoughts, suicide attempts, and completed suicide. Personality can also play a role in suicide risk (65). Individual's personality traits can influence how they respond to stress, adversity, and emotional challenges, which can in turn affect their risk of suicide. Here are some personality traits and factors that have been associated with suicide risk: impulsivity, hopelessness, aggressiveness, perfectionism and social isolation may increase the risk of suicide (66).

In recent years, scientific research has begun to explore personality characteristics in adolescent subjects. Categorical (refers to classifying individuals into distinct diagnostic categories) and dimensional (consider personality traits and features along a spectrum) diagnoses of personality disorders and their relationship to suicide risk in adolescents have been subjects of considerable research and debate.

Our results, in spite of being constrained by a sample size that precludes generalizing certain findings, showed that both categorical and dimensional approaches can contribute to a better understanding of the phenomenon of suicide. It is necessary to expand the reference sample to identify which dimensional variables more accurately predict suicide risk. Furthermore, the opportunity to delve into personality aspects can aid in identifying early therapeutic interventions.

9 - Appendix

Table1

Patient n	gender	age	Group	pharmacotherapy	psychotherapy	Hospitalization/ emergency room	Previous NPI acceptance
1	F	15	Attempter	Yes	Yes	Hospitalization	Yes
2	F	15	Attempter	Yes	Yes	Hospitalization	No
3	F	17	Attempter	Yes	yes	Hospitalization	No
4	M	16	Attempter	No	no	Hospitalization	No
5	F	15	Attempter	Yes	yes	hospitalization	No
6	F	16	Ideator	Yes	yes	hospitalization	Yes
7	F	16	Attempter	Yes	yes	hospitalization	Yes
8	F	15	Attempter	Yes	yes	emergency room	Yes
9	F	15	Attempter	Yes	yes	hospitalization	No
10	F	14	Attempter	Yes	yes	hospitalization	No
11	F	16	Attempter	Yes	yes	hospitalization	No
12	F	14	Ideator	No	yes	hospitalization	No
13	F	13	Attempter	No	yes	emergency room	No
14	M	15	Attempter	Yes	yes	hospitalization	Yes
15	F	16	Ideator	No	yes	emergency room	No
16	F	14	Attempter	No	yes	hospitalization	No
17	F	14	Attempter	Yes	yes	hospitalization	Yes
18	F	16	Attempter	Yes	yes	hospitalization	Yes
19	F	14	Attempter	Yes	yes	hospitalization	No
20	M	15	Ideator	Yes	yes	emergency room	Yes
21	F	15	Attempter	Yes	yes	hospitalization	No
22	F	16	Attempter	No	yes	hospitalization	No
23	F	13	Attempter	No	no	emergency room	No
24	F	14	Attempter	No	yes	emergency room	no
25	F	15	Attempter	Yes	yes	hospitalization	yes
26	F	15	Attempter	Yes	yes	hospitalization	yes
27	M	15	Ideator	Yes	yes	hospitalization	no
28	F	16	Attempter	No	yes	emergency room	no
29	F	14	Attempter	Yes	yes	hospitalization	no
30	F	14	Ideator	No	no	emergency room	no
31	F	15	Ideator	No	yes	emergency room	no
32	F	15	Attempter	No	yes	hospitalization	no
33	F	16	Ideator	Yes	yes	emergency room	yes
34	M	14	Ideator	No	yes	emergency room	no
35	F	15	Ideator	No	no	emergency room	no
36	F	14	Attempter	Yes	yes	hospitalization	no
37	F	15	Attempter	Yes	yes	hospitalization	yes
38	F	15	Ideator	Yes	yes	emergency room	no
39	F	13	Ideator	Yes	yes	hospitalization	no
40	F	14	Ideator	Yes	yes	hospitalization	yes
41	F	14	Ideator	Yes	yes	hospitalization	yes

42	F	16	Attempter	No	yes	emergency room	no
43	F	16	Attempter	Yes	yes	emergency room	no
44	F	14	Ideator	No	yes	clinic	no
45	F	15	Ideator	Yes	yes	hospitalization	yes
46	F	15	Ideator	No	no	emergency room	no
47	F	16	Attempter	Yes	yes	hospitalization	no
48	M	16	Ideator	Yes	yes	emergency room	no
49	F	13	Attempter	No	yes	emergency room	no
50	M	17	Ideator	No	no	clinic	no
51	F	16	Ideator	Yes	yes	hospitalization	no
52	F	17	Ideator	No	yes	clinic	no
53	F	16	Ideator	No	yes	emergency room	no
54	M	16	Ideator	Yes	yes	clinic	no
55	F	16	Ideator	No	yes	emergency room	no
56	F	13	Ideator	Yes	yes	clinic	yes
57	M	16	Ideator	No	yes	clinic	no
58	F	15	Attempter	No	yes	hospitalization	no
59	F	15	Ideator	Yes	yes	hospitalization	no
60	F	14	Attempter	Yes	yes	emergency room	yes
61	F	15	Ideator	No	no	hospitalization	no
62	F	16	Ideator	No	yes	emergency room	no
63	M	16	Ideator	No	no	emergency room	no
64	F	16	Attempter	No	no	emergency room	no
65	F	14	Attempter	Yes	yes	hospitalization	yes
66	M	16	Ideator	No	yes	emergency room	no
67	F	16	Ideator	No	yes	emergency room	yes
68	M	16	Ideator	No	no	clinic	no
69	F	16	Ideator	No	no	clinic	yes
70	M	18	Ideator	No	yes	clinic	no
71	M	14	Ideator	Yes	yes	hospitalization	no
72	M	16	Attempter	Yes	no	hospitalization	no
73	F	13	Attempter	No	yes	hospitalization	no
74	F	14	Attempter	No	yes	emergency room	no
75	F	15	Ideator	Yes	yes	emergency room	no
76	F	14	Attempter	Yes	yes	hospitalization	yes
77	F	15	Ideator	No	yes	emergency room	no
78	F	14	Ideator	No	no	emergency room	no

In sum: sample size 78 (63 female; 15 male) mean age 15,05 (SD 1,08) - 41 (65,08%) started with a psychopharmacological therapy – 65 (83,3%) started with a psychotherapy – 21 (26,9%) were already followed by Neuropsychiatry service.
Female: mean age 14,89 (SD 1,03) - 34 (53,9%) started with a psychopharmacological therapy – 55 (87,3%) started with a psychotherapy – 19 (30,1%) were already followed by Neuropsychiatry service.
Male: mean age 15,73 (SD 1,03) - 7 (46,6%) started with a psychopharmacological therapy – 10 (66,6%) started with a psychotherapy – 2 (13,3%) were already followed by Neuropsychiatry service.

Table 2

		T0	T1	T2
	Subjects n	78	70	63
	Subjects with ideation - (%)	78 (100%)	65 (92,86%)	51 (80,95)
	Subjects with suicidal behavior - (%)	39 (50%)	16 (22,86)	13 (20,63)
	PID negative affectivity Mean	1,95	1,82	1,81
	SD	0,57	0,48	0,51
	PID detachment Mean	1,54	1,44	1,39
	SD	0,53	0,50	0,48
	PID antagonism Mean	0,94	0,89	0,81
	SD	0,65	0,60	0,55
	PID disinhibition Mean	1,73	1,70	1,63
	SD	0,52	0,52	0,42
	PID psychoticism Mean	1,55	1,40	1,33
	SD	0,74	0,71	0,66
Psychopatology	KSADS Depressive disorder n°	77/78	63/70	45/63
	KSADS Depressive disorder %	98,71	90	71,43
	KSADSManiac Disorder n°	4/78	6/70	2/63
	KSADSManiac Disorder %	5,13	8,57	3,17
	KSADS Psychosis n°	2/78	1/70	2/63
	KSADS Psychosis %	2,56	1,43	3,17
	KSADS Panic Disorder n°	21/78	9/70	8/63
	KSADS Panic Disorder %	26,92	12,85	12,7
	KSDAS Separation anxiety n°	3/78	2/70	2/63
	KSDAS Separation anxiety %	3,85	2,86	3,17
	KSADS Social phobia n°	34/78	22/70	17/63
	KSADS Social phobia %	43,58	31,43	26,98
	KSADS Specific phobia n°	12/78	8/70	4/63
	KSADS Specific phobia %	15,38	11,43	6,35
	KSADS Generalized anxiety n°	45/78	41/70	34/63
	KSADS Generalized anxiety %	57,69	58,57	53,96
	KSADS Obsessive compulsive n°	4/78	2/70	2/63
	KSADS Obsessive compulsive %	5,13	2,86	3,17
	KSADS Enuresis n°	0/78	0/70	0/63
	KSADS Enuresis %	0	0	0
	KSADS Encopresis n°	0/78	0/70	0/63
	KSADS Encopresis %	0	0	0
	KSADS Anorexia n°	8/78	8/70	8/63
	KSADS Anorexia %	10,26	11,43	12,7
	KSADS Bulimia n°	6/78	5/70	3/63
	KSADS Bulimia %	7,69	7,14	4,76
	KSADS ADHD n°	10/78	9/70	9/63
	KSADS ADHD %	12,82	12,85	11,84
	KSADS Oppositional Defiant n°	9/78	10/70	8/63
	KSADS Oppositional Defiant %	11,54	14,28	12,7
	KSADS Conduct Disorder n°	6/78	6/70	3/63

	KSADS Conduct Disorder %	7,69	8,57	4,76
	KSADS Tic Disorder n°	0/78	0/70	0/63
	KSADS Tic Disorder %	0	0	0
	KSADS PTSD n°	15/78	13/70	11/63
	KSADS PTSD %	19,23	18,57	17,46
	KSADS Cigarette use n°	36/78	26/70	18/63
	KSADS Cigarette use %	46,15	37,14	28,57
	KSADS Alcohol Abuse n°	25/78	15/70	14/63
	KSADS Alcohol Abuse %	32,05	21,43	22,22
	KSADS Substance Abuse n°	10/78	9/70	5/63
	KSADS Substance Abuse %	12,82	12,85	7,9
Suicidality	C-SSRS ideation (1-5)	3,31	2,55	2,16
	C-SSRS intensity of ideation (1-25)	17,12	14,32	12,05
	C-SSRS suic. Behavior (1-6)	1,83	0,77	0,90
	C-SSRS mediacal damage (0-5)	0,79	0,10	0,10
	C-SSRS potential lethality (0-2)	0,81	0,18	0,13
	MIS psyache (0-4)	2,42	1,63	1,44
	MIS hopelessness (0-4)	0,36	0,28	0,19
	MIS pessimism (0-4)	1,42	1,14	1,02
	MIS perfectionism (0-4)	0,40	0,27	0,32
	MIS life crisis (0-4)	0,53	0,31	0,47
	MIS interpersonal influence (0-4)	0,36	0,24	0,11
	MIS help seeking (0-4)	0,53	0,58	0,24
	MIS burdsomeness (0-4)	0,55	0,37	0,26
	MIS low belongingness (0-4)	0,83	0,49	0,29
	MIS escape fantasy (0-4)	0,27	0,13	0,18
	MIS problem solving (0-4)	0,71	0,45	0,16
	MIS extreme case (0-4)	0,54	0,23	0,31
	MIS atypical case (0-4)	0,05	0,06	0,13
	MIS impulsivity (0-4)	1,04	0,51	0,53
	MIS fearless (0-4)	0,15	0,08	0,03

Table 3

Number of subjects with a diagnosis based on SCID-5	
SCID-5 avoidant	7
SCID-5 dependent	0
SCID-5 obsessive-compulsive	0
SCID-5 paranoid	0
SCID-5 schizotypal	1
SCID-5 schizoid	3
SCID-5 histrionic	3
SCID-5 narcissistic	0
SCID-5 borderline	4
SCID-5 antisocial	0
SCID-5 other	0

Table 4

		T0 CSSRS IDEATION	T0 CSSRS INT OF IDEATION	T0 CSSRS SUI. BEHAV	T0 CSSRS MED. EFFECTS	T0 CSSRS POT. LETHLITY	T2 CSSRS IDEATION	T2 CSSRS INT OF IDEATION	T2 CSSRS SUI. BEHAV	T2 CSSRS MED. EFFECTS	T2 CSSRS POT. LETHALITY
SCID AVOIDANT	r=	-,048	,208	,077	,144	,116	-,064	,022	-,137	-,138	-,091
	p=	,677	,067	,504	,210	,313	,620	,866	,283	,279	,480
	N	78	78	78	78	78	63	63	63	63	63
SCID DEPENDENT	r=	-,099	,073	,056	,117	,128	-,073	,058	-,085	-,052	-,077
	p=	,390	,523	,624	,306	,264	,570	,651	,509	,686	,550
	N	78	78	78	78	78	63	63	63	63	63
SCID OBSESSIVE	r=	,046	,071	-,141	-,125	-,137	-,087	,028	-,013	,104	,105
	p=	,690	,534	,218	,276	,232	,498	,828	,921	,417	,411
	N	78	78	78	78	78	63	63	63	63	63
SCID PARANOID	r=	-,020	,005	-,032	-,149	-,147	,112	,051	,056	-,077	-,085
	p=	,863	,965	,781	,194	,198	,383	,694	,665	,547	,509
	N	78	78	78	78	78	63	63	63	63	63
SCID SCHIZOTYPAL	r=	-,043	,305**	,132	,208	,191	,097	,220	,059	-,044	-,006
	p=	,706	,007	,248	,067	,093	,448	,083	,648	,733	,963
	N	78	78	78	78	78	63	63	63	63	63
SCID SCHIZOYD	r=	,115	,153	,151	,075	,074	,148	,123	,068	-,108	-,118
	p=	,317	,181	,187	,513	,522	,247	,337	,598	,401	,357
	N	78	78	78	78	78	63	63	63	63	63
SCID ISTRIONIC	r=	,193	,158	,205	-,071	,015	,321*	,259*	,468**	,340**	,144
	p=	,091	,166	,071	,534	,895	,010	,040	,000	,006	,260
	N	78	78	78	78	78	63	63	63	63	63
SCID NARCISISTIC	r=	,106	,059	,161	,033	,062	,001	,006	,010	-,080	-,087
	p=	,356	,608	,158	,775	,587	,992	,963	,938	,535	,497
	N	78	78	78	78	78	63	63	63	63	63
SCID BORDERLINE	r=	,011	,162	,340**	,284*	,055	,336**	,272*	,234	-,077	-,037
	p=	,921	,155	,002	,012	,631	,007	,031	,065	,550	,776
	N	78	78	78	78	78	63	63	63	63	63
SCID ANTISOCIAL	r=	-,091	-,193	-,066	-,210	-,041	-,194	-,182	-,146	-,073	-,081
	p=	,427	,090	,568	,065	,722	,127	,152	,252	,567	,531
	N	78	78	78	78	78	63	63	63	63	63
SCID OTHER	r=	.[a]	.[a]	.[a]	.[a]	.[a]	.[a]	.[a]	.[a]	.[a]	.[a]
	p=	.	.	.	.	.	.	.	.	.	.
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 RESTRICTED AFFECTIVITY	r=	,231*	,261*	,113	,050	-,055	,306*	,292*	,278*	,010	-,047
	p=	,041	,021	,325	,664	,631	,015	,020	,028	,939	,717
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 ANEDHONIA	r=	,197	,396**	,206	,190	,034	,281*	,312*	,064	-,010	-,115
	p=	,083	,000	,070	,095	,768	,026	,013	,621	,938	,371
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 SEPARATION INSECURITY	r=	,001	,177	,260*	,245*	,262*	-,026	,003	-,072	-,161	-,127
	p=	,991	,121	,022	,030	,020	,840	,980	,576	,208	,319
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 ANXIOUSNESS	r=	,242*	,364**	,163	,126	,139	,154	,225	,097	,048	-,145
	p=	,033	,001	,154	,270	,226	,228	,076	,451	,707	,256
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 UNUSUAL PERCEPTIONS	r=	,163	,281*	,200	,059	,040	,211	,176	,057	-,165	-,197
	p=	,154	,013	,079	,609	,729	,096	,169	,659	,195	,121
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5	r=	,267*	,595**	,258*	,191	,102	,259*	,421**	,173	,029	-,067

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DEPRESSIVITY	p=	,018	,000	,023	,095	,374	,040	,001	,176	,823	,605
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 PERCEPTUAL DYSREGULATION	r=	,256*	,397**	,277*	,170	,177	,254*	,211	,183	-,132	-,177
	p=	,024	,000	,014	,136	,122	,045	,097	,151	,302	,166
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 DISTRACTIBILITY	r=	,046	,393**	,278*	,293**	,208	,089	,103	-,058	-,278*	-,085
	p=	,688	,000	,014	,009	,068	,489	,421	,652	,027	,509
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 ECCENTRICITY	r=	,221	,370**	,333**	,162	,179	,243	,266*	,088	-,245	-,263*
	p=	,052	,001	,003	,158	,117	,055	,035	,493	,053	,037
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 INTIMACY AVOIDANCE	r=	,197	,131	,179	,035	,095	,159	,217	,118	-,080	,000
	p=	,084	,252	,117	,762	,409	,212	,087	,355	,532	,999
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 GRANDIOSITY	r=	-,125	-,026	,109	-,019	-,159	,106	,081	,036	-,224	-,155
	p=	,274	,821	,343	,871	,163	,408	,530	,780	,078	,224
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 IMPULSIVITY	r=	,046	,210	,314**	,265*	,310**	,110	,173	,028	-,309*	-,187
	p=	,688	,065	,005	,019	,006	,391	,174	,830	,014	,143
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 DECEITFULNESS	r=	,030	,002	,218	,021	,046	,226	,104	,310*	-,054	-,118
	p=	,796	,986	,055	,854	,692	,074	,416	,014	,673	,358
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 CALLOUSNESS	r=	,009	,100	,086	-,046	-,151	,350**	,279*	,262*	-,158	-,112
	p=	,936	,383	,455	,687	,188	,005	,027	,038	,217	,384
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 IRRESPONSABILITY	r=	,068	,237*	,255*	,187	,143	,268*	,210	,231	-,250*	-,157
	p=	,553	,036	,024	,102	,211	,033	,099	,069	,048	,220
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 EMOTIONAL LABILITY	r=	,094	,342**	,296**	,160	,143	-,007	,000	-,070	-,309*	-,271*
	p=	,412	,002	,008	,161	,212	,956	,999	,586	,014	,032
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 MANIPULATIVENESS	r=	-,041	-,035	,098	-,076	-,084	,179	,104	,214	-,102	-,121
	p=	,724	,760	,391	,507	,465	,160	,419	,092	,427	,346
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 HOSTILITY	r=	,080	,128	,011	-,110	-,138	,103	,074	,083	-,151	-,229
	p=	,486	,263	,924	,337	,230	,423	,563	,517	,238	,071
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 PERFECTIONISM	r=	,140	,123	,018	-,008	-,011	,034	,103	,019	-,013	-,168
	p=	,223	,281	,875	,942	,925	,793	,424	,882	,917	,189
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 PERSEVERATION	r=	,221	,295**	,316**	,137	,106	,197	,278*	,094	-,189	-,285*
	p=	,051	,009	,005	,232	,354	,122	,028	,463	,137	,024
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 ATTENTION SEEKING	r=	,017	,003	,150	,053	-,015	,136	,157	,061	-,196	-,152
	p=	,885	,981	,191	,644	,895	,290	,219	,637	,124	,236
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 WITHDRAWAL	r=	,179	,401**	,163	,092	-,026	,259*	,329**	,255*	,086	,024
	p=	,117	,000	,155	,421	,820	,040	,009	,044	,504	,851
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 SUSPICIOUSNESS	r=	,089	,202	,202	,067	,029	,130	,099	,097	,041	-,119
	p=	,440	,077	,076	,561	,802	,309	,442	,452	,749	,352
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 SUBMISSIVNESS	r=	,202	,266*	,186	,218	,185	,180	,328**	,016	-,030	-,107
	p=	,076	,019	,102	,055	,105	,158	,009	,900	,816	,404
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 RISK	r=	,136	,138	,251*	,154	,191	,140	,082	,183	-,099	-,050

TAKING	p=	,235	,228	,027	,178	,094	,274	,524	,152	,441	,698
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 NEGATIVE AFFECTIVITY	r=	,166	,391**	,333**	,201	,203	,094	,148	-,001	-,167	-,207
	p=	,147	,000	,003	,077	,074	,465	,246	,995	,192	,103
	N	78	78	78	78	78	63	63	63	63	63
TO PID5 DETACHMENT	r=	,268*	,411**	,245*	,106	,015	,329**	,404**	,209	,009	-,025
	p=	,018	,000	,031	,356	,895	,009	,001	,100	,944	,845
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 ANTAGONISM	r=	-,055	-,033	,170	-,014	-,041	,172	,081	,208	-,152	-,159
	p=	,630	,777	,136	,903	,722	,177	,527	,101	,233	,213
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 DISINHIBITION	r=	,079	,357**	,367**	,325**	,295**	,184	,196	,089	-,345**	-,176
	p=	,492	,001	,001	,004	,009	,149	,124	,487	,006	,168
	N	78	78	78	78	78	63	63	63	63	63
T0 PID5 PSICOTICISM	r=	,248*	,372**	,321**	,125	,157	,261*	,242	,115	-,199	-,233
	p=	,029	,001	,004	,276	,169	,039	,056	,368	,118	,067
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS DEPRESSION	r=	,201	,334**	,110	-,115	-,130	,185	,221	,089	-,335**	-,570**
	p=	,077	,003	,340	,315	,256	,148	,082	,490	,007	,000
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS DEPRESSION N	r=	,192	,403**	,183	,198	,194	,088	,146	,176	-,313*	-,363**
	p=	,091	,000	,109	,083	,089	,490	,254	,168	,012	,003
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS MANIC	r=	-,068	,076	,314**	,165	,119	,066	,034	,023	-,072	,077
	p=	,555	,507	,005	,148	,299	,605	,791	,860	,574	,550
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS MANIC N	r=	-,064	-,014	,246*	,194	,105	-,083	-,106	-,162	-,090	-,063
	p=	,575	,904	,030	,089	,358	,516	,406	,204	,484	,623
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS PSYCHOSIS	r=	,184	,206	,022	-,130	,036	,355**	,190	,371**	-,050	-,055
	p=	,108	,071	,849	,257	,753	,004	,137	,003	,696	,668
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS PSYCHOSIS N	r=	,175	,262*	,084	-,081	,113	,335**	,208	,342*	-,057	-,063
	p=	,126	,020	,463	,483	,326	,007	,101	,006	,655	,625
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS PANIC	r=	,179	,206	,035	-,049	-,166	,032	,084	,047	,074	-,071
	p=	,116	,071	,760	,668	,146	,804	,513	,717	,564	,580
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS PANIC N	r=	,196	,195	,059	-,050	-,127	-,020	,051	-,063	-,118	-,136
	p=	,085	,087	,610	,661	,269	,878	,692	,622	,356	,286
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS SEPARATION ANXIETY	r=	,068	,167	,081	-,093	-,110	,133	,092	,137	-,062	-,068
	p=	,553	,144	,481	,418	,338	,297	,473	,286	,629	,596
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS SEPARATION ANXIETY N	r=	-,015	,151	,102	,015	-,002	-,006	,015	-,057	-,084	-,092
	p=	,898	,188	,376	,897	,983	,965	,906	,659	,514	,474
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS SOCIAL PHOBIA	r=	,160	,360**	,119	,078	,046	,197	,235	,186	,189	,157
	p=	,161	,001	,301	,500	,689	,123	,064	,145	,137	,219
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS SOCIAL PHOBIA N	r=	,031	,252*	,106	,195	,129	,011	,178	,045	-,018	-,060
	p=	,791	,026	,354	,087	,262	,930	,162	,726	,886	,640
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS SPECIFIC PHOBIA	r=	,112	-,035	-,058	-,198	-,152	,107	,052	-,009	,049	,013
	p=	,331	,762	,617	,082	,184	,402	,687	,945	,703	,917
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS SPECIFIC	r=	,214	-,075	,014	-,091	-,038	,148	,108	,003	-,036	-,066

PHOBIA N	p=	,060	,515	,904	,430	,742	,246	,400	,982	,778	,609
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS GENERALIZED ANXIETY	r=	,225[*]	,194	,032	-,020	-,040	,227	,228	,155	,045	-,054
	p=	,047	,089	,784	,861	,725	,074	,072	,226	,728	,675
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS GENERALIZED ANXIETY N	r=	,048	,095	-,068	,054	,047	,003	,143	-,046	-,228	-,304[*]
	p=	,680	,411	,557	,641	,683	,979	,267	,722	,075	,016
	N	77	77	77	77	77	62	62	62	62	62
T0 KSADS OCD	r=	,042	,127	,031	-,128	-,150	,286[*]	,234	,254[*]	,155	,289[*]
	p=	,712	,269	,785	,265	,189	,023	,065	,045	,225	,022
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS OCD N	r=	,016	,118	-,017	-,137	-,161	,175	,192	,150	,171	,318[*]
	p=	,890	,304	,884	,231	,159	,170	,132	,240	,181	,011
	N	78	78	78	78	78	63	63	63	63	63
T0_KSADS_ENURESIS	r=	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
	p=	.	.	.	.	.	.	.	.	.	.
	N	78	78	78	78	78	63	63	63	63	63
T0_KSADS_ENCOPRESIS	r=	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
	p=	.	.	.	.	.	.	.	.	.	.
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS ANOREXIA NERVOSA	r=	,102	,123	,046	-,058	-,072	,162	,155	,183	,172	,227
	p=	,375	,283	,691	,615	,534	,204	,226	,151	,178	,074
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS ANOREXIA NERVOSA N	r=	,103	,090	,013	-,065	-,053	,049	,112	,088	,089	,108
	p=	,369	,431	,911	,571	,645	,700	,382	,493	,489	,399
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS BULIMIA	r=	-,084	,046	,195	,108	,009	,157	,086	,198	,382[**]	,160
	p=	,463	,689	,087	,346	,941	,220	,502	,120	,002	,209
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS BULIMIA N	r=	-,013	,034	,188	,136	-,003	,157	,086	,198	,382[**]	,160
	p=	,910	,769	,098	,236	,979	,220	,502	,120	,002	,209
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS ADHD	r=	-,039	,087	,207	,273[*]	,308[**]	-,033	,050	-,004	-,106	-,116
	p=	,733	,449	,069	,016	,006	,797	,698	,974	,409	,365
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS ADHD N	r=	-,120	,001	,149	,157	,251[*]	-,162	-,088	-,043	-,081	-,089
	p=	,294	,992	,193	,169	,027	,204	,492	,736	,528	,489
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS ODD	r=	,009	-,163	-,081	-,128	,034	-,033	,022	-,042	-,106	-,116
	p=	,939	,154	,479	,266	,768	,797	,864	,746	,409	,365
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS ODD N	r=	-,087	-,161	-,095	-,155	-,132	-,022	,019	-,101	-,095	-,107
	p=	,452	,163	,410	,179	,254	,867	,886	,433	,464	,409
	N	77	77	77	77	77	62	62	62	62	62
T0 KSADS CONDUCT DISORDER	r=	,053	-,121	-,039	-,134	-,047	,022	-,033	,074	-,072	-,079
	p=	,647	,291	,735	,241	,682	,865	,799	,565	,574	,537
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS CONDUCT DISORDER N	r=	,003	-,084	-,064	-,092	-,003	-,128	-,155	-,088	-,089	-,097
	p=	,976	,467	,576	,422	,982	,316	,224	,494	,490	,449
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS TIC	r=	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
	p=	.	.	.	.	.	.	.	.	.	.
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS TIC N	r=	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
	p=	.	.	.	.	.	.	.	.	.	.
	N	77	77	77	77	77	62	62	62	62	62
T0 KSADS PTSD	r=	,135	,050	,171	-,030	-,004	,200	,232	,174	,006	-,028

	p=	,237	,666	,134	,792	,970	,117	,067	,172	,963	,827
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS PTSD N	r=	,153	,008	,270*	-,030	,090	,130	,155	,023	-,017	-,041
	p=	,182	,941	,017	,792	,432	,310	,226	,860	,896	,747
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS CIGARETTE USE	r=	,079	,007	,164	,161	,111	,103	,183	-,104	-,232	-,255*
	p=	,492	,950	,152	,160	,331	,420	,151	,417	,067	,044
	N	78	78	78	78	78	63	63	63	63	63
T0 KSADS ALCOHOL ABUSE	r=	-,077	,079	,095	-,018	-,032	,096	,147	-,067	-,203	-,143
	p=	,500	,494	,406	,874	,784	,456	,250	,603	,110	,263
	N	78	78	78	78	78	63	63	63	63	63
T0KSADS SUBSTANCES ABUSE	r=	-,076	,020	,052	,002	-,137	,065	,092	-,004	-,106	-,116
	p=	,511	,859	,653	,986	,233	,615	,474	,974	,409	,365
	N	78	78	78	78	78	63	63	63	63	63

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