

# STUDY OF PERSON-SPECIFIC LIFE EVENTS INFLUENCING INTENTIONAL SELF-HARM IN YOUNG POPULATION IN KERICHOCOUNTY, KENYA

## ABSTRACT

**Background:** Suicide has been among the leading causes of death in 15-29-year-old people worldwide. Over three quarters (79%) of all suicides occur in lower and mid-level economic countries.

**Aim:** The study's specific goal was to assess factors influencing personal specific life events on intentional self-organophosphate poisoning.

**Place and duration of study:** Study was conducted in Kericho County, health facilities year 2023.

**Design:** The study adopted cross-sectional study design and purposive sampling technique.

**Methodology:** 100 respondents were included in the study (88 males and 12 females).

**Data analysis:** The collected quantitative data were analyzed using Statistical Package for Social Sciences (SPSS) version 21. Correlation and regression analysis was carried out to establish relationship between variables. Chi-square also was used to measure correlation of variables. The analyzed data were presented in tables, charts and the corresponding thematic areas. Statistical significance was set at  $p < 0.05$ .

**Results:** The results indicated that personal life specific perspective showed positive influenced on self-poisoning. The results indicated that personal specific perspectives/events had chi-square of 13.867 where significance was set at  $p = 0.0001$  indicating a high likelihood of influencing one to self-poison.

**Conclusion:** Self-poisoning study offers important knowledge on one of the commonest popular methods of self-suicidal attempts; that can guide on public health approaches to mitigate this phenomenon, and the lack of research on the influences of personality traits and self-poisoning is the main reason for this study. These cases of self-poisoning influence by self-perfection may increase morbidity and mortality incidences and also overburdening family financially to meet cost of hospitalization.

**Keywords:** Peer pressure, Personal traits, imitation and specific events.

**Definition of terms:** Mentally unstable-Disoriented patient, Drug Abused- misused of drugs for ill motives.

## Introduction.

Suicide is a focus of public health that requires attention; there are different ways to fulfill suicide, for instance, among others is intentional self-poisoning (1). It is a complicated behavior that can be termed as a maladaptive reaction to life stress when one cannot cope up with it (2). Research shows that the most cases of suicidal method in Asia is self-poisoning suicide (3). In different cultural backgrounds, and societies, the types of methods used to fulfill suicidal ideas depend on the availability of the methods, awareness of its lethal effectiveness, motive, and reasons of the victim. In developing countries, poisons and drug overdoses are the common alleged agents in self-poisoning among cases 4 and 5. According to the 2017 World Health Organization (WHO) report, it was found to be the most cause of early deaths among adolescents. Moreover, findings from the USA and the UK in three different studies reiterates that self-poisoning rates among adolescents and children has been on the rise from the commencement of this decade (6).

Suicide has been the second most issue causing deaths among people in the age bracket of 15-29 years (7). Spiller et al. (2020) who stated that the most common age for committing suicide was from (15 to 19) years old, with a frequency almost twice more than that of the (35 to 50) years, where poisoning was the most common mechanism (66.5%) of all suicide attempt(8).

Since 2008, the trend of people presented in emergency care units in hospitals is increasing. It is estimated that about 200,000 people are presented in hospitals every year as a result of self-poisoning or self-harm (9). Data collected from 49 children in United States of America (USA) indicated that hospitalization suicidal patients or behavior doubled among people between the age of 5-17years from 2008 to 2015 (10). Poisoning risks increase among school dropouts or after a protracted leave from school. Unsatisfactory academic development can contribute to stress and, in turn, melancholy. Parental education and awareness are necessary to prevent situations like these from occurring because sexual insult is also a preventable risk factor for self-poisoning (11).

The period of development between 12 years and 15 years is vital to directly conduct a research on self-harm since these years consists of the (12-14years), peak(15-24years) and beginning of remittance of the behavior (12).

The term imitation is used by several researchers to suggest artificial rather than contagion. A type of an infectious disease which precludes the ability of a person to make decisions by themselves is suggested by contagion. Imitation can be defined as a kind of learning which include modeling and acquisition of new behavioral patterns through the use of model observation behavior. Suicidal behavior imitation by young people is mostly as a result of influence from the reports given by the mass media. Additionally, the behavior is also as a result of influence within their environment of living such as peers, family, relatives as well as school environment (13).

Unmarried adolescent experience acute stress as a result of perceived rejection or provocation from their partners, unhealthy reactions they receive from family members, poor academic performance, among other common psychological challenges (14). First, the characteristics of the model are important. Generally, in cases of high similarities between the model and the young person (for example, in gender, age, background situation or mood), there are stronger imitating factors. Additionally, when there exists a strong link between them or maybe the model is influenced by the people they look up to, for example celebrities, then the existence of behavioral model are reinforced. If the behavior is condoned and regarded as positive, sometimes even likely to be encouraged by other people, young people tend to imitate such behaviors. Additionally, how the behavioral model is presented as well as its frequency is significant for instance, the total number and volume of headlines, the type of story; is it real or fiction, and how frequent has the behavior repeated. Imitation of behaviors can sometimes as well take on large dimensions, i.e., suicide clusters; these are chain of actual suicides especially among adolescents within a specified period and a particular place (15). On sudden predisposing factors to self-harm, larger number of patients reported for intentional self-harm have history of depressive period within the global disaster affecting them and reported ease of accessibility to fatal chemicals due to extreme situation of loss of hope and helplessness, academic failures, terminal diseases, bereaved individual, family dispute and carrier associated challenges may face and individual in life.. (16)

Characteristics of this stage of life include transaction, movement as well as altercations from one state into another, within the same period and in several domains. Youth are obliged to decision-making about significant life directions, for instance, in peer group, school, living situation, among others. It is recommended that research should as well come up with ways that can address this issue in relation to developing self-esteem, acquiring increasing independence, building their own identity, and responsibility, among others. At most times they are subjected on very high expectations from their peers and relatives. In such cases, there is high degree of insecurity, emotional distress, losing self as well as helplessness (17).

Personality characteristics are significant determinants for a one's suicidal behavior because personality is controlling an individual's attitude towards the environment (18). Personality traits were noted in about 30-40 percent of people who fulfilled suicidal ideations (19). It has been predicted that these personality traits contributed to psychotic disorders and suicide self-harmed (20). According to the "Big Five Personality Traits," there is a diverse personality style that includes neuroticism, conscientiousness, openness to experience, agreeableness, and extroversion (21).

The vulnerability of adolescents, a group susceptible to self-harm, adds to the urgency of addressing this issue. Despite this, there exists a lack of comprehensive assessment of factors contributing to the rising incidence of intentional self-poisoning cases, particularly among youths aged 15 to 30 years. Notably, Kericho

County health facilities generally face a monthly average of 29 self-poisoning cases, with a concerning uptrend of patient defaulters in follow-up psychiatric clinics. These cases impose a strain on both families and healthcare resources. This study recognizes the need to investigate the factors driving this disturbing trend on personality traits, since no study have been conducted in Kericho County focusing on the said characteristics. Self-poisoning study offers important knowledge on one of the commonest popular methods of self-suicidal attempts; that can guide on public health approaches to mitigate this phenomenon, and the lack of research on the influences of personality traits and self-poisoning is the main reason for this study.

Consequently, it is imperative to conduct a comprehensive facility and community based study to identify these factors, propose mitigation strategies, and establish frameworks to effectively address and prevent future occurrences, safeguarding the well-being of these vulnerable individuals and alleviating the burden on healthcare facilities and families.

### **Purpose of the study**

The study aimed at assessing influencing personal specific events on intentional organophosphate self-poisoning among persons aged between 15-30 years in Kericho County, Kenya and establishing mitigation measures to curb the predicament.

### **Challenges face during the study.**

Some of the difficulties that the researcher encountered included:

- Unwillingness of respondents to give out information because of confidentiality and cultural beliefs. However, the researcher explained and reassured the respondents that high standard of confidentiality would be observed
- Scheduled questionnaires were time-consuming during administration. However, the researcher ensured that at least 2 respondents were interviewed per day
- Sometimes it was a challenge to establish the specific names of the poisons Therefore, the researcher relied on specific signs and symptoms of organophosphate poisoning.
- It was not possible to interview patients in coma and to obtain information from those who had died. In such cases, the researcher excluded them from the study.

### **Material and methods**

This research was conducted in Kericho county. Kericho county is one of the 47 counties in Kenya. This county is about 256 kilometers from Nairobi. Kericho county is known for its large- and small-scale tea-farming and most of its residents rear livestock as well and that was a major reason for selecting this County for the study due to availability of the said chemicals for agricultural use.

**Research design.** The study employed a cross-sectional survey. It was a study of all cases of intentional organophosphate self-poisoning. This design provided insight into factors that influence youth, leading to organophosphate self-poisoning. The researcher used researcher administered questionnaires which were both quantitative and qualitative in nature. The qualitative section of the questionnaires enabled the researcher to collect data in the actual context so that findings and conclusions about the study were made based on the situation on the ground.

**Target population.** All clients who reported in emergency departments at Kericho county referral hospital, Kapkatet sub-county hospital, Londiani sub-county hospital and Sigowet sub-county hospital with a history of poisoning within the study period.

**Sample population.** All respondents brought to hospital presenting to emergency department with a history of intentional organophosphate self-poisoning were recruited for the study depending on their eligibility. The aim was to sample 100 participants during the study period.

#### **Eligibility; Inclusion criteria.**

All the study participants passed the following inclusion criteria: (1). Must have presented himself/herself to the said facilities for medical care occasioned by intentional self-ingestion of organophosphate poisons. (2). Were aged between 15 and 30 years. For minors, either the guardian (close relative) or parent was interviewed.

(3). Must have consented to the study and if a minor, the informant must have consented.

**Exclusion criteria:** (1). Respondents who met the inclusion criteria but were not mentally stable.

(2). Respondents who were comatose/dead were excluded despite meeting the criteria.

(3). The respondents who had not recovered at the end of the study period.

**Sample size determination.**The study employed fisher formula to estimate the sample size (mugenda&mugenda, 1999).

$$n = \frac{Z^2 Pq}{d^2}$$

In this formula, n represented the desired sample size when the study population is over 10 000 and z is the standard normal deviate normally set at 1.96 and corresponds to 95% confidence interval (ci). On the other hand, p was the proportion of target population estimated to have the desired characteristic and was 0.07% (q=1-p=1-0.07=0.93), while d is the degree of accuracy usually set as 0.05. The prevalence of intentional organophosphate poisoning in rift valley-regional was 0.07 %. Hence the desired sample size (n) was determined as follows;

$$n = \frac{Z^2 Pq}{d^2}$$

$$n = \frac{1.96^2 \times 0.07 \times (1 - 0.07)}{0.05^2} = 100$$

**Validity testing.**Validity refers to how strongly theory and evidence support the interpretation of test results that is implied by the use of tests. The degree to which an instrument measures what it is intended to is referred to as its validity. Mugenda and mugenda (1999) defined validity as the accuracy and significance of conclusions drawn from research findings. It is the extent to which the data analysis's findings accurately reflect the study's variables.

The legitimacy and content of the research tool have been verified. The content-related technique assessed how closely the questions mirrored the areas of study that were addressed.

**Reliability testing.**The data collection procedure in this study was reliable. This generated reliable results and answered the research questions. The results are reproducible; any researcher who follows the same data collection procedure and data analysis is expected to yield similar results to those of the researcher in this study.

### Hypothesis.

Ha: Personal specific events influencing intentional self-poisoning among persons age 15-30 years.

H0: Personal specific events do not influence intentional self-poisoning among persons age 15-30 years.

**Data analysis.**The collected data were sorted and coded. Microsoft excel was used. Statistical package for social sciences (spss) version 21.0 was used to carry out data analysis. Descriptive statistics such as frequencies, means and percentages were obtained for socio-demographic variables; personal specific events of the persons aged 15-30 years. Cross-tabulation was carried out to show the relationship among the dependent and independent variables of study. This was carried out for a set of independent and dependent variables at a time. For example, a cross-tabulation of Chi square test was obtained to establish the association among the dependent and independent variables in the cross-tabulation tables. Correlation analysis was carried out to establish the association between socio-demographic characteristics and the outcome variables of the study. Additionally, regression analysis was carried out to show the correlation of factors that significantly influenced self-organophosphate poisoning among the studied group. The analyzed quantitative data were presented using tables and charts. . Statistical significance for quantitative data was set at p<0.05.

## Results .

### Descriptive Statistics on Personal Self-Perception

#### Influence of Drugs

Regarding self-perception, the respondents were asked whether they were under influence of drugs when they had thoughts of suicide. Of these, 54% of the respondents said yes while 46% said no.

**Table 1 Influences of Drugs**

Statement	Yes		No	
	n	%	n	%
Being under influence of drugs when you had thoughts of suicide	54	54	46	46

**Source field Data (2022)**

**Previous use of alcohol**

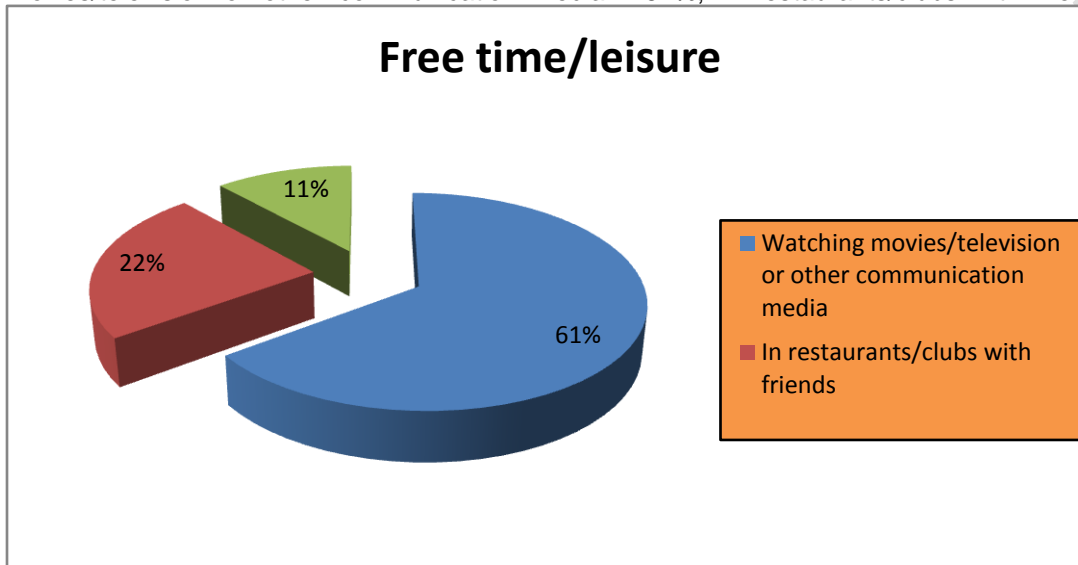
The researcher sought to know from the respondents whether they had previous use of alcohol. Of these, 75% said yes while 25% said no.

**Table 2 Previous use of alcohol**

Statement	Yes		No	
	n	%	n	%
Previous use of alcohol	75	75	25	25

**Free time/leisure time**

The respondents were asked where they spent their leisure time and the responses were as follows: watching movies/television or other communication media - 61%; in restaurants/clubs with friends - 22%; and others - 17%.



**Figure 1: The pie chart indicating where the respondents spent free time/leisure time more often**

The study found that the respondents who replied yes to the question whether they had been affected by the personal specific factors the majority indicated yes with 54 responses while those who indicated no were 46.

**4.2 Measure of Association**

**Table 3. Chi Square measure of association**

Variable	Chi-Square Value	Df	P-Value
Personal Specific	13.867	1	0.001

The study found that there was a statistical relationship between the parameters since the chi square value were 0.001 which was less than the standard p value which is 0.05 at 95% confidence interval.

**Non-Parametric Correlation**

Bivariate analysis was determined and the results obtained were represented on table below that shows that self-poisoning was correlated to respondents having personal specific events.

		Self-Poisoning	Personal Specific factors	
<b>Spearman's rho</b>	Self-Poisoning	Correlation Coefficient	1.000	
		Sig. (2-tailed)	.	
		N	100	

Personal factors	Specific	Correlation Coefficient	.372**	.590**	.980**	1.000
		Sig. (2-tailed)	.001	.001	.001	.
		N	100	100	100	100

**Table 4. Non-Parametric Correlation**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

A strong positive correlation was found between self-poisoning and personal specific factors positively influenced one's propensity to self-poisoning as shown by the results ( $p < 0.05$ ,  $r = 0.372$ ) and ( $p < 0.05$ ,  $r = 0.365$ ), respectively.

A multivariate analysis indicates that personal specific factors accounted for 60.4% of intentional self-poisoning among persons aged 15-30 years in Kericho County. The model was also significant with a Hosmer and Lemeshow test of  $p > 0.05$ .

#### Model Summary

**Table 5: Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke Square	R
1	40.168 <sup>a</sup>	.335	.604	

The study indicated that the parameters used to determine the model summary fitted the study since the value of Nagelkerke R Square was more than 50% which was 60.4%.

#### Discussion.

This study showed that spending free time in a video-room, club or restaurant may cause imitation of what actually happened in the environment. One could take alcohol or smoke bhang in clubs due to peer-pressure or being influenced by the environment. The study also showed that majority of respondents agreed that they were under the influence of alcohol or had a history of alcohol intake previously by the time they ingested poisoning. The findings suggest that alcohol and drug abuse are likely to influence one to self-poison.

Spiller et al. (2020) who stated that the most common age for committing suicide was from (15 to 19) years old, with a frequency almost twice more than that of the (35 to 50) years, where poisoning was the most common mechanism (66.5%) of all suicide attempt in his study

Townsend's study (2016) and Walton et al., 2016 concluded and in agreement (61% of the respondents spent their time in clubs/restaurants) with this study pertaining alcohol used may disrupt youth life and therefore, relationship problems engulf ones progression in life leading to self-poisoning ideation.

This study revealed that spending free time in a video-room, club or restaurant could cause imitation of what actually happened in the environment. One can take alcohol and smoke bhang in clubs due to peer-pressure or being influenced by the environment. This is similar to Hagan et al (2016) and Suresh results (2018) which reported that most of the young men who were interviewed spent most of their time while involving themselves in drug and substance abuse and being in media watching movies).

This environment influence their behavior by imitations therefore, character 'infection' may trigger self-poisoning if their needs are not met.

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## **Conclusion.**

The results indicated that personal specific perspectives/events had chi-square of 13.867 where significance was set at  $p=0.0001$  indicating a high likelihood of influencing one to self-poison. This is influenced by peer-pressure and imitations of what others are doing, for example, abuse of alcohol and other drugs for leisure and enjoyment were the major contributing factors to self poisoning. Leisure or free time indicated that youth engaged themselves in clubs and video shows .

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## **Competing interests.**

Author have no conflicting interest

## **Author contributions**

This work was carried out by author. Author came up with concept paper

Lks collected data , Conducted analysis and Drafted the manuscript eventually revised the manuscript.

## **ETHICAL APPROVAL AND CONSENT**

The researcher obtained research authorization letter from mount kenya university ethical review committee (NACOSTI/P/21/13736). A research permit was sought from the national commission for science, technology and innovation (nacosti) (NACOSTI/P/21/13736) before conducting the study. Authorizations were sought from the county government, the county commissioner, the county director of education, the management of: kericho county referral hospital, kapkatet sub-county hospital, sigowet sub-county hospital and londiani sub-county hospital. In addition, the researcher explained the importance of the research to the respondents to obtain free consent and no one was coerced to take part in the study. The participation was voluntary. The researcher assured the respondents that information obtained from them would be treated with utmost confidentiality and their privacy was guaranteed as anonymity would be assured by the use of numbers/codes to identify respondents.

Additionally, the researcher assured respondents that no one would suffer any form of harm in the event of information utilization since the information was particularly for academic purposes and respondents had the freedom to withdraw with no consequences.

## REFERENCES.

- 1.Haroun MR, Ahmed MK, Rezk AH, Metwally ES, EzElregal ES. Medicolegal Pattern Of Toxic Deaths In Cairo And Giza Governorates: Retrospective Statistical Study (2009-2013). The Egyptian Journal of Forensic Sciences and Applied Toxicology. 2016 Dec 1;16(2):1-8.
- 2.Kanchan T, Menezes RG. Suicidal poisoning in Southern India: gender differences. Journal of forensic and legal medicine. 2008 Jan 1;15(1):7-14.
- 3.Gharbaoui M, Khelil MB, Harzallah H, Benzarti A, Zhioua M, Hamdoun M. Pattern of suicide by self-poisoning in Northern Tunisia: An eleven-year study (2005–2015). Journal of forensic and legal medicine. 2019 Feb 1;61:1-4.
- 4.Azab SM, Hirshon JM, Hayes BD, El-Setouhy M, Smith GS, Sakr ML, Tawfik H, Klein-Schwartz W. Epidemiology of acute poisoning in children presenting to the poisoning treatment center at Ain Shams University in Cairo, Egypt, 2009–2013. Clinical toxicology. 2016 Jan 2;54(1):20-6.
5. Kandeel F, El-Farouny R. Study of acute poisoning cases in children admitted to menoufia poison control center (MPCC) during the year (2016). Ain Shams Journal of Forensic Medicine and Clinical Toxicology. 2017 Jun 1;29(2):89-99.
- 6.Comeau RA. Understanding The Profiles Of Adolescents Engaged In Intentional Self-Poisoning With Suicidal Intent And The Role Of Primary Care In Early Intervention In Vermont. The University of Vermont and State Agricultural College; 2021.
- 7.Bachmann S. Epidemiology of suicide and the psychiatric perspective. International journal of environmental research and public health. 2018 Jul;15(7):1425.

8.Spiller HA, Ackerman JP, Smith GA, Kistamgari S, Funk AR, McDermott MR, Casavant MJ. Suicide attempts by self-poisoning in the United States among 10–25 year olds from 2000 to 2018: substances used, temporal changes and demographics. *Clinical toxicology*. 2020 Jul 2;58(7):676-87.

9.Geulayov G, Kapur N, Turnbull P, Clements C, Waters K, Ness J, Townsend E, Hawton K. Epidemiology and trends in non-fatal self-harm in three centres in England, 2000–2012: findings from the Multicentre Study of Self-harm in England. *BMJ open*. 2016 Apr 1;6(4):e010538

10.Suresh T, Gupta AK, Tiwari S, Belbase M, Paudyal S. Pattern of suicide attempts in southern Nepal: a multi-centered retrospective study. *Journal of National Medical College*. 2018;3(1):41-7.

11.Esposito C, Affuso G, Amodeo AL, Dragone M, Bacchini D. Bullying victimization: investigating the unique contribution of homophobic bias on adolescent non-suicidal self-injury and the buffering role of school support. *School mental health*. 2021 Jun;13(2):420-35.

12.Morey Y, Mellon D, Dailami N, Verne J, Tapp A. Adolescent self-harm in the community: an update on prevalence using a self-report survey of adolescents aged 13–18 in England. *Journal of Public Health*. 2017 Mar 1;39(1):58-64.

13.Hagan CR, Ribeiro JD, Joiner TE. Present status and future prospects of the interpersonal–psychological theory of suicidal behavior. *The international handbook of suicide prevention*. 2016 Sep 28:206-19.

14.Abd El Salam HF, Badr El Dine FM, Abd El Kerim AM, Hieba RR, Kholeif WS. The applicability of Linehan risk assessment scale: a cross-sectional study from Alexandria poison centre, Egypt, during the COVID-19 pandemic. *SN comprehensive clinical medicine*. 2022 Sep 30;4(1):218.

15.Patton GC, Sawyer SM, Santelli JS, Ross DA, Afifi R, Allen NB, Arora M, Azzopardi P, Baldwin W, Bonell C, Kakuma R. Our future: a Lancet commission on adolescent health and wellbeing. *The Lancet*. 2016 Jun 11;387(10036):2423-78

16.Townsend E, Ness J, Waters K, Kapur N, Turnbull P, Cooper J, Bergen H, Hawton K. Self-harm and life problems: findings from the Multicentre Study of Self-harm in England. *Social psychiatry and psychiatric epidemiology*. 2016 Feb;51:183-92.

17.Walton MT, Hall MT. The effects of employment interventions on addiction treatment outcomes: a review of the literature. *Journal of Social Work Practice in the Addictions*. 2016 Oct 1;16(4):358-84.

18. Judd F, Jackson H, Fraser C, Murray G, Robins G, Komiti A. Understanding suicide in Australian farmers. *Social psychiatry and psychiatric epidemiology*. 2006 Jan;41:1-0.

19.Blasco-Fontecilla H, Baca-Garcia E, Duberstein P, Perez-Rodriguez MM, Dervic K, Saiz-Ruiz J, Courtet P, De Leon J, Oquendo MA. An exploratory study of the relationship between diverse life events and specific personality disorders in a sample of suicide attempters. *Journal of personality disorders*. 2010 Dec;24(6):773-84.

20.Ekinci O, Albayrak Y, Ekinci AE. Temperament and character in euthymic major depressive disorder patients: the effect of previous suicide attempts and psychotic mood episodes. *Psychiatry investigation*. 2012 Jun;9(2):119.

21. Costa Jr PT, McCrae RR. Domains and facets: Hierarchical personality assessment using the Revised NEO Personality Inventory. *Journal of personality assessment*. 1995 Feb 1;64(1):21-50.

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