Journal of Affective Disorders 221 (2017) 198–204

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research paper

Temperament and character profile of college students who have suicidal ideas or have attempted suicide

Kounseok Lee[a,b], Hye-Kyung Lee[c], Seok Hyeon Kim[b,d,*]

[a] Department of Psychiatry, St. Andrew's Hospital, Icheon, Republic of Korea
[b] Institute of Mental Health, Hanyang University, Seoul, Republic of Korea
[c] Department of Nursing, College of Nursing and Health, Kongju National University, Gongju, Republic of Korea
[d] Department of Psychiatry, College of Medicine, Hanyang University, Seoul, Republic of Korea

ARTICLE INFO

Keywords:
Temperament
Character
Suicide
Depression
College students

ABSTRACT

Objective: Suicide is a major cause of death in university students. Personality traits have been suggested as possible risk factors for suicidal behaviors. This study looked at the relationship between the personality dimensions of the Temperament and Character Inventory (TCI) and suicidal behaviors.

Method: A total of 5644 college students took the TCI test and the suicidality module of the M.I.N.I. The students were divided into the suicidal ideation group (n = 302; 5.4%) and the suicide attempt group (n = 301; 5.3%). Each group's TCI dimension and sub-dimension scores were compared with one another. To find out which TCI dimension affects suicide risk when depressed, regression analysis and mediation analysis were conducted.

Results: First, we adjusted for age, sex and depressive mood and compared the TCI scores of the participants based on their suicide risk. After the adjustment, self-directedness decreased in the suicidal ideation group while novelty seeking and persistence increased in the suicide attempt group. It turned out that self-directedness has a partial mediating effect between depressive symptom and suicide risk ($\beta = -0.068$ $P < 0.001$).

Conclusion: We adjusted for depressive mood and it turned out that the suicidal ideation group is affected by character whereas the suicide attempt group is affected by temperament. Among the character dimensions, self-directedness was found to reduce the effect of depressive mood on suicide risk. Therefore, when evaluating suicide risk, assessing character dimensions, especially self-directedness along with depressive mood, a risk factor, will be helpful.

1. Introduction

1.1. Suicide as the main cause of death

According to the Health Statistics 2016 released by the Organisation for Economic Co-operation and Development (OECD), South Korea's age-standardized suicide rates among men and women were 43.3 and 16.8 per 100,000 people respectively. The figure is the highest among the OECD-member countries and far above the OECD average that marks 18.9 for men and 5.5 for women (Organisation for Economic Co-operation and Development, 2016). In addition, the 2015 Cause-of-Death Statistics released by Statistics Korea show that South Korea's leading cause of death among people in their 10 s to 30 s is deliberate self-harm (suicide), highlighting suicide among young adults as one of the major social issues in the country (Statistics Korea, 2016).

In the United States, the American College Health Association conducts an extensive epidemiological survey called the National College Health Assessment on a regular basis. The survey deals with a wide range of health issues including college students' mental health, and the country has been paying huge attention to the prevention, early diagnosis and early intervention of mental illnesses based on the results of the survey (American College Health Association, 2007; Mowbray et al., 2006). According to the 2015 survey, 1.5% of students attempted suicide and 9.8% of students seriously considered suicide at least once in the past year (American College Health Association, 2016). Furthermore, suicide rates have been increasing steadily for the past half century among teenagers and college students aged from 15 to 24, claiming over 1000 lives annually and making suicide the second leading cause of death (Zisook et al., 2012). Therefore, it is imperative that we understand the risk factors for suicide and conduct regular checkups to prevent suicide. A study conducted in Denmark found that when 5700 high-risk participants were given psychosocial treatments at a suicide prevention center, the odds ratios of repeated self-harm and death by suicide decreased significantly to 0.84 (0.77–0.91) and 0.75

* Correspondence to: School of Medicine, Hanyang University, 222-1, Wangsimni-ro, Seongdong-gu, Seoul 04763, Republic of Korea.
E-mail address: shkim1219@hanyang.ac.kr (S.H. Kim).

http://dx.doi.org/10.1016/j.jad.2017.06.025
Received 2 February 2017; Received in revised form 16 May 2017; Accepted 12 June 2017
Available online 13 June 2017
0165-0327/

(0.60–0.94) respectively (Erlangsen et al., 2015).

According to the Epidemiological Survey of Mental Disorders, 15.6% of adults have experienced serious suicidal ideation at least once in their lifetime, and 3.3% and 3.2% of adults have planned and attempted suicide respectively (Seoul National University College of Medicine, 2011). Also, while 27.6% of the population suffered from mental disorders at least once in their lifetime, only 15.3% of them consulted with or received treatment from psychiatrists or other mental health professionals. The remaining 85% reported that they have never sought medical help. Thus, finding risk factors for suicide in non-clinical groups and treating those at risk is of the greatest importance.

1.2. Risk factors for suicide and personality

In clinical settings, it is relatively easy to assess suicide risk by conducting personality tests or measuring indicators such as impulsiveness or level of depression. Yet, those who belong to non-clinical groups do not display impulsiveness or depressive mood as much. Thus, experts have relied on personality tests when trying to find risk factors for suicide in non-clinical groups and assessing their suicide risk. Myers-Briggs Type Indicator (MBTI), the Five Factor Model, and the Temperament and Character Inventory (TCI) are the most commonly used tools in testing people's personality.

A study using Myers-Briggs Type Indicator (MBTI) found that introverted people were more likely to attempt suicide (Janowsky et al., 1997; Lacy, 1990). Studies that looked at the link between the Big Five personality traits and suicide concluded that high levels of neuroticism are associated with high suicide risk (Blüml et al., 2013; Kerby, 2003; Velting, 1999). These tools infer people's genotypic personality traits from their phenotypic personality traits, assuming that genetic and environmental factors affect people's behavior in the same way (Min et al., 2007). However, genetic factors and environmental factors play different roles in shaping people's phenotypic personality traits. Thus, it is necessary to make a distinction between the roles the two factors play.

The Temperament and Character Inventory (TCI) allows us to understand individuals' level of maturity, adjustment and severity of mental illnesses by measuring four dimensions of temperament and three dimensions of character (de la Rie et al., 1998; Ha et al., 2007; Svrakic et al., 2002). Previous studies which used the TCI found that of the four dimensions of temperament, high HA scores are associated with depressive symptoms in both the clinical group and the general population (Kampman and Poutanen, 2011). Studies conducted in clinical settings concluded that character immaturity is associated with depressive mood (Bayon et al., 1996; Svrakic et al., 1993). Research involving young adults found that SD scores are negatively correlated with depressive symptoms (Matsudaira and Kitamura, 2006; Naito et al., 2000; Peirson and Heuchert, 2001; Tanaka et al., 1997). Previous research has shown that patients who have attempted suicide in the past (Calati et al., 2008; Conrad et al., 2009) and patients who have suicidal thoughts (Conrad et al., 2009) display high HA and low SD scores just like depressed patients.

1.3. Limitations of previous research

There have been a number of studies on suicide which used TCI scores, including Calati et al.'s analysis on the actual clinical data of 144 suicide attempters (Calati et al., 2008). Yet, the study was a multicenter analysis that looked at the data of people of varying ages. Also, it was only after the participants received treatment that the study had its participants fill out surveys and the study did not assess participants' depressive mood. Furthermore, while the study was conducted of patients with different mental illnesses, the researchers did not consider the mood status of patients in the mood disorder group which was one of the control groups. Lastly, the study did not fully take into account the age differences of each group.

Previous research that looked at the link between TCI scores and suicide in college students was conducted in Japan back in 2013 (Mitsui et al., 2013). This study had 1421 participants fill out the PHQ-9 and TCI and assessed them in terms of self-harm, but did not pay enough attention to whether they had suicidal thoughts at the time of survey. In addition, there was an extensive study conducted in Switzerland which assessed the personality of suicide attempters (Perroud et al., 2013). The study had the advantage of looking at cohort data collected over a long period of time. Yet, because it was a long-term study, the data it used was inconsistent, resulting from a mixture of the Tridimensional Personality questionnaire and TCI.

1.4. Research objectives

Considering the drawbacks of previous studies, it is necessary that this study adjusts for depressive mood in the general population so that it will not affect the result of the study. After the adjustment, the study needs to assess each participant's suicide risk and figure out which temperament or character puts people at risk of suicide or protects them from it. This study looked at the TCI scores of a group of college students, a group recently recognized as one of the high-risk groups for suicide, and tried to figure out the differences in temperament and character regarding each individual's suicide risk. The participants were divided into the suicidal ideation group and suicide attempt group. After assessing their suicide risk, the study compared each group's temperament and character and analyzed the link between suicide risk and the temperament and character dimensions.

2. Methods

2.1. Participants

This study is based on the surveys conducted by the Kongju National University Health Service Center in 2013 and 2014 as part of the University Education Capacity Enhancement Project. The participants were informed of the fact that the results of the survey would remain confidential and would only be used for research purposes. They were then asked to sign a written permission to let the researchers use the data. The study analyzed the answers given by 5644 students out of a total of 5798, excluding 154 students (146 students that did not take the TCI test and 8 students who did not fill out the answers about depression and suicide). This study was approved by the Research Ethics Committee of Kongju National University.

2.2. Tools

2.2.1. The Temperament and Character Inventory (TCI)

The Temperament and Character Inventory (TCI) is a set of tests developed based upon Cloninger's psychobiological theories of temperament and character (Cloninger et al., 1993). The test has been designed to measure four dimensions of temperament including novelty seeking (NS), harm avoidance (HA), reward dependence (RD), persistence (PS) and three dimensions of character including self-directedness (SD), cooperativeness (C), and self-transcendence (ST) (Hansenne et al., 1999; Tomita et al., 2000). This study used the Temperament and Character Inventory-Revised Short version (TCI-RS) which has been verified for its reliability and validity (Min et al., 2007). The test consists of a total of 140 questionnaires and individuals are asked to rate each item on a five-point scale. Internal reliability values of seven TCI-RS scales were range of 0.812–0.875.

2.2.2. Suicide risk assessment

The Korean version of Mini International Neuropsychiatric Interview (MINI) is a structured interview developed in 1998 to diagnose major Axis I psychiatric disorders of the DSM-IV and International Classification of Disease-10th revision (ICD-10). Previous research