

**The Relationship and Level of Suicide Literacy and Stigma Among Hungarian University
Students**

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Abstract

Background: Suicide stigma and literacy are well-established barriers in the prevention of deaths by suicide. Relatively limited information exists regarding suicide-specific knowledge, beliefs, and attitudes in Hungary.

Aim: To examine levels of suicide literacy and suicide attitudes in a Hungarian sample of university students and to identify a possible correlation between these constructs.

Methods: The sample included 166 Hungarian university students ($M_{age} = 21.9$; $SD_{age} = 3.6$). The data was collected through an anonymous questionnaire. Suicide literacy and attitudes were measured alongside demographics.

Results: Respondents showed the most knowledge concerning treatment and prevention. Lower suicide literacy was found in the domain of signs and symptoms of suicide. Overall, 69% gave correct answers to the literacy of suicide questions. Endorsements that attributed suicide to isolation were significantly the highest. Moreover, suicide literacy showed positive association with the overall scale ($r_s = .23$; $p = .003$), and the stigmatization subscale ($r_s = .19$; $p = .012$) of the SOSS.

Conclusions: The findings highlight the need for further research on this topic, as well as the necessity for the implementation of educational campaigns for suicide prevention. Despite several limitations of this paper, new ideas for suicide research were suggested.

Keywords: suicide, suicide literacy, suicide stigma, Hungary

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The Relationship and Level of Suicide Literacy and Stigma Among Hungarian University Students

The act of taking one's own life is an irreversible decision, marking the culmination of profound despair and distress. Contrary to being a novel byproduct of contemporary society, suicide is the intentional and voluntary termination of one's existence that remains a stark contradiction to the inherent survival instinct ingrained in humanity through evolution. Suicide is a pressing public concern, as it is one of the leading causes of death globally, resulting in an estimated 700,000 deaths each year (World Health Organization [WHO], 2023). The number of attempted suicides is even significantly higher than this number, according to the Centers for Disease Control and Prevention (2023). Suicide and suicide attempts also serve as important indicators of mental health in societies (Bachmann, 2018). Therefore, psychological research must unravel the intricate reasons and circumstances that lead individuals toward suicide to promote the prevention of suicide.

Suicide in Hungary

Hungary has been consistently reported as having one of the highest suicide rates among countries with high suicide rates between 1960 and 2000 (Rihmer et al., 2013). Several studies have attempted to explain the different contributing factors to the phenomenon. A plausible explanation for Hungary's suicide rates points to the high incidence of affective disorders (Rihmer et al., 2013). The Finno-Ugrian Suicide Hypothesis suggests another explanation: that the genetic differences between populations may partially explain the geographic patterns of suicide prevalence, as in Europe, the highest suicide rate maps out a J-shaped belt from multiple countries, with Hungary being one of them (Voracek et al., 2003, 2007). Thus, similarities in genetics among these populations suggest that they may share a common susceptibility to suicidal behavior (Voracek et al., 2003). In contrast to this hypothesis, Lester and Kondrichin (2004) suggested that the distribution of blood types offers a compelling explanation for the association of longitude with suicide rates. This theory was further strengthened by the substantial suicide rates among Hungarian migrants living in the USA (Lester, 1995) and the similarly high suicide rates of Hungarians living in Romania (Voracek et al., 2007). Moreover, research has found the seasonality of suicidal deaths to be an essential variant among countries in Eastern Europe (Christodoulou et al., 2012). In Hungary, a seasonal peak is reported during the early summer (Sebestyen et al., 2010;

Zonda, 2005). Furthermore, the risk of suicide was found to be higher in males than in females, as well as among non-married individuals compared to those in marriage, while additionally, greater age and lower education raise the risk of suicide (Balint et al., 2016; Lantos et al., 2021). Neither politics nor economics can be solely blamed for Hungary's suicide rates. Some countries with different political climates, including Denmark, Finland, and Sweden, have landed among the top ten most concerning suicide mortality rates, besides Hungary, which shared a similar political fate with Poland, Bulgaria, Romania, and former Yugoslavia, all ranked in the lower third suicides (Rihmer et al., 2013).

However, significantly decreasing annual trends in suicide rates were found in recent studies: the yearly suicide mortality rates halved in Hungary between 1995 and 2017, with a similarly observed trend in both genders (Lantos et al., 2021). Although there has been a 46% decrease in suicide rates in Hungary in the last two decades, which counts as one of the greatest decreases in the world, the rate today remains high even with the declination of the decreasing trend, especially since 2007 (Rihmer et al., 2013, 2022). Research found that the use of antidepressants and the improvement of healthcare services played a significant factor in the decline in suicide rates (Rihmer et al., 2013; Sebestyen et al., 2010). Despite the current suicide rates, continuous research is crucial for further prevention, especially since this study focuses on an area of suicide research, not yet thoroughly explored in Hungary.

Risk Factors of Suicide

Thus, we can conclude that suicide cannot be attributed to one component, rather it is a multifaceted behavior influenced by biological and psychosocial factors. Recent research showed that the frequency of suicide mortality across all the continents decreased in the last 20 years (Ilic & Ilic, 2022), while in contradiction, Jafari and colleagues (2023) stated that there was an uptick in numbers over the past 50 years. Gathering accurate data is challenging, especially due to the sensitivity of informational access. Some countries even tend to underreport cases (Im et al., 2016). Detecting accurate risk factors is another challenge in suicide research, as various risk factors contribute to suicide that are divided into proximate and distal causes (Turecki et al., 2019).

Proximal factors include mental illness, psychosocial crises, or even exposure to suicidal behavior (Hawton & van Heeringen, 2009). A prior suicide attempt counts as the most critical risk factor for suicide (Appleby et al., 1999; Christiansen & Jensen, 2007), and even though non-fatal

suicidal thoughts and behaviors are viewed as frequent occurrences (Nock et al., 2008), suicidal ideation does not lead to suicide attempts in the vast majority of the cases (Klonsky et al., 2021), but it can still be regarded as one of the strongest predictors for attempted suicide (ten Have et al., 2009). Besides, depressive symptoms were found to be significant risk factors for suicidal attitudes and behaviors (Fiedorowicz et al., 2019). 90% of suicides had a history of mental illness, mostly depression (Aldalaykah et al., 2020; Cash & Bridge, 2009); however, this percentage could be exaggerated due to selection bias (Shahtahmasebi, 2013). Approximately 80% of those who commit suicide display warning signs and symptoms beforehand, such as (a) talking about suicide, (b) problems with eating or sleeping, (c) experiencing significant changes in behavior, (d) withdrawing from social activities or friends, (e) giving away valuable possessions, (f) having previously attempted suicide, (g) taking unnecessary risks, (h) being preoccupied with thoughts of death and dying, (i) increasing the use of alcohol or drugs, and (j) losing interest in personal appearance, according to Fisher (2011). Another study showed that even suicide attempters believed that suicide happened with a previous warning (Hjelmeland & Knizek, 2004). Nevertheless, improving the ability to recognize depression and evaluate suicide risk is very important for suicide prevention (Mann et al., 2005).

Stigmatization of Suicide

The phenomenon of suicide involves a complex interaction between society and individuals (Kalmár, 2013). Social stigma is still embedded in society for receiving treatment for mental disorders (Ahmedani, 2011), and society needs more openness around the topic of suicide (Hjelmeland & Knizek, 2004), as in many cultures, suicide is still seen as taboo and heavily stigmatized, with some nations criminalizing it even nowadays (Eislers & Kasten, 2022). This phenomenon heavily impacts suicide, as stigma is known to make it difficult for people to get medical attention, participate in therapy, and follow through with recommended health care (Stangl et al., 2019).

Stigma was defined as the negative attitude individuals hold toward others with a particular disorder (Calear et al., 2014; Griffiths et al., 2008), and it covers a broad range of medical disorders. Personal stigma, which focuses on people with personal experience of mental illness, tends to be categorized into three forms: perceived, experienced, or self-stigma, explained by Brohan et al. (2010). Perceived stigma refers to an individual's fear or perception of a potentially

stigmatized health condition in the community or society, according to van Brakel et al. (2006). Experienced stigma was elucidated as discrimination as well as restrictions on some parts of the person's life who is stigmatized (van Brakel et al., 2006). Corrigan and Watson (2002) described self-stigma as internalized public stigma, in which case the general population stigmatizes mental illness, and as a consequence, individuals' (and/or their families) internalization results in feelings of shame, blame, hopelessness, guilt, and fear of the discrimination of the mental illness, according to the findings of Corrigan (1998). Direct experience with depression or suicide strongly affirms a feeling of self-stigma (Scocco et al., 2012), while internalization is similarly observed among family members of suicide attempters (Cvinar, 2005; Sveen & Walby, 2008). Those who have a history of attempted suicide tend to feel ashamed and embarrassed and often try to hide their behavior from others (Scocco et al., 2012; Wicklander et al., 2003; Wolf-Wassermann, 1985).

Stigma is associated with mental illness, and it can prevent suicidal individuals from seeking help (WHO, 2021), as suicide was found to have a reciprocal relationship that exists between stigma and suicide. Carpiello and Pinna stated that suicide may lead to a stigmatizing attitude, but stigma toward mental disorders may be a risk factor for suicidality (2017). Research found a modest, however positive, effect of antistigma interventions in the short term on increasing knowledge and reducing stigmatizing attitudes toward suicide (Mehta et al., 2015; Thornicroft et al., 2015). Stigma may result in serious consequences for people who have attempted suicide or who have been bereaved by suicide (Carpiello & Pinna, 2017). Stigma was also found to serve as a motivational moderator for suicidality following negative life events, manifesting in reluctance to seek help, thwarted belongingness, or perceived burdensomeness (Pitman et al., 2014). In a study, participants with a history of previous suicide attempts reported that they were more likely to experience stigma from a close family member or even health-care professionals (Frey et al., 2016). While suicide attempters are technically survivors, the term "survivor of suicide" has typically been associated with the family and friends of those who completed suicide. This connects to the possibility that individuals who have a history of attempted suicide may experience heightened stigma, as they are often lacking access to survivor-support groups compared to those that friends and families of completed suicides avail themselves of (Sudak et al., 2008).

Literacy of Suicide

Public knowledge of the causes, risk factors, signs, symptoms, and treatments of mental disorders was defined as mental health literacy by Jorm (2000). A subset of mental health literacy includes suicide literacy (Batterham et al., 2013a; Jorm, 2000). Health literacy influences behaviors and actions (Sun et al., 2013). Many people do not seek help due to the stigma and poor mental health literacy related to suicide or mental illness (Calear et al., 2021b; Clement et al., 2014). Consequently, individuals with higher levels of stigma toward mental illness or suicide may be at higher risk of having another suicidal attempt (Carpiniello & Pinna, 2017). Moreover, both mental health literacy and the stigma of mental illness are barriers to addressing mental health issues (Jorm, 2000), as low awareness of suicide can also impede access to specialized mental health services (Calear et al., 2014). Batterham and colleagues (2013b) found that lower levels of exposure to suicide, older age, the male gender, and lower education were all associated with lower suicide knowledge. So, it is crucial to assess the level of stigma toward suicide, measure suicide literacy levels within communities, and find solutions to decrease the rate of stigma and improve awareness and literacy levels about suicide (Aldalaykeh et al., 2020; Cryer et al., 2018; Oexle et al., 2018). To measure stigmatizing attitudes toward suicide, it is highly recommended to study it in parallel with the literacy of suicide (Aldalaykeh et al., 2020).

Recent Studies in Suicide Literacy and Suicide Stigma

Two scales were developed in recent years for the measurement of these phenomena. The Literacy of Suicide Scale (LOSS) was created by Calear and colleagues (2021a) to assess knowledge about suicidality. The Stigma of Suicide (SOSS), developed by Batterham et al. (2013a, 2013b), consists of a list of 58 descriptors of a person who committed suicide. The developers organized three factors (stigmatization, isolation, and glorification) to measure attitudes toward suicide. Both scales have displayed satisfactory reliability and convergent validity across several studies (Batterham et al., 2013a; Jarafi et al., 2023; Williams et al., 2018), for instance, in a sample of adults bereaved by suicide and suicide attempt survivors (Kheibari et al., 2022), and were translated to several languages, such as Arabic (Aldalaykeh et al., 2020), Bengali (Arafat et al., 2022), Chinese (Han et al., 2017), Malay (Phoa et al., 2022), Persian (Jafari et al., 2023), and Turkish (Öztürk et al., 2017). Among adolescents and early adults in Hong Kong, the SOSS scale resulted in a four-factor structure (Fong et al., 2020). The translation of the SOSS and LOSS to

Hungarian has been completed recently, and both scales are under the process of validation (Flach et al., 2024).

In an Arab sample with low suicide literacy levels, both stigmatization and glorification were significantly and negatively correlated with suicide stigma, while no correlation was found between the isolation subscale of the SOSS and the LOSS (Al-Shannaq & Aldalaykeh, 2023). However, a German study reported that suicide literacy showed negative associations with all three dimensions of the SOSS (Ludwig et al., 2022). They also found a relatively high level of stigma towards suicidal people in this Arabian sample, which was somewhat similar to research conducted in Turkey (Öztürk et al., 2017), China (Han et al., 2017), and Qatar (Zolezzi et al., 2017). This finding was opposite to the stigma level in Australia, where lower suicide stigma levels were reported among the public community and university students (Batterham et al., 2013a, 2013b).

The WHO (2019) has identified suicide as the fourth most common cause of death in young adults, with reports indicating that around 131,000 suicides occur annually among the groups of 15 and 24 years old. A study focused on the mental health of Hungarian university students showed a consistent estimated prevalence of any depressive or anxiety disorder for undergraduates (15.6%) and graduate students (13.0%), as calculated by Eisenberg and colleagues (2007) (Lisznay et al., 2014). Analysis showed that severe depression, especially major depressive disorder, was a strong predictor of suicidal death (Hawton et al., 2013; Hegerl, 2016; Li et al., 2022). Young adults are among the risk groups for suicidal behavior, and relatively little is known about stigma as it relates to suicide and knowledge about suicidality in this age group.

Research Aims and Hypothesis

This study aims to utilize scales measuring suicide literacy and stigma among Hungarian university students, while seeking to identify potential associations between these constructs. We hypothesized that there is a significant, negative correlation between suicide literacy and attitudes toward suicide, suggesting that higher levels of literacy would correspond to lower levels of stigmatized attitudes toward suicide. Moreover, we predicted that students with higher suicide literacy would be less likely to stigmatize suicide, less likely to attribute it to isolation, and less likely to glorify suicide, as other studies showed these patterns (Al-Shannaq and Aldalaykeh, 2023; Batterham et al., 2013b).

Method

Participants

The study used a cross-sectional correlational design, with participants selected through a convenience sampling method. Anonymous responses were gathered from individuals across Hungarian universities. Written informed consent was obtained from all participants who needed to confirm that they were over 18 years old and agreed to participate. Initially, the questionnaire was completed by 178 respondents. Subsequently, 11 (6.2%) datasets were excluded from the analysis as these individuals were not university students. To maintain the integrity of the data, one participant, aged 56 years old, was further excluded from the analysis. The decision was made due to the identification of the individual as an outlier. This final selection resulted in 166 participants (93.3% of all respondents), a sample of the Hungarian university student population. Table 1 contains demographic data regarding gender, age, educational level, field of study, and answers to personal experience with suicide of the participants.

Table 1

Demographic and Clinical Characteristics of Hungarian University Students (N = 166)

Variable	Category	Frequency (%)
Gender	Female	121 (72.9)
	Male	42 (25.3)
	Other	3 (1.8)
Age	18-20s	30 (18.1)
	20s	130 (78.3)
	30s	4 (2.4)
	40s	2 (1.2)
Educational level	1 st year (BA/BSC)	46 (27.7)
	2 nd year	39 (23.5)
	3 rd year	41 (24.7)
	4 th year	15 (9.0)
	1 st year (MA/MSc)	10 (6.0)
	2 nd year	15 (9.0)

Field of study	Psychology	72 (43.4)
	Medicine	48 (28.9)
	Other	46 (27.3)
Student history of suicide attempt	Yes	16 (9.6)
	No	150 (90.4)
Family history of suicide attempt	Yes	57 (34.3)
	No	109 (65.7)

Note. The table presents the frequency and percentages of responses to demographic questions, including gender, age, educational level, field of study, and answers to the questions concerning their exposure to suicide.

Measures

Sociodemographic Questions

We asked standard demographic questions. Moreover, we focused on questions regarding the respondents' enrolment status at universities, as well as their field and year of study if so. Additionally, there were two questions focused on whether the participants were exposed to suicide or not: "Have you ever attempted suicide?" and "Have any of your close relatives (e.g., a family member or friend) ever attempted suicide?".

Literacy of Suicide Scale–Short Form (LOSS-SF)

The Literacy of Suicide Scale (LOSS) is a scale designed to assess knowledge in four areas of suicide: signs and symptoms (three items), causes/triggers of suicide (three items), risk factors (four items), and treatment/prevention (two items). It was created and tested by Căleară et al. (2021a). The short version of the scale consists of 12 true or false statements, each of which can have one of the following three responses: *true*, *I don't know*, or *false*. For every question, a point is assigned to each answer; for the wrong answer and *I don't know*, the responder gets a zero score, while for each correct answer, one point is assigned. The total score is calculated by summing the correct responses and converting it to a percentage, resulting in a range of scores between 0% and 100%. Item response theory was utilized to evaluate the psychometric properties of this scale instead of using classical testing in the original study (Căleară et al., 2021a). The scale was declared to be unidimensional and displayed adequate internal reliability during the Hungarian translation (Cronbach's $\alpha = .72$, McDonald's $\omega = .72$) (Flach et al., 2024).

Stigma of Suicide Scale–Long Form (SOSS-LF)

This 58-item scale was developed by Batterham and colleagues (2013a, 2013b) to measure attitudes toward suicide. The instrument contains descriptors of people who commit suicide, and participants rate their level of agreement with each descriptor using a five-point Likert scale, ranging from *strongly disagree* (1) to *strongly agree* (5). The scale includes three subscales: stigmatizing attitude toward suicide (32 items), attribution of isolation or depression to suicide (15 items), and normalizing or glorifying suicide (11 items). Each subscale score is calculated by obtaining the mean of responses to the items representing that subscale, yielding scores in the range between one and five, with a mean score higher than three indicating agreement with the targeted concept. For example, higher scores on the stigma subscale mean higher agreement that the person who commits suicide is, for example, “Weak,” “Selfish,” or “Pathetic.”

Procedure

The questionnaire took approximately 20–25 minutes to fill out. The target population was reached by sharing the questionnaire’s link on different social media platforms. Participants had to give consent for their data to be used in the research. We collected the answers through a Google Form. The questions asked the participants about general demographic information. We included questionnaires for measuring the following phenomena: literacy of suicide and attitudes toward suicide. Before and after the survey, details were provided regarding help-seeking and counseling services, such as S.O.S. lines, free phone numbers available 24/7, and websites focusing on suicide prevention and possible helping topics such as how to deal with suicidal thoughts. Email addresses and contact information were provided by both the study’s supervisor and the researcher. The questionnaire was open for responses from the 22nd of November 2023, until the 20th of December 2023. The United Ethical Review Committee for Research in Psychology (EPKEB) has approved the research proposal (reference number: 2023–132).

Statistical Analysis

For the statistical analysis, we used Jamovi (The Jamovi Project, 2023). Before starting the analysis, the responses were examined for missing values and outliers. To assess whether the data is normally distributed, we examined the variables with the Shapiro-Wilk test (Shapiro & Wilk, 1965), as well as checked the skewness and kurtosis of the values (Jarque & Bera, 1987).

Furthermore, we checked the internal consistency of the scales with reliability analysis, particularly for Cronbach's alpha (Cronbach, 1951) and McDonald's omega (Widaman, 1987) scores. We measured the number of relationships between the LOSS-SF and SOSS-LF, as well as all three of its subscales (glorification, isolation, and stigmatization), and used the Spearman correlation coefficient. In statistical decisions, a level of $p < .05$ was accepted as a significant difference.

Results

The Level of Stigma and Suicide Literacy

Table 2 shows that students concurred that isolation contributes to suicide, as the participants scored significantly higher than the set-value of the subscale. Students disagreed that suicide should be normalized or glorified, as they did not score higher than the set-value of the glorification subscale. Finally, students did not agree on the stigmatizing of suicidal individuals, as they scored lower than the set-value of the stigmatization subscale.

Table 2

Attributions Toward Suicidal People (N = 166)

	Glorification	Isolation	Stigmatization
Mean (SD)	2.1 (0.6)	3.8 (0.6)	1.9 (0.6)
Set-value	3.0	3.0	3.0
Wilcoxon W	380**	13010**	160**

Note. This table demonstrates the participants' attributions toward suicidal people on the three subscales of the SOSS-SF. The headings include the three subscales, while the table shows the mean value and standard deviations of the scales, as well as the set-value used for the Wilcoxon signed ranked test to examine potential differences for the endorsements.

** $p < .01$.

Responses to SOSS-LF are shown in Appendix A. One item of the glorification subscale, "Noble," was endorsed by 0.0% of the sample, while the items ranged to 48.2% for an item measuring the understandability of suicide. "Brave" and "Committed" followed by 27.1% of endorsement, while the majority and the remaining 8 items ranged from 0.0% to 13.8%. Four items

of the isolation subscale (“Broken,” “In pain,” “Lost,” and “Unhappy”) were endorsed by more than 92.6% of the students ($n = 154$); 94.6%, 93.4%, 92.7%, and 90.3%, in respective order. The fifth and sixth highest items were endorsed by 80.2% (“Trapped” and “Lonely”), while the minimum endorsement of an item was 16.2% (“Miserable”) in the isolation subscale. As for the stigmatization subscale, the 32 items’ endorsement ranged from 0.0% (“Vengeful”) to 86.7% (“Sad”). From the second highest value, 44.6% for “Hurtful,” the endorsement rate further drops to the highest of 28.9% for the remaining 30 items (93.8%).

The Scores of the Literacy of Suicide Scale

The mean score of the LOSS-SF was 8.3 out of 12 (69%; $SD = 1.4$). Notably, a significant majority of students (97%) demonstrated accurate knowledge when responding to statements such as “People who have thought about suicide should not tell others about it” and “Very few people have thought about suicide,” as illustrated in Appendix B. The response rate was around 90% correct for two other statements: “Seeing a psychiatrist or psychologist can help prevent someone from suicide” (92.2%) and “Talking about suicide always increases the risk of suicide” (89.2%). The two least accurately answered questions were the following: “Most people who suicide are psychotic” (36.7%) and “People who talk about suicide can change their mind quickly” (28.9%). The overall percentages of the correct answers were calculated for the four components of the LOSS-SF: 95.3% for treatment/prevention, 84.1% for causes and triggers, 60.7% for risk factors, and 50.4% for signs and symptoms of suicide.

Reliability Analysis

Reliability was satisfactory for the resulting stigma (Cronbach’s $\alpha = .94$), isolation/depression (Cronbach’s $\alpha = .84$), and glorification/normalization scales (Cronbach’s $\alpha = .82$). The normality of the LOSS-SF was violated ($W = .94$, $p < .001$), as well as in all the three subscales of the SOSS-LF: stigmatization ($W = .95$, $p < .001$), glorification ($W = .97$, $p = .003$), and isolation ($W = .97$, $p < .001$).

Correlation Between Suicide Literacy and Suicide Stigma

There was a positive, significant correlation between the LOSS-SF and SOSS-LF ($r_s = .23$, $p = .003$). There was a positive, significant correlation between LOSS-SF and the stigmatization subscale of the SOSS ($r_s = .19$, $p = .012$). There was a negative, significant correlation between

the stigmatization and the glorification subscale of the SOSS ($r_s = -.20, p = .008$), as well as between stigmatization and isolation subscales ($r_s = .30, p < .001$). There were not any significant correlations between glorification and isolation subscales ($r_s = -.08, p = .300$), glorification subscale and LOSS-SF ($r_s = .10, p = .195$), and between isolation subscale and LOSS-SF ($r_s = .08, p = .311$).

Discussion

We conducted this study to measure the level of suicide literacy and suicide stigma among a sample of Hungarian universities. The purpose of this paper was to ultimately promote suicide research by utilizing two scales developed to measure attitudes towards suicide (Batterham et al., 2013a, 2013b) and knowledge regarding suicide (Calear et al., 2021a), recently translated to Hungarian (Flach et al., 2024), and to measure these factors in a country where the phenomenon is yet to be investigated in length.

The college students in the current study tended to endorse attitudes that attributed suicide more strongly to isolation and depression than attitudes stigmatizing or glorifying suicide. While the endorsement of the glorification items was generally low, it is concerning that almost half of the participants agreed on the understandability of suicide. Another concerning fact was that 9.6% of the participants responded that they had a previous suicide attempt. This high rate could have resulted in the close to the mean agreement of the understandability of suicide, as those people who had a history of previous attempted suicide, might be more understanding toward others with suicidal intent, however, future research is needed to draw the correct conclusion. Another possible explanation could be the ambiguity in the meaning of the word “understandability”. Could participants mean this understanding as to suicide as a whole phenomenon from a scientific viewpoint? Or is it more of an empathic response, that a person who commits suicide can be understood?

A relatively high endorsement was attributed to stereotypes, such as that a suicidal person is lonely or trapped. Participants disagreed with the notion that individuals who die by suicide are “useless”, “pathetic”, or “immoral”. There was a tendency recognizable in the answers: the more negative the descriptors were, such as “barbaric” and “useless”, the lower got endorsement, while attributes as “unfair” and “strange” received higher levels of agreement. This can be due to social

desirability as well as to such differences that maybe university students are less likely to label people with stronger discriminatory words. Continuous research is needed to further explore the depth of different stigmatization of suicide among Hungarians.

In general, the endorsement of the stigmatizing items in the current sample was lower, the endorsement of the isolation/depression items was higher, and the endorsement of the glorification/normalization item was higher than in a previously conducted study (Calear et al., 2021b). Calear and colleagues' study (2021b) suggested that low literacy levels can be one of the key reasons why young people conclude that suicide may be a result of isolation and depression. The current paper questions this view as the college students responded with a high success rate to the statements regarding suicide literacy. On average, participants in the current study responded to 69% of the suicide literacy items correctly. This rate is higher than the median rate of correct responses calculated in multiple studies (63%) that used the LOSS-LF to assess suicide literacy in adult samples (Calear et al., 2021b). Results indicate that the suicide literacy level in the sample of Hungarian university students was high in terms of treatment and prevention of suicide, as participants gave the highest and most correct responses to items related to this sub knowledge of suicide (93.5%), as well as identifying causes and triggers of suicide. One of the possible explanations could be that much of the suicide-related education focuses on the awareness and prevention of suicide, rather than emphasizing factual information, such as that more men commit suicide than women. The respondents showed the most difficulty with the literacy items related to risk factors and the signs and symptoms of suicide. It appears that suicide literacy can vary among population and cultures. For instance, among a sample of Turkish nurses, the highest correct response rate was observed regarding risk factors (46%) and the causes/nature of suicide (34%) (Karakaya et al., 2022), while a German sample showed similarities to the Hungarian sample in terms of the correct responses related to treatment and prevention (>80%) (Ludwig et al., 2022).

Overall, compared to the results of the German population (58%) (Ludwig et al., 2022) or to studies conducted among nurses and doctors (41%, 50%) (Karakaya et al., 2022; Shah et al., 2022), Hungarian college students demonstrated higher level of suicide literacy. Despite these results, the continuous goal of increasing mental health literacy among every population is crucial, as it is fundamental for the identification of signs and assessment of risk levels, and ultimately for

taking precautions and possibly intervening of one's suicidal plans (Bulechek et al., 2012, as cited in Karakaya et al., 2022).

Even though many studies showed confident correlation between suicide literacy and suicide stigma, this study showed an opposing direction between the constructs compared to my previous expectations. Suicide literacy was positively associated with suicide stigma, and students with high suicide literacy were more likely to stigmatize suicide. There was no significant relationship between suicide literacy and either glorification or isolation, thus students with higher suicide literacy were not less likely to contribute suicide to isolation and were not less likely to glorify suicide.

One possible explanation could be that as our knowledge and understanding of suicide deepens, we become more aware of the complexity of the phenomenon. Consequently, we may attempt to simplify and explain it, which can lead to the perpetuation of stigma. Although a suicidal person may not necessarily be experiencing depression, our attributions often tend towards assumptions such as loneliness or sadness. These attributions come almost naturally to mind, as evidenced by this sample, where Hungarian students significantly attributed suicide to isolation and depression. Another rationale could be that stigma can be profoundly rooted in cultural and societal norms. Even if individuals possess exceptional knowledge about suicide, stereotypes may still overwhelm conscious literacy. The complexity of attitudes toward suicide may provide a plausible explanation for why glorification and isolation did not show correlation with suicide literacy. Enhanced knowledge concerning the risk factors, signs, symptoms, and treatments of suicide could heighten sensitivity to stigma without directly impacting attitudes associated with glorification or isolation. Moreover, the exact content of suicide education may have influenced attitudes differentially. For example, if educational interventions primarily focused on addressing misconceptions and negative stereotypes surrounding suicide, it would be logical to expect a more pronounced impact on stigmatization compared to attitudes related to glorification or isolation.

Despite many studies showing confident correlation between these constructs (Al-Shannaq and Aldalaykeh, 2023; Batterham et al., 2013b), a comment made by Ludwig et al. (2022) questioned interesting possible limitations of the SOSS. Even though the SOSS is among the most frequently used measurement for public suicide stigma, which achieved good psychometric qualities and consistency across studies (Nicholas et al., 2023), only the subscale of stigmatization

measures truly negative, discriminatory descriptors toward suicidal persons, such as that a person who commits suicide is shameful or an embarrassment. Furthermore, while the items of the isolation subscale may only represent an ordinary feeling of isolation, loneliness with descriptors, for example that a person who commits suicide is sad or depressed, and glorification especially contains positive words, for instance that a person who commits suicide is brave or noble (Batterham et al., 2013a). The next paragraphs may offer further possible reasons to the results of the correlations between suicide stigma and suicide literacy.

Limitations of the Study

The collected sample may not be adequate for the proper validation of the values, as it is not representative of the Hungarian university population, as its most prominent field of study was psychology and medicine, thus inferences may only be drawn to this specific sampled group, not allowing interpretation for generalization. Cluster analysis would be recommended as a future project with this database. Due to the design, causality cannot be established between the variables. For instance, those who are more aware of suicide reports are more likely to be exposed to the topic, thus obtaining a higher level of literacy (Hawton and Williams, 2002). Income, parents' educational attainment, religion, living conditions, and the availability of the internet and social media, among other influencing factors, may have had an impact on the participants' suicide literacy and stigma level, despite not being measured in this study. The survey may not reach those with lower socioeconomic status. However, the paper may be helpful for the further conduct of research regarding these phenomena.

Implications

Raising levels of suicide and mental health literacy could have a positive impact on altering psychological help-seeking attitudes and lowering the level of stigmatization (Al-Shannaq and Aldalaykeh, 2023). Intervention studies are required to determine whether suicide literacy and attitudes can cause changes in the community, whether these changes lead to more help-seeking behavior, and exactly which characteristics of an intervention are most likely to affect changes in individuals (Batterham et al., 2013a; Rogers et al., 2018). Future longitudinal and experimental investigations may enable us to establish causal links and pinpoint the risk factors connected to suicide stigma and literacy, thus ultimately contributing to the improvement of suicide prevention.

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Appendix A
Responses of the Items of the Stigma of Suicide Scale (N = 166)

Item	Factor	Agree/Strongly agree %	Mean (SD)
Sad	Stigmatization	86.7	4.4 (0.9)
Reckless	Stigmatization	28.9	2.8 (1.2)
Selfish	Stigmatization	28.9	2.6 (1.3)
Hurtful	Stigmatization	44.6	3.1 (1.4)
Unfair	Stigmatization	13.8	2.2 (1.1)
Unnatural	Stigmatization	18.7	2.2 (1.3)
Attention-seeking	Stigmatization	15.7	2.3 (1.1)
Barbaric	Stigmatization	1.8	1.3 (0.7)
Immoral	Stigmatization	1.8	1.4 (0.8)
Unforgivable	Stigmatization	1.8	1.3 (0.6)
Irresponsible	Stigmatization	23.5	2.6 (1.2)
Punishing others	Stigmatization	20.5	2.2 (1.3)
Ignorant	Stigmatization	9.6	2.0 (1.0)
An embarrassment	Stigmatization	3.6	1.5 (0.8)
Evil	Stigmatization	3.6	1.4 (0.8)
Pathetic	Stigmatization	3.6	1.5 (0.8)
Shallow	Stigmatization	3.6	1.5 (0.9)
Violent	Stigmatization	3.6	1.5 (0.8)
Cruel	Stigmatization	11.4	1.9 (1.1)
Lazy	Stigmatization	11.4	1.5 (0.8)
Strange	Stigmatization	11.4	2.0 (1.2)
Arrogant	Stigmatization	2.4	1.6 (0.8)
Shameful	Stigmatization	2.4	1.4 (0.8)
Useless	Stigmatization	2.4	1.4 (0.7)
Failures	Stigmatization	27.1	2.3 (1.4)
A burden	Stigmatization	16.2	2.2 (1.2)

Senseless	Stigmatization	10.2	1.8 (1.1)
Weak	Stigmatization	18.1	2.3 (1.2)
Stupid	Stigmatization	4.2	1.5 (1.0)
Cowardly	Stigmatization	15.0	2.2 (1.2)
Unjustifiable	Stigmatization	15.0	2.1 (1.3)
Vengeful	Stigmatization	0.0	1.4 (0.6)
Lost	Isolation	92.7	4.5 (0.7)
Broken	Isolation	94.6	4.5 (0.7)
Disconnected	Isolation	54.8	3.6 (1.1)
In pain	Isolation	93.4	4.6 (0.7)
Alienated	Isolation	67.6	3.6 (1.1)
Unhappy	Isolation	90.3	4.5 (0.7)
Disturbed	Isolation	64.5	3.7 (1.2)
Lonely	Isolation	80.2	4.1 (1.0)
Trapped	Isolation	80.2	4.1 (1.0)
Hurt	Isolation	80.1	4.2 (1.0)
Cut-off	Isolation	49.4	3.4 (1.1)
Isolated	Isolation	63.2	3.7 (1.1)
Depressed	Isolation	71.1	3.9 (0.8)
Withdrawn	Isolation	37.3	3.0 (1.3)
Miserable	Isolation	16.2	2.3 (1.2)
Strong	Glorification	13.8	2.2 (1.1)
Dedicated	Glorification	10.8	2.1 (1.1)
Understandable	Glorification	48.2	3.3 (1.3)
Fearless	Glorification	8.4	1.9 (1.1)
Rational	Glorification	2.4	1.7 (0.8)
Brave	Glorification	27.1	2.6 (1.3)
Committed	Glorification	27.1	2.8 (1.2)
Powerful	Glorification	7.2	1.8 (1.0)
Realistic	Glorification	7.2	1.8 (1.0)
Motivated	Glorification	6.0	1.8 (1.0)

Noble	Glorification	0.0	1.5 (0.7)
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Note. The table displays all 58 items of the SOSS-LF, listing the percentage of participants' agreement with the statements, as well as the corresponding mean scores. Standard deviations are shown in parentheses.

Appendix B

Correct Responses to Items From the Literacy of Suicide Scale (N = 166)

Item	Factor	Percentage correct
1. If assessed by a psychiatrist, everyone who kills themselves would be diagnosed as depressed (F)	Causes/triggers	84.9%
2. Seeing a psychiatrist or psychologist can help prevent someone from suicide (T)	Treatment/prevention	92.2%
3. Most people who suicide are psychotic (F)	Risk factors	36.7%
4. There is a strong relationship between alcoholism and suicide (T)	Risk factors	59.6%
5. People who talk about suicide rarely kill themselves (F)	Signs and symptoms	28.9%
6. People who want to attempt suicide can change their mind quickly (T)	Signs and symptoms	44.0%
7. Talking about suicide always increases the risk of suicide (F)	Causes/triggers	89.2%
8. Not all people who attempt suicide plan their attempt in advance (T)	Signs and symptoms	70.5%
9. People who have thoughts about suicide should not tell others about it (F)	Treatment/prevention	97.6%
10. Very few people have thoughts about suicide (F)	Risk factors	97.6%
11. Men are more likely to die by suicide than women (T)	Risk factors	48.8%
12. A suicidal person will always be suicidal and entertain thoughts of suicide (F)	Causes/triggers	78.3%

Note. The table presents the items of the LOSS-SF with the accurate percentage assigned to each statement by the respondents. Next to each statement, “T” and “F” indicate whether that declaration is true or false.