Relationships between suicide intention, cognitive styles, and decision making in attempted suicide

Suhruth Reddy[a], Dushad Ram[b]

[a]Department of Psychiatry, JSS Academy of Higher Education and Research, Mysuru, Karnataka, India, [b]Department of Medicine (Psychiatry), College of Medicine, Shaqra University, Shaqra, Saudi Arabia

Correspondence to Dushad Ram, Department of Medicine (Psychiatry), College of Medicine, Shaqra University, Shaqra, Zip Code: 15526, Saudi Arabia.
Tel: +966 897 9225;
e-mail: dushadram@gmail.com

Received: 9 July 2021
Revised: 30 July 2021
Accepted: 31 August 2021
Published: 24 June 2022

Egyptian Journal of Psychiatry 2022, 43:80–86

Background
This study suggests a link of suicidal intention with cognitive styles and decision making. There is a paucity of studies examining these relationships from a multidimensional perspective.
Aims
This study aimed to examine the relationships of suicide intention, cognitive styles, and decision making in serious suicide attempts.
Participants and methods
One hundred individuals with serious suicide attempts were assessed in this hospital-based cross-sectional study using sociodemographic and clinical questionnaires, the Mini-International Neuropsychiatric Interview-Plus (MINI-Plus), the Pierce Suicidal Intention Scale (PSI), the Melbourne Decision Making Questionnaire, and the Cognitive Style Inventory.
Results
The common dimensions of cognitive styles were systematic, undifferentiated, and split. The PSI score was statistically significantly predicted by the vigilance (positive) and buck-passing scores in a linear regression analysis (negative). There were no significant relationships between the PSI score and cognitive styles. There was a statistically significant group difference in the Melbourne Decision Making Questionnaire vigilance score by systematic, undifferentiated, and split cognitive style dimensions in the Mann–Whitney *U*-test.
Conclusion
Systematic, undifferentiated, and split cognitive styles are prevalent in serious suicide attempts. Rational decision making may be proportionate to the severity of suicide intent, but is constrained by the scarcity and static nature of cognitive style in attempted suicide.

Keywords:
attempted suicide, cognitive styles, decision-making, suicide intention

Egypt J Psychiatr 43:80–86

1110-1105

Introduction

Every year, around 20 million people attempt suicide, and 1 million die (World Health Organization 2020). The national rates are at 11.2 per 100 000 (Singh *et al.*, 2016). Many demographic and clinical factors are linked to attempted suicide. An attempt has been made to study the underlying psychological factors such as mental pain, aggression, and communication difficulties (Gvion and Levi-Belz, 2018).

Decision making refers to the act of evaluating several alternatives and choosing the one most likely to achieve one or more goals and follow normative standards for rational decision making. It is determined by multiple psychological processes and factors (Sheftall *et al.*, 2015; Tyburski, 2017). A recent meta-analysis reported alteration in decision making among suicide attempts (Perrain *et al.*, 2021) and this is mediated by emotional dysfunction (Jollant *et al.*, 2005), escape decision making (Millner *et al.*, 2019), framing effect of past negative experiences (Szanto *et al.*, 2015), psychiatric morbidities (Richard-Devantoy *et al.*, 2016; Deisenhammer *et al.*, 2018; Ponsoni *et al.*, 2018), and family history of suicidal behavior (Hoehne *et al.*, 2015). The neurocognitive vulnerability to suicidal behavior involves impaired decision making and cognitive control (Richard-Devantoy *et al.*, 2013). Most studies used the Gambling Task test to assess decision- making, and few used a multidimensional decision-making assessment tool. Procrastination may positively relate to suicide proneness (Klibert *et al.*, 2016), and a hypervigilance decision-making style correlates with rumination (Di Schiena *et al.*, 2013).

Cognitive style is a person's characteristic mode of perceiving, thinking, remembering, and problem solving (VandenBos, 2015). Many classifications

exist for cognitive styles, but Martin's Systematic, Intuitive, Integrated, Undifferentiated, and Split cognitive style dimensions are widely used (Martin, 1998).

Most studies on cognitive style used a negative/positive dichotomy in suicidality and concepts based on rumination tendency. Negative cognitive styles are linked to suicidal thoughts and behaviors (Abramson *et al.*, 1998; Ellis, 2006; Kleiman *et al.*, 2014; Stange *et al.*, 2015) that may result in self-criticism (Stange *et al.*, 2015), a dysfunctional attribution style (Rotheram-Borus *et al.*, 1990), negative self-talk (Wolff *et al.*, 2014), etc. We could not find any research on suicidality from Martin's cognitive style perspective. Report suggests that split cognitive styles are better problem solver (Saxena *et al.*, 2014) and systematic and undifferentiated styles limit the problem-solving ability and enhance bias (Martin, 1998) in nonsuicidal individuals. Problem-solving impairment is common in attempted suicide (McAuliffe *et al.*, 2003; Pollock and Williams, 2004; Abdollahi *et al.*, 2016), and problem solving is inversely related to suicidal thoughts (Sharaf *et al.*, 2018).A possible link of serious suicide attempt with cognitive style (Beautrais *et al.*, 1999) and rational decision making was reported (Qiu and Klonsky, 2021). Among nonsuicidal individuals, cognitive styles are congruent with decision making (Rosenberg, 2011; Rani, 2017; Qiu and Klonsky, 2021). Indirect evidence suggests that rational decision-making correlates with systematic and split types of Martin's cognitive style dimension among nonsuicidal people (Rani, 2017). Due to the lack of research on the relationships of these variables in attempted suicide, this study was carried out. This study examined cognitive and decision-making styles on a multidimensional scale. The Melbourne Decision-Making Questionnaire (MDMQ), developed by Mann *et al.* (1997), assesses four dimensions of decision making: vigilance, hypervigilance, procrastination, and buck passing. The Cognitive Style Inventory (CSI) developed by Martin (1998) assesses four dimensions of cognitive style: systematic, intuitive, integrated, undifferentiated, and split. We hypothesized that vigilance decision making would positively link to the systematic cognitive style.

Participants and methods

This cross-sectional hospital-based study was carried out at a Tertiary Care Center in south India, after obtaining approval from the Institutional Ethics Committee. One hundred individuals aged 18–65 years, of both sexes, admitted for serious attempted suicide and who survived were recruited within 15 days of the attempt, if they did not have a diagnosis of dementia and mental retardation, presence of psychotic symptoms, or attempt suicide during substance intoxication. For this study, serious attempted suicide was defined as any attempted suicide that requires hospitalization for more than 24 h and fulfills one of the following treatment criteria: (a) treatment in specialized units, including the ICU; (b) surgery under general anesthesia; and (c) extensive medical treatment, including antidotes for drug overdose, telemetry, or repeated tests or investigations. After obtaining informed consent, all participants were assessed using the following tools:

(1) Sociodemographic and clinical proforma: the proforma consisted of age, education, occupation, marital status, socioeconomic status, religion, mode of the attempt, any psychiatric diagnosis, previous or family history of suicide attempts, and any medical comorbidities.
(2) Mini-International Neuropsychiatric Interview-Plus (MINI-Plus): the MINI is a short structured diagnostic psychiatric interview that establishes the diagnosis of psychiatric disorders and the presence of suicidality as per the International Classification of Disease and Related Health Problems-10th edition or DSM-IV. It consists of 120 questions and focuses on the current diagnosis by assessing for Axis I disorders. Two to 4 questions to screen for each disorder are used. Additional questions on symptoms are asked only after the screen questions point to a particular disorder. It is easier for nonspecialized interviewers to administer MINI due to its structured nature. It takes around 15 min to conduct in patients. It can be used for a short structured psychiatric interview in research. Studies have shown good reliability and validity of the scale (Sheehan*et al.*, 1998).
(3) Pierce Suicidal Intention Scale (PSI): David W. Pierce designed the suicide intent scale, with the main preference given to objectivity and the patient's statement of intent. It has a maximum score of 21, with the following risk categories: score less than 4=low risk; 4–10 medium risk; and greater than 10 high risk of intentionality (Pierce, 1977). This scale includes 12 items under three headings: circumstance score – which consisted of isolation, timing, precaution against rescue, acting to seek help during the attempt, final act on anticipation of death, suicide note; self-report score such as lethality, stated intent, premeditation, reaction to act; and

medical risk score such as the predicted outcome and death without medical treatment (Pierce, 1981). This scale has been used in the Indian population (Ram*et al.*, 2012; Ram*et al.*, 2016).

(4) MDMQ: the Melbourne decision-making questionnaire originally developed by Mann*et al.* (1997) was based on Jane and Mann's conflict theory of decision making, and it has 22 items. Each question is scored as 0-not true for me, 1-sometimes true for me, and 2-true for me. The scale was later adopted and validated by Cotrena*et al.*(2017), and one item each from the buck-passing and vigilance scale and two items from the hypervigilance scale were removed as it increased the reliability of subsequent subscales. Therefore, there are five questions for assessing vigilance, five questions for assessing Buck Passing, five questions for assessing procrastination, and three questions for assessing Hypervigilance (Mann*et al.*, 1997). The questionnaire is used in the Indian population (Awasthi and Prabhakar, 2019; Gopal, 2020).

(5) CSI: the CSI is a self-administered scale consisting of 40 statements: 20 assess the systematic style and the remaining 20 assess the intuitive style (Martin, 1998). The patient answers each question by choosing the response best suited to him or her with the help of a Likert scale with the following responses: 1-strongly disagree, 2-disagree, 3-undecided, 4-agree, and 5-strongly agree. Responses to the questions yield a systematic score and an intuitive score, which can each be divided into high (>81), medium-high (71–80), medium-low (61–70), and low (<60). Both systematic and intuitive scores were used to assess the type of cognitive style. For this study, four dimensions were calculated as follows. systematic style: a high systematic score with a low intuitive score; Intuitive style: a high intuitive score with a low systematic score; Integrated style: a high systematic score with a high intuitive score; Undifferentiated style: a low Intuitive score with a low systematic score; and Split style: a medium systematic score with a medium intuitive score. This tool has been in use in the Indian population (Saxena, 2015; Rani, 2017).

Data were analyzed using the Statistical Package for Social Sciences (SPSS) [IBM Corp. (2015). IBM SPSS Statistics for Windows, version 23 (IBM Corp., Armonk, NY, USA]. The descriptive statistics including quantitative variables like mean and SD and qualitative variables like percentages and frequencies were calculated. Frequency distributions of categorical variables across two or more groups were determined using the χ^2 test. To assess the relationships of the MDMQ score and PSI scores, linear regression analysis was used, while the Mann–Whitney *U*-test was used to assess the relationships of dimensions of cognitive style with PSI scores and MDMQ scores. α for significance for all inferences was set to P less than 0.05.

Results

The majority of the population was in their early adulthood, educated, employed, and Hindu (Table 1a). The majority had no psychiatric or

Table 1 a: Sociodemographic characteristics

Variables	*N* (%)
Sociodemographic characteristics	
Age	
18–24	35 (35.0)
25–34	37 (37.0)
35–44	22 (22.0)
45–54	4 (4.0)
55–65	2 (2.0)
Sex	
Male	57 (57.0)
Female	43 (43.0)
Education	
Illiterate	14 (14.0)
Primary	2 (2.0)
Middle	22 (22.0)
High school	41 (41.0)
Graduate	17 (17.0)
Postgraduate	4 (4.0)
Occupation	
Unemployed/homemaker	29 (29.0)
Unskilled	6 (6.0)
Semiskilled	39 (39.0)
Skilled	18 (18.0)
Business	5 (5.0)
Professional	3 (3.0)
Marital status	
Unmarried	44 (44.0)
Married	54 (54.0)
Divorcee/separated	2 (2.0)
Religion	
Hindu	93 (93.0)
Muslim	6 (6.0)
Christian	1 (1.0)
Clinical characteristics	
Psychiatric comorbidity	
None	54 (54.0)
Depression	39 (39.0)
Others	7 (7.0)
Medical comorbidity	
No	88 (88.0)
Yes	12 (12.0)

(*Continued*)

Table 1b: Clinical characteristics

Variables	*N* (%)
Previous history of suicide	
Yes	9 (9.0)
No	91 (91.0)
Family history of suicide	
Yes	23 (23.0)
No	77 (77.0)
Method	
Op compound	28 (28.0)
Hanging	12 (12.0)
Aluminum phosphide	2 (2.0)
Rat poison	10 (10.0)
Tablet consumption	21 (21.0)
Other pesticide and insecticide	8 (8.0)
Others	19 (19.0)
Intent	
Low	3 (3.0)
Medium	43 (43.0)
High	54 (54.0)
Cognitive style	
Systematic	24 (24.0)
Intuitive	0
Integrated	3 (3.0)
Undifferentiated	24 (24.0)
Split	30 (30.0)

Clinical characteristics		
Variables	Mean	SD
MDMQ vigilance	5.73	2.88
MDMQ hypervigilance	3.49	1.70
MDMQ procrastination	3.91	2.76
MDMQ buck-passing	2.96	1.58

MDMQ, Melbourne Decision Making Questionnaire.

medical morbidities, no family history of suicide, the common method of suicide attempt had been poisoning, had high suicidal intent, and had less intuitive and integrated cognitive styles (Table 1b). The mean scores for vigilance, hypervigilance, procrastination, and buck-passing were 5.73, 3.49, 3.91, and 2.96, respectively (Table 1b).

A linear regression analysis was performed to determine whether a score on the MDMQ dimension can predict the value of the PSI score. The model could explain 16% of variance (R^2=0.161; d.f.=4; F=4.55; P=0.002). So far, MDMQ dimensions are concerned vigilance score statistically significant positively predicted the value of score on PSI (β=0.29; P=004), while buck-passing could statistically significant negatively predict the value of PSI score (β=–2.68; P=0.009) (Table 2). No statistically significant relationship was observed between different cognitive styles and scores on PSI (Table 3).

A Mann–Whitney *U*-test was carried out to determine the relationships between decision making and cognitive styles. There was a statistically significant group difference on the score of the vigilance dimension of decision making for split [Mann–Whitney *U*-test (AMU)=470.50, Z=–4.39, P=0.001], undifferentiated (AMU=385.50, Z=–4.28, P=0.001), and systematic cognitive styles (AMU=359.00, Z=–4.49, P=0.001) (Table 4).

Table 2 Relationships between decision making and PSI scores

		Unstandardized coefficients		Standardized coefficients		
Model		*B*	SE	β	*t*	Significance
1	(Constant)	10.46	1.60		6.53	0.001
	MDMQ vigilance	0.46	0.15	0.29	2.95	0.004
	MDMQ hypervigilance	–0.09	0.27	–0.03	–0.33	0.741
	MDMQ procrastination	0.23	0.16	0.13	1.39	0.165
	MDMQ buck-passing	–0.73	0.27	–0.25	–2.68	0.009

MDMQ, Melbourne Decision Making Questionnaire; PSI, Pierce Suicidal Intention Scale. [a]Dependent variable: PSI score. R^2=0.161; d.f.=4; F=4.55; P=002.

Table 3 Relationships between cognitive styles and the PSI score

	Variables	*N*	Mean rank	Mann–Whitney *U*	*Z*	Asymp. significance (2-tailed)
PSI score	Split absent	70	51.06	1011.000	–0.294	0.769
	Split present	30	49.20			
PSI score	Undifferentiated absent	76	50.16	886.000	–0.210	0.833
	Undifferentiated present	24	51.58			
PSI score	Integrated absent	97	50.57	139.000	–0.132	0.895
	Integrated present	3	48.33			
PSI score	Systemic absent	76	51.22	857.000	–0.445	0.656
	Systemic present	24	48.21			

PSI, Pierce Suicidal Intention Scale

Table 4 Relationships between decision-making and cognitive styles

Variables	Cognitive styles	*N*	Mean rank	MWU	*Z*	*P*	*r*
MDMQ vigilance	Split absent	70	42.22	470.50	–4.39	0.001	0.44
	Split present	30	69.82				
MDMQ vigilance	Undifferentiated absent	76	57.43	385.50	–4.28	0.001	0.97
	Undifferentiated present	24	28.56				
MDMQ vigilance	Systemic absent	76	57.78	359.00	–4.49	0.001	0.45
	Systemic present	24	27.46				

MDMQ, Melbourne Decision Making Questionnaire; MWU, Mann–Whitney *U*-test.

Discussion

Demographic and clinical characteristics are comparable to those described in a previous report from this geographic region (Ram *et al.*, 2012; Ram *et al.*, 2019; Ram *et al.*, 2020), and to a certain degree, it reflects the population characteristics it caters services. Half of the participants in the study did not have a psychiatric diagnosis. In India, family issues are the main cause of suicide, followed by illness, and poisoning remains the most common method of suicide (Chiu, 1972; National Crime Records Bureau, 2019).

The most frequent cognitive style was split, followed by systematic and undifferentiated. This could be due to cultural influences (Chiu, 1972; Ferris *et al.*, 2018; National Crime Records Bureau, 2019). These styles were reported to be prevalent among Indian students, although their prevalence could not be traced to individuals with attempted suicide (Srinivas, 2014; Sharma, 2017; Srinivas Kumar and Munichandra, 2017). MDMQ scores were reported in a similar manner among Indian students, as observed in this study (Gopal, 2020). In addition, some studies discovered a positive correlation between systematic and intuitive-cognitive styles with resilience (Bashir *et al.*, 2013; Ahmed, 2015).

The severity of suicidal intention was positively predicted by rational decision-making (vigilance) and negatively predicted by avoidance decision making (Buck-passing). Links between cognitive style and decision making have been reported (Hunt *et al.*, 1989; Thunholm, 2004; Qiu and Klonsky, 2021), and individual differences in decision-making style may partially be due to the differences in cognitive style (Andersen, 2000). Our finding partially corroborates Levenson and Neuringer's observation that suicide is more prevalent in individuals with field-dependent cognitive styles (Levenson and Neuringer, 1974). The finding of the study contrasts with a previous report that rational decision making is less prevalent in attempters (Beautrais *et al.*, 1999). This difference could be explained by the fact that all participants in this study were attempters of suicide. Another possibility is that impulsivity temporarily impairs rationality, leading to a suicide attempt, particularly in this study population, which may be restored following the attempt (Ram *et al.*, 2019). There were no significant relationships between cognitive style and severity of suicide intention.

Consistent with our hypothesis, those with rational decision making (vigilance) tended to overutilize a few cognitive styles (systematic style) and underutilize multiple cognitive styles concurrently (split and) or were unable to utilize cognitive styles and remained passive and withdrawn (undifferentiated style). Martin asserted that systematic and undifferentiated styles may impede one's ability to solve problems (Martin, 1998). This means that rational decision making is constrained more by the static nature of cognitive style functioning than by the dynamic nature of cognitive style functioning. As suggested by Sheehy and O'Connor (2002), this may result in cognitive inflexibility, associated cognitive processing dysfunction and cognitive distortion, and continued negative cognition. According to some reports, cognitive styles may obstruct decision making by distorting cognitive processing when moods change, as observed in this study (MacGillivray and Baron, 1994).

The findings of this study should be interpreted with caution, as they may apply to the tertiary care center. The limitations of this study were that there was no control group, and that it had a hospital-based and cross-sectional study design.

Conclusion

In attempted suicide, some of Martin's cognitive styles (systematic, undifferentiated, split) are common. Rational decision making may proportionately be linked to the severity of suicide intent and constrained by the limited and nondynamic nature of cognitive styles. The finding of this study implies that, for effective and rational decision making, psychological intervention may be needed to correct the abnormal pattern of cognitive styles.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

References

Abdollahi A, Talib MA, Yaacob SN, Ismail Z (2016). Problem-solving skills and suicidal ideation among Malaysian college students: the mediating role of hopelessness. Aca Psychiatry 40:261–267.

Abramson LY, Alloy LB, Hogan ME, Whitehouse WG, Cornette M, Akhavan S, Chiara A (1998). Suicidality and cognitive vulnerability to depression among college students: a prospective study. J Adolesc 21:473–487.

National Crime Records Bureau (2019). Accidental Deaths and Suicides in India-2019. Available at: https ://ncrb.gov.in/en/ accidental- deaths-suicides-india-2019 [Accessed June 26, 2021].

Ahmed A (2015). Resilience in relation with personality, cognitive styles and decision-making styles. J Indian Acad Appl Psychol 41:151.

Andersen JA (2000). Intuition in managers: are intuitive managers more effective? J Manag Psychol 15:46-67.

Awasthi S, Prabhakar P (2019). A comparative study of decision making styles of trainee coaches and coaches with experience. Int J Physiol Nutr Phys Educ S P1:34-37.

Bashir T, Shafi S, Ahmed HR, Juhangir S, Saed H, Zaigham S (2013). Impact of cognitive and decision-making style on resilience: an exploratory study. Eur. J Manag Bus 5:92-107.

Beautrais AL, Joyce PR, Mulder RT (1999). Personality traits and cognitive styles as risk factors for serious suicide attempts among young people. Suicide Life Threat Behav 29:37-47.

Chiu LH (1972). A cross-cultural comparison of cognitive styles in Chinese and American children. Int J Psychol 7:235-242.

Cotrena C, Branco LD, Fonseca RP (2017). Adaptation and validation of the melbourne decision making questionnaire to Brazilian Portuguese. Trends Psychiatry Psychother 40:29-37.

Deisenhammer EA, Schmid SK, Kemmler G, Moser B, Delazer M (2018). Decision making under risk and under ambiguity in depressed suicide attempters, depressed non-attempters, and healthy controls. J Affect Disord 226:261-266.

Di Schiena R, Luminet O, Chang B, Philippot P (2013). Why are depressive individuals indecisive? Different modes of rumination account for indecision in non-clinical depression. Cogn Ther Res 37:713-724.

Ellis TE (2006). American psychological association. Ellis TE, editor. Cognition and Suicide: Theory, Research, and Therapy. Washington, DC: American Psychological Association.

Ferris DL, Reb J, Lian H, Sim S, Ang D (2018). What goes up must . . . Keep going up? Cultural differences in cognitive styles influence evaluations of dynamic performance. J Appl Psychol 103:347.

Gopal CR (2020). Relationship between personality and decision-making styles among college students. Ann Trop Med Public Health 23:231-501.

Gvion Y, Levi-Belz Y (2018). Serious suicide attempts: systematic review of psychological risk factors. Front Psychiatry 9:56.

Hoehne A, Richard-Devantoy S, Ding Y, Turecki G, Jollant F (2015). First-degree relatives of suicide completers may have impaired decision-making but functional cognitive control. J Psychiatr Res 68: 192-197.

Hunt RG, Krzystofiak FJ, Meindl JR, Yousry AM (1989). Cognitive style and decision making. Organ Behav Hum Decis Process 44:436-453.

Jollant F, Bellivier F, Leboyer M, Astruc B, Torres S, Verdier R, *et al.* (2005). Impaired decision making in suicide attempters. Am J Psychiatry 162:304-310.

Kleiman EM, Law KC, Anestis MD (2014). Do theories of suicide play well together? Integrating components of the hopelessness and interpersonal psychological theories of suicide. Compr Psychiatry 55:431-438.

Klibert J, LeLeux-LaBarge K, Tarantino N, Yancey T, Lamis DA (2016). Procrastination, and suicide proneness: a moderated-mediation model for cognitive schemas and gender. Death Stud 40:350-357.

Levenson M, Neuringer C (1974). Suicide and field dependency. OMEGA-J Death Dying 5:181-186.

MacGillivray RG, Baron P (1994). The influence of cognitive processing style on cognitive distortion in clinical depression. Soc Behav Pers 22:145-156.

Mann L, Burnett P, Radford M, Ford S (1997). The Melbourne Decision Making Questionnaire: an instrument for measuring patterns for coping with decisional conflict. J Behav Decis Mak 10:1-19.

Martin LP (1998). The cognitive-style inventory. The Pfeiffer Library, Jossey-Bass/ Pfeiffer 8:113-127.

McAuliffe C, Corcoran P, Keeley HS, Perry IJ (2003). Risk of suicide ideation associated with problem-solving ability and attitudes toward suicidal behavior in university students. Crisis 24:160.

Millner AJ, den Ouden HEM, Gershman SJ, Glenn CR, Kearns JC, Bornstein AM, *et al.* (2019). Suicidal thoughts and behaviors are associated with an increased decision-making bias for active responses to escape aversive states. J Abnorm Psychol. 128:106-118.

Perrain R, Dardennes R, Jollant F (2021). Risky decision-making in suicide attempters, and the choice of a violent suicidal means: an updated meta-analysis. J Affect Disord 280:241-249.

Pierce DW (1977). Suicidal intent in self injury. Br J Psychiatry 130:377-385.

Pierce DW (1981). The predictive validation of a suicide intent scale: a five-year follow- up. Br J Psychiatry 139:391-396.

Pollock LR, Williams JM (2004). Problem-solving in suicide attempters. Psychol Med 34:163-167.

Ponsoni A, Branco LD, Cotrena C, Shansis FM, Grassi-Oliveira R, Fonseca RP (2018). Self-reported inhibition predicts history of suicide attempts in bipolar disorder and major depression. Compre Psychiatry 82:89-94.

Qiu T, Klonsky ED (2021). Deciding to die: the relations of decision-making styles to suicide ideation and attempts. Int J Cogn Ther 14:341-361.

Ram D, Darshan MS, Rao TS, Honagodu AR (2012). Suicide prevention is possible: a perception after suicide attempt. Indian J Psychiatry 54:172.

Ram D, Mahegowda D, Gowdappa B (2016). Correlates of process of suicide attempt and perception of its prevention. Iran J Psychiatry 11:178.

Ram D, Chandran S, Sadar A, Gowdappa B (2019). Correlation of cognitive resilience, cognitive flexibility and impulsivity in attempted suicide. Indian J Psychol Med 41:362-367.

Ram D, Koneru A, Gowdappa B (2020). Relationship between life skills, repetitive negative thinking, family function, and life satisfaction in attempted suicide. Indian J Psychiatry 62:283? 289.

Rani R (2017). Relationship between cognitive styles and problem solving abilities of senior secondary school students. Asian J Res Soci Sci Human 7:115-120.

Richard-Devantoy S, Olié E, Guillaume S, Bechara A, Courtet P, Jollant F (2013). Distinct alterations in value-based decision-making and cognitive control in suicide attempters: toward a dual neurocognitive model. J Affect Disord 151:1120-1124.

Richard-Devantoy S, Olie E, Guillaume S, Courtet P (2016). Decision-making in unipolar or bipolar suicide attempters. J Affect Disord. 190:128-136.

Rosenberg C (2011). Cognitive characteristics affecting rational decision-making style [MS thesis].

Rotheram-Borus MJ, Trautman PD, Dopkins SC, Shrout PE (1990). Cognitive style and pleasant activities among female adolescent suicide attempters. J Consult Clin Psychol 58:554.

Saxena AK (2015). Psychological profiling for counselling of IPS Officers and Training needs Assessment. SVP Natil Police Acad J XX:74-99.

Saxena S, Jain RK, Jain HK (2014). Impact of cognitive style on problem solving ability among undergraduates. Int J Acad Res Psychol 1:6–10.

Sharaf AY, Lachine OA, Thompson EA (2018). Rumination, social problem solving and suicide intent among Egyptians with a recent suicide attempt. Arch Psychiatr Nurs 32:86-92.

Sharma P (2017). A study of cognitive styles of senior secondary students with relation to their gender. Int J Sci Res 5:7206-7208.

Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E, *et al.* (1998). The Mini-International Neuropsychiatric Interview (MINI): the development and validation of a structured diagnostic psychiatric interview for dsm-iv and ICD-10. J Clin Psychiatry 59 (Suppl 20):22-33.

Sheehy N, O'Connor RC (2002). Cognitive style and suicidal behaviour: implications for therapeutic intervention, research lacunae and priorities. Br J Guid Counc 30:353-362.

Sheftall AH, Davidson DJ, McBee-Strayer SM, Ackerman J, Mendoza K, Reynolds B, Bridge JA (2015). Decision-making in adolescents with suicidal ideation: a case-control study. Psychiatr Res 228:928-931.

Singh P, Shah R, Midha P, Soni A, Bagotia S, Gaur KL (2016). Revisiting profile of deliberate self-harm at a tertiary care hospital after an interval of 10 years. Indian J Psychiatry 58:301-305.

Srinivas D (2014). Cognitive styles of high school mathematics teachers. SRJHS&EL 1:425-430.

Srinivas Kumar D, Munichandra B (2017). Profile of cognitive styles of principals of Andhra Pradesh Model Schools. Int J Humanit Arts Soc Sci 20:37-39.

Stange JP, Hamilton JL, Burke TA. (2015). Negative cognitive styles synergistically predict suicidal ideation in bipolar spectrum disorders: a 3-year prospective study. Psychiatry Res 226:162-168.

Szanto K, Bruine de Bruin W, Parker AM, Hallquist MN, Vanyukov PM, Dombrovski AY (2015). Decision-making competence and attempted suicide. J Clin Psychiatry 76:e1590-e1597.

Thunholm P (2004). Decision-making style: habit, style or both? Pers Individ Differ 36:931-944.

Tyburski E (2017). Psychological determinants of decision making. In: Nermend K, Łatuszynska M, Editors. Neuroeconomic and behavioral aspects of decision making. Springer Proceedings in Business and Economics. Cham, Switzerland: Springer; p. 19-34.

VandenBos GR (2015). APA Dictionary of Psychology. 2nd ed. Washington, DC: American Psychological Association.

WHO (2020) Suicide mortality rate (per 100 000 population). Available at: https://www.who.int/data/gho/data/indicators/indicator-details/GHO/suicide-mortality-rate-(per-100-000-population [Assessed June 28, 2021].

Wolff JC, Frazier EA, Esposito-Smythers C, Becker SJ, Burke TA, Cataldo A, Spirito A (2014). Negative cognitive style and perceived social support mediate the relationship between aggression and NSSI in hospitalized adolescents. J Adolesc 37:483-491.