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The Importance of Mental Pain and Physical Dissociation in Youth Suicidality

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This study examines the importance of two suicide risk factors, mental pain and physical dissociation, among young people. Participants were 42 suicidal inpatients, 36 nonsuicidal inpatients, and 45 nonclinical participants. Overall, suicide attempters reported a stronger intensity of and lower tolerance for mental pain and more physical dissociation compared to the other two groups. Suicide attempters with a low tolerance for mental pain showed a higher level of dissociation from pain and insensitivity to bodily cues compared to nonsuicidal inpatients with similar levels of tolerance for mental pain. Physical dissociation contributed significantly to the likelihood of suicidality beyond the contribution of mental pain. Our results accentuate the importance of the combination of mental pain and physical dissociation in suicidality. Further research on the applicability of our findings to self-injurious behavior is warranted.

KEYWORDS suicide, mental pain, dissociation, inpatients, young adults, adolescents

Although intolerable mental pain can be seen as a primary cause of suicide, physical dissociation may be a facilitator of the suicidal act. Physical dissociation is the detachment from one's body and its sensations, including

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pain, a process that may be associated with allowing physical assaults on the body among individuals who feel unable to cope with mental pain (Orbach, 2006).

Intense negative emotions such as guilt, shame, hopelessness, and rage can become a generalized experience of unbearable mental pain, particularly when there is no foreseeable change in the future. Under these circumstances, individuals may seek to escape their "psychache" (Shneidman, 1985) by committing suicide (Shneidman, 1993, 1996). Several conceptualizations and measurements have been developed over the past decade to describe and assess mental pain, seen as a central factor in suicide (e.g., Holden, Mehta, Cunningham, & McLeod, 2001; Shneidman, 1999).

Highlighting the centrality of mental pain in the study of psychopathology and suicide, Orbach, Mikulincer, Sirota, and Gilboa-Schectman (2003) described nine dimensions of mental pain: lack of control, irreversibility of pain, emotional flooding, narcissistic wounds, estrangement, emotional flooding, confusion, social distancing, and emptiness. Previous studies among adult populations showed that suicidal inpatients reported higher levels of mental pain than nonsuicidal inpatients (Orbach, Mikulincer, Gilboa-Schectman, & Sirota, 2003) and nonclinical respondents (Levi et al., 2008; Orbach, Mikulincer, Gilboa-Schectman, et al., 2003). Mental pain was recently shown to contribute significantly to suicide risk independent of depression (Soumani et al., 2011). However, those data were collected from a nonclinical adult sample without a comparison to clinical groups.

Because mental pain can lead to suicide only when it is experienced as unbearable, to adequately comprehend the elusive behavior of suicide one must understand individual differences in the endurance of mental pain (Shneidman, 1993, 1996). Studies on the tolerance of mental pain are scarce (e.g., Orbach, Gilboa-Schechtman, Johan, & Mikulincer, 2004; Soumani et al., 2011), and, to the best of our knowledge, none have yet assessed it among suicide attempters or young inpatients.

Although psychological dissociation might play an important factor in the suicidal act (Shneidman, 1980) and in the development of suicidal tendencies (Baumeister, 1990), a specific facilitator in initiating the act of self-harm and suicide is dissociation from one's body, or *physical dissociation* (Orbach, 1994, 2006). Physical dissociation is related to detachment and alienation from one's body and could serve as a facilitating precursor to the actual attack on the body. This variable has been shown to differentiate young suicidal inpatients from nonsuicidal inpatients and normal controls (Orbach et al., 2006; Orbach, Stein, Shani-Sela, & Har-Even, 2001). Two facets of physical dissociation are insensitivity to bodily cues and tolerance for physical pain. Insensitivity to bodily cues is probably a key factor in suicide behavior, as it correlates significantly with suicidal tendencies (Orbach et al., 2001) and features more prominently among suicidal inpatients than control groups (Stein et al., 2003). Tolerance for physical pain could also

be an important variable in suicidality. Indeed, suicide attempters were more tolerant of electric shocks (Orbach et al., 1996) and heat stimulation (Orbach, Mikulincer, King, Cohen, & Stein, 1997) than control groups and appraised these stimuli as less painful.

Although the importance of mental pain and physical dissociation has been demonstrated separately in suicidality, and despite speculations that the combination of these two variables could be pivotal in understanding suicide (e.g., Maltsberger, 2004; Orbach, 2006), no study has thus far assessed their weighted contribution. Previously published data have shown a positive correlation between psychological stress and pain tolerance (greater perceived stress was related to a greater ability to tolerate pain produced by electric shocks) and a negative correlation between anxiety level and the appraisal of pain produced by electric shocks among suicidal participants (Orbach et al., 1996). These findings might imply that a similar pattern of relationships exists between mental pain and suicidality among suicide attempters. From this, we hypothesize the following:

1. Suicidal participants will demonstrate more intense mental pain and a lower tolerance for mental pain compared to controls (i.e., inpatient and nonclinical participants).
2. Suicidal inpatients will demonstrate higher physical dissociation compared to controls.
3. Suicidal participants who report stronger mental pain or lower tolerance for mental pain will demonstrate higher levels of physical dissociation compared to nonsuicidal inpatients and nonclinical participants with similar levels of mental pain or tolerance for mental pain.
4. Mental pain and *low* tolerance for mental pain will be associated with suicide risk.

Because physical dissociation is seen as a facilitator that can increase suicidal risk when mental pain is high and its tolerance is low, it is important to assess whether physical dissociation will make a unique contribution to suicidal risk above and beyond the contributions of mental pain and *low* tolerance for that mental pain.

Epidemiological studies indicate that suicidal behavior peaks during adolescence and that suicide attempts are most common among youth (Shaffer, 2004). In fact, completed suicides are the most common cause of death second only to traffic-related deaths among youth and young adults (Patton et al., 2009). Thus, this cohort warrants thorough exploration of suicide risk factors, particularly because previous studies assessing mental pain or its tolerance have neglected this age group. We therefore decided to test our hypotheses specifically among youth and young adults.

METHOD

Participants

The total sample comprised 123 youth and young adults: 63 female and 60 male participants between 15 and 25 years of age ($M = 19.58$, $SD = 3.2$). The suicidal group consisted of 42 participants who had attempted suicide shortly prior to hospitalization and who were admitted to the hospital because of their elevated suicide risk. A suicide attempt was defined according to the International Classification of Diseases–10 definition of parasuicide (see Schmidtke et al., 1996), namely, "an act with non-fatal outcome, in which an individual deliberately initiates a non-habitual behavior that, without intervention from others, will cause self-harm" (p. 328). Although this definition does not include intention to die, it is important to note that according to our patient or therapist reports in 41 of the 42 respondents there was a nonzero intent to die during the attempt. Participants were recruited from adult and adolescent inpatient units at a large mental health center in central Israel. Methods of attempt included drug overdose ($n = 19$), cutting or other forms of self-injury ($n = 16$), jumping ($n = 6$), and hanging ($n = 1$).

The nonsuicidal inpatient group consisted of 36 participants recruited from the same adult and adolescent inpatient units. According to their medical charts, staff reports, and the patients' self-reports, none had made a prior suicide attempt. Exclusion criteria for both inpatient groups were current hospitalization periods that had exceeded 4 months and the presence of a manic or a psychotic episode during evaluation.

There were 45 participants in the nonclinical group, all siblings of undergraduate university students. The inclusion criterion was no reported history of attempted suicide, self-injurious behavior, or psychiatric treatment.

Few between-group differences were found in a demographic comparison of the groups (see Table 1). The nonsuicidal inpatient group had a higher mean age compared to the other two groups, and differences were found between the psychiatric groups in the distribution of principal diagnoses, whereby personality disorders were more common in the suicidal group. To ascertain whether these differences had any effect on the study's dependent variables, we conducted two-way analyses of variance in which group and personality disorder (as principal or secondary diagnosis) were independent variables and mental pain and its tolerance were dependent variables. No main effects were identified for personality disorder or for the interaction of group and personality disorder.

Measures

Orbach Mikulincer Mental Pain Scale (Orbach, Mikulincer, Sirota, et al., 2003). This is a self-rating tool utilizing 5-point Likert scales. The measure

TABLE 1 Demographic and Psychiatric Characteristics by Group

Characteristic	Suicidal ($n = 42$)	Nonsuicidal ($n = 36$)	Nonclinical ($n = 45$)	Test statistic
Age, *M* (*SD*)	18.6 (3.3)	21.08 (2.73)	19.29 (3.07)	$F = 6.74^{**}$
Sex, *n* (%)				
Male	19 (45.2)	21 (58.3)	20 (44.4)	$\chi^2 = 1.86$
Female	23 (54.8)	15 (41.7)	25 (55.6)	
Country of birth, *n* (%)				
Israel	32 (72.6)	25 (69.4)	39 (86.7)	$\chi^2 = 3.59$
Other	10 (23.8)	11(30.6)	6 (13.3)	
Marital status, *n* (%)[a]				
Married	0	1 (2.8)	3 (6.7)	
Single	42 (100)	35 (97.2)	42 (93.3)	
Hospitalization days until evaluation, *M* (*SD*)	32.02 (31.42)	24.25 (20.39)		$t = 1.31$
Previous hospitalization, *n* (%)				
Yes	25 (64.1)	22 (66.7)		$\chi^2 = 0.05$
No	14 (35.9)	11 (33.3)		
Principal diagnosis, *n* (%)				
Affective	8 (19)	16 (44.4)		$\chi^2 = 12.69^{**}$
Personality	17 (40.5)	4 (11.1)		
Schizophrenic spectrum	11(26.2)	14 (38.9)		
Other	6 (14.3)	2 (5.6)		
Secondary diagnosis, *n* (%)[a]				
Without	17 (40.5)	24 (68.6)		
Affective	8 (19)	0		
Personality	7 (16.7)	2 (5.7)		
Schizophrenic spectrum	0	1 (2.9)		
Other	10 (23.8)	8 (22.9)		

[a]No chi-square was computed because of the low number of expected participants.
** $p < .01$

originally consisted of nine factors, but we omitted the social distance factor because of its low reliability (Levi et al., 2008; Soumani et al., 2011). The questionnaire thus consisted of 41 items measuring the following eight factors: (a) irreversibility, (b) loss of control, (c) narcissistic wounds, (d) emotional flooding, (e) freezing, (f) self-estrangement, (g) confusion, (h) emptiness. Higher values on each scale reflect stronger mental pain. We used two versions of the scale: one for the current state and one for the worst point in life. Because data were collected among the nonclinical group at an arbitrary point in time that was probably not related to any significant emotional crisis, we assessed mental pain and its tolerance at its worst time in order to compare our three research groups relative to reported reactions during an intense emotional crisis. Cronbach's alpha reliability coefficients for the eight Orbach Mikulincer Mental Pain Scale factors in this study ranged from .80 to .92 for current mental pain and from .70 to .90 for worst past mental pain. Cronbach's alpha coefficients for the total scale were .97 for current pain and .96 for worst past pain.

Tolerance for Mental Pain Scale (TMPS; Orbach et al., 2004). This is a 20-item self-rating measure that uses 5-point Likert scales, with higher scores indicating greater tolerance for mental pain. The measure has demonstrated good psychometric properties and, following a factor analysis, yielded three subscales: (a) surfeit of pain, (b) coping with pain, and (c) containing of pain (Orbach et al., 2004; Soumani et al., 2011). Cronbach's alpha coefficients for TMPS factors in this study ranged from .83 to .93 for current state and from .78 to .91 for worst point in life. Cronbach's alpha coefficients for the total scale were .93 for current state and .92 for worst point in life.

Multi-Attitude Suicidal Tendencies Scale (Orbach et al., 1991). This is a 30-item, self-rating measure that uses 5-point scales. It provides four independent scores of suicidal tendencies: attraction to and repulsion by life and death. High attraction to life and repulsion by death reflect low suicidal tendencies, whereas high repulsion by life and attraction to death reflect high suicidal tendencies. Following an item analysis, Items 8 and 9 were omitted because of their low correlation with the attraction to death and repulsion by life scales, respectively. Cronbach's alpha coefficients for the four scales were as follows: Attraction to Life = .93, Repulsion by Life = .80, Attraction to Death = .77, and Repulsion by Death = .90.

Beck Scale for Suicide Ideation (Beck, Steer, & Ranieri, 1988). This questionnaire evaluates one's current level of suicidality and includes 19 items assessing characteristics such as capability and preparations for suicide, wish to die, and wish to live. Each item is rated on a 3-point scale from 0 to 2, with higher scores reflecting higher levels of current suicidality. The first five items are used to screen attitudes toward living and dying, and only those who report a desire to actively (Item 4) or passively (Item 5) attempt suicide are rated on Items 6–19. Two scores were given for the current study: one for the total scale and one for the preparation index, which included Items 12–18 (Joiner et al., 2003). The preparation index contains items that assess quality of plans, courage, and capability to commit suicide. Cronbach's alpha coefficients were .97 for the total scale and .88 for the preparation index.

Lethality of Suicide Attempt Scale (Orbach, Kedem, Gorchover, Apter, & Tyano, 1993). For this measure, therapists complete the items. For the first part of the scale, raters are asked to evaluate the lethality of a suicide attempt on a scale ranging from *not lethal at all* (1) to *very lethal suicidal behavior* (5). For the second part, therapists are asked to evaluate the severity of the intention to die by suicide during the attempt on a scale ranging from *no suicidal ideation at all* (0) to *unequivocal intention to die* (5). For the purpose of this study, we also measured the current severity of intention to die by suicide.

Physical Dissociation Questionnaire (Levinger, 2013). This measure was developed for the present study and included 14 items evaluated using 5-point ratings ranging from 1 (*not true at all*) to 5 (*very true*). The items were taken from four reliable and validated dissociation scales:

the Hebrew-Multidimensional Inventory of Dissociation (Somer & Dell, 2005), the Body Image Aberration Scale (Chapman, Chapman, & Raulen, 1978), the Perceptual Alteration Scale (Sanders, 1986), and the Somatoform Dissociation Questionnaire (Nijenhuis, Spinhoven, Van Dyck, Van der Hart, & Vanderlinden, 1996). These items assessed feelings of estrangement and detachment from the body (e.g., "Sometimes it feels as if my body doesn't belong to me") and insensitivity to pain (e.g., "Sometimes I don't feel physical pain even when I am exposed to a painful stimulus that normally causes pain"). Higher scores reflect higher dissociation. Two scores were given: one for the total scale and one for dissociation from pain (Items 3, 11, 14). Cronbach's alpha coefficients were .93 for the total scale and .80 for dissociation from pain.

Body Insensitivity Scale (Orbach et al., 2001). This scale contains nine items, such as "I can easily identify my body needs" or "Sometimes I don't notice how thirsty I am," evaluated using 5-point ratings ranging from 1 (*don't agree at all*) to 5 (*very much agree*). Higher scores indicate higher levels of insensitivity to bodily cues. Item 3 is reverse scored. Item analysis resulted in the removal of Item 9 because of its low correlation with the total scale. Cronbach's alpha coefficient for the final scale was .71.

Procedures

This study was approved by the Geha Psychiatric Medical Center's Institutional Review Board for Human Experimentation (Helsinki Committee). Consecutive inpatient admissions who provided informed consent to participate in a study on mental pain and bodily sensations were included. Parental informed consent was provided for participants younger than the age of 18 years. Prior to the evaluation session, the personal therapist assessed the patient's psychological ability to take part in the study. At the evaluation meeting, the researcher clarified that the participant was free to decline to answer any or all questions and to withdraw from the study with no prejudice or consequences to his or her quality of care. Participants for the nonclinical group were recruited through university advertisements inviting students' siblings between 15 and 25 years of age to participate in exchange for course credit. The psychological measures were administered in a randomized order.

RESULTS

We confirmed the hypothesis that suicidal participants demonstrate more intense mental pain and a lower tolerance for such pain (see Table 2) by performing a multivariate analysis of covariance (MANCOVA) with current and worst mental pain as dependent variables and age as a covariate.

TABLE 2 Means (*SD*) and *F* Ratios for Mental Pain and Physical Dissociation by Group

Factor	Group 1: Suicidal ($n = 42$)	Group 2: Nonsuicidal ($n = 36$)	Group 3: Nonclinical ($n = 45$)	*F*	Partial η^2	Bonferroni group comparisons
Mental pain—current[a]	3.13 (0.77)	2.42 (0.76)	1.91 (0.58)	31.80***	0.36	1 > 2 > 3
Irreversibility[b]	3.19 (0.93)	2.56 (0.83)	1.75 (0.60)	27.10***	0.38	1 > 2 > 3
Loss of control[b]	3.34 (0.89)	2.52 (0.98)	2.04 (0.68)	26.03***	0.31	1 > 2 = 3
Narcissistic wounds[b]	2.71 (0.96)	1.98 (0.82)	1.65 (0.53)	20.56***	0.26	1 > 2 = 3
Emotional flooding[b]	3.55 (1.00)	3.09 (0.92)	2.57 (0.91)	11.63***	0.17	1 = 2 > 3
Freezing[b]	2.43 (0.99)	2.18 (1.03)	1.56 (0.62)	11.24***	0.16	1 = 2 > 3
Self-estrangement	2.63 (1.22)	2.06 (0.96)	1.70 (0.68)	10.06***	0.15	2 = 1 > 3 = 2
Confusion[b]	3.40 (1.06)	2.40 (1.02)	2.12 (0.93)	19.28***	0.25	1 > 2 = 3
Emptiness[b]	3.48 (1.02)	2.10 (0.99)	1.82 (0.63)	42.49***	0.42	1 > 2 = 3
Tolerance for mental pain—current[c]	2.93 (0.85)	3.42 (0.93)	4.23 (0.46)	31.45***	0.36	1 = 2 < 3
Surfeit of pain[d]	2.87 (1.00)	3.22 (1.15)	4.35 (0.55)	30.75***	0.35	1 = 2 < 3
Coping with pain[d]	2.91 (1.02)	3.71 (1.03)	4.03 (0.64)	17.55***	0.23	1 < 2 = 3
Containing the pain[d]	2.61 (1.27)	2.81 (1.36)	4.08 (0.90)	19.30***	0.25	1 = 2 < 3
Mental pain—worst[e]	3.89 (0.57)	3.56 (0.86)	2.82 (0.67)	27.10***	0.32	1 > 2 > 3
Tolerance for mental pain—worst[f]	2.09 (0.64)	2.52 (0.86)	3.12 (0.77)	20.04***	0.27	3 < 2 < 1
Physical dissociation[e]	2.44 (0.94)	1.79 (0.91)	1.44 (0.39)	17.38***	0.23	3 = 2 > 1
Dissociation from pain[f]	2.71 (1.22)	2.03 (1.20)	1.50 (0.69)	13.58***	0.19	3 > 2 = 1
Insensitivity to bodily cues[g]	3.05 (0.74)	2.41(0.71)	2.29 (0.63)	13.42***	0.19	3 = 2 > 1

[a]Mean of Orbach Mikulincer Mental Pain Scale (OMMPS). [b]Mean of OMMPS factor. [c]Mean of Tolerance for Mental Pain Scale (TMPS). [d]Mean of TMPS factor. [e]Mean of Physical Dissociation Questionnaire. [f]Mean of Dissociation From Pain subscale. [g]Mean of Body Insensitivity Scale. Total scales are bolded.

***$p < .001$

Significant differences among groups were noted, $F(4, 224) = 17.30$, $p < .001$, partial $\eta^2 = 0.24$. Subsequent analyses of covariance (ANCOVAs) for each dependent variable were also significant. Bonferroni-corrected post hoc analyses identified the suicidal group as having higher mental pain than the other two groups. To identify which Mental Pain Scale (MPS) factors were associated with these differences, we conducted one-way ANCOVAs (with age as a covariate) and identified significant differences for all factors. Bonferroni-corrected post hoc analyses with age as a covariate showed that the suicidal group had stronger mental pain on all eight factors compared to the nonclinical group and on all mental pain factors except emotional flooding, freezing, and self-estrangement compared to the nonsuicidal inpatient group (age and diagnosis covaried out). Post hoc Bonferroni-adjusted analysis (age covaried out) concerning worst mental pain revealed that the two inpatient groups demonstrated stronger mental pain than the nonclinical group, and the suicidal group had experienced stronger mental pain than the nonsuicidal inpatient group (age and diagnosis covaried out).

We also conducted a MANCOVA (with age as a covariate) in which current and worst tolerance for mental pain served as the dependent variables (and subsequent separate ANCOVAs for each dependent variable). MANCOVA revealed significant differences among the groups, with post hoc Bonferroni analysis identifying the nonclinical group as having greater tolerance for current mental pain compared to the other two groups, which did not differ (diagnosis also covaried out), $F(4, 220) = 18.08$, $p < .001$, partial $\eta^2 = 0.25$. One-way ANCOVAs (with age as a covariate) showed significant differences among the groups on all three TMPS factors. Bonferroni-corrected analyses identified lower tolerance on all TMPS factors (surfeit of pain, coping with pain, and containing the pain) in the suicidal group compared to the nonclinical group (age covaried out). Suicidal inpatients and nonsuicidal inpatients did not differ on these factors when age and diagnosis were covaried out. Regarding tolerance for worst mental pain, post hoc Bonferroni analysis showed that both inpatient groups had lower tolerance compared to the nonclinical group (age covaried out), with the two inpatient groups also differing significantly (age and diagnosis covaried out).

In sum, suicide attempters reported more intense mental pain and lower tolerance for that pain compared to nonclinical respondents. Although the two clinical groups did not differ significantly on the tolerance for current mental pain (after age and diagnosis were controlled), suicide attempters reported more intense current and worst mental pain and lower tolerance for worst mental pain compared to nonsuicidal inpatient respondents.

We set physical dissociation, dissociation from pain, and insensitivity to bodily cues as dependent variables for the hypothesis that suicidal inpatients would be more inclined to use physical dissociation than comparison participants. A MANCOVA (with age as a covariate) showed significant differences between our research groups, $F(6, 232) = 6.80$, $p < .001$, partial

$\eta^2 = 0.15$. As seen in Table 2, the suicidal group reported higher levels of general physical dissociation, dissociation of physical pain, and insensitivity for bodily cues than the nonclinical control group (age covaried out). The suicidal group also reported higher levels of general dissociation and insensitivity to bodily cues (but not dissociation from pain) than the nonsuicidal inpatient group (with age and diagnosis as covariates). Thus, overall, our second research hypothesis was confirmed.

Our third hypothesis predicted that suicide attempters who reported stronger mental pain or lower tolerance for mental pain would demonstrate higher levels of physical dissociation compared to controls with similar levels of mental pain or tolerance for mental pain. We divided participants into low and high mental pain conditions, and, separately, low and high tolerance for mental pain conditions, using median splits. Because there was only a small number of individuals with high mental pain and low tolerance for mental pain in the nonclinical group, we analyzed data only for the two inpatient groups (see Table 3). In a first set of ANCOVAs, the two patient groups with high mental pain were compared on dissociation measures. ANCOVAs used age and continuous scores on mental pain as covariates to control for age differences and for mental pain differences among the high mental pain participants. In a second set of ANCOVAs, the two patient groups with low tolerance for mental pain were compared on dissociation measures. ANCOVAs used age and continuous scores on tolerance for mental pain as covariates to control for age differences and for tolerance for mental pain differences among the low tolerance for mental pain participants. Although differences in dissociation between suicidal and nonsuicidal patients with high current mental pain did not emerge, significant differences in dissociation from pain and insensitivity to bodily cues between suicidal and nonsuicidal patients with low tolerance for mental pain provided partial support for our third research hypothesis.

Our fourth prediction, that mental pain and tolerance for that pain would contribute to the prediction of suicide risk, was mostly confirmed. Mental pain and its tolerance (for both current and worst ever) were entered into the first stage of a hierarchical stepwise regression. In the second stage, we entered our three measures of physical dissociation, with the aim of assessing the unique contribution of these variables to suicidality beyond the contribution of mental pain or its tolerance. In the third stage, age was entered to covary out any group differences associated with that variable. Current mental pain was the strongest predictor of most suicidal manifestations. It was the best predictor of self-reported suicidal ideation, suicide preparation, attraction to life, repulsion by life, and attraction to death and the best predictor of therapists' reports of current suicidal intent (see Table 4). Tolerance for mental pain contributed significantly to attraction to death (see Table 4).

TABLE 3 Means and Standard Deviations Between the Inpatient Groups for the Combination of Mental Pain and Its Tolerance With Physical Dissociation

	High current mental pain					Low tolerance for current mental pain				
	Suicidal ($n = 34$)		Nonsuicidal ($n = 15$)			Suicidal ($n = 34$)		Nonsuicidal ($n = 21$)		
Factor	M	SD	M	SD	$F(1, 45)$[a]	M	SD	M	SD	$F(1, 51)$[a]
Physical dissociation[b]	0.92	2.53	0.98	1.89	1.80	0.95	2.57	0.99	1.86	3.77
Dissociation from pain[c]	1.22	2.82	1.19	1.98	1.67	1.24	2.87	1.14	1.87	4.71*
Insensitivity to bodily cues[d]	0.65	3.20	0.66	2.63	3.14	0.69	3.14	0.79	2.57	4.39*

[a]Based on covarying out continuous scores on corresponding mental pain measure and age. [b]Mean of Physical Dissociation Questionnaire. [c]Mean of Pain Dissociation subscale. [d]Mean of Body Insensitivity Scale.

*$p < .05$

**$p < .01$

TABLE 4 Standardized Regression Coefficients (Betas) for a Hierarchical Stepwise Multiple Regression Predicting Suicidality From Mental Pain, Tolerance for Mental Pain, Physical Dissociation, and Age ($N = 123$)

	Suicidal ideation			Suicide preparation				Attraction to life		Repulsion by life			Attraction to death			Lethality of intent (current) [a]		
	Block			Block				Block		Block			Block			Block		
	1	2	3	1	2	2	3	1	3	1	2	3	1	2	3	1	2	3
Predictor	I	I	I	I	I	II	I	I	I	I	I	I	I	I	I	I	II	I
Mental pain—current	.60***	.47***	.47***	.53***	.37***	.29**	.29**	−.65***	−.63***	.70***	.61***	.62***	.44***	.32***	.30**	.42***	.25	.26*
Mental pain—worst																		
Tolerance for mental pain—current																		
Tolerance for mental pain—worst														−.28**	−.30**			
Physical dissociation		.24**	.21*		.30**	.22*	.20*				.16*	.14						
Dissociation from pain																		
Insensitivity to bodily cues						.20*	.19										.29*	.21
Age			−.21**				−.15*		.20**			−.15*			−.10			−.25*
R^2	.36***	.39***	.44***	.28***	.35***	.37***	.39***	.42***	.45***	.49***	.51***	.53***	.20***	.26***	.27***	.17***	.23***	.28***
ΔR^2	.36***	.04**	.04**	.28***	.06**	.02*	.02*	.42***	.04**	.49***	.02*	.02*	.20***	.06**	.01	.17***	.06*	.06*

Notes: Blank entries indicate that the particular predictor did not statistically merit inclusion in the stepwise procedure.

[a] $n = 78$ (included only the two clinical groups).

*$p < .05$

**$p < .01$

***$p < .001$

Physical dissociation contributed uniquely to the prediction of the current level of suicidality as measured by ideation, preparation, and repulsion by life. For repulsion by life, the contribution of dissociation became nonsignificant when age was covaried out. Insensitivity to bodily cues made an additional unique contribution to the prediction of the current level of preparation and lethality of intent; however, these were reduced when age was covaried out. None of the dissociation measures contributed significantly to the prediction of lethality or intent of the act during the suicide attempt.

DISCUSSION

We found that hospitalized youth and young adults who had attempted suicide tended to show more intense mental pain than nonclinical participants and nonsuicidal inpatients. This finding among suicidal youth and young adults is in line with previous data on the importance of mental pain as a risk factor in suicidality among adults (Levi et al., 2008; Orbach, Mikulincer, Gilboa-Schectman, et al., 2003; Soumani et al., 2011). Together with previous studies, it underscores the importance of mental pain in suicidality across the lifespan (Shneidman, 1991).

Our study highlighted recent findings showing the importance of tolerance for mental pain in suicidality among nonclinical adults (Soumani et al., 2011). Overall, suicidal inpatients reported lower levels of tolerance for mental pain compared to the other groups. However, comparisons of the three factors of the TMPS revealed that only *coping with mental pain* differentiated between the two inpatient groups. Compared to the two other TMPS subscales, which gauge the difficulty of bearing current painful emotions and the need for immediate relief, coping with pain is future oriented and assesses the belief that the pain will eventually subside, either with the passage of time (e.g., "I believe that time will make the pain disappear) or through some form of problem solving (e.g., "I believe that if I do the right thing, the pain will disappear"). This subscale evaluates respondents' belief in the (ir)reversibility of pain and its transient or permanent nature. Thus, loss of hope for future respite from mental anguish might have gravely damaged the sufferers' capacity to generate sustainable coping resources and could have paved the way for a suicide attempt, a behavior said to occur when pain reaches a high intensity without any foreseeable change in the future (Shneidman, 1993, 1996).

Our suicidal respondents demonstrated a higher intensity of worst past mental pain and a lower tolerance of that pain compared to the comparison groups. Thus, our results imply that beyond the importance of current level of mental pain, demonstrated previously as a predictor of suicidal behavior (Levi et al., 2008; Orbach, Mikulincer, Gilboa-Schectman, et al., 2003), worst pain and its tolerance are also important factors in differentiating between

attempters and nonattempters, including at-risk groups (i.e., nonsuicidal inpatients). Our findings could also suggest that suicide attempters tend to feel emotionally more fragile throughout their lives, not only at the time of an attempt.

The Physical Dissociation Questionnaire was developed for this study and was shown to be a statistically reliable instrument for the evaluation of physical dissociation and dissociation from pain. Combined with the Body Insensitivity Scale, the Physical Dissociation Questionnaire helped demonstrate that suicidal youth and young adults reported overall greater physical dissociation compared to respondents from control groups. The suicidal group was more prone to detachment from their bodies, less sensitive to bodily cues, and less sensitive to pain. These findings are in line with previous research on suicide attempters, in which greater physical dissociation (assessed with the Body Image Aberration Scale; Orbach et al., 2001, 2006) and less sensitivity to painful stimuli (Orbach et al., 1996, 1997) or bodily cues (Orbach et al., 2001; Stein et al., 2003) were reported. Further research is recommended to establish the relevance of physical dissociation and body insensitivity among self-cutters, shown to be more dissociative (Matsumoto, Yamaguchi, Asaqmi, Yoshikawa, & Hirayasu, 2005), and among survivors of sexual abuse, reported to show higher experimental pain thresholds (Granot et al., 2011).

Our results did not detect differences between the suicidal and nonsuicidal inpatient groups (who had similarly elevated mental pain) on any of the dissociation measures. However, suicide attempters showing low levels of tolerance for mental pain also reported higher levels of dissociation from pain and insensitivity to bodily cues compared to nonsuicidal respondents with similarly low levels of tolerance for mental pain. These findings echo theories that underscore the importance of physical dissociation beyond mental pain for the actual suicide act (e.g., Maltsberger, 2004; Orbach, 2006). Although causality cannot be inferred from our data, we suspect that a unique process takes place in suicidal individuals whereby when the mental pain becomes unbearable, it triggers a physical dissociation process, weakening the instinctual drive for physical self-preservation and desensitizing the natural deterrent to self-harm.

Our regression analyses demonstrated the importance of physical dissociation and insensitivity to bodily cues as unique contributors to the variance in suicide behaviors above the contribution of mental pain. Physical dissociation contributed unique information to the prediction of suicidal ideation, preparation for an attempt in the future, and repulsion by life. Beyond its importance in the prediction of preparation for a future suicide attempt, insensitivity to bodily needs also played a particularly important role in predicting therapist assessment of current severity of intention to die by suicide. The Body Insensitivity Scale captures difficulties in discriminating between physical needs such as hunger, thirst, and the need for physical

rest and a failure to satisfy them. It is conceivable not only that overall detachment from one's body is important in aggravating the risk for suicide but that the lower vitality associated with the denial of basic life-sustaining needs could also exacerbate a dangerous process.

Dissociation has been shown to be associated with deliberate self-harm (e.g., Bedi, Muller, & Classen, 2013; Muehlenkamp, Claes, Smits, Peat, & Vandereycken, 2011) and with suicide attempts (e.g., Güleç, Ýnanç, Yanartap, Üzer, & Güleç, 2013; Wedig et al., 2012). Past studies on suicide attempts, self-injurious behavior, and dissociation have mostly used the Dissociative Experiences Scale as the gauge for dissociation. This instrument, however, is too broad a measure to illuminate the relationship between dissociation and intentional physical attacks on the body. The concept of somatoform dissociation and its derivative questionnaire (Nijenhuis, 2000) may also not be helpful because they focus on symptoms associated with conversion disorder. Although our cross-sectional study may not address the issue directly, we posit that our measurement of physical dissociation helped demonstrate that it is perhaps a specific form of dissociation, one that functions as a barrier between mind and body and that may provide the courage to launch a potentially lethal attack on it.

In sum, we believe that physical dissociation can increase the likelihood of choosing a suicidal act rather than another form of coping with intense and intolerable mental pain. We do not know whether dissociation from bodily experiences is an acute process that accompanies serious suicidal ideation and contributes to the facilitation of self-harm and suicidal behavior (Maltsberger, 2004) or whether it develops over time as a reaction to childhood neglect or trauma (Orbach, 2006). Be that as it may, when mental pain becomes intolerable and persistent, blocking awareness of the body and its signals renders the body a lifeless object and an easier target to attack. Physical perisuicidal dissociation might provide the analgesia necessary for an aggressive and potential deadly attack on the body (Orbach, 2006).

Limitations

We note three potential limitations to this study. First, certain aspects of the suicidal group were not completely equivalent to those of the comparison groups. In particular, more personality disorders were diagnosed among suicidal inpatients, and the nonsuicidal group had a higher mean age compared to the other two groups. A more equal distribution of psychiatric diagnoses among our inpatient groups and a greater similarity in age among groups would have allowed us to draw finer inferences and firmer conclusions. The second limitation concerns the measurement of worst mental pain. Retrospective assessment can be distorted by the passage of time and current circumstances. For example, current depression could taint the perception of past experiences in a more negative way. However, we believe

that the explicit request to contrast current and worst past mental pain may have helped respondents to differentiate between the two indices to the best of their ability. Third, although our Physical Dissociation Questionnaire contained items from reliable and validated tools, a separate validation study for this newly constructed instrument is warranted.

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