








## ORIGINAL ARTICLE

# Torn between living or dying—analyses of influencing factors on suicide ambivalence and its longitudinally impact on suicidal ideation and behavior in a high-risk sample

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## Abstract

**Introduction:** Findings on the role of suicide ambivalence, an individual's wish to live (WL), and wish to die (WD) in the development of suicidality have been heterogenous. The main goal of this study was to examine associations of these constructs within the past week with sociodemographic factors and to longitudinally investigate their predictive power for suicidal ideation (SI) and suicide attempts (SA).

**Methods:**  $N = 308$  patients (54% female;  $M = 36.92$  years,  $SD = 14.30$ ), admitted to a psychiatric ward due to suicidality, were assessed for all constructs after admission, after six, nine, and 12 months. Data were analyzed with univariate fixed-effect models and lagged mixed-effect regression models.

**Results:** Decreased, WL increased post-baseline. Gender showed no significant link to ambivalence, WD, and WL. Ambivalence and WD correlated negatively with age and positively with depressiveness. More participants in a relationship showed a WL compared with single/divorced/widowed participants. More single participants or those in a relationship showed ambivalence than divorced/widowed participants. More single participants showed a WD than participants in a relationship/divorced/widowed. Longitudinally, ambivalence and WD predicted SI and SA.

**Conclusion:** The findings underscore the importance of taking suicide ambivalence and WD into account in risk assessment and treatment.

## KEYWORDS

suicidal ideation, suicide ambivalence, suicide attempt

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## INTRODUCTION

A cross-national study in the United States including 84,850 adults (Nock et al., 2008) revealed a high lifetime prevalence of suicidal ideation (9.2%), suicide plans (3.1%), and suicide attempts (2.7%). The transition from suicidal ideation to suicidal behavior occurs usually within the first year after suicidal ideation onset. These numbers indicate that few individuals with suicidal ideation develop a plan on how to die or show suicidal behavior; nonetheless, suicidal ideation is one of the most reliable predictors of suicide attempts (ten Have et al., 2009). Suicidal ideation is usually defined as passive or active thoughts about killing oneself which are not accompanied by preparatory behavior (O'Connor et al., 2013); while passive suicidal ideation is usually defined as a desire for death without a suicide plan (Van Orden et al., 2010), active suicidal ideation is associated with a clear intention to die by suicide and the explicit thoughts of killing oneself (Van Orden et al., 2010).

But even though suicidal ideation has been highlighted as one of the strongest predictors of suicide attempts, not everyone with suicidal ideation engages in suicidal behavior or a suicide attempt (Franklin et al., 2017). To explain this phenomenon, Kovacs and Beck (1977) proposed the internal struggle hypothesis of suicidal behavior, describing an internal struggle between an individual's wish to live and wish to die. This internal struggle corresponds to a certain ambivalence that those affected seem to be subject to. Ambivalence in general can be understood as the simultaneous existence of both positive and negative evaluations of an attitude object (Conner & Sparks, 2002).

In suicide research, studies investigating suicide ambivalence are scarce and their findings are heterogeneous: O'Connor et al. (2012) differentiate participants based on the balance of wishes to live and wishes to die into three distinct groups (wish to die, wish to live, equal wish to die/wish to live; cf. Corona et al., 2013; Lento et al., 2013; O'Connor et al., 2012). They could show that patients in the wish to die group were more likely to report having made a suicide attempt and concluded that ambivalence toward dying might be a protective factor.

In contrast, a very recent study of Oakey-Frost et al. (2023) investigated wishes to live and wishes to die within a 10-day ecological momentary assessment (EMA). They also defined suicide ambivalence as relatively equal wishes to live and wishes to die ratings. Both wishes to die and suicide ambivalence predicted suicidal desire at the next assessment leading to the conclusion that ambivalence might be a risk factor for suicidal behavior. Lento et al. (2013) also divided participants in three groups showing that patients with wish to live or wish to die resolved

suicidal ideation by discharge while those patients in the ambivalent group had more variable changes in suicidal ideation during treatment.

While some speak of suicide ambivalence as a risk factor (Lento et al., 2013; Oakey-Frost et al., 2023), others speak of a protective factor (O'Connor et al., 2012). Additionally, following Conner and Sparks (2002) who refer to Ainslie's decision-making perspective (Ainslie, 1992), being ambivalent means to not being able to make a stable choice, which could mean that suicide ambivalence is a protective factor for suicide attempts. More studies are needed to investigate whether suicide ambivalence is a risk or a protective factor for the development of active suicidal ideation and suicide attempts.

On this background, the current study had two aims: The first aim was to extend findings on suicide ambivalence, wish to live, and wish to die and to investigate (1a) the frequencies of these constructs over time as well as to examine whether (1b) gender, (1c) age, (1d) marital status, and (1e) depressiveness are associated with suicide ambivalence, wish to live, and wish to die. Therefore, three categories were built at baseline with ambivalence (equal wishes to live and to die), wish to live, and wish to die.

The second aim of this study was to investigate whether suicide ambivalence, wish to live, and wish to die longitudinally (previous assessment,  $t-1$ ) predict (2a) active suicidal ideation at the next measurement ( $t$ ). Additionally, the aim was to investigate whether suicide ambivalence, wish to live, and wish to die at baseline ( $T_0$ ) predict (2b) suicide attempts (after 12 months) and thereby investigate whether it serves as risk or a protective factor for suicidal ideation and behavior.

## MATERIALS AND METHODS

### Sample

The total sample comprised  $N=308$  participants aged 18–81 years ( $M=36.92$ ,  $SD=14.30$ ), and 54% of participants were female ( $n=165$ ). One-hundred and sixty-three participants (53%) were admitted to a psychiatric ward due to recent suicide attempt and 145 (47%) due to an acute suicidal crisis (i.e., suicidal intent with intrusive suicidal ideation and an acute suicide threat). The most common disorders according to the International Classification of Diseases (ICD-10; Dilling et al., 2016) were affective disorders (F3;  $n=235$ ; 77%), neurotic, stress-related, and somatoform disorders (F4;  $n=110$ ; 36%), and personality disorders (F6;  $n=76$ ; 25%).

## Procedure

During September 2016 and March 2018, study participants were recruited in 13 psychiatric wards in Aachen, Bochum, and Leipzig in Germany. Participants were approached in case they had been admitted to the psychiatric ward either after a recent suicide attempt or because of an acute suicidal crisis (e.g., suicidal ideation). They were interviewed at a baseline assessment within 14 days after admission (T0). In addition to a comprehensive baseline assessment (T0), participants were contacted for follow-up assessments after discharge after six (T1), nine (T2), and 12 months (T3). Participants were excluded in case of acute intoxication, psychotic symptoms, age below 18, cognitive impairments, and insufficient German language skills. All participants were informed about the voluntary nature of the study, data security, and storage. They all gave written informed consent prior to participating. The whole procedure of the study was approved by the responsible Ethics Committees (Medical Faculty, RWTH Aachen University: EK310/13; Medical Faculty, Ruhr-University Bochum: 4909-14; Medical Faculty, University of Leipzig: 042-14-27,012,014) and was in accordance with the Declaration of Helsinki (World Medical Association, 2001). This study is a secondary analysis of the data of a prospective multicenter study named “Predictors of suicidal ideation and suicidal behavior in a high-risk sample (PRESS).” For more information on the study, see (Forkmann et al., 2020, 2021).

## Measures

### Sociodemographic variables

Age, gender, and marital status were assessed with a single item each.

### Depression

Depressiveness of participants was assessed with the Rasch-based Depression Screening (DESC; Forkmann et al., 2010). The DESC assesses depressive symptoms with 10 items. All items refer to the last 2 weeks and are to be answered on a Likert scale ranging from “0-never” to “4-always.” Total scores range from 0 to 40 with higher scores indicating greater depression. A sum score was calculated for all items. Excellent internal consistency was reported for the German version of the DESC in prior studies (Cronbach's  $\alpha = 0.92$ – $0.93$ ; Forkmann et al., 2010). Internal consistency was excellent in the present sample with Cronbach's  $\alpha = 0.92$ .

### Suicidal ideation, ambivalence, wish to die, and wish to live

In line with previous studies, we used the Beck Scale for Suicide Ideation (BSS; Beck & Steer, 1991) to assess active and passive suicidal ideation as well as suicidal ambivalence. The BSS includes a total of 21 items referring to the past week and assessing different aspects of suicidal ideation that have to be answered on a 3-point Likert scale (0 to 2). The sum score ranges from 0 to 38 with higher values indicating greater suicide risk. The first five items can be used as a screening tool for suicidal ideation during the last week and build in sum the BSS-Screen score. If one of those statement groups is answered with more than 0, 14 subsequent items must be answered to assess severity of suicidal ideation. Additionally, two items that are not included in the BSS sum score ask for frequency and intensity of former suicide attempts.

For the outcome variable of active suicidal ideation, a sum score items 4, 6, 7, 8, and 9 (Forkmann et al., 2021) was calculated for each measurement. The internal consistency for active suicidal ideation was excellent in the present sample with Cronbach's  $\alpha = 0.89$ .

In line with the recent study of, for example, Oakey-Frost et al. (2023) and O'Connor et al. (2012), we decided to operationalize suicide ambivalence as equal ratings of wish to live and wish to die. For this, we used Item 3 in the BSS. Item 3 results in a multicategorical variable coded as 0 = wish to live (“My reasons to live outweigh my reasons to die”), 1 = suicide ambivalence (“My reasons for living or dying are about the same.”), and 2 = wish to die (“My reasons to die outweigh my reasons to live.”). Suicide ambivalence, wish to live, and wish to die were also assessed at each measurement always referring to the last week.

### Suicide attempt history

Suicide attempt as an outcome variable after 12 months was assessed with the Self-Injurious Thoughts and Behaviors Interview (SITBI; Fischer et al., 2014), which is a structured interview assessing a wide range of suicidal and self-injurious thoughts and behavior.

## Statistical analyses

The number of participants with wish to live, ambivalence, and wish to die at each assessment point was summarized using frequency statistics. Cross-sectional associations between sociodemographic variables and depressiveness with suicide ambivalence, wish to live, and wish to die at T0 were analyzed using univariate

fixed-effect models. Separate models were run with gender, age, and depressiveness as dependent variables and the multicategorical variable including wish to live, suicide ambivalence, and wish to die as independent variable. This variable was dummy-coded for the analyses with “wish to live” serving as reference category. The multicategorical variable *marital status* was also dummy-coded into (1) *single* ( $n=125$ ), (2) *in a relationship* ( $n=108$ ), and (3) *divorced or widowed* ( $n=61$ ). Differences in wish to live, suicide ambivalence, and wish to die were analyzed using chi-squared tests, since marital status as well as the variable for wish to live, suicide ambivalence, and wish to die were multicategorical. In case of significant chi-square test, post hoc tests were conducted to determine which of the marital status groups differ in wish to live, ambivalence, and wish to die.

To examine whether wish to live, ambivalence, and wish to die predict active suicidal ideation from measurement to measurement, mixed-effect regression models were performed. Advantages of mixed-effect models are that they account for statistical dependency of clustered data (observations nested within participants) and adequately handle missing data at random. As preparation, a lag – 1 variable of wish to live, ambivalence, and wish to die was created, representing whether participants showed wish to live, suicide ambivalence, or wish to die at the previous assessment ( $t-1$ ). Three separate models with active suicidal ideation as dependent variable and the lagged wish to live, ambivalence, and wish to die as fixed effect were run. In the first model, only wish to live, ambivalence, and wish to die at the previous assessment were entered as independent variable. In the second model, depressiveness at the previous assessment as well as sociodemographic baseline variables gender and age were entered as covariates. In the third model, active suicidal ideation at the previous assessment was additionally entered as covariate to control for the autocorrelation of the dependent variable. In all mixed-effect models, “wish to live” served as reference category. Post hoc pairwise comparisons were used to also examine potential differences between the categories “ambivalence” and “wish to die” in all models, since only direct comparisons with the reference category are possible in the primary model specification. All models were run as random intercept and random slope models. If model fitting results in a singular fit, models were specified as fixed intercept and random slope models. Restricted maximum likelihood was used for all models and a time variable indicating the assessment point (coded as 0–3) was entered as covariate in all models to control for potential time trends.

To analyze whether wish to live, suicide ambivalence, and wish to die at T0 predicts suicide attempts over the

course of the 12-month study period, logistic regression models were performed. Suicide attempts (0=no suicide attempt, 1=suicide attempt) were entered as dependent variable and wish to live, suicide ambivalence, and wish to die as predictor. Again, models were additionally controlled for depressiveness, age, and gender; “wish to live” served as reference category. Since these models only include baseline ambivalence as predictor, there was no need to account for autocorrelation. All analyses were conducted in R (R Core Team, 2023) with a significance cut-off of  $\alpha < 0.05$ . Mixed-effect models were conducted using the package *lme4* (Bates et al., 2009).

## RESULTS

### Sample characteristics

Table 1 summarizes the sample characteristics at baseline.

### Frequencies of three categories of suicide ambivalence over time

Table 2 provides an overview of the number of participants for each of the three categories wish to live, ambivalence, and wish to die at all four assessments for the complete sample and for subgroups of participants that were admitted to a psychiatric ward at baseline because of a suicide attempt ( $n=163$ ) or acute suicidality ( $n=145$ ). Noteworthy, the relative number of participants showing wish to die substantially decreases after baseline, while the frequency of wish to live increases, and ambivalence remains relatively similar.

TABLE 1 Sample characteristics at baseline.

Variable	<i>M</i>	<i>SD</i>	<i>n</i>	%
Age	36.92	14.30	-	-
Gender				
Female	-	-	165	54
Male	-	-	143	46
Marital status				
Single	-	-	125	41
Relationship	-	-	55	18
Married	-	-	53	17
Divorced	-	-	53	17
Widowed	-	-	8	3
Active SI	3.43	2.82	-	-
Depressiveness	26.67	8.34	-	-

Note:  $N=308$ .

Abbreviation: SI, Suicidal ideation.



**TABLE 2** Frequencies and percentages of participants that showed wish to live, ambivalence, or wish to die at the four assessments<sup>a</sup> for the complete sample and for subgroups of participants that were admitted because of a suicide attempt or acute suicidality.

	T0	T1	T2	T3
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
<b>Complete sample</b> ( <i>N</i> = 308)				
Wish to live	125 (42)	103 (59)	110 (65)	100 (64)
Ambivalence	85 (29)	49 (28)	41 (24)	41 (26)
Wish to die	87 (29)	22 (13)	18 (11)	15 (10)
Total <i>N</i>	297	174	169	156
NA	11	134	139	152
<b>Suicide attempt</b> ( <i>n</i> = 163)				
Wish to live	65 (41)	58 (64)	57 (69)	50 (68)
Ambivalence	45 (28)	23 (26)	17 (20)	18 (24)
Wish to die	48 (30)	9 (10)	9 (11)	6 (8)
Total <i>N</i>	158	90	83	74
NA	5	73	80	89
<b>Acute suicidality</b> ( <i>n</i> = 145)				
Wish to live	60 (43)	45 (54)	53 (62)	50 (61)
Ambivalence	40 (29)	26 (31)	24 (28)	23 (28)
Wish to die	39 (28)	13 (15)	9 (10)	9 (11)
Total <i>N</i>	139	84	86	82
NA	6	61	59	63

Abbreviation: NA, not available.

<sup>a</sup>Ambivalence, wish to live, and wish to die were analyzed with a three-categorical variable based on one item of Beck's Scale for Suicide Ideation. The item refers to the past week and was assessed after admission to the psychiatric ward due to an acute suicidal crisis or suicide attempt, after 6, 9, and 12 months.

## Cross-sectional associations of suicide ambivalence with sociodemographic characteristics and depressiveness at baseline

Table 3 shows the results of univariate fixed-effect models. Ambivalence and wish to die at baseline are negatively related with age and positively related with depressiveness. This suggests that, compared with the reference category wish to live, being younger and having more depressive symptoms is associated with higher ambivalence and wish to die. There was no association between wish to live, ambivalence, wish to die, and gender. Additional post hoc tests showed that the effects of ambivalence versus wish to die did not significantly differ for any of the outcomes.

**TABLE 3** Outcomes of simple univariate regression analyses between sociodemographic variables and depressiveness as well as suicidal ambivalence, wish to live, and wish to die.

	Age	Gender	Depressiveness
	<i>B</i> ( <i>SE</i> )	<i>B</i> ( <i>SE</i> )	<i>B</i> ( <i>SE</i> )
Wish to live <sup>a</sup>	-	-	-
Ambivalence	-8.98 (1.92)***	0.20 (0.28)	7.26 (1.02)***
Wish to die	-9.21 (1.90)***	-0.36 (0.28)	9.07 (1.01)***

Abbreviations: *B*, Unstandardized regression coefficient; *SE*, standard error.

<sup>a</sup>Wish to live serves as reference category in the regression models. All estimates should therefore be interpreted as the effect of this category compared with the reference category. Additional post hoc pairwise comparisons showed that the effects of "Ambivalence" versus "Wish to die" did not significantly differ in any of the models.

\*\*\**p* < 0.001.

The chi-square tests indicated that there were significant differences in the frequency of wish to live, ambivalence, and wish to die between categories of marital status ( $\chi^2(4) = 18.15, p = 0.001$ ). Additional post hoc tests showed that significantly more people in a relationship showed wish to live (*n* = 56) compared with singles (*n* = 37) and divorced/widowed people (*n* = 32). Significantly less divorced/widowed people showed ambivalence (*n* = 10) versus singles (*n* = 41) and people in a relationship (*n* = 31). Finally, significantly more single people showed wish to die (*n* = 45) versus people in a relationship (*n* = 21) and divorced/widowed people (*n* = 19).

## Longitudinal association of suicide ambivalence with active suicide ideation and suicide attempts

### Lagged models

Table 4 summarizes the results of lagged mixed-effect regression models predicting active suicidal ideation by suicide ambivalence, wish to live, and wish to die at the previous assessment (referring to the last week). Ambivalence (*B* = 1.77, *p* < 0.001) and wish to die (*B* = 2.47, *p* < 0.001) at the previous assessment were both positively related with active suicidal ideation, suggesting that they predicted higher active suicidal ideation compared with the reference category wish to live (Model 1). These effects remained significant if additional covariates were entered to the model (Model 2) but became insignificant if active suicidal ideation at the previous assessment was included as covariate (Model 3). Additional post hoc pairwise comparisons showed that the effects of ambivalence versus wish to die on active suicidal ideation did not significantly differ in any of the two models.

**TABLE 4** Results of lagged mixed-effect regression models with ambivalence, wish to live, and wish to die at the previous time point as predictor for active suicidal ideation.

	Model 1	Model 2	Model 3
	<i>B</i> ( <i>SE</i> )	<i>B</i> ( <i>SE</i> )	<i>B</i> ( <i>SE</i> )
Predictor			
Wish to live <sub>t-1</sub> <sup>a</sup>	-	-	-
Ambivalence <sub>t-1</sub>	1.77 (0.23)***	0.96 (0.24)***	0.45 (0.24)
Wish to die <sub>t-1</sub>	2.47 (0.40)***	1.49 (0.37)***	0.41 (0.40)
Time	-0.11 (0.07)	-0.07 (0.08)	0.12 (0.10)
Depression <sub>t-1</sub>	-	0.01 (0.01)	-0.00 (0.01)
Age	-	-0.005 (0.01)	0.00 (0.01)
Gender	-	0.11 (0.26)	-0.05 (0.16)
Active SI <sub>t-1</sub>	-	-	0.50 (0.50)***
<i>N</i> , observations (level 1)	435	430	423
<i>N</i> , participants (level 2)	183	180	178

Abbreviations: *B*, Unstandardized fixed effect; *SE*, Standard error, SI, Suicidal ideation.

<sup>a</sup>Wish to live serves as reference category in the regression models. Additional post hoc pairwise comparisons showed that the effects of “Ambivalence” versus “Wish to die” did not significantly differ in any of the two models.

\*\*\* $p < 0.001$ .

## Logistic regression models

Table 5 summarizes the results of logistic regression models predicting suicide attempts during the 12-month study period with ambivalence, wish to live, and wish to die (at baseline). Similar to the results in lagged models, wish to die ( $B = 1.05$ ,  $p = 0.02$ ) and ambivalence ( $B = 0.94$ ,  $p = 0.03$ ) at baseline predicted an increased likelihood of suicide attempts compared with the reference category wish to live. However, this association became insignificant when the additional covariates depressiveness, age, and gender were entered. Again, post hoc tests showed that the effect of ambivalence versus wish to die not significantly differed.

## DISCUSSION

Even though suicide ambivalence has gained prominence in suicide research, it has not yet been studied very extensively. Results on its role as a risk or a protective factors are heterogenous: Some researchers view it as a potential risk factor (Oakey-Frost et al., 2023), whereas others understand suicidal ambivalence as a protective factor (O'Connor et al., 2012). Additionally, the approach to conceptualization and operationalization differs between

**TABLE 5** Results of generalized linear model with ambivalence, wish to live, and wish to die at T0 as predictor for suicide attempts within the 12-month study period.

	Model 1	Model 2
	<i>B</i> ( <i>SE</i> )	<i>B</i> ( <i>SE</i> )
Wish to live <sub>T0</sub> <sup>a</sup>	-	-
Ambivalence <sub>T0</sub>	1.05 (0.46)*	0.40 (0.51)
Wish to die <sub>T0</sub>	0.94 (0.03)*	0.23 (0.50)
Depressiveness <sub>T0</sub>	-	0.10 (0.03)**
Age	-	-0.01 (0.01)
Gender	-	0.26 (0.39)
<i>N</i> , participants	172	168

Abbreviations: *B*, Unstandardized fixed effect, *SE*, Standard Error.

<sup>a</sup>Wish to live serves as reference category in the regression models. Additional post hoc pairwise comparisons showed that the effects of “Ambivalence” versus “Wish to die” did not significantly differ in any of the two models.

\* $p < 0.05$ . \*\* $p < 0.01$ .

studies. Against this background, the present study pursued two primary objectives. The initial goal was to expand upon existing insights into suicide ambivalence by examining (1a) the evolving frequencies of suicide ambivalence, the wish to live, and the wish to die over time, while exploring potential associations with (1b) gender, (1c) age, (1d) marital status, and (1e) depressiveness. The second objective was to longitudinally investigate whether suicide ambivalence, the wish to live, and the wish to die, over a 12-month period, predict (2a) active suicidal ideation and (2b) suicide attempts, thereby elucidating whether these factors function as risk or protective factors.

Within this sample of highly suicidal individuals, the proportion of individuals expressing a wish to die after admission notably diminishes post-baseline, whereas the incidence of wish to live rises. Interestingly, the frequency of ambivalence remains relatively consistent. This provides initial indications that ambivalence seems to be a relatively stable construct, and individuals with ambivalence appear to persist in a state of ambivalence over longer periods of time. This is in line with Oakey-Frost et al. (2023), who found relatively low variability from time point to time point in a 10-day Ecological Momentary Assessment (EMA) investigation.

There was a negative correlation between ambivalence and the wish to die with age, while a positive correlation was observed with depressiveness. The association between suicidal ambivalence and depression has also been shown in other studies (Lento et al., 2013) and may be related to the fundamental indecisiveness of depressed individuals (Hallenbeck et al., 2022). Participants in a relationship exhibited a

higher prevalence of the wish to live, compared to those who were single, divorced, or widowed. Conversely, a higher proportion of single participants or those in a relationship displayed ambivalence compared to divorced or widowed participants. Additionally, a greater number of single participants expressed a wish to die compared to those in a relationship, divorced, or widowed. In principle, widowed and divorced people have an increased risk of suicide (Næss et al., 2021)—reduced ambivalence or heightened suicide intent may contribute to this. At the same time, we must caution against drawing far-reaching conclusions based on individual findings. However, being in a relationship might be a protective factor against the wish to die.

About the predictive significance of wish to live, ambivalence, and wish to die, we found that both ambivalence and wish to die in the preceding assessment exhibited positive associations with active suicidal ideation. This suggests that they were associated with higher levels of active suicidal ideation. These effects retained significance even with additional covariates included, but lost significance when controlling for the autocorrelation of active suicidal ideation. Post hoc comparisons revealed that the effects of ambivalence versus wish to die on active suicidal ideation did not significantly differ highlighting both ambivalence and wish to die as risk factors. Consistently, wish to die and ambivalence were indicative of a heightened probability of suicide attempts. Nevertheless, this association was not significant anymore when adding additional covariates. Once again, post hoc comparisons indicated no significant difference in the effects of ambivalence versus the wish to die on active suicidal ideation. The findings for wish to die and ambivalence as a risk factor are in line with Oakey-Frost et al. (2023), who did not only found that both have small magnitudes of change over time but also that wish to die and ambivalence served as a predictor for suicidal desire.

In general, the question of whether suicidal ambivalence is a protective or a risk factor might be too simplistic: Compared to a strong suicidal intent, ambivalence may be associated with a lower suicide risk—after all, reasons for continuing to live are still seen. In contrast, ambivalence may be associated with a higher suicide risk compared to an existing desire to continue living—after all, there are individual reasons to die. Ambivalence is generally a transitional state and can therefore be both protective and risky.

## Implications and future research

The current study findings highlight suicide ambivalence as a risk factor for both active suicidal ideation and suicide

attempt. Given that persistent suicide ambivalence also leads to a more stable suicidal desire over time (Goods et al., 2020), patients with suicidal ambivalence might be less responsive to treatment (Page & Stritzke, 2020). Wish to die also served as a risk factor and should therefore also always be included in both suicide risk assessment and treatment.

Concerning wish to live, a prolonged inclination toward a wish to live serves as a protective factor against experiencing long-term suicidal desire, even within the notably stressful setting of inpatient treatment (Bryan et al., 2016; Goods et al., 2020). Significantly, the discoveries of Goods et al. (2020) resonate with those of Bryan et al. (2016), proposing that the wish to die might be a relatively more influential catalyst for suicidal ambivalence, and concurrently, the wish to live can maybe destabilize the desire to die (Oakey-Frost et al., 2023). Following Oakey-Frost et al. (2022), priming focused on life disrupts a cognitive state oriented toward rumination on death, therefore enhancing the wish to live in treatment seems to be important.

## Strengths and limitations

The major strengths of the study are the large clinical sample and the longitudinal data that allowed statements on the predictive role of suicide ambivalence for both active suicidal ideation and suicide attempts. A limitation of this study is that other types of operationalization of suicidal ambivalence were used. In contrast to O'Connor et al. (2012), Corona et al. (2013), and Lento et al. (2013), we only used one item to operationalize wish to live, ambivalence, and wish to die and not a suicidality index score. This operationalization potentially represents a too rigid type of operationalization: Of course, ambivalence can also be present when wish to live/wish to die is not balanced. Another interesting definition of ambivalence follows the idea that ambivalence is actually more about people's attitudes in general to a certain topic and not about their current beliefs (Conner & Sparks, 2002). It would therefore be interesting to additionally assess participants for their general attitude toward suicide and compare this to the intensity of their suicidal ideation. If they generally condemned suicide but report suicidal ideation including plans, this could also serve as ambivalence. At this point, a clear definition of ambivalence about suicide is needed and the development of a valid and reliable measure for suicide ambivalence seems necessary for future research. Furthermore, suicidal ambivalence as well as wish to die and wish to live are likely to be subject to (fast) intraindividual fluctuations, which could not be adequately mapped in this study (cf. Oakey-Frost

et al., 2023). High-resolution EMA studies in patient samples are needed for this.

## CONCLUSION

To conclude, results of the current study revealed that both wish to die and wish to live serve as a risk factor for active suicidal ideation and suicide attempts. The study findings highlight the importance of a uniform definition and operationalization of suicide ambivalence as well as the relevance of ambivalence as a treatment target.

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## CONFLICT OF INTEREST STATEMENT

All authors declare no conflict of interest.

## DATA AVAILABILITY STATEMENT

Data are available upon reasonable request.








## ETHICS APPROVAL STATEMENT

The study was approved by the responsible Ethics Committees (Medical Faculty, RWTH Aachen University: EK310/13; Medical Faculty, Ruhr-University Bochum: 4909-14; Medical Faculty, University of Leipzig: 042-14-27012014).

## PATIENT CONSENT STATEMENT

All patients gave written informed consent.

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## REFERENCES

- Ainslie, G. (1992). *Picoeconomics: The strategic interaction of successive motivational states within the person*. Cambridge University Press.
- Bates, D., Maechler, M., Bolker, B., Walker, S., Christensen, R. H. B., Singmann, H., & Green, P. (2009). Package 'lme4'. <http://lme4.r-forge.r-project.org>
- Beck, A. T., & Steer, R. A. (1991). *Manual for the Beck scale for suicide ideation*. Psychological Cooperation.
- Bryan, C. J., Rudd, M. D., Peterson, A. L., Young-McCaughan, S., & Wertemberger, E. G. (2016). The ebb and flow of the wish to live and the wish to die among suicidal military personnel. *Journal of Affective Disorders*, 202, 58–66. <https://doi.org/10.1016/j.jad.2016.05.049>
- Conner, M., & Sparks, P. (2002). Ambivalence and attitudes. *European Review of Social Psychology*, 12(1), 37–70.
- Corona, C. D., Jobes, D. A., Nielsen, A. C., Pedersen, C. M., Jennings, K. W., Lento, R. M., & Brazaitis, K. A. (2013). Assessing and treating different suicidal states in a Danish outpatient sample. *Archives of Suicide Research*, 17(3), 302–312. <https://doi.org/10.1080/13811118.2013.777002>
- Dilling, H., Mombour, M., Schmidt, M., & Schulte-Markwort, E. (2016). *WHO: ICD-10 Kapitel V (F) Diagnostische Kriterien für Forschung und Praxis* (Vol. 6). Hogrefe.
- Fischer, G., Ameis, N., Parzer, P., Plener, P. L., Groschwitz, R., Vonderlin, E., Kolch, M., Brunner, R., & Kaess, M. (2014). The German version of the self-injurious thoughts and behaviors interview (SITBI-G): A tool to assess non-suicidal self-injury and suicidal behavior disorder. *BMC Psychiatry*, 14(1), 265. <https://doi.org/10.1186/s12888-014-0265-0>
- Forkmann, T., Boecker, M., Wirtz, M., Glaesmer, H., Brähler, E., Norra, C., & Gauggel, S. (2010). Validation of the Rasch-based depression screening in a large scale German general population sample. *Health and Quality of Life Outcomes*, 8, 105. <https://doi.org/10.1186/1477-7525-8-105>
- Forkmann, T., Glaesmer, H., Paashaus, L., Rath, D., Schönfelder, A., Juckel, G., Gauggel, S., Beginn-Göbel, U., & Teismann, T. (2021). Testing the four main predictions of the interpersonal-psychological theory of suicidal behavior in an inpatient sample admitted due to severe suicidality. *Behavior Therapy*, 52(3), 626–638. <https://doi.org/10.1016/j.beth.2020.08.002>
- Forkmann, T., Glaesmer, H., Paashaus, L., Rath, D., Schonfelder, A., Stengler, K., Juckel, G., Assion, H. J., & Teismann, T. (2020). Interpersonal theory of suicide: Prospective examination. *BJPsych Open*, 6(5), e113. <https://doi.org/10.1192/bjo.2020.93>
- Franklin, J. C., Ribeiro, J. D., Fox, K. R., Bentley, K. H., Kleiman, E. M., Huang, X., Musacchio, K. M., Jaroszewski, A. C., Chang, B. P., & Nock, M. K. (2017). Risk factors for suicidal thoughts and behaviors: A meta-analysis of 50 years of research. *Psychological Bulletin*, 143(2), 187–232. <https://doi.org/10.1037/bul0000084>
- Goods, N. A., Page, A. C., Stritzke, W. G., Kyron, M. J., & Hooke, G. R. (2020). Daily monitoring of the wish to live and the wish to die with suicidal inpatients. In *Alternatives to Suicide* (pp. 89–110). Elsevier.
- Hallenbeck, H. W., Rodebaugh, T. L., & Thompson, R. J. (2022). Understanding indecisiveness: Dimensionality of two self-report questionnaires and associations with depression and indecision. *Psychological Assessment*, 34(2), 176.
- Kovacs, M., & Beck, A. T. (1977). The wish to die and the wish to live in attempted suicides. *Journal of Clinical Psychology*, 33(2), 361–365.
- Lento, R. M., Ellis, T. E., Hinnant, B. J., & Jobes, D. A. (2013). Using the suicide index score to predict treatment outcomes among



- psychiatric inpatients. *Suicide and Life-threatening Behavior*, 43(5), 547–561.
- Næss, E. O., Mehlum, L., & Qin, P. (2021). Marital status and suicide risk: Temporal effect of marital breakdown and contextual difference by socioeconomic status. *SSM-population Health*, 15, 100853
- Nock, M. K., Borges, G., Bromet, E. J., Alonso, J., Angermeyer, M., Beautrais, A., Bruffaerts, R., Chiu, W. T., de Girolamo, G., Gluzman, S., de Graaf, R., Gureje, O., Haro, J. M., Huang, Y., Karam, E., Kessler, R. C., Lepine, J. P., Levinson, D., Medina-Mora, M. E., ... Williams, D. (2008). Cross-national prevalence and risk factors for suicidal ideation, plans and attempts. *British Journal of Psychiatry*, 192(2), 98–105. <https://doi.org/10.1192/bjp.bp.107.040113>
- Oakey-Frost, D. N., Harris, J. A., Roberge, E. M., Andres, W. C., Rugo, K. F., Bryan, A. O., & Bryan, C. J. (2022). Verbal response latency as a behavioral indicator of diminished wish to live in a clinical sample of active duty army personnel with recent suicidal ideation. *Archives of Suicide Research*, 26(3), 1046–1059. <https://doi.org/10.1080/13811118.2020.1848670>
- Oakey-Frost, N., Moscardini, E. H., Cowan, T., Cohen, A., & Tucker, R. P. (2023). The temporal dynamics of wish to live, wish to die, and their short-term prospective relationships with suicidal desire. *Behavior Therapy*, 54(3), 584–594. <https://doi.org/10.1016/j.beth.2022.12.011>
- O'Connor, R. C., Smyth, R., Ferguson, E., Ryan, C., & Williams, J. M. (2013). Psychological processes and repeat suicidal behavior: A four-year prospective study. *Journal of Consulting and Clinical Psychology*, 81(6), 1137–1143. <https://doi.org/10.1037/a0033751>
- O'Connor, S. S., Jobes, D. A., Yeargin, M. K., Fitzgerald, M. E., Rodriguez, V. M., Conrad, A. K., & Lineberry, T. W. (2012). A cross-sectional investigation of the suicidal spectrum: Typologies of suicidality based on ambivalence about living and dying. *Comprehensive Psychiatry*, 53(5), 461–467. <https://doi.org/10.1016/j.comppsy.2011.09.007>
- Page, A., & Stritzke, W. (2020). *Alternatives to suicide: Beyond risk and toward a life worth living*. Academic Press.
- R Core Team. (2023). *R: A Language and Environment for Statistical Computing*. <https://www.R-project.org/>
- ten Have, M., de Graaf, R., van Dorsselaer, S., Verdurmen, J., van't Land, H., Vollebergh, W., & Beekman, A. (2009). Incidence and course of suicidal ideation and suicide attempts in the general population. *The Canadian Journal of Psychiatry*, 54(12), 824–833. <https://doi.org/10.1177/070674370905401205>
- Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S. R., Selby, E. A., & Joiner, T. E. (2010). The interpersonal theory of suicide. *Psychological Review*, 117(2), 575–600. <https://doi.org/10.1037/a0018697>
- World Medical Association. (2001). World medical association declaration of Helsinki. Ethical principles for medical research involving human subjects. *Bulletin of the World Health Organization*, 79(4), 373–374.

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