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Suicide and Life-Threatening BEHAVIOR

ORIGINAL ARTICLE

Is camouflaging autistic traits associated with defeat, entrapment, and lifetime suicidal thoughts? Expanding the Integrated Motivational Volitional Model of Suicide

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Abstract

Introduction: The current study explored whether camouflaging autistic traits is associated with defeat and entrapment and lifetime suicidal thoughts, as predicted by the Integrated Volitional Model of Suicide (IMV model).

Methods: 180 UK undergraduate students (76.7% female 18–67 years) completed a cross-sectional online survey from February 5 to March 23, 2020, including self-report measures of defeat and entrapment (SDES), autistic traits (AQ-10), depression (PHQ-9), anxiety (GAD-7), camouflaging autistic traits (CAT-Q), and lifetime suicidal thoughts and behaviors (SBQ-R item 1).

Results: After controlling for age, gender, current depression, and anxiety symptoms, autistic traits accounted for significantly more of the variance in defeat and entrapment (1.1%), and camouflaging accounted for a further 3.2% of the variance. The association between autistic traits and lifetime suicidality was significantly mediated by camouflaging, defeat, and entrapment. After controlling for age, gender, current depression, and anxiety symptoms, defeat and entrapment (but not camouflaging) accounted for significantly more variance in lifetime suicidal thoughts. The interaction between camouflaging, defeat and entrapment predicted significantly less variance in lifetime suicidal thoughts than either variable alone.

Conclusion: Results suggest that camouflaging autistic traits is a transdiagnostic risk factor for lifetime suicidality, relevant to the defeat and entrapment constructs of the IMV model.

KEYWORDS

autism spectrum conditions, autistic traits, broader autism phenotype, camouflaging, defeat, entrapment, Integrated Motivational–Volitional model of suicide, masking, suicidality, suicide

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INTRODUCTION

Suicide is the leading cause of death for young people aged 24–34 years in the UK (Office for National Statistics, 2015). However, understanding and preventing suicide is highly complex and challenging, involving a combination of biological, psychological, social, and environmental factors (O'Connor & Nock, 2014; Townsend, 2019; Walter & Pridmore, 2012; World Health Organization, 2012). Autism and autistic traits are not currently considered in models of suicide (Cassidy, 2020). Yet, research shows that autism diagnosis and autistic traits are associated with increased risk of suicidal thoughts and behaviors (e.g., Cassidy et al., 2014, 2022; Cassidy, Bradley, Shaw, et al., 2018; Gallyer et al., 2020; Hedley et al., 2021; Hedley & Uljarević, 2018; Newell et al., 2023; Paquette-Smith et al., 2014; Pelton & Cassidy, 2017; Takara & Kondo, 2014). However, there is comparatively little research into *why* this is the case (Cassidy, Robertson, et al., 2020; Cassidy & Rodgers, 2017). Hence, autistic[1] people and those who support them worldwide identified "How well do existing models of understanding suicide apply to autistic people?" in the top 10 priorities for future research to address (Cassidy, Goodwin, et al., 2021).

Autistic traits are normally distributed in the general population and tend to be higher in diagnosed autistic people (Allison et al., 2012; Baron-Cohen et al., 2001, 2014; Booth et al., 2013; Ruzich et al., 2015) and their family members (Constantino & Todd, 2005; Piven et al., 1997). Many autistic people also remain undiagnosed (Lai & Baron-Cohen, 2015), and at potentially high risk of suicide. For example, 11% of depressed patients, and 15% of patients with borderline personality disorder met diagnostic criteria for autism, and co-occurring autism was associated with significantly increased risk of suicide attempts (Rydén et al., 2008; Takara & Kondo, 2014). 40.6% of adults who have attempted suicide score above the clinical cut-off for possible undiagnosed autism on a validated screening instrument, after excluding those who suspected they were autistic or diagnosed autistic from the analysis (Richards et al., 2019). In a review of coroner's inquest records and interviews with next of kin of those who died by suicide in two regions of England, 41.4% of people who died had evidence of high autistic traits indicating possible undiagnosed autism (Cassidy et al., 2022). Additionally, in a sample of patients with psychosis, 25% scored above the clinical cut-off for possible undiagnosed autism, and autistic traits were associated with suicidality through hopelessness and positive psychotic symptoms (Upthegrove et al., 2018). Hence, exploring the role of autistic traits in the formation of suicidal intent, and associated risk factors outlined in current theory, could be especially useful for increasing our understanding and prevention of suicide in both diagnosed and undiagnosed autistic people, and the broader autism phenotype of those with high autistic traits who might not meet diagnostic criteria for autism (Cassidy, 2020).

Research has therefore explored how suicide theories developed for the general population could be relevant to understanding and preventing suicide in the context of autism and autistic traits (Cassidy, 2020; Mitchell et al., 2021; Pelton et al., 2020a; Pelton & Cassidy, 2017). Many suicide theories developed for the general population highlight the importance of difficulties commonly experienced by autistic people and those with high autistic traits in the formation of suicide intent. For example, the Integrated Motivational–Volitional Model of Suicide (IMV model; O'Connor & Kirtley, 2018) posits that feelings of defeat (a failed social struggle, including feelings of powerlessness and a sense of lost social status or not meeting personal goals; Gilbert & Allan, 1998), together with entrapment (feeling trapped in an aversive situation; Gilbert & Allan, 1998), increases risk of suicidal thoughts, with suicide perceived as the only possible escape route (O'Connor & Kirtley, 2018).

Research suggests that autistic people and those with high autistic traits experience a number of external indicators for feelings of defeat and entrapment as defined in the IMV model. For example, in order to meet criteria for a diagnosis of autism, a person must demonstrate pronounced deficits in social and communication skills (American Psychiatric Association, 2013). However, more recent evidence suggests that autistic people have a unique interaction style which is more readily understood by other autistic than non-autistic people (Alkhaldi et al., 2019; Crompton et al., 2020; Jaswal & Akhtar, 2019; Sheppard et al., 2016). As a consequence, autistic people can experience difficulties fitting into a largely neurotypical society which is not built for "people like them" (Mitchell et al., 2021; Milton, 2012). This lack of understanding and acceptance of autistic people in a largely neurotypical society can lead to underemployment and unemployment (Solomon, 2020), lack of access to appropriate support (Camm-Crosbie et al., 2018; Crane et al., 2019), lack of acceptance (Cage et al., 2018), stigma, and pressure to camouflage one's true self in order to "fit in" (Bradley et al., 2021; Miller et al., 2021; Pearson & Rose, 2021). These kinds of experiences could all increase risk of autistic people and those with high autistic traits experiencing defeat as conceptualized in the IMV model. Autistic people and those with high autistic traits can also experience rigid, perseverative or inflexible thinking, and difficulties generating alternative solutions to situations (American Psychiatric Association, 2013; Baron-Cohen et al., 2001). Additionally, as autism and autistic traits are immutable aspects of a person, these negative experiences of stigma,

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discrimination, and exclusion from a largely neurotypical society, with negative effects on ability to thrive and be successful, may also feel unchangeable. These internal and external pressures could therefore increase risk of experiencing entrapment as conceptualized in the IMV model (Cassidy, 2020; Cassidy, Robertson, et al., 2020).

Although these hypotheses have not been directly tested in research to date, there is evidence that autistic people and those with high autistic traits may experience external indicators of defeat and entrapment, which are associated with increased risk of suicidality. For example, increased rumination and low self-esteem were associated with suicidality in autistic adults (Arwert & Sizoo, 2020), and in women with high autistic traits, self-reported low imagination, and higher rates of repetitive behaviors were associated with suicidality (South et al., 2020). These risk factors for suicidality resonate with the constructs of the IMV model, where poor self-esteem (an external indicator of defeat), and not being able to see a way out one's current circumstances (an indicator of entrapment) are both associated with increased risk of suicidality (Cassidy, 2020; Cassidy, Robertson, et al., 2020).

However, previous research has shown that suicide theories designed for the general population may not be valid for autistic people or those with high autistic traits, one reason being that the constructs in the model may not fully reflect their experiences (Pelton et al., 2020a, 2020b; Pelton & Cassidy, 2017). Hence, it is crucial for research exploring the applicability of suicide theory developed for the general population to autism and autistic traits, to consider inclusion of autism relevant constructs which have not been previously considered. One particularly relevant construct to the experiences of autistic people and those with high autistic traits, and constructs of the IMV model, is camouflaging or masking one's autistic traits and characteristics, to fit in better with others socially. Camouflaging was originally described by and explored in autistic people (Bradley et al., 2021; Cage & Troxell-Whitman, 2019; Hull et al., 2017; Lai et al., 2017; Livingston, Colvert, et al., 2019; Livingston, Shah, et al., 2019), but as with autistic traits, tendency to camouflage autistic traits also appears to be normally distributed in the general population (Hull et al., 2019). Camouflaging has been associated with mental health problems (Bargiela et al., 2016; Bradley et al., 2021; Cage et al., 2018; Hull et al., 2019; Hull et al., 2021; Leedham et al., 2020; Livingston, Colvert, et al., 2019), and suicidal thoughts and behaviors (Beck et al., 2020; Cassidy, Bradley, Shaw, et al., 2018; Cassidy, Gould, et al., 2020; South et al., 2020), in both autistic adults and those with high autistic traits.

Camouflaging could be particularly relevant to the constructs outlined in the IMV model. For example, those who camouflage their autistic traits and characteristics to fit in with others may still experience social difficulties and rejection, increasing risk of feeling defeat. Given that autistic traits are immutable characteristics of a person, this cycle may feel like it will never change, increasing risk of experiencing entrapment. The IMV model predicts that defeat and entrapment together increase risk of suicidal thoughts. Therefore, those who despite their best efforts to camouflage still experience social rejection, together with a feeling that this will never change, could be at the highest risk of suicidal thoughts, compared with those who experience either camouflaging or defeat and entrapment in isolation. Hence, camouflaging autistic traits *together* with feelings of defeat and entrapment could be a stronger predictor of suicidal thoughts compared with either of these variables alone.

The aim of the current study was therefore: (1) to test whether camouflaging autistic traits is associated with feelings of defeat and entrapment, as conceptualized by the IMV model of suicide; (2) to test whether camouflaging autistic traits is associated with lifetime suicidal thoughts and behaviors through defeat and entrapment; and (3) to test whether camouflaging and feelings of defeat and entrapment together explain significantly more variance in lifetime suicidal thoughts compared with either variable alone. Given that many autistic adults remain undiagnosed (Lai & Baron-Cohen, 2016) and a high-risk group for suicide attempts (Richards et al., 2019), and the importance of exploring transdiagnostic risk factors for suicidality (Hedley et al., 2021), we explored these factors for the first time in the context of autistic traits in an undergraduate sample.

METHOD

Participants

Participants were current UK undergraduate Psychology students ($n = 180$, 76.7% female, mean age = 21.09, $SD = 6$, age range = 18–67 years, 96.7% originating from the UK, 77% White/Caucasian ethnicity; see Tables 1 and 2 for participant demographics), recruited from the University of Nottingham, between February 5, 2020, and March 23, 2020. The research team decided at this point to stop data collection, prior to the national lockdown being announced in the UK in response to the COVID-19 pandemic. This decision was due to ethical concerns about asking questions relating to defeat and entrapment during this time, and also to avoid potential bias given the potential impact of the COVID-19 on mental health not yet being known. Students received course credit in exchange for participating in the study. Exclusion criteria included not being a current student.

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TABLE 1 Spearman inter-correlations between all variables.

Variables	AQ	PHQ-8	GAD-7	CAT-Q Total	SDES	SBQ-R	Age	Gender
AQ	-							
PHQ-8	0.263*	-						
GAD-7	0.262*	0.784*	-					
CAT-Q Total	0.491*	0.529*	0.521*	-				
SDES	0.336*	0.799*	0.704*	0.63*	-			
SBQ-R	0.329*	0.583*	0.519*	0.478*	0.64*	-		
Age	0.191	0.107	0.09	0.208	0.119	0.24*	-	
Gender	−0.105	0.15	0.225*	0.206	0.056	0.061	−0.03	-
Mean / %	3.34	8.97	7.57	93.32	9.45	2.15	21.09	76.7
SD	2.19	6.15	5.7	27.05	8.78	1.04	6	-
Range	0–10	0–24	0–21	39–147	0–32	1–4	18–67	-

Note: $N = 180$; Sex = % Female; *denotes $p < 0.002$ (Bonferroni corrected for multiple comparisons).

Abbreviations: AQ, Autism Spectrum Quotient 10 item; PHQ-8, Patient Health Questionnaire 8-item (excluding self-harm suicidality item 9); GAD-7, General Anxiety Disorder 7-item; CAT-Q, Camouflaging Autistic Traits Questionnaire; SDES, Short Defeat and Entrapment Scale; SBQ, Suicide Behaviors Questionnaire-Revised Item 1.

Materials

AQ-10

The Autism Spectrum Quotient-10 item (AQ-10, Allison et al., 2012) is a 10-item measure of self-reported autistic traits, extracted from the full 50-item Autism Spectrum Quotient (AQ, Baron-Cohen et al., 2001). Participants rate each of the 10 questions on a four-point Likert scale between "Strongly Agree" to "Strongly Disagree." In the current study, the binary scoring method was used to dichotomize answers into "agree" / "disagree," similar to the approach of a majority of previous studies using the AQ (e.g., Allison et al., 2012; Baron-Cohen et al., 2001; Booth et al., 2013). Questions endorsing an autistic trait received a score of one. Scores therefore ranged from 0–10, with higher scores indicating higher levels of self-reported autistic traits. Using the dichotomous scoring method, scores at or above a clinical cut-off of 6 have shown acceptable sensitivity and specificity in distinguishing autistic from non-autistic adults (Allison et al., 2012). Chronbach's alpha = 0.644.

CAT-Q

The Camouflaging Autistic Traits Questionnaire (CAT-Q; Hull et al., 2019) is a 25-item self-report questionnaire assessing the extent to which a person attempts to camouflage autistic traits to "fit in" with others in social situations. The CAT-Q consists of three subscales each capturing a different aspect of social camouflaging: (1) "compensation" (behaviors used to compensate for autism-related difficulties in social situations) corresponding to items 1, 4, 5, 8, 11, 14, 17, 20 and 23 of the questionnaire; (2) "masking" (behaviors used to hide autistic characteristics or present a non-autistic personality to others) corresponding to items 2, 6, 9, 12, 15, 18, 21 and 24 of the questionnaire; and (3) "assimilation" (behaviors used to fit in better with others and not "stand out") corresponding to items 3, 7, 10, 13, 16, 19, 22, and 25 of the questionnaire. Participants rate each of the 25 questions on a seven-point Likert scale between "Strongly Agree" to "Strongly Disagree." As in the original study, responses were scored between 1 and 7, with higher scores for items which endorse presence of social camouflaging behavior (Hull et al., 2019). The CAT-Q has been validated in autistic and non-autistic adults, with equivalent factor structure between groups (Hull et al., 2019). For compensation subscale, Chronbach's alpha = 0.895. For masking subscale, Chronbach's alpha = 0.758. For assimilation subscale, Chronbach's alpha = 0.916. For CAT-Q full scale, Chronbach's alpha = 0.934.

PHQ-9

The Patient Health Questionnaire-9 item (PHQ-9, Kroenke et al., 2001) is a 9-item self-report scale used to assess severity of current depressive symptoms in line with DSM-V diagnostic criteria (American Psychiatric Association, 2013). Scores range from 0 to 27 with scores at or over 10 indicating moderate, 15 moderately severe, and 20 severe depression. A recent systematic review showed that the PHQ-9 was extensively used in general population research, with strong evidence for its

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TABLE 2 Self-reported demographics.

Variable	Mean (*SD*) / *n* (%)
Country of origin UK (3 missing data points)	174 (96.7)
Ethnicity	
Asian	19 (10.6)
Black/African/Caribbean	9 (5)
Hispanic/Latinx	2 (1.1)
Middle Eastern/Arab	7 (3.9)
White/Caucasian	139 (77.2)
Other ethnic groups	9 (5)
Prefer not to answer	1 (0.6)
Gender	
Female	138 (76.7)
Male	35 (19.4)
Other	7 (3.9)
Mainstream education	164 (91.1)
Self-reported Current Diagnoses	
Autism	3 (1.7)
Suspected autism	15 (8.3)
Non-autistic	161 (89.4)
>=1 developmental condition	5 (2.8)
>=1 mental health condition	47 (26.1)
Depression	35 (19.4)
Anxiety	40 (22.2)
Obsessive-compulsive disorder	6 (0.03)
Bipolar disorder	2 (0.01)
Personality disorder	3 (0.02)
Post-traumatic stress disorder	4 (0.02)
Anorexia	2 (0.01)
Bulimia	1 (0.005)
Other	4 (0.02)

psychometric properties as rated by a validated research tool (COSMIN) (Cassidy, et al., 2018a). Chronbach's alpha = 0.909.

GAD-7

The Generalized Anxiety Disorder-7 item (GAD-7) (Spitzer et al., 2006) is a self-report questionnaire assessing current generalized anxiety symptoms. Scores range from 0 to 21, with scores of 10 or over indicating moderate, and 15 or over severe anxiety. The GAD-7 has demonstrated good sensitivity and specificity in detecting clinical anxiety (Spitzer et al., 2006). Chronbach's alpha = 0.918.

SBQ-R

The Suicide Behaviours Questionnaire-revised (SBQ-R) is a validated 4-item self-report questionnaire that assesses lifetime suicidal behavior, suicide ideation over the past 12 months, threat of suicide attempt, and likelihood of suicidal behavior in the future (Osman et al., 2001). This study employed question 1 of the SBQ-R which states: "Have you ever thought about or attempted to kill yourself?" There are six possible responses from "never" to 'I have attempted to kill myself and really hoped to die." According to their response, participants are assigned to one of four categorical groups indicating no suicidal behavior, suicide ideation, suicide plan, or suicide attempt. A recent systematic review showed that the SBQ-R had been extensively used in general population research, with moderate–strong evidence in support of a range of measurement properties, rated using a validated research tool (COSMIN) (Cassidy, et al., 2018b).

Short defeat and entrapment scale

The short defeat and entrapment scale (SDES; Griffiths et al., 2015) is an 8-item self-report questionnaire assessing feelings of defeat (a failed social struggle) and entrapment (a perceived inability to escape from aversive situations). Each item is rated and scored on a Likert scale ranging from 0 (not at all like me) to 4 (extremely like me), with scores ranging from 0 to 32. The SDES shows evidence in support of a range of measurement properties, including a single-factor structure, internal consistency, test–retest reliability, and convergent validity in community and patient samples (Griffiths et al., 2015). Chronbach's alpha = 0.927.

Demographic questions

Participants self-reported their age, gender, country of origin, ethnicity, education, employment, diagnosed developmental condition(s), and currently diagnosed mental health condition(s) (Tables 1 and 2). Socio-economic status data were not obtained for the student sample included in the current study.

Ethics statement

The current study received ethical approval from the relevant local ethics committee (ethical approval number: S1193).

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Procedure

Participants completed an online anonymous survey using Qualtrics. Safeguards followed best practice guidelines for conducting anonymous online suicide research (Townsend et al., 2020). This included participants being fully briefed about the nature of the research, that they could skip questions and sections of the survey that made them feel uncomfortable, providing information about relevant support services before and after taking part in the study. After providing their informed written consent to take part via an online form, participants completed the demographics questions, PHQ-9, GAD-7, AQ-10, CAT-Q, item one of the SBQ-R, and lastly the SDES. Subsequently, participants completed a positive mood induction procedure including a doodle page with various activities (memory game, video of cute animals, and jokes). These positive mood induction procedures have proved effective in previous research exploring similar topics (Lockwood et al., 2018; Nittono et al., 2012). Participants were subsequently provided a debrief including information about further support.

Data analysis

296 participants accessed the survey, 264 of these provided consent to participate in the survey, 219 of these reported being a current student, and 180 of these completed all measures with no missing data—these 180 participants with no missing data were included in the current analysis. Data were screened to ensure no pattern to the missing data. It was not possible to impute missing values, given that missing data accounted for >10% of the total number of items for each measure.

Anonymized data were exported into SPSS version 24 for analysis. The SDES and SBQ-R are usually non-normally distributed in the general population as they measure experiences and feelings that are rare, and exploration of the data showed that data from these measures were indeed non-normally distributed in the current sample. Therefore, as in previous similar studies (Cassidy, Gould, et al., 2020; Cole et al., 2013; Pelton et al., 2020a; Pelton & Cassidy, 2017), all analyses were undertaken using bootstrapping procedures, as this allows for non-normal distribution in regression and mediation analyses (Field, 2009; Hayes, 2013). Levels of significance, direction, and strength of effects for all analyses were similar regardless of bootstrapping, and therefore, non-bootstrapped results are reported for ease of interpretation.

Spearman correlations explored associations between all variables, given that many variables (SBQ-R item 1, defeat, and entrapment) are designed to capture rare experiences. Bonferroni correction was applied specifically to these multiple exploratory correlational analyses to reduce risk of type one error (adjusted $p < 0.002$, Field, 2009). Multiple hierarchical regression explored (after controlling for age, gender, current depression, and anxiety) whether autistic traits and camouflaging significantly predicted defeat and entrapment total scores. Path analysis subsequently explored whether the association between autistic traits and lifetime suicidal thoughts and behaviors was mediated by camouflaging autistic traits and subsequently defeat and entrapment total score, using SPSS custom dialogue box PROCESS model 6 for serial mediation analysis (Field, 2009; Hayes, 2013), similar to the approach of previous studies (e.g., Cassidy, Gould, et al., 2020; Cole et al., 2013; Pelton et al., 2020a; Pelton & Cassidy, 2017). Logistic regression explored (after controlling for age, gender, current depression, and anxiety) whether defeat and entrapment, and subsequently camouflaging, accounted for significant additional variance in lifetime suicidal thoughts, and whether the interaction between camouflaging with defeat and entrapment explained significantly more variance in the model after controlling for each of these variables alone. For all analyses including depression as a variable (correlations, hierarchical regression, and logistic regression), we excluded the suicidality item nine of the PHQ-9, to avoid conflation with the measure of lifetime suicidal thoughts and behaviors (SBQ-R item 1).

RESULTS

Descriptive statistics

Mean AQ score in this sample was 3.34, under the clinical cut-off for possible autism diagnosis of 6, with a minority (15.6%) of the total sample scoring at or above this cut-off. Prevalence of lifetime suicide attempts was reported in 11.7% of the current sample, similar to prevalence rates found in general and university populations (2.5–10% suicide attempts; Kessler et al., 1999; Nock et al., 2008; O'Carroll, 1992; Pelton & Cassidy, 2017). Mean PHQ-9 (6.84) was below the recommended cut-off for severe depression (20), with 11.1% of the total sample scoring at or above this cut-off. Mean GAD-7 (7.57) was also below the recommended cut-off for severe anxiety (15), with 14.4% of the total sample scoring at or above this cut-off.

Are autistic traits, camouflaging, defeat and entrapment, and lifetime suicidal thoughts and behaviors significantly correlated?

All variables—autistic traits, camouflaging, depression, anxiety, defeat, and entrapment—were significantly

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correlated with each other after Bonferroni correction was applied (all $p < 0.002$, Table 2).

Do autistic traits and camouflaging predict defeat and entrapment?

A hierarchical multiple regression was performed with defeat and entrapment as the outcome variable. The first step included age and gender. The second step included depression and anxiety. The third step included autistic traits. The fourth and last step included camouflaging.

In step 1, the model containing age and gender did not significantly predict defeat and entrapment ($F(2,177) = 0.267$, $p = 0.77$). In step 2, depression and anxiety accounted for significantly more of the variance (67.5%) in defeat and entrapment ($F(2,175) = 183.7$, $p < 0.001$). In step 3, autistic traits accounted for significantly more of the variance in defeat and entrapment (1.1%) ($F(1,174) = 6.12$, $p = 0.014$). In step 4, camouflaging accounted for significantly more variance (3.2%) in defeat and entrapment ($F(1,173) = 20.17$, $p < 0.001$, Table 3).

TABLE 3 Multiple hierarchical regression with autistic traits and camouflaging predicting defeat and entrapment (total score).

	B	*SE* B	β	*p*-value
Step 1				
Constant	7.59	2.68		
Age	0.08	0.11	0.05	0.49
Gender	0.29	1.44	0.02	0.84
Step 2				
Constant	−0.98	1.66		
PHQ-8	0.94	0.1	0.66	0.001
GAD-7	0.3	0.11	0.19	0.01
Step 3				
Constant	−1.98	1.68		
AQ	0.48	0.19	0.12	0.01
Step 4				
Constant	−6.39	1.86		
CAT-Q	0.08	0.02	0.25	0.001

Note: $R^2 = 0.003$ for step 1 ($p = 0.77$), $\Delta R^2 = 0.65$ for step 2 ($p < 0.001$), $\Delta R^2 = 0.01$ for step 3 ($p = 0.01$); $\Delta R^2 = 0.04$ for step 4 ($p < 0.001$). $N = 180$.

Is the relationship between autistic traits and lifetime suicidal thoughts and behaviors mediated by camouflaging, defeat, and entrapment?

Simple linear regressions showed that autistic traits ($F(1,178) = 29.69$, $p < 0.001$), camouflaging ($F(1,178) = 49.96$, $p < 0.001$), defeat and entrapment ($F(1,178) = 113.09$, $p < 0.001$), all significantly predicted lifetime suicidality.

There was a significant indirect effect of autistic traits on lifetime suicidality through camouflaging, defeat, and entrapment ($b = 0.079$ BCa CI [0.05, 0.113]). The direct effect of autistic traits on suicidality remained significant once the mediators were added ($b = 0.084$, $p < 0.01$), indicating significant partial mediation. The path between autistic traits and suicidality was not significantly mediated by camouflaging ($b = 0.011$ BCa CI [−0.273, 0.049]), or defeat and entrapment ($b = 0.007$ BCa CI [−0.031, 0.045], Figure 1).

Do camouflaging and defeat and entrapment predict suicidal thoughts?

In the sub-sample who reported no suicidality or lifetime suicidal thoughts (brief passing thought or suicide plan according to item 1 of the SBQ-R; $n = 156$), a logistic regression was performed with suicidal thoughts (yes/no) as the categorical outcome variable. The first step included age and gender. The second step included depression and anxiety. The third step included defeat and entrapment. The fourth step included camouflaging. The fifth and last step included the interaction term between camouflaging with defeat and entrapment.

In step 1, the model containing age and gender did not significantly predict suicidal thoughts ($\chi^2(2) = 2.54$, $p = 0.281$). In step 2, depression and anxiety accounted for significantly more of the variance (28%) in suicidal thoughts ($\chi^2(2) = 52.33$, $p < 0.001$). In step 3, defeat and entrapment accounted for significantly more of the variance (5%) in suicidal thoughts ($\chi^2(1) = 12.36$, $p < 0.001$). In step 4, camouflaging did not account for significantly more variance in suicidal thoughts ($\chi^2(1) = 0.45$, $p = 0.5$). In step 5, the interaction between camouflaging with defeat and entrapment accounted for significantly less variance in suicidal thoughts (2%) than either variable alone ($\chi^2(1) = 5.61$, $p = 0.02$) (Table 4). Figure 1 illustrates this interaction effect, showing the association between camouflaging autistic traits with defeat and entrapment is strongest in those with no suicidality, and significantly attenuated at each level of suicidal thoughts (brief passing suicidal thought and suicide plan, Figure 2).

DISCUSSION

The current study tested whether camouflaging autistic traits to fit in with others socially is associated with increased feelings of defeat and entrapment, and suicidal

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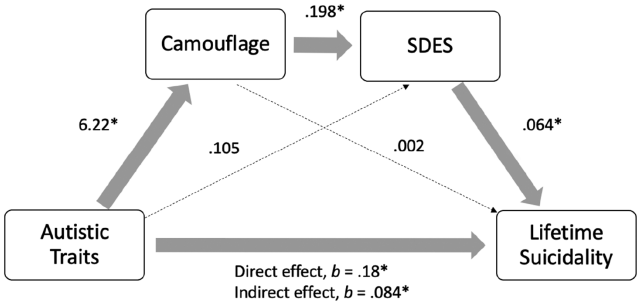

FIGURE 1 Model of the indirect effect of self-reported autistic traits on lifetime suicidality through camouflaging, defeat, and entrapment (SDES = Short Defeat and Entrapment Scale).

TABLE 4 Logistic regression with camouflaging, defeat, and entrapment predicting presence of suicidal thoughts.

		95% CI for odds ratio		
	B (SE)	Lower	Odds ratio	Upper
Step 1				
Constant	−0.48 (0.73)			
Age	0.04 (0.03)	0.98	1.04	1.12
Gender	−0.32 (0.42)	0.32	0.72	1.63
Step 2				
Constant	−2.91 (0.83)			
PHQ-8	0.25* (0.06)	1.14	1.3	1.46
GAD-7	−0.04 (0.06)	0.93	1	1.16
Step 3				
Constant	−2.71 (0.87)			
SDES	0.16* (0.05)	1.1	1.18	1.3
Step 4				
Constant	−3.12 (1.07)			
CAT-Q	0.01 (0.01)	0.99	1.01	1.03
Step 5				
Constant	−5.1 (1.45)			
CAT-Q × SDES	−0.004* (0.001)	1	0.99	1

Note: $R^2 = 0.016$ (Cox & Snell), 0.022 (Nagelkerke). Model $\chi^2(2) = 2.54$, $p = 0.281$ for step 1, $\Delta R^2 = 0.28$ (Cox & Snell), 0.37 (Nagelkerke). Model $\chi^2(2) = 52.33$, $p < 0.001$ for step 2, $\Delta R^2 = 0.05$ (Cox & Snell), 0.07 (Nagelkerke). Model $\chi^2(1) = 12.36$, $p < 0.001$ for step 3, $\Delta R^2 = 0.002$ (Cox & Snell), 0.003 (Nagelkerke). Model $\chi^2(1) = 0.45$, $p = 0.5$ for step 4, $\Delta R^2 = 0.02$ (Cox & Snell), 0.03 (Nagelkerke). Model $\chi^2(1) = 5.61$, $p = 0.02$ for step 5. $N = 156$.

thoughts, as predicted by the Integrated Volitional Model of Suicide (IMV model; O'Connor & Kirtley, 2018). Results from the current study support this hypothesis. Camouflaging explained a small but significant amount of additional variance in feelings of a failed social struggle (defeat), and a perception that this will never change (entrapment), after controlling for age, gender, current depression and anxiety symptoms, and autistic traits. This suggests that camouflaging explains unique additional variance in defeat and entrapment over and above autistic traits. This is consistent with previous research, showing that after controlling for age, gender, and autistic traits, camouflaging explains a small but significant amount of additional variance in mental health problems in autistic adults (Hull et al., 2021). These results suggest that camouflaging autistic traits is an important independent risk marker for mental health problems, lifetime suicidal thoughts and behaviors, in a community sample of undergraduate students.

Consistent with hypotheses, the association between autistic traits and lifetime suicidality was significantly mediated by camouflaging, defeat, and entrapment. Interestingly, there were non-significant paths between autistic traits with defeat and entrapment, and camouflaging with lifetime suicidality. This suggests that camouflaging is indirectly associated with suicidality through defeat and entrapment, and autistic traits are indirectly associated with suicidality through camouflaging, defeat, and entrapment. These results suggest a nuanced model where camouflaging autistic traits is associated with increased risk of experiencing other risk markers for suicidality. This is consistent with previous research showing associations between camouflaging and other known risk factors for suicidal thoughts. For example, camouflaging autistic traits was associated with lifetime suicidality through thwarted belongingness (feeling alone; Cassidy, Gould, et al., 2020) as predicted by the Interpersonal Theory of Suicide (ITS) (Van Orden et al., 2010). This suggests that camouflaging autistic traits is associated with feelings of not being accepted for one's true self, increasing risk of thwarted belongingness, and suicidal thoughts and behaviors (Cassidy, Gould, et al., 2020). In the IMV model, thwarted belongingness is a motivational moderator between defeat and entrapment and suicidal thoughts, whereby lack of meaningful social connections can increase risk of defeat and entrapment leading to the formation of suicidal thoughts (O'Connor & Kirtley, 2018). These results suggest that camouflaging could potentially be a motivational moderator in the IMV model, which may increase risk of experiencing defeat and entrapment, and in turn suicidal intent.

However, contrary to hypotheses, camouflaging did not predict significantly more variance in suicidal thoughts after controlling for age, gender, current depression and anxiety symptoms, defeat, and entrapment. Furthermore, the interaction between camouflaging with defeat and entrapment explained significantly less variance in suicidal thoughts, than either camouflaging or defeat and entrapment alone. The direction of this effect

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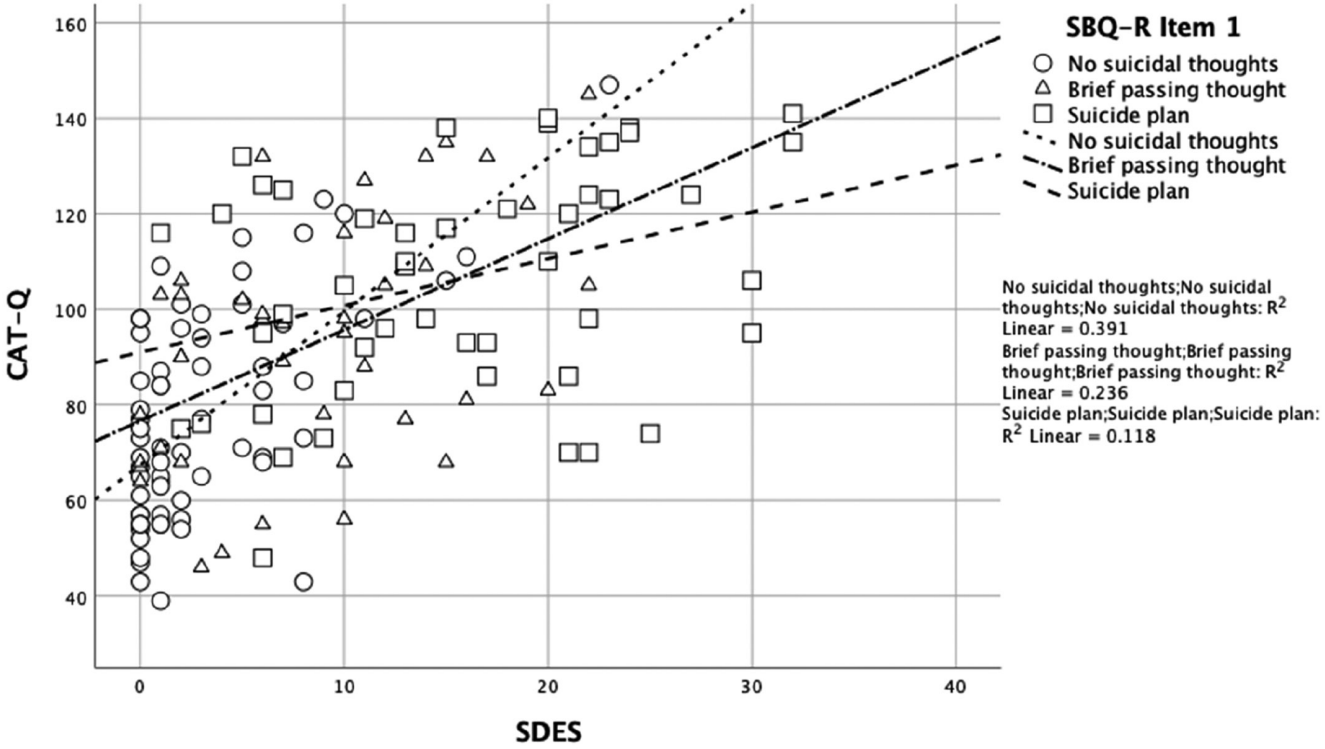

FIGURE 2 Interaction between camouflaging autistic traits (CAT-Q) with defeat and entrapment (SDES) in predicting no lifetime suicidal thoughts, lifetime experience of brief passing suicidal thoughts, and lifetime experience of suicide plans.

showed that the association between camouflaging with defeat and entrapment was strongest in the group without lifetime experience of suicidal thoughts, and significantly attenuated at increasing levels of lifetime suicidal thoughts (brief passing through and suicide plan). These findings are consistent with previous research. For example, Pelton and Cassidy (2017) showed that the association between thwarted belongingness with depression was significantly attenuated at the highest levels of autistic traits. Additionally, Pelton et al. (2020a) showed that the hypothesized associations predicted by the ITS (Van Orden et al., 2010) were attenuated in autistic compared with non-autistic adults. This suggests that suicide theories developed for the general population may not apply as strongly in the context of elevated autistic traits. Current results suggest that this is also true in the case of the IMV model.

Why might the predictions of the IMV model and other suicide models not apply as strongly in the context of elevated autistic traits? One possible reason is that the measures designed to capture the constructs in these models, which have been designed for the general population, may operate differently in those with high autistic traits. This interpretation is consistent with evidence that measures developed for the general population generally do not tend to capture the intended construct as strongly in autistic people (Cassidy, Bradley, et al., 2020; Nicolaidis et al., 2020), and this was also true for measures designed to capture the ITS model constructs (Pelton et al., 2020b). Adaptations to tools with and for autistic people and those with high autistic traits can improve their power to detect associations with other constructs (Cassidy, Bradley, et al., 2021). Hence, further research is needed to explore whether defeat and entrapment as defined in the IMV model applies to autistic people and those with high autistic traits, and whether the model and measures need to be adapted to better apply to the experiences of these groups.

Results suggest that camouflaging autistic traits is a transdiagnostic risk marker for lifetime suicidal thoughts and behaviors. This is supported by the fact that in the current study, camouflaging was associated with lifetime suicidal thoughts and behaviors in an undergraduate student sample with low levels of self-reported autism diagnosis (1.7%), suspected autism (but not diagnosed; 8.3%), and low proportion who scored above the recommended cut-off for high autistic traits indicating possible undiagnosed autism (15.9%). Previous research has also shown associations between camouflaging with suicidality in both autistic (Beck et al., 2020; Cassidy, Bradley, Shaw, et al., 2018), and non-autistic people (Cassidy, Bradley, et al., 2020; South et al., 2020). This reflects the fact that camouflaging is normally distributed in the general population (Hull et al., 2019). Therefore, tendency to camouflage is also present in people not yet diagnosed as autistic, or

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who may have high autistic traits but not meet diagnostic criteria for autism (Miller et al., 2021). Research therefore suggests that camouflaging autistic traits is potentially harmful for mental health and risk of lifetime suicidality, regardless of autism diagnosis. Hence, suicide prevention strategies should consider how to reduce pressure on people to camouflage autistic traits in wider society, which could potentially benefit everyone (Bradley et al., 2021; Mitchell et al., 2021).

There are important implications for clinical practice. First, clinicians must be aware of the potential negative impacts of camouflaging for mental health and risk of suicidal thoughts and behaviors. Second, clinicians should be aware of how autistic traits and camouflaging are associated with risk markers for suicidal thoughts. For example, lack of meaningful social connections, feelings of not belonging or being accepted for who you are, feelings of defeat and entrapment, should be followed up to explore possible suicidal thoughts and behaviors. Camouflaging can also prevent access to diagnosis, treatment, and support for co-occurring mental health problems, suicidal thoughts and behaviors (Camm-Crosbie et al., 2018). Understanding and addressing such barriers to support and treatment is the top autism community priority for future suicide prevention efforts (Cassidy, Bradley, et al., 2021). Improving training for clinicians regarding camouflaging and creating safe spaces to reduce pressure to camouflage in clinical contexts could, at least in part, start to address these barriers.

There are also important implications for wider society and future research. Research suggests that camouflaging could lower access to protective factors against mental health problems and suicidal thoughts. For example, camouflaging is associated with feelings of not being accepted by society (Cage et al., 2018), and lack of belonging and connections (termed thwarted belonging) (Cassidy, Gould, et al., 2020). Research has also started to explore the important role of stigma, identity, disclosure and minority stress in motivations to camouflage, and the consequent impact on mental health problems, burnout, and suicidal thoughts (Botha & Frost, 2020; Cage & Troxell-Whitman, 2020; Pearson & Rose, 2021; Miller et al., 2021; Raymaker et al., 2020). These societal factors involved in camouflaging, mental health, and suicidal thoughts have not yet been explored in suicide models. However, it is clear that increasing acceptance and understanding of autistic traits in society, tackling exclusion, stigma, and discrimination, could reduce pressure to camouflage, benefiting mental health and reducing suicidal thoughts in the general population (Bradley et al., 2021; Pearson & Rose, 2021; Miller et al., 2021; Mitchell et al., 2021).

The current study has a number of limitations. Self-report measures of autistic traits, camouflaging, depression, anxiety, defeat and entrapment, and suicidality were utilized in the current study. Furthermore, short scales of lifetime suicidal thoughts and behaviors, autistic traits, defeat, and entrapment were utilized. This was necessary to reduce participant burden while exploring initial broad associations between variables, and all tools had evidence in support of their measurement properties (Allison et al., 2012; Griffiths et al., 2015; Osman et al., 2001). However, use of these shorter tools precluded exploration of how different subcomponents of autistic traits, defeat separate to entrapment, and severity of suicidal thoughts and behaviors, are associated with different components of camouflaging. The definition of camouflaging and its measurement has been debated in the literature (e.g., Fombonne, 2020; Pearson & Rose, 2021), with different measurement tools emerging to capture this construct (e.g., Hull et al., 2019; Livingston et al., 2020). The current study utilized the camouflaging autistic traits questionnaire (Hull et al., 2019), which has been criticized due to conflation with constructs such as social anxiety and poorly constructed items (Fombonne, 2020). Future research should explore how other aspects, definitions, and measures of camouflaging are associated with mental health problems, suicidal thoughts and behaviors, and components of suicide models.

Although analyses adjusted for age, sex, current depression and anxiety, and autistic traits, additional potentially important covariates, such as socio-economic status, were not controlled for. A majority of the sample consisted of young adult female undergraduate students, and scored below cut-off on depression, anxiety, and autistic traits. This limits the generalizability of results to males, older adults, those with mental health problems, and autistic people. This study was cross-sectional, and therefore, results show associations, and direction of causation cannot be confirmed. Although the survey was closed prior to the UK lockdown in response to the COVID-19 pandemic, it is possible that news of the impending lockdown and escalating pandemic situation could have impacted our results. However, rates of current anxiety and depression symptoms and lifetime suicide attempts did not appear out of line with previous pre-pandemic prevalence estimates in similar samples, suggesting that our sample was representative and similar to results obtained in previous undergraduate samples.

CONCLUSION

Results suggest that in a sample of undergraduate students, camouflaging autistic traits is independently associated with feelings of defeat and entrapment—key risk markers for the formation of suicidal intent in the IMV

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model of suicide (O'Connor & Kirtley, 2018). Consistent with the predictions of the IMV model, those with high autistic traits, tend to camouflage these traits in social situations, which may be associated with increased feelings of defeat and entrapment, and lifetime suicidal thoughts and behaviors. Results also suggest that the constructs of the IMV model do not apply as strongly in the context of high autistic traits—this is similar to previous research exploring the applicability of suicide theories developed for the general population to the case of autism and autistic traits (Pelton et al., 2020a, 2020b; Pelton & Cassidy, 2017). Therefore, it will be important for future research to explore how the constructs of the IMV model and related measures apply to the experiences of autistic people and those with high autistic traits. Overall, these findings suggest that camouflaging is relevant to the IMV model of suicide (O'Connor & Kirtley, 2018). This is consistent with previous research showing the relevance of camouflaging for other motivational moderators outlined in the IMV model, such as thwarted belongingness (Cassidy, 2020; Cassidy, Gould, et al., 2020). Future research and clinical practice need to address the potentially damaging consequences of camouflaging on mental health and suicidal thoughts and behaviors.

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CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare.

DATA AVAILABILITY STATEMENT

The datasets generated and/or analyzed during the current study are not publicly available due to participants not consenting to the public sharing of data, but anonymized data are available from the corresponding author (SC) upon reasonable request.

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ENDNOTE

[1] We use identity-first language (autistic community/people/person) to describe and talk about autism in the current paper, given that this is the most preferred language of the autistic community (Kenny et al., 2016; Bottema-Beute et al. 2021; Bury et al., 2020). We recognize and respect the wide range of terms and different individual preferences for describing autism, and that the language used to describe and talk about autism will continue to evolve over time.

REFERENCES

Alkhaldi, R. S., Sheppard, E., & Mitchell, P. (2019). Is there a link between autistic people being perceived unfavorably and having a mind that is difficult to read? *Journal of Autism and Developmental Disorders*, *49*, 3973–3982.

Allison, C., Auyeung, B., & Baron-Cohen, S. (2012). Toward brief "red flags" for autism screening: The short autism spectrum quotient and the short quantitative checklist in 1,000 cases and 3,000 controls. *Journal of the American Academy of Child & Adolescent Psychiatry*, *51*(2), 202–212.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Pub.

Arwert, T. G., & Sizoo, B. B. (2020). Self-reported suicidality in male and female adults with autism spectrum disorders: Rumination and self-esteem. *Journal of Autism and Developmental Disorders*, *50*, 3598–3605.

Bargiela, S., Steward, R., & Mandy, W. (2016). The experiences of late-diagnosed women with autism spectrum conditions: An investigation of the female autism phenotype. *Journal of Autism and Developmental Disorders*, *46*(10), 3281–3294.

Baron-Cohen, S., Cassidy, S., Auyeung, B., Allison, C., Achoukhi, M., Robertson, S., Pohl, A., & Lai, M. C. (2014). Attenuation of typical sex differences in 800 adults with autism vs. 3,900 controls. *PLoS One*, *9*(7), e102251.

Baron-Cohen, S., Wheelwright, S., Skinner, R., Martin, J., & Clubley, E. (2001). The autism-Spectrum quotient (AQ): Evidence from Asperger syndrome/high-functioning autism, males and females, scientists and mathematicians. *Journal of Autism and Developmental Disorders*, *31*(1), 5–17.

Beck, J. S., Lundwall, R. A., Gabrielsen, T., Cox, J. C., & South, M. (2020). Looking good but feeling bad: "Camouflaging" behaviors and mental health in women with autistic traits. *Autism*, *24*(4), 809–821.

Booth, T., Murray, A. L., McKenzie, K., Kuenssberg, R., O'Donnell, M., & Burnett, H. (2013). Brief report: An evaluation of the AQ-10 as a brief screening instrument for ASD in adults. *Journal of Autism and Developmental Disorders*, *43*(12), 2997–3000.

Botha, M., & Frost, D. M. (2020). Extending the minority stress model to understand mental health problems experienced by the autistic population. *Society and Mental Health*, *10*(1), 20–34.

Bottema-Beutel, K., Kapp, S. K., Lester, J. N., Sasson, N. J., & Hand, B. N. (2021). Avoiding ableist language: Suggestions for autism researchers. *Autism in Adulthood*, *3*(1), 18–29.

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Bradley, L., Shaw, R., Baron-Cohen, S., & Cassidy, S. (2021). Autistic adults' experiences of camouflaging and its perceived impact on mental health. *Autism in Adulthood*, *3*(4), 320–329.

Bury, S. M., Jellett, R., Spoor, J. R., & Hedley, D. (2020). "It defines who I am" or "It's something I have": What language do [autistic] Australian adults [on the autism spectrum] prefer? *Journal of Autism and Developmental Disorders*, 1–11.

Cage, E., Di Monaco, J., & Newell, V. (2018). Experiences of autism acceptance and mental health in autistic adults. *Journal of Autism and Developmental Disorders*, *48*(2), 473–484.

Cage, E., & Troxell-Whitman, Z. (2019). Understanding the reasons, contexts and costs of camouflaging for autistic adults. *Journal of Autism and Developmental Disorders*, *49*(5), 1899–1911.

Cage, E., & Troxell-Whitman, Z. (2020). Understanding the relationships between autistic identity, disclosure, and camouflaging. *Autism in Adulthood*, *2*(4), 334–338.

Camm-Crosbie, L., Bradley, L., Shaw, R., Baron-Cohen, S., & Cassidy, S. (2018). 'People like me don't get support': Autistic adults' experiences of support and treatment for mental health difficulties, self-injury and suicidality. *Autism* 1362361318816053.

Cassidy, S. (2020). Suicidality and self-harm in autism Spectrum conditions. In S. White, B. Maddox, & C. Mazefsky (Eds.), *Oxford handbook of psychiatric Co-morbidity in autism*. Oxford University Press.

Cassidy, S., Au-Yeung, S., Robertson, A., Cogger-Ward, H., Richards, G., Allison, C., Bradley, L., Kenny, R., O'Connor, R., Mosse, D., Rodgers, J., & Baron-Cohen, S. (2022). Autism and autistic traits in those who died by suicide in England. *The British Journal of Psychiatry*, *221*(5), 683–691.

Cassidy, S., Bradley, L., Shaw, R., & Baron-Cohen, S. (2018). Risk markers for suicidality in autistic adults. *Molecular Autism*, *9*(1), 42.

Cassidy, S., Bradley, P., Robinson, J., Allison, C., McHugh, M., & Baron-Cohen, S. (2014). Suicidal ideation and suicide plans or attempts in adults with Asperger's syndrome attending a specialist diagnostic clinic: A clinical cohort study. *The Lancet Psychiatry*, *1*(2), 142–147.

Cassidy, S., Goodwin, J., Robertson, A., & Rodgers, R. (2021). INSAR policy brief: Autism community priorities for suicide prevention. Available from: https://cdn.ymaws.com/www.autism-insar.org/resource/resmgr/files/policybriefs/2021-insar_policy_brief.pdf

Cassidy, S., & Rodgers, J. (2017). Understanding and prevention of suicide in autism. *The Lancet Psychiatry*, *4*(6), e11.

Cassidy, S. A., Bradley, L., Bowen, E., Wigham, S., & Rodgers, J. (2018a). Measurement properties of tools used to assess depression in adults with and without autism spectrum conditions: A systematic review. *Autism Research*, *11*(5), 738–754.

Cassidy, S. A., Bradley, L., Bowen, E., Wigham, S., & Rodgers, J. (2018b). Measurement properties of tools used to assess suicidality in autistic and general population adults: A systematic review. *Clinical Psychology Review*, *62*, 56–70.

Cassidy, S. A., Bradley, L., Cogger-Ward, H., & Rodgers, J. (2021). Development and validation of the suicidal behaviours questionnaire-autism spectrum conditions in a community sample of autistic, possibly autistic and non-autistic adults. *Molecular Autism*, *12*(1), 46.

Cassidy, S. A., Bradley, L., Cogger-Ward, H., Shaw, R., Bowen, E., Glod, M., Baron-Cohen, S., & Rodgers, J. (2020). Measurement properties of the suicidal behaviour questionnaire-revised in autistic adults. *Journal of Autism and Developmental Disorders*, *50*(10), 3477–3488.

Cassidy, S. A., Gould, K., Townsend, E., Pelton, M., Robertson, A. E., & Rodgers, J. (2020). Is camouflaging autistic traits associated with suicidal thoughts and behaviours? Expanding the interpersonal psychological theory of suicide in an undergraduate student sample. *Journal of Autism and Developmental Disorders*, *50*(10), 3638–3648.

Cassidy, S. A., Robertson, A., Townsend, E., O'Connor, R. C., & Rodgers, J. (2020). Advancing our understanding of self-harm, suicidal thoughts and behaviours in autism. *Journal of Autism and Developmental Disorders*, *50*, 3445–3449.

Cole, A. B., Wingate, L. R., Slish, M. L., Tucker, R. P., Hollingsworth, D. W., & O'Keefe, V. M. (2013). Burdensomeness, depression, and suicide in a sample of American-Indian college students. *Ethnicity and Inequalities in Health and Social Care*, *6*(2), 77–86.

Constantino, J. N., & Todd, R. D. (2005). Intergenerational transmission of subthreshold autistic traits in the general population. *Biological Psychiatry*, *57*(6), 655–660.

Crane, L., Adams, F., Harper, G., Welch, J., & Pellicano, E. (2019). 'Something needs to change': Mental health experiences of young autistic adults in England. *Autism*, *23*(2), 477–493.

Crompton, C. J., Ropar, D., Evans-Williams, C. V., Flynn, E. G., & Fletcher-Watson, S. (2020). Autistic peer-to-peer information transfer is highly effective. *Autism*, *24*(7), 1704–1712.

Field, A. (2009). *Discovering statistics using SPSS*. SAGE Publications.

Fombonne, E. (2020). Camouflage and autism. *Journal of Child Psychology and Psychiatry*, *61*(7), 735–738.

Gallyer, A. J., Stanley, I. H., Day, T. N., & Joiner, T. E. (2020). Examining the interaction of autism spectrum disorder-related traits and unit cohesion on suicide risk among military personnel. *Journal of Affective Disorders*, *271*, 59–65.

Gilbert, P., & Allan, S. (1998). The role of defeat and entrapment (arrested flight) in depression: An exploration of an evolutionary view. *Psychological Medicine*, *28*(3), 585–598.

Griffiths, A. W., Wood, A. M., Maltby, J., Taylor, P. J., Panagioti, M., & Tai, S. (2015). The development of the short defeat and entrapment scale (SDES). *Psychological Assessment*, *27*(4), 1182–1194.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional Process analysis: A regression-based approach*. Guilford Press.

Hedley, D., & Uljarević, M. (2018). Systematic review of suicide in autism spectrum disorder: Current trends and implications. *Current Developmental Disorders Reports*, *5*(1), 65–76.

Hedley, D., Uljarević, M., Cai, R. Y., Bury, S. M., Stokes, M. A., & Evans, D. W. (2021). Domains of the autism phenotype, cognitive control, and rumination as transdiagnostic predictors of DSM-5 suicide risk. *PLoS One*, *16*(1), e0245562.

Hull, L., Levy, L., Lai, M. C., Petrides, K. V., Baron-Cohen, S., Allison, C., Smith, P., & Mandy, W. (2021). Is social camouflaging associated with anxiety and depression in autistic adults? *Molecular Autism*, *12*(1), 1–13.

Hull, L., Mandy, W., Lai, M. C., Baron-Cohen, S., Allison, C., Smith, P., & Petrides, K. V. (2019). Development and validation of the camouflaging autistic traits questionnaire (CAT-Q). *Journal of Autism and Developmental Disorders*, *49*(3), 819–833.

Hull, L., Petrides, K. V., Allison, C., Smith, P., Baron-Cohen, S., Lai, M. C., & Mandy, W. (2017). "Putting on my best normal":

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Social camouflaging in adults with autism spectrum conditions. *Journal of Autism and Developmental Disorders*, *47*(8), 2519–2534.

Jaswal, V. K., & Akhtar, N. (2019). Being versus appearing socially uninterested: Challenging assumptions about social motivation in autism. *Behavioral and Brain Sciences*, *42*, e82.

Kenny, L., Hattersley, C., Molins, B., Buckley, C., Povey, C., & Pellicano, E. (2016). Which terms should be used to describe autism? Perspectives from the UK autism community. *Autism*, *20*(4), 442–462.

Kessler, R. C., Borges, G., & Walters, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Archives of General Psychiatry*, *56*(7), 617–626.

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, *16*(9), 606–613.

Lai, M. C., & Baron-Cohen, S. (2015). Identifying the lost generation of adults with autism spectrum conditions. *The Lancet Psychiatry*, *2*(11), 1013–1027.

Lai, M. C., Lombardo, M. V., Ruigrok, A. N., Chakrabarti, B., Auyeung, B., Szatmari, P., Happé, F., Baron-Cohen, S., & MRC AIMS Consortium. (2017). Quantifying and exploring camouflaging in men and women with autism. *Autism*, *21*(6), 690–702.

Lai, M. C., & Baron-Cohen, S. (2015). Identifying the lost generation of adults with autism spectrum conditions. *The Lancet Psychiatry*, *2*(11), 1013–1027.

Leedham, A., Thompson, A. R., Smith, R., & Freeth, M. (2020). 'I was exhausted trying to figure it out': The experiences of females receiving an autism diagnosis in middle to late adulthood. *Autism*, *24*(1), 135–146.

Livingston, L. A., Colvert, E., Social Relationships Study Team, Bolton, P., & Happé, F. (2019). Good social skills despite poor theory of mind: Exploring compensation in autism spectrum disorder. *Journal of Child Psychology and Psychiatry*, *60*(1), 102–110.

Livingston, L. A., Shah, P., & Happé, F. (2019). Compensatory strategies below the behavioural surface in autism: A qualitative study. *The Lancet Psychiatry*, *6*(9), 766–777.

Livingston, L. A., Shah, P., Milner, V., & Happé, F. (2020). Quantifying compensatory strategies in adults with and without diagnosed autism. *Molecular Autism*, *11*(1), 1–10.

Lockwood, J., Townsend, E., Royes, L., Daley, D., & Sayal, K. (2018). What do young adolescents think about taking part in longitudinal self-harm research? Findings from a school-based study. *Child and Adolescent Psychiatry and Mental Health*, *12*(1), 23.

Miller, D., Rees, J., & Pearson, A. (2021). *"Masking is life": Experiences of masking in autistic and non-autistic adults*. Autism in Adulthood.

Milton, D. E. (2012). On the ontological status of autism: The 'double empathy problem'. *Disability & Society*, *27*(6), 883–887.

Mitchell, P., Sheppard, E., & Cassidy, S. (2021). Autism and the double empathy problem: Implications for development and mental health. *British Journal of Developmental Psychology*, *39*(1), 1–18.

Newell, V., Phillips, L., Jones, C., Townsend, E., Richards, C., & Cassidy, S. (2023). A systematic review and meta-analysis of suicidality in autistic and possibly autistic people without co-occurring intellectual disability. *Molecular Autism*, *14*(1), 1–37.

Nicolaidis, C., Raymaker, D. M., McDonald, K. E., Lund, E. M., Leotti, S., Kapp, S. K., Katz, M., Beers, L. M., Kripke, C., Maslak, J., Hunter, M., & Zhen, K. Y. (2020). Creating accessible survey instruments for use with autistic adults and people with intellectual disability: Lessons learned and recommendations. *Autism in Adulthood*, *2*(1), 61–76.

Nittono, H., Fukushima, M., Yano, A., & Moriya, H. (2012). The power of kawaii: Viewing cute images promotes a careful behavior and narrows attentional focus. *PLoS One*, *7*(9), e46362.

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. *The British Journal of Psychiatry*, *192*(2), 98–105.

O'Carroll, P. W. (1992). Attempted suicide among young adults: Progress toward a meaningful estimate of prevalence. *American Journal of Psychiatry*, *149*, 41–44.

O'Connor, R. C., & Kirtley, O. J. (2018). The integrated motivational–volitional model of suicidal behaviour. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *373*(1754), 20170268.

O'Connor, R. C., & Nock, M. K. (2014). The psychology of suicidal behaviour. *The Lancet Psychiatry*, *1*(1), 73–85.

Office for National Statistics. (2015). *Suicides in the United Kingdom, 2014 registrations*. Office for National Statistics.

Osman, A., Bagge, C. L., Gutierrez, P. M., Konick, L. C., Kopper, B. A., & Barrios, F. X. (2001). The suicidal behaviors questionnaire-revised (SBQ-R): Validation with clinical and nonclinical samples. *Assessment*, *8*(4), 443–454.

Paquette-Smith, M., Weiss, J., & Lunsky, Y. (2014). History of suicide attempts in adults with Asperger syndrome. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*, *35*(4), 273–277.

Pearson, A., & Rose, K. (2021). *A conceptual analysis of autistic masking: Understanding the narrative of stigma and the illusion of choice*. Autism in Adulthood.

Pelton, M. K., & Cassidy, S. A. (2017). Are autistic traits associated with suicidality? A test of the interpersonal-psychological theory of suicide in a non-clinical young adult sample. *Autism Research*, *10*(11), 1891–1904.

Pelton, M. K., Crawford, H., Robertson, A. E., Rodgers, J., Baron-Cohen, S., & Cassidy, S. (2020a). Understanding suicide risk in autistic adults: Comparing the interpersonal theory of suicide in autistic and non-autistic samples. *Journal of Autism and Developmental Disorders*, *50*(10), 3620–3637.

Pelton, M. K., Crawford, H., Robertson, A. E., Rodgers, J., Baron-Cohen, S., & Cassidy, S. (2020b). A measurement invariance analysis of the interpersonal needs questionnaire and acquired capability for suicide scale in autistic and non-autistic adults. *Autism in Adulthood*, *2*(3), 193–203.

Piven, J., Palmer, P., Jacobi, D., Childress, D., & Arndt, S. (1997). Broader autism phenotype: Evidence from a family history study of multiple-incidence autism families. *American Journal of Psychiatry*, *154*(2), 185–190.

Raymaker, D. M., Teo, A. R., Steckler, N. A., Lentz, B., Scharer, M., Delos Santos, A., Kapp, S. K., Hunter, M., & Nicolaidis, C. (2020). "Having all of your internal resources exhausted beyond measure and being left with No clean-up crew": Defining autistic burnout. *Autism in Adulthood*, *2*(2), 132–143.

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Richards, G., Kenny, R., Griffiths, S., Allison, C., Mosse, D., Holt, R., O'Connor, R. C., Cassidy, S., & Baron-Cohen, S. (2019). Autistic traits in adults who have attempted suicide. *Molecular Autism*, *10*(1), 26.

Ruzich, E., Allison, C., Smith, P., Watson, P., Auyeung, B., Ring, H., & Baron-Cohen, S. (2015). Measuring autistic traits in the general population: A systematic review of the autism-Spectrum quotient (AQ) in a nonclinical population sample of 6,900 typical adult males and females. *Molecular Autism*, *6*(1), 2.

Rydén, G., Rydén, E., & Hetta, J. (2008). Borderline personality disorder and autism spectrum disorder in females: A cross-sectional study. *Clinical Neuropsychiatry*, *5*(1), 22–30.

Sheppard, E., Pillai, D., Wong, G. T. L., Ropar, D., & Mitchell, P. (2016). How easy is it to read the minds of people with autism spectrum disorder? *Journal of autism and developmental disorders*, *46*, 1247–1254.

Solomon, C. (2020). Autism and employment: Implications for employers and adults with ASD. *Journal of Autism and Developmental Disorders*, *50*, 4209–4217.

South, M., Beck, J. S., Lundwall, R., Christensen, M., Cutrer, E. A., Gabrielsen, T. P., Cox, J. C., & Lundwall, R. A. (2020). Unrelenting depression and suicidality in women with autistic traits. *Journal of Autism and Developmental Disorders*, *50*, 3606–3619.

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092–1097.

Takara, K., & Kondo, T. (2014). Comorbid atypical autistic traits as a potential risk factor for suicide attempts among adult depressed patients: A case–control study. *Annals of General Psychiatry*, *13*(1), 33.

Townsend, E. (2019). Time to take self-harm in young people seriously. *The Lancet Psychiatry*, *6*(4), 279–280.

Townsend, E., Nielsen, E., Allister, R., & Cassidy, S. A. (2020). Key ethical questions for research during the COVID-19 pandemic. *The Lancet Psychiatry*, *7*(5), 381–383.

Upthegrove, R., Abu-Akel, A., Chisholm, K., Lin, A., Zahid, S., Pelton, M., Apperly, I., Hansen, P. C., & Wood, S. J. (2018). Autism and psychosis: Clinical implications for depression and suicide. *Schizophrenia Research*, *195*, 80–85.

Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S. R., Selby, E. A., & Joiner, T. E., Jr. (2010). The interpersonal theory of suicide. *Psychological Review*, *117*(2), 575–600.

Walter, G., & Pridmore, S. (2012). Suicide is preventable, sometimes. *Australasian Psychiatry: Bulletin of Royal Australian and New Zealand College of Psychiatrists*, *20*, 271–273.

World Health Organization. (2012). *Public health action for the prevention of suicide: A framework*. World Health Organization.

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