Lifetime stressor exposure and suicidality in autistic adults: a multinational study examining the role of gender in interpersonal life stress

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Declaration of interests

RLM, DH, JMGT, MU, SMB, JNT, MAS, GSS and GMS declare no competing interests.

Funding

DH was supported by a Suicide Prevention Australia National Suicide Prevention Research fellowship. MU was supported by a Discovery Early Career Researcher Award from the Australian Research Council (DE180100632). JNT is supported by NHMRC Investigator Grant GNT2009771. GMS was supported by grant #OPR21101 from the California Governor's Office of Planning and Research/California Initiative to Advance Precision Medicine. These organizations had no role in the study design, data collection, analysis, data interpretation, or writing of the report.

Data access

Requests for access to the Australian data sample should be directed to Associate Professor Darren Hedley, PhD, School of Psychology and Public Health, La Trobe University, Melbourne 3086, VIC, Australia; e-mail: d.hedley@latrobe.edu.au. Requests for access to the

UK dataset should be addressed to Dr Rachel Moseley, PhD, Principal Academic in Psychology, Department of Psychology, Bournemouth University, UK; email: rmoseley@bournemouth.ac.uk. The corresponding author had full access to all the data in the study and final responsibility for the decision to submit the report for publication.

Ethical approval

The Australian research was approved by La Trobe University Human Research Ethics Committee HEC20235; the UK study was approved by the Ethics Panel of the Faculty of Science and Technology, Bournemouth University (ID: 19040). All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from participants after the nature of the study was explained.

Acknowledgements

The authors sincerely thank the individuals who took part in the UK and Australian studies, as well as the members of the Australian autistic advisory group. We acknowledge, for the Australian study, the financial support of the Suicide Prevention Australia National Suicide Prevention Research Fund and Untapped Holdings; data for this study were collected and managed using REDCap electronic data capture tools hosted at La Trobe University (Harris et al., 2019; Harris et al., 2009). For the UK study, we thank our institution for the internal funding which made this study possible, and the moderators of Facebook groups where we recruited our participants.

Abstract

Despite very high rates of suicidality in autistic adults, the key psychosocial drivers of this phenomenon remain unknown. To investigate this, we examined how lifetime stressor exposure and severity, which have been found to predict suicidality in non-autistic populations, related to suicidality in a large, multinational dataset of 226 autistic adults (67% female; M_{age} = 41.8, SD = 13.6 years, age range = 19–73). Results revealed that autistic men and women differ with respect to the count, severity, and type of stressors they experience over the life course. While autistic men were exposed to more numerous legal/crime-related stressors, autistic women experienced more numerous stressors related to social relationships and chronic humiliation, and typically experienced stressors as more severe. Additionally, we found that whereas chronic interpersonal loss was particularly strongly related to suicidality for men, acute dangerous events, and lower exposure to chronic entrapment, were most strongly related to suicidality in autistic women. These findings indicate that certain stressors may be differentially experienced, and relevant to suicidality, in autistic men versus women. They also suggest that screening for lifetime stressor exposure may help identify autistic individuals at greatest risk for suicide.

Key words: life stress; STRAIN; suicide; psychopathology; gender

Lay abstract

When we encounter life events ('stressors') that we experience as stressful, it sets off a biological stress response which can impact mental health and contribute to suicide risk. While we know about specific stressors associated with suicide risk in the general population, little is known about the kinds of stressors which might be related to suicide risk in autistic people, and whether these differ by gender.

In this study, we compared autistic men and women in their exposure and perception of stressful life events, and looked at relationships between stress and suicide. We combined Australian and UK datasets of 226 autistic adults who had completed the Stress and Adversity Inventory for Adults.

Autistic men and women differed in their exposure to and perception of stressors. While men experienced more legal/crime-related stressors, women experienced more stressors related to relationships with other people, and more long-lasting stressors associated with humiliation. Autistic women often perceived life events as more severe than did men, which is important: perception of life events as stressful is what affects our health. We also found that different stressors may be relevant to suicide in autistic men and women. Loss of loved ones was associated with suicide in men; physically dangerous events were associated with suicide in women. Women with fewer stressors related to feelings of entrapment also had higher suicide rates.

Further research is needed to confirm these relationships, but they suggest that looking at lifetime stress exposure could be relevant to assessing suicide risk in autistic people.

A variety of social, psychological, and physical stressors can evoke a psychological and neurobiological stress response that has implications for health. Stressor exposure can incur bodily 'wear and tear' (allostatic load) (McEwen, 2005), leading to early mortality from a range of chronic and life-threatening conditions, particularly when the stressor is chronic, interpersonal in nature, and early in life (Johnson et al., 2020; Shields et al., 2017; Slavich, 2020; Van Bodegom et al., 2017). Stressor exposure principally impacts health through the subjective perception and experience of life events as 'stressful' (Fassett-Carman et al., 2020; Shields et al., 2023; Slavich & Cole, 2013; Slavich, Mengelkoch, et al., 2023). Whilst this varies considerably across individuals, there are certain demographic groups, such as women and gender minorities (Helpman, 2023; Murchison et al., 2023), who are disproportionately affected by lifetime adversity. In this study, we examined gendered patterns of stressor exposure and perception in a particularly vulnerable group – namely, autistic adults – and investigated potential associations between stressor type and suicidality.

Sex and Stress

Cisgender men and women (henceforth 'men' and 'women') differ in their exposure to lifetime stressors and their perception of the same. Whereas men are more likely to experience physical violence from strangers and encounters with the criminal justice system, women are more likely to experience sexual victimization and harassment, abuse in intimate relationships, greater burden of caregiving and household responsibilities, discrimination in the workplace along with economic disadvantages (Helpman, 2023; World Health Organisation, 2021). Men and women also differ in their physiological reactivity and neuroinflammatory response to stressors, and their perception of stressors as stressful (Bekhbat & Neigh, 2018; Helpman, 2023; Rincón-Cortés et al., 2019; Slavich & Sacher, 2019). Research in the general population suggests that compared to men, women may perceive stressors as more severe, may be more sensitive to social stressors, and more

susceptible to psychopathological consequences of the same (Helpman, 2023; Slavich & Sacher, 2019).

Stress and Suicide

Men and women differ in another stress-related outcome: death by suicide (Ilic & Ilic, 2022). Suicide is a longitudinal correlate of adverse childhood experiences (Sachs-Ericsson et al., 2016; Thompson et al., 2019), which have biological, psychological, behavioral and socioeconomic consequences throughout the lifespan (Landry et al., 2022; Nurius et al., 2019; Pitkänen et al., 2021). It is also a comparatively acute sequelae to adverse life events such as bullying, sexual victimization, relational victimization (e.g., social exclusion, attacks on an individual's reputation), financial distress and interpersonal loss through bereavement and relationship break-downs (Fjeldsted et al., 2017; Liu & Miller, 2014; Massing-Schaffer et al., 2019; McFeeters et al., 2015; Paul, 2018; Stewart et al., 2019). Direct and causal stressors interact with those more distal and indirect, such as historical adversity, to influence risk of suicidal thoughts and behaviour (Liu & Miller, 2014; McFeeters et al., 2015). This risk is potentially mediated by variables such as psychopathology or hopelessness (Daniel et al., 2017; Howarth et al., 2020; Zhang et al., 2020), exacerbated by factors such as loneliness (Chang et al., 2010), or, conversely, ameliorated by factors such as social support (Lew et al., 2019).

Lifetime stress features in most neurobiological and psychological models of suicide (Mann & Rizk, 2020; O'Connor et al., 2020; Stewart et al., 2019). In this context, stressors associated with interpersonal loss (e.g., bereavement, divorce) and humiliation (e.g., bullying, employment issues) have been hypothesized to contribute to the development of thwarted belongingness and perceived burdensomeness (Van Orden et al., 2010); stressors associated with pain and danger, as "physically painful and/or emotionally provocative" events (Bender et al., 2011), have been proposed to increase suicide capability, as indeed suggested by direct

relations between violent (but not non-violent) abuse and suicide attempts (Sachs-Ericsson et al., 2017). Moreover, stressors related to role change (e.g., becoming a carer) and, conversely, dependence on others (e.g., needing the support of ageing parents), may be associated with entrapment as a proximal risk factor for suicide (O'Connor & Kirtley, 2018). Sociological approaches, too, suggest that the combination of life events and internalized pressures on the individual (such as the gap between reality and their hopes) result in psychological strain, which leads to psychopathology and suicide in those with insufficient social support (Zhang et al., 2020).

Autism and Suicide

One group at particularly high risk of suicide is autistic people, in whom suicide ideation and attempts are alarmingly common from childhood (Hedley et al., 2022; Huntjens et al., 2023; Newell et al., 2023; O'Halloran et al., 2022). Autistic adults have an up to seven-fold increased risk of premature death by suicide compared to their neurotypical peers (Hirvikoski et al., 2020; Santomauro et al., 2021), with the highest risk for persons without intellectual disability (Casten et al., 2023; Hirvikoski et al., 2020; Hirvikoski et al., 2016). To understand this finding, research has focused on risk factors that might be associated with the autistic phenotype, as well as correlates of suicidality that might be more or less prevalent within autistic populations (Hedley & Uljarević, 2018; Hedley et al., 2021).

First, suicidality in autistic people has been linked to common features of autism, such as cognitive rigidity, insistence on sameness, and emotion regulation difficulties (Conner et al., 2020; Hedley et al., 2021), but also to risk factors from psychological theory, such as thwarted belongingness (Pelton et al., 2020), perceived burdensomeness (Moseley et al., 2022a; Pelton et al., 2020), and reduced fear of death (Moseley et al., 2022a). Second, in terms of correlates, additional risk of suicidality in autism has been related to co-occurring attention deficit hyperactivity disorder (ADHD) and psychiatric illnesses (Hirvikoski et al.,

2020; Moseley et al., 2023; Pelton et al., 2022); non-suicidal self-injury (NSSI) (Cassidy, Bradley, Shaw, et al., 2018; Moseley et al., 2022b); employment problems (Cassidy, Bradley, Shaw, et al., 2018); loneliness and lack of social support (Hedley, Uljarević, et al., 2018; Hedley et al., 2017); and camouflaging (Cassidy, Bradley, Shaw, et al., 2018; South et al., 2020).

Autism, Stress and Suicide

Researchers have applied a lifetime stressor exposure framework to suicide in the general population (Brodsky, 2016; McFeeters et al., 2015; Sachs-Ericsson et al., 2016; Stewart et al., 2019) and in several clinical or minority groups (Parra et al., 2023; Wiebenga et al., 2022). However, it remains underutilised in the context of autistic suicidality. In fact, contributions of life stressors to autistic suicidality seem highly probable given higher incidence of adverse childhood experiences (Hoover & Kaufman, 2018; Kerns et al., 2017), and greater likelihood of victimization, exploitation, abuse and assault in adulthood (Griffiths et al., 2019; Weiss & Fardella, 2018), along with chronic difficulties with employment, finances and housing (Harmuth et al., 2018). While these are instances where activation of the stress response would be clearly expected, recent theoretical work also conceptualizes camouflaging as a chronic stressor which contributes to allostatic load and subsequent burnout and psychopathology (Mahony & O'Ryan, 2022). Impacts of chronic and acute life stressors may be exacerbated, for autistic people, by heightened perception of stressors as stressful (Bishop-Fitzpatrick et al., 2017), by difficulties regulating emotions and accessing adaptive coping skills (Beck et al., 2020; Muniandy et al., 2022), and by social exclusion (Jones et al., 2021). There are indeed associations between autistic suicidality and generic measures of trauma (Pelton et al., 2020) and painful and provocative events (Moseley et al., 2023). There is also limited empirical work linking adverse childhood experiences and bullying to psychopathology and suicide in autistic people (Chou et al., 2020; Holden et al.,

2020; Warrier & Baron-Cohen, 2021). Yet, associations between specific stressors, stressor-types and suicidality have been relatively unexplored in autistic people.

Lifetime stressor exposure might be a particularly useful explanatory framework for disparities in suicide rates among the autistic population. In contrast to the typical preponderence of male suicide deaths (Ilic & Ilic, 2022), suicide risk is greater in autistic women than men (Lai et al., 2023; Newell et al., 2023; Santomauro et al., 2021), a finding that may be explained by their higher rates of psychopathology (Lai et al., 2023). Through the lens of lifetime stress, it is notable that autistic men and women are disproportionately exposed to certain stressors; autistic women are more likely to be hospitalized, abused and assaulted (Gibbs et al., 2021; Schnabel & Bastow, 2023; Tint et al., 2023). Moreover, autistic women tend to perceive stressors as more severe (McQuaid, Weiss, et al., 2022), as might be expected given greater emotion regulation problems (Weiner et al., 2023) and greater difficulties accessing healthcare and other forms of support (Gosling et al., 2023; Grove et al., 2023; Miller et al., 2022; Tint & Weiss, 2018). As such, differences in lifetime stressor exposure and stress perception may help to explain the varied prevalence of psychopathology and suicidality in autistic people of different sexes and genders.

High-precision Mapping of Relations between Stressor Exposure, Stress Perception, and Suicidality

In the general population, contemporary research has informed the development of one high-precision stress assessment tool—the Stress and Adversity Inventory for Adults (STRAIN) (Slavich & Shields, 2018)—which has been used to investigate the impact of a wide variety of life stressors on many different biopsychosocial and clinical outcomes (Clay et al., 2023; Ojha et al., 2022; Rolnik et al., 2019), including suicide (Stewart et al., 2019). Stewart et al. (2019) found that stressors involving chronic interpersonal loss were strongly related to attempting suicide; stressors in general seemed to predict suicide ideation only

insofar as they predicted psychopathology, which is consistent with other findings of psychopathology as a key factor linking stressors and suicidality (Zhang et al., 2020).

We recently used the STRAIN to assess lifetime stressor exposure in autistic people (citation redacted). We observed higher incidence of nearly every stressor type in addition to greater perceived stress, the latter which was related to current psychological distress. Certain stressor-types appeared particularly impactful, namely those involving interpersonal loss, entrapment, and role change/disruption, but suicidality was not explored as an outcome measure, and the relatively small sample size precluded analysis of sex or gender differences.

Given the novelty of using the STRAIN in autistic populations and the present lack of research around associations between specific life stressors and suicide in autism, in this first-of-its-kind large multi-national (Australia, AU; United Kingdom, UK) study, we leveraged two well-characterised STRAIN datasets to examine life stressors of greatest relevance for suicidality in autistic men and women. First, we examined gender differences in stressor exposure, stressor perception, psychopathology, and suicidality; next, we examined associations between stressor exposure, perception, and suicidality in men and women separately. Our hypothesis-driven approach focused on specific life stressor domains already linked to autistic suicidality, such as stressors relating to work and education (Cassidy, Bradley, Shaw, et al., 2018; Chou et al., 2020; Hedley, Uljarević, et al., 2018; Holden et al., 2020), and stressor-types such as have been related to major constructs from suicidology (Stewart et al., 2019).

Based on the research summarized above, we hypothesised that 1) autistic women would have higher levels of psychopathology and suicidality than autistic men; 2) autistic women would report higher lifetime stressor counts (reflecting greater exposure to lifetime stressors) than autistic men, particularly in relation to stressors relating to victimisation, help-seeking difficulties (e.g., treatment/health), and physical danger; and 3) that they would

perceive stressors as more severe. We also hypothesized that, for both autistic women and men, 4) greater cumulative exposure to stressors highlighted as relevant to suicidality, as well as the perceived severity of the same, would be related to greater suicidality controlling for current levels of psychopathology (Stewart et al., 2019; Zhang et al., 2020).

Method

This study analysed pooled data from two research groups in Australia and the United Kingdom. All studies were approved by the relevant university ethics committees [blinded for review] and all participants provided informed consent.

Participants

We combined data from two independent studies of autistic adults. The sample from the UK (n = 127) was recruited between May and June 2018 through social media (citation redacted). The AU sample (n = 108) was recruited between October 2020 and June 2021. They had responded to an advertisement in an emailed newsletter sent to all participants from one of two Australian longitudinal studies on autism (citations redacted). Interested individuals first registered their interest in the study via REDCap (Harris et al., 2019; Harris et al., 2009) and were contacted by a member of the AU research team to determine interest and eligibility. Following removal of data for 9 participants (5 UK participants who lived in Australia; 4 Australian participants who reported their gender as 'other'), the analytic dataset comprised 226 autistic adults (see Table 1).

[Insert Table 1 about here]

Procedure

For the UK dataset, the STRAIN was conducted in the course of an online survey on stress and health, which included tasks reported elsewhere (citations redacted). Participants completed a variety of scales online in a self-paced manner, with remote (email) support from the first author if required. The Australian sample initially completed online consent,

demographics, and self-report instruments on REDCap, and then completed the STRAIN virtually via Zoom interview with the second author (redacted) or a research assistant. Identified suicidal risk was managed according to a risk management protocol (citation redacted).

Measures

The Stress and Adversity Inventory for Adults (STRAIN)

The STRAIN (Slavich & Shields, 2018) provides high-precision data on cumulative exposure to life stressors – including their perceived severity, frequency, exposure timing, and duration – and differentiates between stressors occurring in childhood vs. adulthood, as well as whether they were acute vs. chronic (e.g., being assaulted vs. prolonged financial problems), to which life domain they involved (e.g., work, housing, marital relationship), and their core social-psychological feature (e.g., interpersonal loss, humiliation) (see https://www.strainsetup.com). The STRAIN has strong psychometric qualities and has been related to a variety of biological and clinical outcomes (Cazassa et al., 2020; Lam et al., 2019; Smith et al., 2020; Stewart et al., 2019; Sturmbauer et al., 2019). For the present analysis, we focused on participants' total counts of different types of lifetime stressors, and the perceived severity of these stressors, rated on a scale of 1-5, with higher scores reflecting greater severity.

The Suicide Behaviours Questionnaire-Revised (SBQ-R)

We used the four-item SBQ-R (Osman et al., 2001) to detect lifetime suicide ideation and suicide attempts, recent suicide ideations in the last 12 months, expression of suicidal intent to others, and likelihood of future suicide attempts. Recommended cut-off scores of 7–8 indicate suicide risk in non-autistic populations. The SBQ-R has adequate psychometric properties in the general population (Batterham et al., 2015; Cassidy, Bradley, Bowen, et al., 2018) and showed adequate internal consistency in the present study (UK sample α = .81; AU

sample $\alpha = .72$).

Data Analysis and Covariates

Two male participants neglected to enter their age, such that they were dropped from analyses using this covariate. Otherwise, there were no missing data and no extreme datapoints. We used the Kessler 6-item Psychological Distress Inventory (K6; which is provided with the STRAIN) (Kessler et al., 2003), initially as a dependent variable for comparison between groups, and then as a covariate in regression to adjust for the possible influence of current psychopathology. For the K6, higher scores indicate increased psychological distress or psychopathology (Furukawa et al., 2003; Kessler et al., 2003): cut-off scores of 8-12 indicate mild to moderate mental illness, while scores of 13 and above indicate more severe mental illness.

Comparisons between men and women

To test our *a priori* hypotheses regarding greater psychopathology, suicidality, lifetime stressor count and perceived stressor severity in autistic women than men, we compared the two groups in four univariate and multivariate ANOVAs (alpha levels corrected to $p = .0125$), while controlling for the age difference between men ($M = 45.9$, $SD = 14.5$ years) and women ($M = 39.8$, $SD = 12.64$ years), $t(222) = 3.18$, $p = .002$, $d = .45$, 95% CI [.17, .74].

To test whether autistic women had higher scores in psychopathology and suicidality than autistic men (hypothesis 1), we performed two univariate ANOVAs to compare their K6 scores and SBQ-R scores respectively. Subsequently, to examine whether women were exposed to more numerous life stressors and experienced them as more stressful (hypotheses 2 and 3), we compared autistic men and women with respect to lifetime stressor count and perceived stressor severity. The STRAIN categorizes stressors by life domains, and of these,

stressors from 8 domains[1] were previously associated with suicidality in autistic people (Black et al., 2022; Chou et al., 2020; Cooper et al., 2022; Doherty et al., 2022; Hedley, Uljarević, et al., 2018; Holden et al., 2020; Pearson et al., 2023; Weir et al., 2022; Yew et al., 2021). Therefore, this MANOVA included count and perceived severity of stressors related to Work (e.g., being fired or made redundant, struggling to gain employment); Housing (e.g., moving frequently, living in unsafe or poor conditions); Financial (e.g., difficulty covering rent and basic needs); Education (e.g., dropping out, failing exams); Treatment and Health (e.g., being hospitalized, seeking or receiving treatment); Legal/Crime (e.g., being the victim of a crime, being arrested); Marital/Romantic Relationships (e.g., having major fights or chronic conflict); Other Relationships (e.g., being discriminated against or excluded, losing friendships).

Some adverse experiences for autistic people operate across multiple life domains and may do so in an enduring manner (e.g., rejection and bullying may occur for autistic people in relation to Education, Work, Other Relationships, Marital/Romantic Relationships) (Jones et al., 2021). In this context, the shared social-psychological characteristics of apparently diverse stressors may be particularly meaningful, as might their nature as acute or chronic (Stewart et al., 2019). As such, our second analysis categorised lifetime stressors by their core social-psychological nature and their duration as acute (lasting no more than a few

[1] The four remaining stressor domains from the STRAIN include Possessions (e.g., being burgled); Reproductive issues; Death/Bereavement; and Life-Threatening incidents. We did not include these domains because we did not have specific hypotheses about them and/or they overlapped strongly with stressors categorised by social-psychological stressor-type. For instance, stressors categorised within the domain Life-Threatening incidents overlap strongly with those associated with Physical Danger as a social-psychological stressor type, making it redundant to analyse these very similar variables. The same was true for Death/Bereavement and Interpersonal Loss.

days) or chronic (lasting at least one month). In this MANOVA, we compared autistic men and women in the count and perceived severity of acute and chronic instances of interpersonal loss (e.g., separation from a partner, bereavement); acute and chronic instances of humiliation (e.g., being fired, bullying); acute and chronic instances of physical danger (e.g., assault, living in unsafe environments); chronic instances of entrapment, which by nature is only chronic (e.g., caregiving responsibilities or financial insecurity); and acute and chronic instances of role change/disruption (e.g., being temporarily disabled by illness, caring for elderly parents).

Associations between stressor exposure, stress perception, and suicidality

To test our prediction that cumulative stressor exposure and perceived severity would be related to psychopathology and lifetime suicidality (hypothesis 4), we performed four planned hierarchical regressions (Enter method), alpha levels corrected to $p = .0125$ to account for multiple comparisons. Prior to performing the analyses we mean-centred all variables, confirmed homoscedasticity and normal distributions of residuals, and ensured independence and the absence of multicollinearity between STRAIN variables. To increase robustness of our findings, we used bootstrapping with 5,000 resamples in each regression (providing bias-corrected confidence intervals; BCa 95% CI).

In the first regression, we modelled site of data collection in block 1, stressors counts for 8 key life domains (Work, Housing, Financial, Education, Treatment/Health, Legal/Crime, Marital/Romantic Relationships, Other Relationships) in block 2, and recent psychopathology (K6 scores) in block 3. While keeping block 1 and block 3 constant, in the second regression we replaced block 2 variables with stressor counts for acute and chronic instances of interpersonal loss, humiliation, physical danger, entrapment, and role change/disruption. In the third regression we replaced block 2 variables with perceived severity of stressors categorised by the 8 life domains above, while keeping blocks 1 and 3

constant. In the fourth regression, we similarly retained block 1 and 3 variables but modelled perceived severity of acute and chronic stressors categorised by social-psychological type. In each instance, SBQ-R scores were modelled as the dependent variable. With regressions stratified by gender, we compared the models using Fisher's *z*; we additionally report Cohen's *q* with 95% CI.

Community involvement

The research team includes neurotypical and neurodivergent people. The Australian study partnered with local autism associations and peak organisations, and included an autistic advisory group who were consulted and advised on the design of the study. The UK study was led by an autistic researcher who designed and implemented the study.

Results

SBQ-R and K6

The present sample exhibited high levels of suicidality on average (M = 9.8, mode = 7, SD = 3.9, *Range* = 3–18). Similarly, levels of psychopathology were indicative of greater than average psychological distress (M = 18.5, mode = 18, SD = 6, *Range* = 6–30).

Gender Differences

Between-group comparisons on study variables are provided in Table 2. Applying our adjusted criteria for statistical significance, autistic women and men did not differ on psychopathology (p = .036) or lifetime suicidality (p = 153). In relation to lifetime stressor count, with stressors categorised by life domain (Figure 1, part A), we found that autistic men and women differed significantly in Legal/Crime-related stressor count (higher in men) and Other Relationships stressor count (higher in women); moreover, women tended to perceive Treatment/Health-related stressors and Other Relationship stressors as more severe (see Figure 1, part A, and Table 2, row 1). With acute and chronic stressors categorised by core social-psychological characteristics (Table 2, row 2), autistic women had significantly greater

counts of chronic humiliation stressors than autistic men, and perceived these as more severe; they also perceived chronic entrapment stressors as more severe, while not experiencing more of them (Figure 1, part B).

[Insert Table 2 about here]

[Insert Figure 1 about here]

Stressor exposure as predictive of suicidality

Treatment/Health-related stressors were related to suicidality in both autistic men and women; as hypothesised, a positive association indicated greater stressor count related to greater suicidality (see Table 3). For autistic women, Treatment/Health-related stressor count remained a significant predictor of suicidality even while controlling for current psychological distress. Categorizing acute and chronic stressors by their social-psychological nature revealed different stressors of relevance for suicidality in autistic men and women: whereas greater count of chronic interpersonal loss predicted suicidality in men, greater counts of acute danger predicted suicidality in women. Moreover, in contrast to the hypothesised direction of associations between stressors and suicidality, lower counts of chronic entrapment predicted suicidality in autistic women.

[Insert Table 3 about here]

Perceived stressor severity as predictive of suicidality

Alongside the count of Treatment/Health-related stressors, greater perceived severity of these stressors was related to higher suicidality in autistic men and women (Table 4). Having lower perceived severity of Other Relationship (e.g., friendship) stressors was associated with suicidality in autistic women, but not independent of current psychological distress. For autistic women, additionally, greater perceived severity of acute dangerous stressors was associated with greater suicidality.

[Insert Table 4 about here]

Discussion

In this first multi-national study of stress and suicidality in autistic people, we investigated lifetime stressors associated with suicidality in autistic participants and explored where these patterns differ by gender. Our primary hypothesis was supported; Autistic men and women differed significantly in their exposure to and perceived severity of life stressors. Importantly, while treatment and health-related stressors emerged as a strong predictor of suicidality in autistic men *and* women, we observed gender differences in the relevance of specific life stressors for suicidality.

Stressor Exposure and Perception Differs in Autistic Men and Women

Prior research using the STRAIN revealed greater exposure to (and perceived severity of) almost every kind of stressor in autistic compared to non-autistic participants (redacted). The present findings build on this research by identifying gender differences in autistic participants that mirror those seen in the general population (Cazassa et al., 2020; Slavich & Shields, 2018; Slavich et al., 2019; Sturmbauer et al., 2019)—like neurotypical counterparts, autistic men showed greater counts of legal/crime-related stressors, while women had greater exposure to other relationship stressors. Our finding of greater exposure to humiliation in autistic women is less reliably observed in non-autistic women, only sometimes occurring at trend level (Cazassa et al., 2020; Slavich & Shields, 2018). Interestingly, some consistent gender differences in non-autistic samples, such as higher frequency of entrapment and interpersonal loss in women than men (Cazassa et al., 2020; Slavich & Shields, 2018; Sturmbauer et al., 2019), did not appear in autistic individuals. Since stressor exposure in non-autistic women has been linked to social inequities (Helpman, 2023), the marginalization of autistic people broadly (Jones et al., 2021), in addition to their greater lifetime stressor burden (Mahony & O'Ryan, 2022; Moseley, Turner-Cobb, et al., 2021), may be why some gender differences are less apparent, even while others emerge.

In both autistic and non-autistic samples, subjective perception of life events as stressful mediates the impact of stressor exposure on mental ill-health (Moseley, Turner-Cobb, et al., 2021; Shields et al., 2023). This and other reports (McQuaid, Weiss, et al., 2022) suggest that autistic women may be more likely to perceive, and experience, life events as more stressful than do autistic men. Because greater stressor exposure typically increases the perception of stressors as stressful (Slavich, 2020), some instances of higher *perceived* stress in autistic women could reflect their greater *exposure* to that stressor - as, for instance, where autistic women had higher stressor count *and* perceived stress related to other relationships and chronic humiliation. However, there were also some stressors, namely those related to chronic entrapment and treatment/health, which appeared to affect autistic women more severely than autistic men, despite not experiencing more of them. Regardless of whether autistic women actually experience more numerous stressors, the fact of their higher perceived stress, alone, would have highly significant implications for their health.

Intraindividual differences in stressor perception can be traced back to factors which confer vulnerability and resilience (Shields et al., 2023). Vulnerability factors for autistic women could originate from the social environment, such as greater pressure to perform femininity in occupational and familial spheres (Gore et al., 2023; Grove et al., 2023), and perhaps relatedly, greater burden of camouflaging (McQuaid, Lee, et al., 2022; Wood-Downie et al., 2021). Some vulnerability factors, like existing psychopathology and greater difficulties with emotion regulation (Weiner et al., 2023), could be related to (on average) longer duration of undiagnosed autism (Mandy et al., 2022). Vulnerability can also be conferred by the relative absence of protective factors such as social support, given the difficulties autistic women often face in establishing and maintaining relationships (Black et al., 2022; Gosling et al., 2023; Sedgewick, Crane, et al., 2019; Sedgewick, Hill, et al., 2019). Autistic women also have reduced access to a range of professional support, most notably in

healthcare settings (Miller et al., 2022; Tint et al., 2023; Tint & Weiss, 2018), where they often experience misdiagnoses, invalidation and gaslighting (Fusar-Poli et al., 2022; Gosling et al., 2023; Grove et al., 2023; Tint & Weiss, 2018). This may be why, even while our hypothesis of *more numerous* healthcare/treatment-related stressors in women was not supported, these stressors were imbued with particularly negative weighting.

Shared and Specific Stressors Relevant to Suicidality

The extent to which gender differences in stress exposure and perception are meaningful rests on their deleterious sequalae. We examined associations between stressor exposure, stressor perception and suicidality as dependent or independent of psychopathology, given its mediating role in the stress-suicide association (Hockey et al., 2022; Stewart et al., 2019; Zhang et al., 2020) and the higher relative risk of suicide death in autistic compared to non-autistic women (Kirby et al., 2024; Lai et al., 2023). We found associations which operated similarly for autistic men and women, as well as some which might be particular for autistic men or women alone.

Regarding the former, greater exposure to and perceived severity of treatment/health-related stressors was associated with greater suicidality in men *and* women. The prominence of these stressors is perhaps foreseeable given the poorer physical and mental health of autistic adults (Lai, 2023; Ward et al., 2023), who will necessarily encounter these stressors more frequently than non-autistic counterparts (Moseley, Turner-Cobb, et al., 2021). Although relations between treatment/health-related stressors and suicidality could reflect the well-established relationship between physical/psychiatric morbidity and suicidality (Fu et al., 2023; Onyeka et al., 2020), they could also be related to dissatisfactory or even traumatic healthcare encounters among autistic people (Brede et al., 2022; Doherty et al., 2022). Although we cannot confirm either interpretation, both are easily conceptualized within theoretical frameworks for suicide. Chronic illness is frequently associated with feelings of

hopelessness, entrapment, psychological pain, perceived burdensomeness, and social disconnection from others (Rogers et al., 2020; Shim et al., 2023). These feelings are also apparent in autistic accounts of facing barriers to healthcare ("I just felt like a burden"" (Crane et al., 2019); "I'm alone almost all the time ... I wonder what the point of me being here is... I have no life and no purpose" (Camm-Crosbie et al., 2019)). While perceived severity of treatment/health-related stressors was linked to suicidality in autistic men *and* women, it is possible that the association is pertinent to gender differences in suicidality, since autistic women perceived these stressors as more severe.

Several stressor-types emerged as differentially relevant to suicidality in autistic men and women. For autistic men, exposure to interpersonal loss was in its chronic form associated with suicidality. A profound human need for connection lies at the heart of prominent approaches to suicidality (Klonsky & May, 2015; Van Orden et al., 2010), stress and health (Slavich, 2020; Slavich, 2022; Slavich, Roos, et al., 2023; Slavich & Sacher, 2019). With reference to dominant theories of suicide, interpersonal loss may contribute to thwarted belongingness (Van Orden et al., 2010), the loss of social connectedness which might anchor an individual to living (Klonsky & May, 2015), and the absence of a social safety net (Zhang, 2019); it is, moreover, one of several core social threats capable of invoking a neurobiological stress response and subsequently damaging mental and physical health (Slavich, 2020; Slavich & Sacher, 2019). Among other social stressors, Stewart et al. (2019) found that instances of *acute* interpersonal loss uniquely precipitated suicide attempts in neurotypical adolescents. Given our older autistic sample, the relevance of *chronic* interpersonal loss to suicidality may be more akin to the role of loneliness in autistic psychopathology and suicide (Hedley, Uljarevic, et al., 2018; Levi et al., 2023; Umagami et al., 2022), where individuals may have fewer social connections which dwindle over time.

Interestingly, a similar interpretation as for social connectedness might pertain to the

emergence of chronic entrapment as a predictor of suicidality in autistic women. Although suicidality is typically associated with greater feelings of entrapment (Li et al., 2018; O'Connor & Kirtley, 2018), we found that autistic women with *lower* exposure to and perceived severity of entrapment stressors reported greater suicidality. Chronic by nature, entrapment stressors include such experiences as being a caregiver[2], experiencing overwhelming demands in social, educational, or occupational spheres, and being trapped in unsafe/dissatisfying living circumstances. Although not universally true, it is conceivable that some entrapment stressors are a form of connectedness (Klonsky & May, 2015), either to other people or to a meaningful project, job or role. As per this theory, such connections can keep individuals invested in living when their strength equates or surpasses that of psychological pain and hopelessness.

This interpretation is intriguing in relation to our prior study, where examining the UK sample alone revealed that greater entrapment was associated with greater psychopathology (citation redacted). The precise nature of entrapment stressors experienced by our sample is unknown to us, but it is conceivable that some might have deleterious effects on mental health while still functioning as a source of connection. As a putative example, unemployment is linked to suicidality in autistic and non-autistic people alike (Kolves et al., 2021). However, workplace relationships and insufficiently adapted environments also cause considerable stress in autistic people (Hayward et al., 2020; Tomczak & Kulikowski, 2023), which could explain why employment may not protect autistic people against depression and suicidality in the same way as it does non-autistic people (Hedley et al., 2019; Kolves et al., 2021; Schwartzman & Corbett, 2022).

[2] There is something of an overlap, here, between different ways of categorizing stressors: chronic entrapment, for instance, may include stressors which are also categorised as related to treatment/health. Entrapment is a superordinate category, however, which incorporates stressors across different life domains; the different pattern of relationships supports its distinctiveness from treatment/health-related stressors where both were modelled as predictors.

Employment could therefore be conceived of as an entrapment stressor which, although providing a sense of purpose and/or relationships with other people, also incurs stress and subsequent health impacts. A similar explanation might account for why *lower* perceived severity of other relationship stressors was associated with greater suicidality in autistic women (albeit not independently of psychopathology). Autistic women tended to experience more such stressors and perceive them as more severe than did autistic men, which would incur allostatic load. However, it is possible that perceiving these stressors as less stressful was indicative of having fewer such connections. Although this interpretation requires further investigation, it would appear consistent with the proposed centrality of social connection and belongingness in suicidality (Mournet et al., 2023), and the problems autistic men *and* women face when trying to establish such connections (Grove et al., 2023; Jones et al., 2021; Schnabel & Bastow, 2023).

Finally, for autistic women, exposure to and perceived severity of acute physically dangerous stressors were relevant to suicidality over and above psychopathology. Across different frameworks, suicide capability is proposed as a mechanism through which physically painful and/or dangerous experiences can erode evolutionary instincts for self-preservation (Klonsky & May, 2015; O'Connor & Kirtley, 2018; Van Orden et al., 2010). This mechanism was supported in autistic people (Moseley et al., 2023), but only partially explains the relation reported elsewhere between traumatic events and suicidality (Pelton et al., 2020; Warrier & Baron-Cohen, 2021). It is possible that post-traumatic sequalae of dangerous stressors might additionally explain this association. Future research should, however, elucidate the timeframe between such events and suicidality, and the mechanisms which might, for some individuals, link the two.

Strengths and Limitations

Several strengths and limitations of this study should be noted. In terms of strengths, this study is the first to use a multi-national dataset of stressor exposure and perception in a large sample of autistic adults to investigate associations between a wide variety of stressors occurring over the life course and suicidality, which is a critical issue in autistic populations. In a statistically robust, hypothesis-driven design, we provide evidence of differential stressor exposure and perception in autistic men and women, and differential relevance of certain life stressors to suicide. There are, however, several limitations that bear remembering. First, the cross-sectional design precludes drawing conclusions about the direction of associations between stressor exposure, stress perception, psychopathology and suicidality—particularly since suicidality can exacerbate or generate psychopathology and interpersonal stress (O'Connor et al., 2021; Tong et al., 2021). Second, we did not have a non-autistic comparison group. Third, our measurement tools were not specifically designed by or for autistic people; the STRAIN may neglect factors that autistic people find stressful. Fourth, autistic adults with intellectual disabilities were excluded from the study, and thus the sample is not representative of the full autism spectrum. Finally, the exclusion of participants who did not identify as either male or female meant that gender minorities were not included, though their higher rates of suicidality (Chang et al., 2022; Newell et al., 2023) and life adversity (Strang et al., 2021) suggest the relevance of a stress framework to this group. Other clinically-relevant factors to stress and suicide not included here are race and ethnicity (Ames et al., 2022), age at diagnosis (Mandy et al., 2022; Newell et al., 2023) and age at study participation, given differential importance of life experiences to suicide at varied points of the lifespan (Stewart et al., 2019). Indeed, the autistic community are often perceived monolithically as regards their challenges and related suicide risk, but life stages may be highly influential (Moseley, Druce, et al., 2021).

Conclusion

In conclusion, this is the first cross-national study to investigate how lifetime stressor exposure and severity relates to suicidality in autistic adults and whether these effects differ for men and women. We found that autistic men and women had different patterns of lifetime stressor count and perceived severity and, in addition, that the effects of these stressors on suicidality differed across these groups. These findings highlight the importance of screening for lifetime stressor exposure when considering suicide risk in autistic individuals, and may also help refine thinking and research on this topic, particularly with respect to understanding key drivers of health disparities in the autistic population.

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Table 1

Demographics for UK, AU and Final Combined Sample

		UK (***n*** **= 122)**	**AU** (***n*** **= 104)**	**Combined** (***N*** **= 226)**
		M (SD), Range		
Age		40.8 (13.9), *19–73*	42.9 (13.18), *20–70*	41.8 (13.6), *19-73*
Age at diagnosis		33.6 (16.5), *2-67*	35.5 (15.8), *4-69*	34.8 (16), *2-69*
		Percent (%)		
Gender[3]	Male	29.5	36.1	33.2
	Female	70.5	60.2	66.8
Co-occurring conditions	ADHD/ADD	9	33.3	21.2
	Depression	62.3	68.5	64.6
	Anxiety	52.5	70.4	60.2
	Specific learning disability or developmental delay	13	4.7	9.7
Highest level qualification	GCSE (UK)	20.4	n/a	11.1
	A-Level / Secondary	16	15.7	16.3
	Certificate or diploma (AU)	n/a	25	11.5
	Degree or higher	57	59.3	58.3

[3] The STRAIN allows participants to describe their "gender" as "male", "female" or "other". Regrettably, an undersized "other" group meant that these participants were excluded from analyses.

	Not provided	6.6	0	3.5
Country of residence	UK	64.7	0	35
	AU	0	100	46
	Other	35.3	0	19

Table 2

Between-group comparisons of lifetime stressor count and perception in autistic men and women

Models	**Variables with significant gender differences**	**Men**		**Women**						
		M	***SD***	***M***	***SD***	***F***	***p***	**Partial η^2**	***b*-weights [95% CI**	***d* [95% CI]**
1. Psychopathology **Model statistics:** *F* (1, 224) = 4.43, *p* = .036, partial *η2* = .02	K6 scores	17.21	6.03	19.03	5.83	4.43	.036	.02	-1.81 [-3.51, -.12]	-.31 [-.59, -.03]
2. Suicidality **Model statistics:** *F* (1, 224) = 2.06, *p* = .153, partial *η2* = .01	None	9.15	3.69	10.01	3.95	2.06	.153	.009	-.81 [-1.92, .30]	-.22 [-.5, .06]
3. Count and perceived severity of stressors categorised by life domain **Model statistics:** *F* (206) = 2.58, *p* < .001, partial *η2* = .17, Wilk's Λ = .83	*Stressor count:* Legal/Crime stressors Other Relationship stressors *Perceived severity of:* Treatment/Health stressors Other Relationship stressors	 .62 4.42 14.38 14.51	 1.10 3.11 7.99 7.91	 .23 5.78 17.66 18.15	 .56 3.61 8.71 9.15	 8.11 10.15 9.81 11.71	 .005 .002 .002 < .001	 .04 .04 .04 .05	 . 32 [.10, .53] -1.59 [-2.58, -.61] -3.84 [-6.26, -1.43] -4.32 [-6.81, -1.83]	 .5 [.22, .78] -.39 [-.67, -.11] -.39 [-.67, -.11] -.42 [-.69, -.14]

4. Count and perceived severity of acute and chronic stressors categorised by social-psychological type **Model statistics:** *F* (206) = 1.90, *p* = .018, partial *η2* = .14, Wilk's Λ = .86	*Stressor count:* Chronic humiliation	2.99	2.29	3.82	2.49	8.16	.005	.04	-1.00 [-1.69, -.310]	-.34 [-.62, -.06]
	Perceived severity of: Chronic humiliation	10.79	5.59	12.40	5.52	7.37	.007	.03	-2.15 [-3.70, -.59]	-.29 [-.57, -.01]
	Chronic entrapment	9.75	6.85	12.08	7.53	8.46	.004	.04	-3.04 [-5.09, -.98]	-.32 [-.60, -.04]

Table 2: Between-group comparisons of psychopathology, suicidality, lifetime stressor counts and stressor perception by gender. For brevity, only significant differences are displayed: see Supplementary Materials for full statistical notations.

Table 3

Lifetime stressor counts: regression models for autistic men and women

Model 1: Stressors categorised by life domain								
	Men				**Women**			
	b (SE)	***β***	**BCa *p* [BCa 95% CI]**	**r^2_{part}**	***b (SE)***	***β***	**BCa *p* [BCa 95% CI]**	**r^2_{part}**
Block 2:								
Treatment/Health stressors	.51 (.14)	.50	.002 [.24, .76]	.20	.34 (.09)	.34	.002 [.16, .49]	.09
Block 3:								
Treatment/Health stressors	.40 (.14)	.39	.019 [.10, .64]	.10	.25 (.08)	.25	.001 [.10, .39]	.05
Psychopathology	.36 (.12)	.36	.005 [.12, .60]	.10	.59 (.08)	.55	< .001 [.44, .73]	.30
Block 1 Model (study site only):	R^2 = .00, F [1, 74] = .003, p = .957				R^2 = .001, F [1, 150] = .095, p = .758			
Block 2 Model:	R^2 = .20, F [9, 74] = 1.77, p = .091; $R^2\Delta$ = .20, $F\Delta$ = 2.00, p = .061				R^2 = .15, F [9, 150] = 2.76, p = .005; $R^2\Delta$ = .15, $F\Delta$ = 3.09, p = .003			
Block 3 Model:	R^2 = .29, F [10, 74] = 2.62, p = .010; $R^2\Delta$ = .09, $F\Delta$ = 8.40, p = .005				R^2 = .38, F [10, 150] = 8.57, p < .001; $R^2\Delta$ = .23, $F\Delta$ = 51.91, p < .001			
Model 1 comparison: Z = -.13, p = .448; q = -.03 [-.04, -.01]								
Model 2 comparison: Z = .48, p = .317; q = .07 [.05, .09]								
Model 3 comparison: Z = -.80, p = .212; q = -.12 [-.13, -.10]								

Model 2: Stressors categorised by acute and chronic social-psychological type								
	Men				**Women**			
	b (SE)	***β***	**BCa *p* [BCa 95% CI]**	**r^2_{part}**	***b (SE)***	***β***	**BCa *p* [BCa 95% CI]**	**r^2_{part}**
Block 2:								
Acute danger	*ns.*	*ns.*	*ns.*	*ns.*	.43 (.10)	.43	< .001 [.23, .62]	.11
Chronic entrapment	*ns.*	*ns.*	*ns.*	*ns.*	-.25 (.11)	-.25	.019 [-.45, -.06]	.03
Block 3:								
Chronic interpersonal loss	.32 (.12)	.36	.008 [.12, .55]	.09	*ns.*	*ns.*	*ns.*	*ns.*
Acute danger	*ns.*	*ns.*	*ns.*	*ns.*	.35 (.09)	.34	< .001 [.19, .50]	.07
Chronic entrapment	*ns.*	*ns.*	*ns.*	*ns.*	-.27 (.09)	-.27	.004 [-.44, -.10]	.04
Psychopathology	.40 (.12)	.41	< .001 [.19, .59]	.14	.61 (.08)	.56	< .001 [.46, .75]	.33
Block 1 Model (study site only):	R^2 = .00, F [1, 74] = .003, p = .957				R^2 = .001, F [1, 150] = .095, p = .758			
Block 2 Model:	R^2 = .21, F [10, 74] = 1.65, p = .112; $R^2\Delta$ = .21, $F\Delta$ = 1.84, p = .078				R^2 = .19, F [10, 150] = 3.34, p < .001; $R^2\Delta$ = .19, $F\Delta$ = 3.70, p < .001			
Block 3 Model:	R^2 = .33, F [11, 74] = 2.81, p = .005; $R^2\Delta$ = .12, $F\Delta$ = 11.64, p = .001				R^2 = .44, F [11, 150] = 9.87, p < .001; $R^2\Delta$ = .25 $F\Delta$ = 60.88, p < .001			
Model 1 comparison: Z = -.13, p = .448; q = -.03 [-.04, -.01]								
Model 2 comparison: Z = .12, p = .452; q = .02 [.04, -.002]								
Model 3 comparison: Z = -.99, p = .162; q = -.14 [-.16, -.12]								

Note. Associations between lifetime stressor counts and suicidality. For brevity, the table displays only Block 2 and 3 variables with significant associations with suicidality ($p <$. 0125) in either men or women (see Supplementary Materials for full statistical notations).

Table 4

Perceived stress: regression models for autistic men and women

Model 1: Perceived severity of life domain stressors								
	Men				**Women**			
	b (SE)	***β***	**BCa *p* [BCa 95% CI]**	r^2_{part}	***b (SE)***	***β***	**BCa *p* [BCa 95% CI]**	r^2_{part}
Block 2:								
Treatment/Health stressors	.59 (.14)	.53	< .001 [.33, .80]	.25	.42 (.10)	.39	< .001 [.22, .60]	.12
Other Relationship stressors	*ns.*	*ns.*	*ns.*	*ns.*	-.28 (.11)	-.27	.005 [-.48, .07]	.04
Block 3:								
Treatment/Health stressors	.46 (.15)	.42	.002 [.20, .69]	.11	.29 (.09)	.27	< .001 [.13, .44]	.05
Psychopathology	*ns.*	*ns.*	*ns.*	*ns.*	.56 (.08)	.52	< .001 [.38, .73]	.25
Block 1 Model (study site only):	R^2 = .00, F [1, 74] = .003, p = .957				R^2 = .001, F [1, 150] = .095, p = .758			
Block 2 Model:	R^2 = .28, F [9, 74] = 2.83, p = .007; $R^{2\,\Delta}$ = .28, F^{Δ} = 3.18, p = .004				R^2 = .18, F [9, 150] = 3.50, p < .001; $R^{2\,\Delta}$ = .18, F^{Δ} = 3.92, p < .001			
Block 3 Model:	R^2 = .32, F [10, 74] = 2.98, p = .004; $R^{2\,\Delta}$ = .04, F^{Δ} = 3.40, p = .070				R^2 = .38, F [10, 150] = 8.68, p < .001; $R^{2\,\Delta}$ = .20, F^{Δ} = 45.39, p < .001			
Model 1 comparison: Z = -.13, p = .448; q = -.03 [-.04, -.01]								
Model 2 comparison: Z = .93, p = .176; q = .14 [.12, .15]								

Model 3 comparison: Z = -.58, p = .280; q = -.08 [-.10, -.07]

Model 2: Perceived severity of acute and chronic social-psychological stressors

	Men				**Women**			
	b (SE)	***β***	**BCa *p* [BCa 95% CI]**	**r^2_{part}**	***b (SE)***	***β***	**BCa *p* [BCa 95% CI]**	**r^2_{part}**
Block 2:								
Acute danger	*ns.*	*ns.*	*ns.*	*ns.*	.42 (.10)	.44	< .001 [.21, .62]	.11
Block 3:								
Acute danger	*ns.*	*ns.*	*ns.*	*ns.*	.38 (.09)	.40	< .001 [.21, .54]	.08
Psychopathology	.34 (.13)	.35	.005 [.13, .57]	.09	.63 (.08)	.58	< .001 [.50, .75]	.36
Block 1 Model (study site only):	R^2 = .00, F [1, 74] = .003, p = .957				R^2 = .001, F [1, 150] = .095, p = .758			
Block 2 Model:	R^2 = .21, F [10, 74] = 1.70, p = .100; $R^{2\,\Delta}$ = .21, F^{Δ} = 1.89, p = .070				*R^2 = .18, F [10, 150] = 3.05, p = .002*; $R^{2\,\Delta}$ = .18, F^{Δ} = 3.38, p = .001			
Block 3 Model:	R^2 = .29, F [11, 74] = 2.37, p = .016; $R^{2\,\Delta}$ = .08, F^{Δ} = 7.34, p = .009				R^2 = .45, F [11, 150] = 10.11, p < .001; $R^{2\,\Delta}$ = .27 F^{Δ} = 66.46, p < .001			

Model 1 comparison: Z = -.13, p = .448; q = -.03 [-.04, -.01]

Model 2 comparison: Z = .30, p = .382; q = .04 [.02, .06]

Model 3 comparison: Z = -1.38, p = .084; q = -.20 [-.22, -.18]

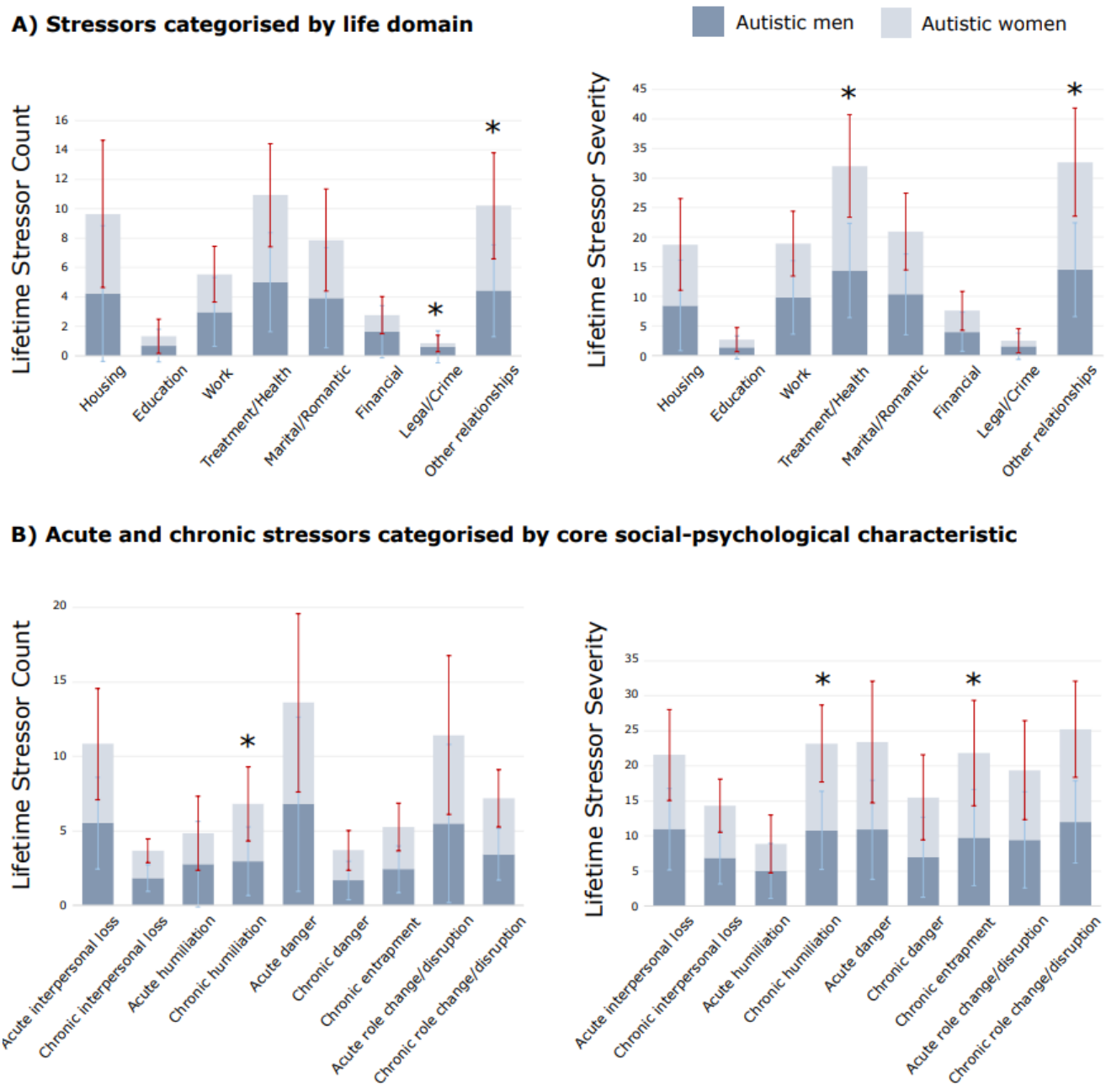
Note. Associations between lifetime stressor severity and suicidality. For brevity, the table displays only Block 2 and 3 variables with significant associations with suicidality ($p <$. 0125) in either men or women (see Supplementary Materials for full statistical notations).

Legends

Figure 1

Lifetime stress in autistic men and women

Figure 1: Lifetime stressor count and severity categorised by (A) primary life domain and (B) core social-psychological characteristic. Error bars reflect standard deviation, and significant differences between autistic men (dark grey) and autistic women (light grey) are marked with asterisks (*).



Supplementary Materials

for

Lifetime stressor exposure and suicidality in autistic adults: a multinational study examining the role of gender in interpersonal life stress

1. Full statistical notations for between-group comparisons of stressor exposure and perception in autistic men and women

2. Full statistical notations for stressor exposure regression models for autistic men and women

3. Full statistical notations for perceived stress regression models for autistic men and women

Supplementary item 1: Between-group comparisons of psychopathology, suicidality, stressor count and perceived severity in autistic men and women

	Between group comparisons								
Models	**Variables**	**Male**		**Female**					
		M	***SD***	***M***	***SD***	***F***	***p***	**Partial η^2**	***b*-weights [95% CI**	***d* [95% CI]**
5. Psychopathology **Model statistics:** $F(1, 224) = 4.43$, $p = .036$, partial $\eta 2 = .02$	K6 scores	17.21	6.03	19.03	5.83	4.43	.036	.02	-1.81 [-3.51, -.12]	-.31 [-.59, -.03]
6. Suicidality **Model statistics:** $F(1, 224) = 2.06$, $p = .153$, partial $\eta 2 = .01$	None	9.15	3.69	10.01	3.95	*2.06*	*.153*	.009	-.81 [-1.92, .30]	-.22 [-.5, .06]
7. Count and perceived severity of stressors categorised by life domain **Model statistics:**	*Counts of:*									
	Housing stressors	4.23	4.60	5.42	5.01	4.35	.038	.019	-1.47 [-2.87, -.08]	-.24 [-.52, .04]
	Education stressors	.70	1.10	.63	1.16	.40	.529	.002	.11 [-.22, .43]	.06 [-.22, .34]
	Work stressors	2.99	2.35	2.56	1.91	.28	.597	.001	.15 [-.42, .72]	.21 [-.07, .49]
	Treatment/Health stressors	5.01	3.37	5.91	3.51	4.02	.046	.018	-1.01 [-2.01, -.02]	.37 [.09, .65]
	Marital/Relationship stressors	3.95	3.42	3.93	3.48	.62	.432	.003	-.39 [-1.35, .58]	.15 [-.13, .43]
	Financial stressors	1.64	1.77	1.11	1.27	3.95	.048	.018	.42 [.003, .83]	.37 [.09, .64]

$F(206) = 2.58$, $p < .001$, partial $\eta 2 = .17$, Wilk's $\Lambda = .83$	**Legal/Crime stressors***	**.62**	**1.10**	**.23**	**.56**	**8.11**	**.005**	**.04**	**. 32 [.10, .53]**	**.5 [.22, .78]**
	Other Relationship stressors*	**4.42**	**3.11**	**5.78**	**3.61**	**10.15**	**.002**	**.04**	**-1.59 [-2.58, -.61]**	**-.39 [-.67, -.11]**
	Perceived severity of:									
	Housing stressors	8.44	7.66	10.30	7.76	4.23	.041	.019	-2.30 [-4.51, -.10]	-.24 [-.52, .04]
	Education stressors	1.33	1.94	1.34	2.05	.06	.800	.0002	.074 [-.50, .65]	-.005 [-.28, .27]
	Work stressors	9.81	6.22	9.13	5.48	.04	.850	.0002	-.15 [-1.72, 1.41]	.12 [-.16, .40]
	Treatment/Health stressors*	**14.38**	**7.99**	**17.66**	**8.71**	**9.81**	**.002**	**.04**	**-3.84 [-6.26, -1.43]**	**-.39 [-.67, -.11]**
	Marital/Relationship stressors	10.33	6.81	10.65	6.51	1.67	.198	.007	-1.19 [-3.01, .63]	-.05 [-.33, .23]
	Financial stressors	3.97	3.29	3.57	3.29	.01	.926	.00004	.04 [-.88, .96]	.12 [-.16, .40]
	Legal/Crime stressors	1.52	2.25	.92	2.03	1.27	.262	.01	.33 [-.25, .92]	.29 [.01, .56]
	Other Relationship stressors*	**14.51**	**7.91**	**18.15**	**9.15**	**11.71**	**< .001**	**.05**	**-4.32 [-6.81, -1.83]**	**-.42 [-.69, -.14]**
8. Count and perceived severity of acute and chronic stressors categorised by social-psychological type **Model statistics:** $F(206) = 1.90$, $p = .018$, partial $\eta 2 = .14$, Wilk's $\Lambda = .86$	*Counts of:*									
	Acute interpersonal loss	5.55	3.08	5.28	3.71	.98	.324	.004	-.45 [-1.36, .45]	.08 [-.20, .36]
	Chronic interpersonal loss	1.84	.90	1.84	.81	.36	.548	.002	-.07 [-.31, .17]	-.01 [-.29, .27]
	Acute humiliation	2.78	2.88	2.07	2.47	1.47	.227	.01	.45 [-.28, 1.18]	.27 [-.01, .55]
	Chronic humiliation*	**2.99**	**2.29**	**3.82**	**2.49**	**8.16**	**.005**	**.04**	**-1.00 [-1.69, -.310]**	**-.34 [-.62, -.06]**
	Acute danger	6.81	5.84	6.79	5.99	.18	.673	.001	-.36 [-2.06, 1.33]	.003 [-.28, .28]
	Chronic danger	1.70	1.29	2.01	1.33	3.85	.051	.02	-.38 [-.75, .002]	-.24 [-.51, .04]
	Chronic entrapment	2.44	1.55	2.83	1.61	5.59	.019	.03	-.54 [-.99, -.09]	-.25 [-.52, .03]
	Acute role change/disruption	5.52	5.31	5.91	5.34	.98	.324	.004	-.76 [-2.28, .76]	-.21 [-.49, .07]
	Chronic role change/disruption	3.44	1.74	3.76	1.91	2.12	.147	.01	-.39 [-.93, .14]	-.17 [-.45, .11]
	Perceived severity of:									
	Acute interpersonal loss	10.99	5.82	10.58	6.47	1.36	.246	.01	-.94 [-2.53, .65]	.07 [-.21, .34]
	Chronic interpersonal loss	6.89	3.75	7.42	3.80	2.64	.106	.01	-.88 [-1.94, .19]	-.14 [-.42, .14]
	Acute humiliation	5.00	3.95	3.85	4.10	1.84	.176	.01	.79 [-.36, 1.93]	.28 [.004, .56]
	Chronic humiliation*	**10.79**	**5.59**	**12.40**	**5.52**	**7.37**	**.007**	**.03**	**-2.15 [-3.70, -.59]**	**-.29 [-.57, -.01]**

	Acute danger	10.89	7.11	`12.55	5.52	4.30	.039	.02	-2.43 [-4.74, -.12]	-.27 [-.55, .01]
	Chronic danger	6.96	5.74	8.52	6.08	4.93	.027	.02	-1.92 [-3.63, -.22]	-.26 [-.54, .02]
	Chronic entrapment*	**9.75**	**6.85**	**12.08**	**7.53**	**8.46**	**.004**	**.04**	**-3.04 [-5.09, -.98]**	**-.32 [-.60, -.04]**
	Acute role change/disruption	9.41	6.88	9.99	7.07	1.35	.246	.01	-1.17 [-3.15, .81]	-.08 [-.36, .20]
	Chronic role change/disruption	11.99	5.86	13.26	6.88	3.95	.048	.02	-1.87 [-3.72, -.02]	-.19 [-.47, .09]

Supplementary item 2: Full statistical notations for stressor count regression models for autistic men and women

Model 1: Stressors categorised by life domain								
	Men				**Women**			
	b (SE)	***β***	**BCa *p* [BCa 95% CI]**	r^2_{part}	***b (SE)***	***β***	**BCa *p* [BCa 95% CI]**	r^2_{part}
Block 1:								
Study site	-.01 (.22)	-.01	.955 [-.46, .42]	<.01	.05 (.16)	.03	.752 [-.28, .37]	<.01
Block 2:								
Housing stressors	.03 (.14)	.03	.854 [-.25, .43]	<.01	.10 (.09)	.11	.274 [-.09, .33]	<.01
Education stressors	-.12 (.11)	-.13	.352 [-.43, .18]	.01	-.04 (.08)	-.05	.576 [-.21, .11]	<.01
Work stressors	.01 (.12)	.01	.949 [-.27, .39]	<.01	-.03 (.10)	-.03	.773 [-.20, .15]	<.01
Treatment/Health stressors*	**.51 (.14)**	**.50**	**.002 [.24, .76]**	**.20**	**.34 (.09)**	**.34**	**.002 [.16, .49]**	**.09**
Marital/Romantic stressors	.11 (.12)	.12	.388 [-.12, .29]	.01	-.04 (.09)	-.04	.653 [-.24, .17]	<.01
Financial stressors	-.08 (.08)	-.10	.547 [-.32, .16]	.01	.18 (.10)	.17	.109 [-.03, .38]	.02
Legal/Crime stressors	-.04 (.08)	-.06	.639 [-.18, .23]	<.01	-.08 (.11)	-.06	.467 [-.29, .10]	<.01
Other Relationship stressors	-.13 (.15)	-.12	.399 [.44, .25]	.01	-.13 (.10)	-.13	.221 [-.33, .08]	.01
Block 3:								
Housing stressors	-.03 (.13)	-.03	.796 [-.28, .32]	<.01	.08 (.08)	.08	.383 [-.09, .26]	<.01

Education stressors	-.03 (.11)	-.03	.828 [-.33, .31]	<.01	-.08 (.07)	-.09	.246 [-.24, .06]	<.01
Work stressors	.02 (.12)	.03	.844 [-.22, .34]	<.01	-.08 (.08)	-.08	.312 [-.24, .08]	<.01
Treatment/Health stressors*	.40 (.14)	.39	.019 [.10, .64]	.10	**.25 (.08)**	**.25**	**.001 [.10, .39]**	**.05**
Marital/Romantic stressors	.11 (.12)	.12	.415 [-.15, .27]	.01	-.002 (.08)	-.002	.980 [-.16, .16]	<.01
Financial stressors	-.06 (.11)	-.08	.615 [-.29, .24]	<.01	.09 (.08)	.08	.308 [-.08, .26]	<.01
Legal/Crime stressors	.0004 (.08)	.00	.999 [-.15, .29]	<.01	-.06 (.10)	-.05	.461 [-.23, .07]	<.01
Other Relationship stressors	-.20 (.14)	-.19	.170 [-.51, .16]	.02	-.14 (.09)	-.14	.149 [-.31, .04]	.01
Psychopathology*	**.36 (.12)**	**.36**	**.005 [.12, .60]**	**.10**	**.59 (.08)**	**.55**	**< .001 [.44, .73]**	**.30**
Block 1 Model:	R^2 = .00, F[1, 74] = .003, p = .957				R^2 = .001, F[1, 150] = .095, p = .758			
Block 2 Model:	R^2 = .20, F[9, 74] = 1.77, p = .091; $R^2\Delta$ = .20, $F\Delta$ = 2.00, p = .061				R^2 = .15, F[9, 150] = 2.76, p = .005; $R^2\Delta$ = .15, $F\Delta$ = 3.09, p = .003			
Block 3 Model:	R^2 = .29, F[10, 74] = 2.62, p = .010; $R^2\Delta$ = .09, $F\Delta$ = 8.40, p = .005				R^2 = .38, F[10, 150] = 8.57, p < .001; $R^2\Delta$ = .23, $F\Delta$ = 51.91, p < .001			

Model 1 comparison: Z = -.13, p = .448; q = -.03 [-.04, -.01]

Model 2 comparison: Z = .48, p = .317; q = .07 [.05, .09]

Model 3 comparison: Z = -.80, p = .212; q = -.12 [-.13, -.10]

Model 2: Stressors categorised by acute and chronic social-psychological type								
	Men				**Women**			
	b (SE)	***β***	**BCa *p* [BCa 95% CI]**	**r^2_{part}**	***b (SE)***	***β***	**BCa *p* [BCa 95% CI]**	**r^2_{part}**
Block 1:								
Study site	-.01 (.22)	-.01	.961 [-.47, .44]	<.01	.05 (.16)	.03	.753 [-.26, .36]	.001
Block 2:								
Acute interpersonal loss	-.13 (.15)	-.12	.352 [-.39, .12]	.01	-.12 (.09)	-.12	.221 [-.31, .06]	.01
Chronic interpersonal loss	.33 (.12)	.37	.024 [.06, .58]	.09	-.05 (.09)	-.05	.594 [-.24, .15]	<.01
Acute humiliation	-.16 (.13)	-.18	.330 [-.48, .20]	.02	-.01 (.10)	-.01	.923 [-.21, .21]	<.01
Chronic humiliation	-.07 (.14)	-.06	.689 [-.36, .21]	<.01	.06 (.09)	.06	.557 [-.13, .23]	<.01
Acute danger*	.17 (.15)	.17	.383 [-.18, .63]	.01	**.43 (.10)**	**.43**	**< .001 [.23, .62]**	**.11**
Chronic danger	.12 (.16)	.12	.517 [-.30, .45]	.02	-.08 (.11)	-.08	.414 [-.28, .12]	<.01
Chronic entrapment	-.07 (.18)	-.07	.720 [-.44, .32]	<.01	-.25 (.11)	-.25	.019 [-.45, -.06]	.03
Acute role change/disruption	-.11 (.15)	-.12	.494 [-.43, .21]	.01	.23 (.11)	.23	.023 [.02, .44]	.03
Chronic role change/disruption	.31 (.16)	.30	.084 [-.04, .61]	.04	.02 (.09)	.02	.849 [-.16, .21]	<.01
Block 3:								
Acute interpersonal loss	-.12 (.23)	-.11	.330 [-.36, .07]	.01	-.09 (.08)	-.10	.279 [-.27, .07]	<.01

Chronic interpersonal loss*	**.32 (.12)**	**.36**	**.008 [.12, .55]**	**.09**	.05 (.08)	.04	.512 [-.10, .21]	<.01
Acute humiliation	-.12 (.12)	-.14	.419 [-.40, .19]	.01	-.08 (.08)	-.07	.405 [-.26, .11]	<.01
Chronic humiliation	-.16 (.13)	-.15	.337 [-.46, .13]	.02	.04 (.08)	.04	.641 [-.12, .18]	<.01
Acute danger*	.23 (.14)	.23	.206 [-.09, .70]	.03	**.35 (.09)**	**.34**	**< .001 [.19, .50]**	**.07**
Chronic danger	.11 (.15)	.11	.486 [-.25, .39]	.01	-.14 (.09)	-.14	.104 [-.31, .03]	.01
Chronic entrapment*	-.06 (.16)	-.07	.729 [-.43, .29]	<.01	**-.27 (.09)**	**-.27**	**.004 [-.44, -.10]**	**.04**
Acute role change/disruption	-.14 (.14)	-.14	.390 [-.42, .16]	.01	.17 (.09)	.17	.052 [-.01, .36]	.02
Chronic role change/disruption	.14 (.16)	.14	.425 [-.19, .46]	<.01	.02 (.08)	.02	.802 [-.15, .20]	<.01
Psychopathology*	**.40 (.12)**	**.41**	**< .001 [.19, .59]**	**.14**	**.61 (.08)**	**.56**	**< .001 [.46, .75]**	**.33**
Block 1 Model:	R^2 = .00, F[1, 74] = .003, p = .957;				R^2 = .001, F[1, 150] = .095, p = .758;			
Block 2 Model:	R^2 = .21, F[10, 74] = 1.65, p = .112; $R^2\Delta$ = .21, $F\Delta$ = 1.84, p = .078				R^2 = .19, F[10, 150] = 3.34, p < .001; $R^2\Delta$ = .19, $F\Delta$ = 3.70, p < .001			
Block 3 Model:	R^2 = .33, F[11, 74] = 2.81, p = .005; $R^2\Delta$ = .12, $F\Delta$ = 11.64, p = .001				R^2 = .44, F[11, 150] = 9.87, p < .001; $R^2\Delta$ = .25 $F\Delta$ = 60.88, p < .001			
Model 1 comparison: Z = -.13, p = .448; q = -.03 [-.04, -.01]								
Model 2 comparison: Z = .12, p = .452; q = .02 [.04, -.002]								
Model 3 comparison: Z = -.99, p = .162; q = -.14 [-.16, -.12]								

Supplementary item 3: Full statistical notations for perceived stress regression models for autistic men and women

Model 1: Perceived severity of life domain stressors								
	Men				**Women**			
	b (SE)	***β***	**BCa *p* [BCa 95% CI]**	r^2_{part}	***b (SE)***	***β***	**BCa *p* [BCa 95% CI]**	r^2_{part}
Block 1:								
Study site	-.01 (.22)	-.01	.961 [-.48, .45]	< .01	.05 (.17)	.03	.762 [-.27, .36]	< .01
Block 2:								
Housing stressors	-.10 (.15)	-.10	.495 [-.39, .24]	< .01	.03 (.11)	.03	.754 [-.17, .24]	< .01
Education stressors	-.09 (.10)	-.10	.389 [-.32, .09]	< .01	-.06 (.08)	-.06	.429 [-.21, .10]	< .01
Work stressors	.05 (.12)	.05	.709 [-.21, .34]	< .01	.02 (.10)	.02	.846 [-.18, .22]	< .01
Treatment/Health stressors*	**.59 (.14)**	**.53**	**< .001 [.33, .80]**	**.25**	**.42 (.10)**	**.39**	**< .001 [.22, .60]**	**.12**
Marital/Romantic stressors	.20 (.13	.22	.171 [-.08, .46]	.03	-.02 (.10)	-.02	.867 [-.23, .20]	< .01
Financial stressors	-.15 (.14)	-.16	.339 [-.45, .09]	.01	.23 (.10)	.23	.017 [.04, .42]	**.03**
Legal/Crime stressors	.06 (.09)	.07	.550 [-.13, .29]	< .01	-.07 (.08)	-.08	.276 [-.19, .05]	.01
Other Relationship stressors*	-.01 (.16)	-.10	.936 [-.32, .30]	< .01	**-.28 (.11)**	**-.27**	**.005 [-.48, .07]**	**.04**
Block 3:								

Housing stressors	-.13 (.15)	-.13	.360 [-.41, .20]	.01	.0003 (.09)	.0003	.998 [-.18, .18]	< .01
Education stressors	-.01 (.11)	-.02	.888 [-.25, .17]	< .01	-.08 (.07)	-.09	.196 [-.21, .05]	< .01
Work stressors	.03 (.12)	.04	.794 [-.22, .30]	< .01	-.02 (.09)	-.02	.862 [-.20, .16]	< .01
Treatment/Health stressors*	**.46 (.15)**	**.42**	**.002 [.20, .69]**	**.11**	**.29 (.09)**	**.27**	**< .001 [.13, .44]**	**.05**
Marital/Romantic stressors	.16 (.13)	.18	.259 [-.12, .42]	.02	.01 (.09)	.01	.910 [-.16, .18]	< .01
Financial stressors	-.10 (.14)	-.10	.534 [-.41, .15]	< .01	.11 (.09)	.11	.232 [-.07, .28]	< .01
Legal/Crime stressors	.08 (.09)	.10	.392 [-.10, .30]	< .01	-.04 (.07)	-.04	.506 [-.15, .08]	< .01
Other Relationship stressors	-.05 (.15)	-.05	.703 [-.36, .26]	< .01	-.20 (.10)	-.20	.041 [-.40, .00004]	.02
Psychopathology*	.25 (.14)	.26	.038 [.01, .49]	.04	**.56 (.08)**	**.52**	**< .001 [.38, .73]**	**.25**
Block 1 Model:	R^2 = .00, F[1, 74] = .003, p = .957				R^2 = .001, F[1, 150] = .095, p = .758			
Block 2 Model:	R^2 = .28, F[9, 74] = 2.83, p = .007; $R^{2\,\Delta}$ = .28, F^{Δ} = 3.18, p = .004				R^2 = .18, F[9, 150] = 3.50, p < .001; $R^{2\,\Delta}$ = .18, F^{Δ} = 3.92, p < .001			
Block 3 Model:	R^2 = .32, F[10, 74] = 2.98, p = .004; $R^{2\,\Delta}$ = .04, F^{Δ} = 3.40, p = .070				R^2 = .38, F[10, 150] = 8.68, p < .001; $R^{2\,\Delta}$ = .20, F^{Δ} = 45.39, p < .001			

Model 1 comparison: Z = -.13, p = .448; q = -.03 [-.04, -.01]

Model 2 comparison: Z = .93, p = .176; q = .14 [.12, .15]

Model 3 comparison: Z = -.58, p = .280; q = -.08 [-.10, -.07]

Model 2: Perceived severity of acute and chronic social-psychological stressors								
	Men				**Women**			
	b (SE)	***β***	**BCa *p* [BCa 95% CI]**	r^2_{part}	***b (SE)***	***β***	**BCa *p* [BCa 95% CI]**	r^2_{part}
Block 1:								
Study site	-.01 (.22)	-.01	.957 [-.43, .45]	< .01	.05 (.16)	.03	.753 [-.26, .36]	< .01
Block 2:								
Acute interpersonal loss	-.09 (.15)	-.08	.567 [-.36, .21]	< .01	-.11 (.09)	-.11	.278 [-.30, .10]	< .01
Chronic interpersonal loss	.30 (.17)	.32	.070 [-.01, .62]	.04	-.04 (.10)	-.04	.719 [-.24, .17]	< .01
Acute humiliation	-.16 (.15)	-.16	.333 [-.44, .14]	.01	-.11 (.09)	-.11	.264 [-.29, .08]	< .01
Chronic humiliation	-.02 (.15)	-.02	.895 [-.32, .27]	< .01	.02 (.10)	.02	.869 [-.18, .20]	< .01
Acute danger*	.31 (.18)	.28	.114 [-.09, .72]	.04	**.42 (.10)**	**.44**	**< .001 [.21, .62]**	**.11**
Chronic danger	.05 (.17)	.05	.796 [-.35, .40]	< .01	.004 (.11)	.004	.969 [-.20, .08]	< .01
Chronic entrapment	-.13 (.18)	-.12	.532 [-.54, .31]	< .01	-.20 (.12)	-.21	.093 [-.46, .05]	.02
Acute role change/disruption	-.16 (.17)	-.16	.374 [-.53, .18]	.01	.18 (.12)	.18	.158 [-.08, .44]	.01
Chronic role change/disruption	.31 (.17)	.29	.105 [-.04, .66]	.04	.01 (.10)	.01	.931 [-.22, .25]	< .01
Block 3:								
Acute interpersonal loss	-.11 (.14)	-.11	.433 [-.35, .15]	< .01	-.13 (.08)	-.13	.107 [-.29, .03]	.01

Chronic interpersonal loss	.28 (.16)	.29	.076 [-.35, .62]	.03	.06 (.08)	.06	.417 [-.09, .21]	< .01
Acute humiliation	-.13 (.15)	-.13	.408 [-.42, .16]	< .01	-.12 (.07)	-.12	.122 [-.28, .03]	.01
Chronic humiliation	-.07 (.15)	-.07	.639 [-.36, .21]	< .01	-.01 (.08)	-.01	.902 [-.18, .13]	< .01
Acute danger*	.33 (.17)	.30	.062 [-.04, .74]	.04	**.38 (.09)**	**.40**	**< .001 [.21, .54]**	**.08**
Chronic danger	.05 (.16)	.05	.791 [-.31, .36]	< .01	-.10 (.09)	-.10	.310 [-.28, .08]	< .01
Chronic entrapment	-.13 (.17)	-.13	.522 [-.53, .27]	< .01	-.21 (.10)	-.21	.029 [-.39, -.03]	.02
Acute role change/disruption	-.14 (.16)	-.14	.435 [-.52, .18]	< .01	.16 (.10)	.16	.122 [-.05, .36]	.01
Chronic role change/disruption	.16 (.17)	.15	.388 [-.20, .52]	.01	-.03 (.09)	-.04	.676 [-.20, .14]	< .01
Psychopathology*	**.34 (.13)**	**.35**	**.005 [.13, .57]**	**.09**	**.63 (.08)**	**.58**	**< .001 [.50, .75]**	**.36**
Block 1 Model:	R^2 = .00, F[1, 74] = .003, p = .957;				R^2 = .001, F[1, 150] = .095, p = .758;			
Block 2 Model:	R^2 = .21, F[10, 74] = 1.70, p = .100; $R^{2\,\Delta}$ = .21, F^{Δ} = 1.89, p = .070				*R^2 = .18, F[10, 150] = 3.05, p = .002*; $R^{2\,\Delta}$ = .18, F^{Δ} = 3.38, p = .001			
Block 3 Model:	R^2 = .29, F[11, 74] = 2.37, p = .016; $R^{2\,\Delta}$ = .08, F^{Δ} = 7.34, p = .009				R^2 = .45, F[11, 150] = 10.11, p < .001; $R^{2\,\Delta}$ = .27 F^{Δ} = 66.46, p < .001			
Model 1 comparison: Z = -.13, p = .448; q = -.03 [-.04, -.01]								
Model 2 comparison: Z = .30, p = .382; q = .04 [.02, .06]								
Model 3 comparison: Z = -1.38, p = .084; q = -.20 [-.22, -.18]								