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Levels of Well-Being Among Men Who Are Incel (Involuntarily Celibate)

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Abstract

Incels (involuntary celibates) are a subculture community of men who build their identity around their perceived inability to form sexual or romantic relationships. To address the dearth of primary data collected from incels, this study compared a sample ($n = 151$) of self-identified male incels with similarly aged non-incele males ($n = 378$) across a range of measures related to mental well-being. We also examined the role of sociosexuality and tendency for interpersonal victimhood as potential moderators of incel status and its links with mental health. Compared to non-incels, incels were found to have a greater tendency for interpersonal victimhood, higher levels of depression, anxiety and loneliness, and lower levels of life satisfaction. As predicted, incels also scored higher on levels of sociosexual desire, but this did not appear to moderate the relationship between incel status and mental well-being. Tendency for interpersonal victimhood only moderated the relationship between incel self-identification and loneliness, yet not in the predicted manner. These novel findings are some of the earliest data based on primary responses from self-identified incels and suggest that incels represent a newly identified “at-risk” group to target for mental health interventions, possibly informed by evolutionary psychology. Potential applications of the findings for mental health professionals as well as directions for future research are discussed.

Keywords Involuntary celibate · Well-being · Depression · Sociosexuality · Anxiety · Life satisfaction

“The power to charm the female has sometimes been more important than the power to conquer other males in battle”.

– Charles Darwin, *The Descent of Man*

Incels, or involuntary celibates, are a group composed of mostly men who forge their sense of identity around a perceived inability to form sexual or romantic relationships (Speckhard et al., 2021). Recent years have seen growing concerns about potential threats of violence stemming from the incel community (Hoffman & Ware, 2020). A significant minority of incels (~10%) engage in misogynistic online hostility (Ging, 2019; Jaki et al., 2019), and rare individual cases have seen incels lash out in violent rage. Most notable is the notorious case of Elliot Rodger, who in 2014 killed six people and injured 14 others before killing himself, referring

in his manifesto to a “day of retribution” when he would kill those who he most envied (Allely & Faccini, 2017).

The incel community operates almost exclusively online, providing an outlet to express misogynistic hostility, frustration, and blame toward society for a perceived failure to include them (Speckhard et al., 2021). There is a need to know more about incels’ experiences, grievances, and mental health outcomes, yet there is a dearth of primary data collected from inquiries made to incels themselves, with most academic research focusing on incel misogyny, using online linguistic analysis (Jaki et al., 2019; O’Malley et al., 2020). It is unclear how much of incel rhetoric is performatively antagonistic; however, online misogyny can be used to predict domestic violence (Blake et al., 2021), and there is evidence that internet “trolls” who are hostile online are similarly hostile offline and may be attracted to evolutionarily novel online worlds, where aggression-based strategies can be pursued without risking real-world retaliation (Bor & Petersen, 2019).

While the theme of misogyny has understandably formed the bulk of the narrative surrounding incels, the aim of this study was to fill a gap in the literature, with some of the earliest primary data from self-identified incels, moving beyond studies analyzing incels’ online rhetoric, and instead capture

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the levels of mental well-being among members of the incel community using a broad sample. The study also aimed to investigate what factors may have a moderating effect on levels of well-being among members of the incel community. In doing so, we hope to add to the growing literature on incels with a broader sample. Obtaining primary data on mental health outcomes from direct engagement with self-identified incels is an important first step toward informing any potential therapeutic interventions.

Prior Incel Research

A comprehensive literature review on the psychological profile of incels (Stijelja, 2021) found that before 2014, there was almost no scholarly literature studying incels. What little research that had been done found that incels share several characteristics with adult virgins and young adults experiencing late sexual onset, including a significant fear of having irretrievably “missed out” on meaningful life experiences (Stijelja, 2021). Although incel research is in its infancy, we can infer some information about incels’ well-being from the literature on sexlessness and mental well-being, in particular the findings that romantic loneliness is associated with lower well-being and negative emotions (Gómez-López et al., 2019), and romantic loneliness is higher among individuals who perceive themselves to be involuntarily, rather than voluntarily, single (Adamczyk, 2016). Based on this research, we might expect inceldom, i.e., the condition of being involuntarily celibate, to be associated with a number of negative mental health outcomes. Indeed, because incels form their identity around this perceived inability to form sexual or romantic relationships, it might even be the case that the effect of singlehood on mental health is exaggerated among this subgroup.

In recent years, specific research on the incel community has grown, examining topics ranging from misogynistic online rhetoric (Byerly, 2020; Jaki et al., 2019), Big Five personality traits (Bieselt, 2020), to incel pornography use (Stickel, 2020). However, Speckhard et al. (2021) note that almost all academic studies which include primary responses from incels used the same limited data set—an online survey of incels ($n = 28$) from the University of Twente in the Netherlands.

More recently, larger quantitative studies with samples in excess of 250 have started to emerge, focusing on incel experiences, grievances, ideology, and prevalence of mental health diagnoses (Moskalenko et al., 2022; Speckhard et al., 2021). Speckhard and Ellenberg (2022) conducted a study of 272 self-identified incels and found a higher self-reported prevalence of formal psychological diagnoses than in the general population. These larger studies worked in partnership with one specific incel forum, Incels.is, and as such,

are missing the perspectives of incels beyond the users of just one specific, albeit significant, online forum. Daly and Laskovtsov (2021) conducted a series of in-depth qualitative interviews with ($n = 10$) self-identified incels, finding that participants feel they experience masculinity challenges that affect their romantic opportunities, perceive themselves as marginalized or treated as “subhuman” due to their appearance, and as a result, experience negative emotions related to their incel identity, which in turn affects their misogynistic online hostility.

While Moskalenko et al. (2022) currently has the greatest sample size ($n = 274$), incel research is still in its infancy and stands to benefit from more primary data, particularly from participants beyond the users of just one specific, significant forum. We attempted to collect such data here, as well as data from a group of non-incel men to allow for direct comparisons to be made. We used several well-established mental health measures to assess levels of well-being in this group to allow for comparisons to be made with the general population or other groups in future studies.

Well-Being

Incels often show signs of low well-being, such as depression and suicidality (Jones, 2020; Romano, 2018). Still, Stijelja’s (2021) comprehensive literature review found that while mental health issues are prominent points of discussion on incel forums, they have not received the same attention as themes of misogyny. Outside of Speckhard and Ellenberg (2022) and Daly and Laskovtsov (2021) examining potentiality for self-harm and suicidality on incel sub-Reddit posts, there is little academic research investigating incel mental health, despite romantic relationships being a robust predictor of mental well-being (Pietromonaco & Beck, 2019; Raque-Bogdan et al., 2011), and negative relations between depressive symptoms and assessment of one’s own mate value (Kirsner et al., 2003). From an evolutionary perspective, the recurring problem of finding and securing a mate represents one of the most ultimate evolutionary goals, and as such, failure to satisfy such fundamental needs as mating and pair-bonding can be expected to have deleterious consequences for well-being, mental health, and social functioning (Baumeister & Leary, 1995; Kenrick et al., 2010). Indeed, Apostolou et al. (2019) found that people who indicated *poor mating performance* experienced more negative emotions such as sadness and loneliness, and fewer positive emotions such as happiness and excitement, and lower life satisfaction. Van De Velde et al. (2010) found that being single was a large risk factor for high levels of depression in men, and Brody (2010) found that psychological function was positively correlated (sometimes showing a causal relationship) with penile-vaginal intercourse. Incels

experience poor mating performance, so can be predicted to have lower levels of well-being compared to non-incels.

Internal surveys conducted by the incel forum Incels.co (2020) show that 74.1% of respondents reported that they suffer from anxiety and 67.5% from depression. These data are concerning given the relationship between suicide risk and depression and anxiety in men (Bjerkeset et al., 2008). Sparks et al. (2022a, b) highlight how in 2018, the moderators of the forum incels.co conducted a poll of ~300 incel participants, finding that only one-third of the 294 respondents indicated that they *had any friends*. Several studies have found that themes of loneliness, hopelessness, and depression pervade incel forums (Høiland, 2019; Regehr, 2020), with many members openly discussing suicidal plans online (Baele et al., 2019; Cottee, 2020; Daly & Laskovtsov, 2021; Glace et al., 2021; Hoffman & Ware, 2020; Jaki et al., 2019; Jones, 2020; Maxwell et al., 2020; Rubertsson, 2019; Williams & Arntfield, 2020). It should not be surprising that an Incels.co survey (2020) indicated that 82.3% of incels reported to have considered suicide.

Hypothesis 1 Compared to non-incel men, men who self-identify as incel will report worse levels of well-being, including higher levels of depression, anxiety, and loneliness, along with lower levels of life-satisfaction.

The Tendency for Interpersonal Victimhood

The Tendency for Interpersonal Victimhood (TIV; Gabay et al., 2020) describes an ongoing feeling that the self is a victim, a feeling that becomes central to one's identity. Those with a perpetual victimhood-mindset tend to have an "external locus of control" and believe one's life is entirely under the control of forces outside of oneself. The TIV is composed of four dimensions: *Need for recognition*: the preoccupation with having the legitimacy of grievances acknowledged, *moral elitism*: the belief that the individual or their ingroup behaves more morally than others, *lack of empathy*: the belief that because of their victimization, an individual cares less about the pain of others, and *rumination*: the preoccupation with reflecting on past instances of victimization. The "incelosphere," i.e., the online space occupied by incels, can be characterized as a "fatalistic, misogynistic echo-chamber in which misery and failure are celebrated," emblematic of all four dimensions of the TIV (Kates, 2021). Brzuszkiewicz (2020) suggests that most incels take an external locus of control to the extreme in perceptions of themselves and inter-sex relations. Many incels subscribe to a philosophy or worldview known as the "blackpill," a derivative of the "red-pill," denoting a willingness to *see the world as it really is* as opposed to the *blissful ignorance* of taking the "bluepill." The "blackpill"

describes a particularly bleak "truth" to swallow; in this case, the belief that sexual attraction is mostly fixed and that there is nothing that incels can do to improve their romantic prospects (Glace et al., 2021). Thus, incels can be expected to score highly on the TIV.

Additionally, this study sought to investigate, on an exploratory basis, whether TIV moderates levels of incel well-being. Victimhood has often been associated with poor mental health outcomes in the psychotherapeutic literature (Lac & Donaldson, 2022); thus, we might expect incels who score higher on the TIV to have worse mental health outcomes. We also might expect that stronger TIV would result in worse mental health outcomes for incels vs non-incels, due to the reenforcing nature of the incel community (Kates, 2021), which might compound the rumination facet of the TIV and in turn result in lower levels of well-being. This is in contrast to non-incels, who might have their TIV challenged by their other social supports, which incels lack (Sparks et al., 2022a, b).

Hypothesis 2 Men who self-identify as incel will have a greater TIV than non-incel men.

Hypothesis 3 TIV will moderate the relationship between incel status and well-being, such that greater TIV will negatively impact well-being for incels more strongly than for non-incels.

Sociosexual Desire and Well-Being

Sociosexual orientation refers to individual differences in the willingness to engage in sexual activity outside of a committed relationship. It is composed of three dimensions, including sociosexual behaviors, attitudes and desires, with individuals varying from more "restricted" to more "unrestricted" in their sociosexual orientation (Penke & Asendorpf, 2008). Incels are, by virtue of being involuntarily celibate, relatively restricted in their sociosexual *behaviors*, but may still score high in sociosexual *desires* (Passman, 2020), with some research demonstrating that individuals who are not in a romantic relationship experience greater sociosexual desires (Del Rio et al., 2019). Additionally, incels appear to be more "sex" orientated rather than "relationship" orientated in their concerns, and they appear preoccupied with traits that are usually more important as short-term mating preferences than long-term ones (Kreuzberg, 2020; Ünes, 2020). Passman (2020) found that incels indeed score higher on sociosexual desire and lower on sociosexual behavior than non-incels, and that low well-being was indeed predicted by the discrepancy between sociosexual desire and behavior.

Assuming that there is variation on sociosexual desire, we might expect it to act as a moderator of mental health.

Grello et al. (2006) found that casual sex is associated with less depression for male college students, and sociosexually unrestricted students reported higher levels of well-being after casual sex (Vrangalova & Ong, 2014), and Michalos (1985) found that discrepancies between sociosexual desire and behavior result in lower levels of subjective well-being. Based on this past research, one might argue that, for incels, having high levels of sociosexual desire while ruminating on a perceived inability to act on that desire could have deleterious effects on well-being. A counter argument could be that because incels feel like their sexual and relationship prospects are non-existent, that their level of sociosexuality will not lead to greater levels of rumination or perceived goal frustration, and indeed there is some evidence that incels are characterized by an extreme *sex negativity* (Williams & Arntfield, 2020); however, this *sex negativity* may only apply to attitudes rather than desires. As such, we introduced an exploratory hypothesis to test these ideas.

Hypothesis 4 Men who self-identify as incels will score higher on sociosexual desires than non-incel men.

Hypothesis 5 Sociosexual desires will moderate the relationship between incel versus non-incel identity and well-being, such that greater levels of sociosexual desire will negatively impact well-being for incels more strongly than for non-incels.

Other Demographic and Contextual Information

Given the dearth of primary data available from self-identified incels, the current research sought to ask some additional exploratory questions to help better understand the complexion of the incel community, and to guide future research. Many commentators describe the incel subculture as adjacent to far-right or white supremacist movements (Bates, 2020; Srinivasan, 2021), and Julian (2018) suggests that one contributing reason why young people may be having less sex is because of an increased tendency to remain living with their parents into adulthood. Some of the exploratory findings in this study include the number of incels who report living with self-reported mental and physical conditions, education levels, employment status, living arrangements, political affiliation, relationship seeking, adherence to blackpill ideology, belief in the permanency of incelhood, and frequency of pornography use. We also asked whether individual incels used online forums or not, and the participant's perception of the effect of forum use on their levels of well-being, so that we could compare the two subgroups of forum using and non-forum using incels. These data are reported in the Appendix 1.

Method

Participants

Participants were recruited using social media snowball sampling, specifically focusing on Twitter and Facebook, for a study advertised as “*Exploring attitudes and behaviors around sexuality, wellbeing and identity.*” No compensation was offered for participation. Due to this social media snowball sampling, the study was picked up by the moderators of the Incel.wiki page, who shared a link to our survey on their pages encouraging incels in the community to participate.

In total, 783 people responded to the survey, with several degrees of completion. Because the incel community is almost exclusively male and our study focused on incel vs non-incel group differences in mental health, only participants who were biologically male and had completed the incel identification item were kept, resulting in a final sample of 529 males ($M_{\text{age}} = 31.75$, $SD_{\text{age}} = 9.63$), of which 151 self-identified as incel ($M_{\text{age}} = 28.14$, $SD_{\text{age}} = 7.59$). Incels were significantly younger ($M = 27.94$, $SD = 7.26$) than were non-incels ($M = 32.98$, $SD = 9.66$), $t(351.08) = -6.44$, $p < 0.001$, $d = 0.59$, 95%*BootCI*[-6.57, -3.50]. Most participants (94.71%) were cisgender, with no differences in the proportions of cis- and non-cisgender participants between incels and non-incels. Proportions between both groups also did not differ for sexual orientation, with 83.18% of the total sample identifying as heterosexual, 6.24% as bisexual, 4.91% as gay, and the remaining 5.67% as other sexual orientations. Regarding ethnicity, 71.83% of the total sample identified as White/Caucasian, 9.64% as mixed, 6.99% as South/Southeast Asian, 3.40% as Black, 2.84% as Other, 2.08% as Latino, 1.70% as Middle Eastern, and 1.51% as East Asian. The majority of participants lived in the USA (39.70%), while 22.12% lived in the UK and 36.86% lived in other countries (with the remaining 1.32% skipping the question). A full breakdown of demographics for all men, as well as incel and non-incel subgroups can be found in Appendix 1.

Measures

Depression

The Patient Health Questionnaire-9 (PHQ-9) is a nine-item questionnaire used to diagnose depression (Kroenke et al., 2001). Participants are asked to think about their feelings over the last 2 weeks and to indicate on a scale of “0” (not at all) to “3” (nearly every day) how often they have been experiencing a certain feeling (e.g., how often have you been

bothered by feeling down, depressed, or hopeless?) during those last 2 weeks. Due to a copying error during questionnaire setup, participants were not asked the PHQ-9 suicidal item. A reliability test based on the remaining 8-items resulted in a Cronbach's α of 0.90.

Anxiety

The Generalized Anxiety Disorder Assessment (GAD-7; Spitzer et al., 2006) is a brief measure for assessing generalized anxiety disorder. A total score is calculated by assigning scores of 0, 1, 2, and 3, to the response categories of “not at all,” “several days,” “more than half the days,” and “nearly every day” respectively, and summing the scores for the seven questions (e.g., *How often have you been bothered by having trouble relaxing?*). Scores of 5, 10, and 15 are taken as the cutoff points for mild, moderate, and severe anxiety, respectively. Reliability tests resulted in a Cronbach's α of 0.94.

Loneliness

The loneliness scale (Hughes et al., 2004) is composed of three questions (e.g., “How often do you feel that you lack companionship?”, $\alpha = 0.84$). Response categories were coded as 1 (*hardly ever*), 2 (*some of the time*), and 3 (*often*).

Satisfaction with Life

The Satisfaction with Life Scale (SWLS; Diener et al., 1985) is a five-item (e.g., “The conditions of my life are excellent,” $\alpha = 0.91$) seven-point Likert response scale designed to measure cognitive judgments of satisfaction with one's life, with higher scores corresponding to greater satisfaction. Scores on the SWLS have been shown to correlate with measures of mental health and be predictive of future behaviors such as suicide attempts (Pavot & Diener, 2008).

Interpersonal Victimhood

The TIV scale (Gabay et al., 2020) is composed of four dimensions: need for recognition (e.g., “It makes me angry when people don't believe that I was hurt,” 6 items, $\alpha = 0.88$), moral elitism (e.g., “I think I am much more conscientious and moral in my relations with other people compared to their treatment of me,” 6 items, $\alpha = 0.82$), lack of empathy (e.g., “People who are offended by me are only thinking of themselves,” 6 items, $\alpha = 0.85$), and rumination (e.g., “I am flooded by more anger than I would like every time I remember people who hurt me,” 4 items, $\alpha = 0.92$). Items are scored on a five-point Likert scale and can be averaged into a composite score ($\alpha = 0.91$), with higher scores corresponding to greater TIV scores.

Sociosexual Desire

The Sociosexual Desire (SOI-D) dimension of the Sociosexual Orientation Inventory—Revised (SOI-R; Penke & Asendorpf, 2008) is a 3-item measure used to assess individual differences in the desire to have casual, uncommitted sexual relationships. Participants were asked to indicate on a 1–9 scale the extent to which they agreed or disagreed with three statements (e.g., “How often do you have fantasies about having sex with someone with whom you do not have a committed romantic relationship?”). Reliability tests resulted in a Cronbach's $\alpha = 0.79$.

Incel Identification and other Measures

A single yes–no choice item (i.e., “do you identify as incel (involuntarily celibate)?”) assessed whether participants self-identified as incels. Participants were also asked various demographic questions including country of residence, ethnicity, age, sexual orientation, education, and employment status. In addition, they were also asked questions about their mate preferences, including their own minimum preferences across 15 traits a potential partner would need to satisfy, as well as their perceptions of the minimum standards they perceived women generally expect. These were asked as part of a separate study and so are not reported here.

Procedure

Participants gave full informed consent prior to participating in the study. First, demographic information was taken. Next, participants completed the above questionnaires in the following order, SOI-D, TIV, mate value, depression, anxiety, loneliness, and satisfaction with life. Finally, participants were given a full debrief. The study took approximately 25 min to complete and was approved by [redacted for peer review] ethics committee.

Results

Missing Values and Mean Scores Over Aggregates

For all of our measures, we allowed participants to skip questions that they did not want to answer or made them feel uncomfortable. While the mental health questionnaires allow for aggregate scores for the purpose of diagnosis (e.g., a patient being administered the PHQ9 for their doctor to assess whether to refer them to mental health services), such scores can be sensitive to missing data. Listwise deletion solves this issue, but also decreases the sample size for group comparisons. Thus, to keep our power high, we instead opted to use mean scores to alleviate the impact of

missing data. Table 1 shows means, standard deviations, and several inferential statistics for group differences between incels and non-incels for all variables described.

Confirmatory Results: Group Comparisons

Table 1 shows a series of independent samples *t* tests comparing incels and non-incels on all outcome variables for which we predicted significant differences. Incels scored significantly higher on depression, anxiety, and loneliness, and lower on satisfaction with life (Hypothesis 1). They also showed greater levels of TIV across all dimensions and the overall construct (Hypothesis 2), as well as greater sociosexual desire (Hypothesis 4).

In addition to examining mean differences, because the PHQ-9 and GAD-7 clinically diagnose people into different categories of depression and anxiety respectively, we investigated whether incels would be more likely to be categorized as highly depressed and anxious than would be expected by chance (see Appendix 2/Tables 4 and 5). New categorical variables aggregating scores with listwise deletion were created for depression and anxiety, resulting in five and four categories, respectively. Incels were more likely to be categorized as having “moderately severe depression” (45.68%) compared to non-incels (17.42%), $X^2(4, N = 213) = 40.21$, $p < 0.001$. Similarly, 41.77% of incels fell under the “severe anxiety” category, compared to 18.46% of non-incels, $X^2(3, N = 209) = 18.51$, $p < 0.001$.

Exploratory Results

The Moderating Role of the Tendency for Interpersonal Victimhood and Sociosexual Desire on Mental Health Outcomes

Hypotheses 3 and 5 stated that TIV and sociosexual desire would moderate the relationship between incel self-identification and worse mental health outcomes for incels more than non-incels. To test these hypotheses, we first ran correlations between TIV and the mental health outcomes, and between SOI desire and the mental health outcomes. Fisher’s *Z* was computed to see if these correlations differed between incels and non-incels (see Table 2). TIV positively correlated with depression, anxiety, and loneliness in both incels and non-incels, although these correlations did not differ significantly between groups. Correlations for TIV and satisfaction with life were negative for both groups, despite only the correlation for non-incels being statistically significant and Fisher’s *Z* suggesting no difference between group correlations. Among incels, SOI desire positively correlated with depression, anxiety, and loneliness, but was not correlated with satisfaction with life. Meanwhile, only the positive correlation between SOI desire and anxiety was significant among non-incels. Fisher’s *Z* for SOI desire—depression and for SOI desire—loneliness were marginally significant, suggesting a trend where these relationships are stronger in incels.

Next, we conducted moderated regressions to examine whether the relationship between incel identification and

Table 1 Means, standard deviations, and comparisons between incel and non-incel men

Dimension	Incels men <i>M</i> (<i>SD</i>)	Non-incel men <i>M</i> (<i>SD</i>)	<i>t</i>	<i>df</i>	<i>p</i> _{adj}	95% <i>BootCI</i>	<i>d</i>	$\beta - I$
Well-being measures								
Depression	1.94 (0.71, <i>n</i> = 112)	1.35 (0.80, <i>n</i> = 259)	6.73	369	<0.001	[0.42, 0.75]	0.78	0.99
Anxiety	1.61 (0.88, <i>n</i> = 108)	1.09 (0.79, <i>n</i> = 242)	5.25	186.97	<0.001	[0.33, 0.71]	0.62	0.99
Loneliness	2.66 (0.43, <i>n</i> = 111)	2.14 (0.62, <i>n</i> = 240)	9.08	294.73	<0.001	[0.41, 0.63]	0.97	0.99
Satisfaction with life	2.66 (1.33, <i>n</i> = 104)	3.97 (1.49, <i>n</i> = 266)	-7.78	368	<0.001	[-1.61, -0.99]	0.92	0.99
TIV								
Need for recognition	3.36 (1.02, <i>n</i> = 129)	3.02 (0.91, <i>n</i> = 311)	3.45	438	<0.003	[0.14, 0.54]	0.35	0.92
Moral elitism	3.50 (0.85, <i>n</i> = 128)	3.05 (0.70, <i>n</i> = 308)	5.18	202.25	<0.001	[0.27, 0.61]	0.56	0.99
Lack of empathy	2.78 (1.03, <i>n</i> = 121)	2.45 (0.78, <i>n</i> = 289)	3.08	180.45	<0.01	[0.12, 0.52]	0.35	0.90
Rumination	3.33 (1.24, <i>n</i> = 115)	2.61 (1.14, <i>n</i> = 264)	5.50	377	<0.001	[0.46, 0.99]	0.60	0.99
Overall TIV	3.28 (0.76, <i>n</i> = 130)	2.84 (0.59, <i>n</i> = 317)	5.87	195.95	<0.001	[0.29, 0.59]	0.64	0.99
Sociosexual desire								
	5.38 (2.18, <i>n</i> = 134)	4.82 (1.94, <i>n</i> = 320)	2.59	226.31	<0.01	[0.15, 0.99]	0.27	0.75

Given incels were significantly younger than were non-incels, a series of regressions with age and incel-identification as predictors were run to assess how results would change when controlling for age. The effects of incel self-identification after controlling for age remained significant in all cases except for need for recognition, where, after applying Bonferroni corrections, the effect became marginally significant at $p = 0.07$. Thus, in the interest of parsimony, we report results for independent sample *t* tests

*Bonferroni corrections were applied for TIV (comparisons = 5) and mental well-being variables (comparisons = 4). Bootstrapped confidence intervals for group differences were computed for greater accuracy, particularly for variables that did not meet the normality assumption

Table 2 Fisher's Z-values representing differences in the magnitude of correlations between TIV and mental health, and SOI desire and mental health in incels and non-incels

Correlated variables		r_{incel}	$r_{non-incel}$	Z-value
TIV	Depression	0.39***	0.43***	-0.35
	Anxiety	0.45***	0.45***	-0.06
	Loneliness	0.35***	0.39***	-0.42
	Satisfaction with life	-0.15	-0.24***	0.80
SOI desire	Depression	0.29**	0.09	1.76****
	Anxiety	0.32***	0.15*	1.50
	Loneliness	0.26**	0.06	1.72****
	Satisfaction with life	-0.04	0.01	-0.41

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; **** $p < 0.10$

the negative well-being measures depended on TIV and sociosexual desire. Mahalanobis distances greater than $X^2(4) = 18.47$ were used to identify participants as multivariate outliers (Tabachnick et al., 2007). After removing these scores, we regressed each of the mental health outcomes on incel identification, TIV, sociosexual desire, and the interaction terms of incel identification*TIV and incel identification*sociosexual desire. All predictors were entered in the same step, and the R supernova package (version 2.4.4) was used to extract the change in R square of the interaction terms. For TIV, only the interaction on loneliness was significant ($b = -0.22, \beta = -0.56, p = 0.02, 95\%BootCI [-0.39, -0.05]$), although it barely accounted for 2% of the variability in loneliness. Probing the interaction with the probemod package (0.2.1.) revealed that, for incels, greater TIV scores were associated with greater loneliness ($effect = 0.17, SE = 0.08, p = 0.03$); however, the same effect was found more strongly for non-incel men ($effect = 0.39, SE = 0.05, p < 0.001$). Thus, Hypothesis 3 was partly supported (i.e., TIV moderated the relationship between incel identification and one of four mental health outcome variables), but in an opposite direction than predicted. Hypothesis 5, on the other hand, was not supported; sociosexual desire did not moderate any relationship between incel self-identification and mental health. Table 3 shows standardized coefficients, as well as the variance in mental well-being

outcomes accounted for by the interactions. Post hoc power analyses with G*Power (Faul et al., 2009) indicated all regressions reached a power of 0.99.

Discussion

This study found that incels, compared to non-incels, have worse mental health and well-being (i.e., higher depression, anxiety, and loneliness, and lower satisfaction with life, as well as greater likelihood of being clinically diagnosed as anxious and depressed; see Appendix 2/Tables 4 and 5), greater TIV, and higher levels of sociosexual desire. The relationship between incel self-identification and loneliness was significantly moderated by TIV; however, contrary to predictions, the conditional effect of TIV was stronger for non-incels, perhaps because even incels with low TIV had high levels of loneliness, resulting in ceiling effects for the latter group but not the former. Sociosexuality was not a moderator for any relationships between incel self-identification and mental health and well-being variables. Looking at demographic variables, a profile seemed to emerge—while incels were not more politically right-wing or disproportionately white (see Appendix 2/Tables 10 and 11) as they are often portrayed in popular mainstream media (Bates, 2020; Romano, 2018; Srinivasan, 2021), they were more likely to be living with either a diagnosed (34%) or undiagnosed (24%) mental health condition (see Appendix 2/Table 6) and more likely to be NEET (not in education employment or training), lower educated, and still living with their parents (see Appendix 2/Tables 7, 8 and 9), which may in turn have deleterious effects on their ability to form romantic relationships.

Typically, a surplus population of unpartnered young men disproportionately harms society and themselves, due to increased levels of status seeking and risk taking, in what is referred to as “young male syndrome” (Edlund et al., 2013; Guttentag & Secord, 1983; Krahn et al., 1986; Wilson & Daly, 1985). In China, substantially skewed sex ratios have left large surpluses of unpartnered young men relative to young women (Hudson & den Boer, 2004; Zhu et al., 2009), resulting in rises in violent crime (Edlund et al., 2013), and

Table 3 Standardized regression coefficients for incel identification, TIV, sociosexual desire, and their interactions. ΔR^2 shows the variance in the well-being measures accounted for the interaction term

	β_{incel}	β_{soides}	β_{TIV}	$\beta_{incel*soides}$	$\beta_{incel*TIV}$	R^2	$\Delta R^2_{incel*soides}$	$\Delta R^2_{incel*TIV}$
Depression	0.48*	0.04	0.46***	0.12	-0.42****	0.27***	0.002	0.009
Anxiety	0.32	0.08	0.45***	0.08	-0.26	0.26***	0.001	0.004
Loneliness	0.73***	0.01	0.44***	0.09	-0.56*	0.28***	0.001	0.02
Satisfaction with life	-0.64**	0.04	-0.26***	-0.02	0.36	0.18***	<0.001	0.006

Adding age into the moderating models to control for it did not alter results significantly for any constructs. Thus, we report the moderations without age

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; **** $p < 0.10$

deteriorating male mental health (Zhou & Hesketh, 2017), while there is accumulating evidence from criminology for the sexual frustration theory of aggression, violence, and crime (Lankford, 2021). These lines of evidence should give us cause for concern about the problems incels face and represent in society and highlight the importance of planning appropriate mental health interventions.

Together with previous findings showing that incels are reluctant to access mental health support (Speckhard et al., 2021), our findings suggest that incels can be considered a high-risk and hard-to-reach group. Incels may also encounter financial barriers to accessing mental health support because of their increased likelihood of being NEET (not in education employment or training), as well as being disincentivized by the cynicism toward mental health interventions often expressed in their community.

Loneliness

The largest effect size in our data referred to incels' greater loneliness vs non-incels. Sparks et al. (2022a, b) suggest that the term *incel* has resulted in an overemphasis on the sexual exclusion and frustration aspects of incel identity, and offers instead a more general social isolation as a key facet of incel identity, finding that incels reported more feelings of loneliness and less social support outlets than non-incel men. These feelings of loneliness and lack of social support were associated with multiple relational and mental health issues among incels, including depression, anxiety, and self-esteem. Additionally, they found that incels reported using more solitary and problematic coping mechanisms, such as self-blame.

Our finding about incels' high levels of loneliness provides supporting evidence to Sparks et al.'s (2022b) conclusion that incels may be missing a key buffer in sheltering them from the adverse effects of romantic rejection. From an evolutionary psychological perspective, loneliness represents an alarm signal that something is drastically wrong, because in the vast majority of ancestral environments, social isolation would equate to a death sentence. Although this may not be the case in the modern environment per se, our evolved psychological mechanisms are more attuned to our ancestral environments in response to which they evolved (Tooby & Cosmides, 1990) and, as such, process loneliness as catastrophic. It makes sense that loneliness would correlate with broader mental health issues (e.g., depression and anxiety). Indeed, loneliness is a risk factor comparable to smoking, obesity, and high blood pressure (Dunbar, 2021; Hawkey et al., 2010; Holt-Lunstad et al., 2010; House et al., 1988; Murphy et al., 2017). Thus, helping incels to cultivate more general social relationships may be an avenue to improving their well-being.

Tendency for Interpersonal Victimhood

Any potential mental health interventions should also take into consideration our findings around the TIV, which predicted low levels of well-being among incels and non-incels alike. This dimension of personality could present obstacles to incels engaging with the therapeutic process. One dimension of the TIV is the *need for recognition*, referring to a preoccupation with having the legitimacy of grievances acknowledged. Mental health professionals who are overly challenging toward incel clients run the risk of alienating incels who may feel their experiences are not seen as valid. One of the strongest predictors of whether a mental health intervention will be effective or not is the strength of the relationship between therapist and client, and creating rapport is essential (Finsrud et al., 2022).

Another dimension of the TIV is that of *rumination*, the preoccupation with reflecting on past instances of victimization. Our findings around incels' greater tendency to ruminate is consistent with our findings around incels' higher levels of depression, as depression puts an individual's mind into a state of rumination, which affects the ability to think in a goal-oriented manner (Alderman et al., 2015).

There is some debate about the adaptive properties of rumination within the evolutionary literature (Kennair et al., 2017). The analytical rumination hypothesis (Andrews & Thompson, 2009; Watson & Andrews, 2002) describes a theory of how rumination and depressive symptoms provide solutions to complex social problems and, therefore, should be promoted rather than treated. However, Pedersen et al. (2022) provide evidence that metacognition (how people think about their thinking) is related to the development and maintenance of depressive symptoms. This is consistent with research finding significant improvements among patients who underwent metacognitive therapy for depression, which focuses on minimizing rumination (Hagen et al., 2017). The patients involved in the study were treated over a 10-week period, and after 6 months, 80% had achieved full recovery from their depression diagnosis, and results from a 3-year follow-up study (Solem et al., 2019) suggest that the treatment had long-lasting benefits.

Those with a TIV tend to have an "external locus of control", believing that their life is entirely under the control of forces outside of themselves (Gabay et al., 2020). Helping incels to cultivate an internal locus of control—a belief that they can affect change toward their own predicament, could be an avenue of exploration in helping to challenge any fatalistic thinking about the permanency of their predicament within incel individuals. Our findings highlight that belief about the permanency of inceldom significantly predicted high levels of depression (see Appendix 1 iii). Cultivating an internal locus of control could help improve incel mental well-being.

Sociosexuality and Well-Being

Incels are, by virtue of being involuntarily celibate, restricted in their sociosexual behavior. Due to previous research showing that sociosexually unrestricted students reported higher well-being after casual-sex (Vrangalova & Ong, 2014), and other evidence that discrepancies between sociosexual desire and behavior result in lower levels of subjective well-being (Michalos, 1985; Passman, 2020), this study predicted that, for incels, having high levels of sociosexual desire, while ruminating on their perceived inability to act on that desire, would have deleterious effects on well-being more so for incels than for non-incels. Although incels scored significantly higher than non-incels on sociosexual desire, this did not appear to moderate the relationship between incel status and mental well-being. One interpretation of our findings is that it is incels' perceived inability to realize their mating goals that leads to poor mental health outcomes, regardless of whether those mating goals are for short term or long-term mating. One limitation of our study is that we hypothesized that the relationship between being an incel and poor well-being is conditional on how high one's levels of sociosexual desire are, with the assumption that at least non-incels may be able to satisfy this desire, while incels cannot, by the mere assumption that incelhood (the condition of being incel) is characterized by lack of sex. Individual incels with a high level of desire are unlikely to be able to satisfy that desire, which might exacerbate negative well-being compared to incels with little desire, who may still be depressed, anxious, lonely, and dissatisfied with life, but perhaps slightly less so because at least they do not desire the unrestricted sex they cannot access. This moderating hypothesis assumes that incels truly cannot fulfill their desires, while non-incels will be more likely to. Without having a measure of sociosexual behavior in our study, this is just an assumption, and future research should measure actual behavior rather than making the assumption that incels truly cannot satisfy their unrestricted desires. Future research should also investigate why indeed sociosexual desire correlated positively with depression and anxiety, as this is a puzzling finding in our data.

The Effect of the Incel Social Identity and Beliefs

It is possible that some incels experience some positives from the incel social identity. The need to belong theory (Baumeister & Leary, 1995) refers to the idea that humans have a fundamental motivation to be accepted into relationships with others and to be a part of social groups. For some, incel identity may provide a sense of fraternity (Crimando, 2019), virtuous victimhood identity (Ok et al., 2021), a common enemy (Lindsay, 2022), a rich lexicon of

humorous in-group terminology (Gothard, 2020), and an excuse to not participate in the mating-market (Costello, 2020). Lindner (2022) uses an evolutionary psychology lens to categorize the incel movement as coalitional bargaining for sexual access. Idriss et al. (2009) found that online support groups can have benefits on feelings of subjective well-being, although our exploratory findings suggest forum use predicted greater self-reported anxiety among incels (see Appendix 1 iii). While only 26% of incels in our sample reported participating in forums, their mean perception of increased subjective well-being was no different from 0 or from a neutral effect. Belief in permanency of being incel did show a small-to-moderate effect whereby the sample mean leaned toward believing in permanency, with only approximately 20% indicating they do not believe they will be involuntarily celibate for the rest of their life. Belief in the permanency of being incel significantly predicted depression and low life satisfaction in incels (see Appendix 1 ii and iii). Future research should further examine whether forum use exacerbates feelings of hopelessness (Stijelja, 2021), or alternatively, buffers against feelings of low well-being for some.

Engaging Incels in Mental Health Interventions

In concert with this study's findings, Speckhard et al. (2021) found that many incels report experiencing lower levels of mental health but also found they are loath to seek help from mental health professionals, citing a general mistrust about the usefulness of the mental health system. We suggest that therapeutic interventions designed to target incels would benefit from being led by mental health professionals who have knowledge of evolutionary psychology (Buss & Abrams, 2017; Nesse, 2005). Brooks et al. (2022) outline how the misogyny of incel men and their tendency to hyperbolically co-opt ideas from evolutionary psychology lead some authors to unfairly dismiss the field (e.g., O'Malley et al., 2020; Van Valkenburgh, 2021). We suggest that unfair dismissals of evolutionary psychology are illustrative of the "moralistic fallacy," where some of evolutionary psychology's findings are rejected on the basis of being considered morally unpalatable (Gorelik & Shackelford, 2017). Unfairly dismissing evolutionary psychology risks alienating incels who may consider themselves being unfairly pressed to doubt their own reality and the sincerity of the challenges they face in attracting a romantic partner. For instance, there is robust evidence from evolutionary psychology that women do indeed value socioeconomic status in a romantic partner. Using a 45-country sample ($N=14,399$), Walter et al. (2020) found that cross-culturally, women typically prefer mates with financial prospects. Additionally, using cross cultural data from 1.8 million online daters from 24

countries, Jonason and Thomas (2022) found that resource-acquisition ability (as indicated by education and income) improved the attention received for men by almost 2.5× that of women. These data suggest that our findings that incels are significantly more likely to be NEET (not in education employment or training), and still living with their parents (see Appendix 2 Tables 8 and 9), do indeed present significant challenges to them forming romantic relationships. Indeed, Sparks et al. (2022a, b) study examining incels' experiences of dating apps, which are an evolutionarily novel and ubiquitous feature of the modern mating market, found that although incels adopted more liberal dating app strategies, they reported fewer matches, conversations, and in-person meetings. Additionally, Brooks et al. (2022) found that mating ecologies with high income-inequality, male biased sex ratios, and low gender pay-gaps predicted high levels of online incel activity, concluding that there is some evidence that incels are at least partly accurate about the socioeconomic drivers contributing to their plight. Furthermore, there is some evidence of a modern "sex-recession" disproportionately affecting young men with lower income (Lehman, 2019; Ueda et al., 2020).

Mental health professionals with a knowledge of, and respect for, evolutionary psychology are uniquely placed to build rapport with incels, while also providing appropriate challenge against any hyperbolic misappropriation of evolutionary psychology concepts. Evidence shows that in order for any interventions against radicalization to be effective, it is important that they come from "credible insiders" (Ellefsen & Sandberg, 2022). Mental health professionals who lack knowledge of evolutionary psychology are likely to be dismissed by incels as lacking in credibility.

Interventions should also include models of acceptance to deal with frustration and exclusion (Miller, 1995), potential avenues to overcome obstacles to forming romantic relationships, such as improving "mating intelligence" (Geher & Kaufman, 2013), and identification and challenging of cognitive distortions in thinking. Importantly, interventions should include an understanding of the mating ecology conditions contributing to incels predicament (Brooks et al., 2022).

Incel Demographics and their Potential Impact on Mating Performance

Many commentators describe the incel subculture as adjacent to far-right or white-supremacist movements (Bates, 2020; Srinivasan, 2021), although the present findings are demonstrative of ethnic and political diversity among incels (see Appendix 2 Tables 10 and 11). However, the political beliefs of incels should be examined further beyond our use of a single item, to clarify or challenge assumptions that the

community is "far right." Jaki et al. (2019) used a dictionary-based approach to identify posts on the incel forum Incels.co with keywords that constitute racism, finding that just 3% could be considered racist. Although extreme racialized derogatory slang can be seen throughout incel forums, Pelzer et al. (2021) found that "self-hatred" is a significantly more common form of "toxic language" in the forum Incels.co. The racist language may be an example of performative "trolling" (Hoffman & Ware, 2020), or the actions of an extreme minority of incels. Jaki et al. (2019) indicated that only a minority of users (~10%) in incel forums were responsible for most of the hateful content, and Pelzer et al. (2021) concluded that the racism on incel forums is not comparable to white-supremacist forums.

A significant finding in this study was the extent to which incels reported to be NEET (not engaged in education employment or training), lower educated, or still living with their parents (see Appendix 2 Tables 7, 8, and 9). Given the premium that women do indeed place on status, education, and economic success when selecting a mate (Hopcroft, 2021; Parker et al., 2021; Walter et al., 2020), improving the material-conditions of men's lives through education, housing, and employment might help them to form romantic relationships and thus improve their mental well-being, while simultaneously widening the pool of eligible men for women to select from. Additionally, unemployment and precarious employment are risk factors for adverse mental health outcomes including depression, substance abuse, and suicide, and these risk factors appear to have a stronger impact on the mental health of men than women (Whitley, 2021).

Limitations and Conclusion

A key limitation of the present work is that it relies on incel self-identification rather than "incel-typical" behavior and cognition, leaving the possibility that some participants with incel-tendencies identified as non-incels. Future research should focus on developing and psychometrically validating a level of inceldom scale, i.e., a scale that would measure a degree of incel typical beliefs and behaviors, so that studies need not rely on subjective self-identification. A potential use of the level of inceldom scale is that it may help characterize those who do not identify as incel but may pose a risk to themselves or others due to similarly fatalistic thinking. There may be levels of incel identity ranging from hostile to benevolent.

There is some evidence that incels are at least partly accurate in their assessment of the modern socioeconomic drivers that contribute to their inability to form sexual and romantic relationships. Our data suggest that incels represent a newly identified hard-to-reach and potentially at-risk

group, suitable for targeted mental health interventions. It is imperative that therapeutic interventions do not risk alienating incels by unfairly dismissing the field of evolutionary psychology. Furthermore, mental health practitioners could benefit from an evolutionary-psychology-informed understanding of the problems incels face and represent in society.

Appendix 1. Characteristics of the Incelosphere

Beyond our main hypotheses, we ran exploratory analyses comparing incel and non-incel men on variables such as living with self-reported mental and physical conditions, education, employment status, living arrangements, political affiliation, relationship seeking, adherence to blackpill ideology, belief in the permanency of incelism, and attitudes toward having cosmetic surgery. These results are reported in the supplementary materials.

(i) Categorical variables

Greater proportions of incel men reported living with a clinically undiagnosed (24%) mental condition than would be expected by chance, compared to 12.73% of non-incel men, respectively, $X^2(2)=22.57$, $p < 0.001$ (see Table 6). While similar proportions of incel and non-incel men held an undergraduate degree, a greater proportion of incel men (36%) than would be expected by chance had a secondary (high school) level education or lower, compared to 19.89% of non-incel men, $X^2(2)=18.29$, $p < 0.001$ (Table 8). More incels (17.33%) than non-incels (9.02%) also reported being NEET (not in education, employment or training), $X^2(1)=6.55$, $p = 0.01$ (see Table 9). Regarding living arrangements, a smaller proportion of incels than expected were cohabiting with either a housemate or romantic partner (13.79%), and a significantly greater proportion were living with parents or a caregiver (50.34%), compared to 44.74% and 26.95% of non-incels, respectively, $X^2(2)=46.68$, $p < 0.001$ (see Table 10). A significantly smaller proportion of incels were white (63.58%) compared to the proportion of white non-incels (75.13%), while the proportion of BIPOC (black, indigenous, or people of color) incels was greater than the proportion of BIPOC non-incels (36.42% vs 24.87%), $X^2(1)=6.56$, $p = 0.01$ (see Appendix 2/Table 11).

(ii) Continuous variables

Independent sample t tests revealed no political orientation differences between incel ($M=2.94$, $SD=1.44$) and non-incel men ($M=2.93$, $SD=1.41$), $t(486)=0.01$, $p = 0.99$, $95\%BootCI [-0.27, 0.28]$ on a 5-point political orientation item (where 1 = left wing and 5 = right wing). Looking at single men only, incels ($M=3.33$, $SD=1.44$) reported greater relationship seeking than did non-incels ($M=2.77$, $SD=1.32$), $t(302)=3.55$, $p < 0.001$, $95\%BootCI [0.25, 0.88]$ $d=0.41$, $Power=0.97$ on a 5-point item (where 1 = definitely not seeking a romantic relationship and 5 = definitely seeking). One-sample t tests revealed no significant difference from $\mu=3$ (neither agree or disagree) regarding subjective perception of increased well-being for incels who used forums, or from $\mu=3$ (neutral) regarding adherence to the blackpill ideology. However, the incel sample mean for belief in permanency of incelism ($M=3.38$, $SD=1.00$) was significantly different from $\mu=3$ (not sure), $t(136)=4.44$, $p < 0.001$, $d=0.38$, indicating a general belief among incels that their situation will be permanent.

(iii) Which incels are faring better?

We explored the effects of greater weekly porn frequency, forum membership (0 = not a member of any incel forums, 1 = member of at least one incel forum), and blackpill and incelism permanency beliefs (two 5-point items with greater scores reflecting greater endorsement of these beliefs) on the mental well-being measures of incels (i.e., excluding non-incels from these specific analyses). Belief in permanent incelism significantly predicted mean depression scores ($b=0.16$, $SE=0.08$, $p=0.04$), while weekly porn frequency was a marginally significant predictor ($b=0.03$, $SE=0.01$, $p=0.07$). Forum membership predicted mean anxiety ($b=0.38$, $SE=0.18$, $p=0.04$), with greater blackpill belief as a marginal predictor ($b=0.12$, $SE=0.07$, $p=0.08$). There were no significant or marginal predictors for mean loneliness. Finally, belief in permanent incelism negatively predicted satisfaction with life ($b=-0.35$, $SE=0.15$, $p=0.02$), while a one-sample t test revealed no significant difference from $\mu=3$ (neither agree or disagree) regarding subjective perception of increased well-being for incels who used forums.

Appendix 2

Table 4 Contingency table for depression categories for incel and non-incel men. Bonferroni corrections set the new alpha criterion at 0.005 and the new critical value at |2.81|

		No depression	Mild depression	Moderate depression	Moderately severe depression	Severe depression
Incels	Observed	3	7	10	37	24
	Expected	13.31	14.83	13.31	22.82	16.73
	Row %	3.70%	8.64%	12.34%	45.68%	29.63%
Non-incels	Observed	32	32	25	23	20
	Expected	21.69	24.17	21.69	37.18	27.27
	Row %	24.24%	24.24%	18.94%	17.42%	15.15%
Adj. res		3.92	2.86	1.26	4.45	2.53

Table 5 Contingency table for anxiety categories for incel and non-incel men. Bonferroni corrections set the new alpha criterion at 0.006 and the new critical value at |2.73|

		No anxiety	Mild anxiety	Moderate anxiety	Severe anxiety
Incels	Observed	16	10	20	33
	Expected	26.08	13.98	17.39	21.55
	Row %	20.25%	12.66%	25.32%	41.77%
Non-incels	Observed	53	27	26	24
	Expected	42.92	23.01	28.61	35.45
	Row %	40.77%	20.77%	20.00%	18.46%
Adj. res		3.06	1.49	0.89	3.67

Table 6 Contingency table for incel and non-incel men with self-reported mental conditions. Bonferroni corrections set the new alpha criterion at 0.008 and the new critical value at |2.64|

		No condition	Yes, clinically diagnosed	Yes, undiagnosed
Incels	Observed	63	51	36
	Expected	86.81	39.28	23.91
	Row %	42.00%	34.00%	24.00%
Non-incels	Observed	242	87	48
	Expected	218.19	98.72	60.09
	Row %	64.19%	23.08%	12.73%
Adj. res		4.65	2.57	3.19

Table 7 Contingency table for education among incel and non-incel men. Bonferroni corrections set the new alpha criterion at 0.008 and the new critical value at |2.64|

		Secondary or less	Undergraduate	Graduate or higher
Incels	Observed	54	63	33
	Expected	36.72	64.90	48.39
	Row %	36.00%	42.00%	22.00%
Non-incels	Observed	75	165	137
	Expected	92.28	163.10	121.61
	Row %	19.89%	43.77%	36.34%
Adj. res		3.88	0.37	3.18

Table 8 Contingency table for employment among incel and non-incel men. Bonferroni corrections set the new alpha criterion at 0.01 and the new critical value at |2.50|

		non-NEET	NEET
Incels	Observed	124	26
	Expected	132.92	17.08
	Row %	82.67%	17.33%
Non-incels	Observed	343	34
	Expected	334.08	42.92
	Row %	90.98%	9.02%
Adj. res		2.71	2.71

Table 9 Contingency table for living arrangements for incel and non-incel men. Bonferroni corrections set the new alpha criterion at 0.008 and the new critical value at |2.64|

		Alone	Cohabiting	Parents or carer
Incels	Observed	52	20	73
	Expected	44.12	52.27	48.61
	Row %	35.86%	13.79%	50.34%
Non-incels	Observed	105	166	100
	Expected	112.88	133.73	124.38
	Row %	28.30%	44.74%	26.95%
Adj. res		1.68	6.58	5.06

Author Contribution This research was initially undertaken as part of the lead author's dissertation during his MSc in Psychology, Culture, and Evolution at Brunel University 2021. DS acted as dissertation supervisor throughout the project. WC: conceptualization, data curation, formal analysis, methodology, investigation, project administration, writing (original draft). VR: data curation, formal analysis, methodology, writing (original draft, review and editing). AT: supervision, formal analysis, writing (original draft, review and editing). DS: supervision, conceptualization, writing (review and editing).

Data Availability Code: https://github.com/vrolo001/psych_of_incels.

Declarations

Ethics Approval and Consent to Participate Ethical approval for this study was approved by the Brunel University London Ethics Approval Board.

Consent for Publication All authors have provided their consent for publication.

Competing Interests Not applicable.

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Table 10 Contingency table for ethnic background among incel and non-incel men. Bonferroni corrections set the new alpha criterion at 0.01 and the new critical value at |2.50|

		White	BIPOC
Incels	Observed	96	55
	Expected	108.47	42.53
	Row %	63.58%	36.42%
Non-incels	Observed	284	94
	Expected	271.53	106.47
	Row %	75.13%	24.87%
Adj. res		2.67	2.67

Table 11 Observed counts and percentages of incel and non-incel men who identify as right-leaning, center, and left-leaning. Participants who identified as right wing or center right were aggregated to create the right-leaning group. Conversely, those who identified as left wing or center left came to form the left-leaning group. An independent sample *t* test using the original 1–5 scores found no differences between incels ($M=2.93$, $SD=1.44$) and non-incels ($M=2.93$, $SD=1.41$), $t(486)=0.01$, $p=0.99$, 95%BootCI [-0.27, 0.28]

		Right-leaning	Center	Left-leaning
Incels	Observed	54	24	61
	Row %	38.85%	17.47%	44.70%
Non-incels	Observed	132	61	156
	Row %	37.82%	17.27	43.88%

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