

Levels of well-being among men who are incels (involuntary celibates)

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Total word count: 7262

## Abstract

Incels (involuntary celibates) are a sub-culture 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 of self-identified male incels ( $n = 151$ ) with similarly aged non-incel males ( $n = 378$ ) across a range of measures related to mental well-being. We also examined the role of sociosexuality and the tendency for interpersonal victimhood as potential moderators of incel status and its links with mental health. Compared to non-incels, incels had 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 findings suggest 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.

Key words: 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 comprised of mostly men who forge their sense of identity around a perceived inability to form sexual or romantic relationships (Donnelly et al., 2001). 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%) do engage in misogynistic online-hostility (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 whom 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 online discourse-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, but may be attracted to evolutionarily-novel online worlds, where

aggression-based strategies can be pursued without risking real-world retaliation (Bor & Peterson, 2019).

The aim of this study was to capture levels of mental well-being among members of the incel community using an especially broad sample, and 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 current literature on incels with a broader sample than previous research, potentially revealing whether unfulfilled sexual desires or tendencies toward victimhood undergird any mental health difficulties they may possess. Obtaining primary data on mental health outcomes and their correlates from direct engagement with self-identified incels is also an important first step towards 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 incels shared 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). In recent years, research on incels 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 (Speckhard et al., 2021; Moskalenko et al., 2022). 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 et al. (2022) 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 marginalised or treated as “subhuman” due to their appearance, and as a result, experience negative emotions related to their incelhood, 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 similarly-aged non-incel men to allow for direct comparisons to be made. We used several well-established mental health measures to assess levels of wellbeing in this group to allow for comparisons to be made with the general population or other groups in future studies.

### **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 comprised 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 *ruminatio*n: the preoccupation with reflecting on past instances of victimization. The “incelosphere” can be characterised as a “fatalistic, misogynistic echo-chamber in which misery and failure are celebrated”, emblematic of all four dimensions of the victimhood-mindset (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 “black-pill”, denoting a willingness to *see the world as it really is* as opposed to the *blissful ignorance* of taking the “blue-pill”. The “black-pill” 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 (Glance et al., 2021). Thus, incels can be expected to score highly on the TIV. Additionally, this study sought to investigate whether the TIV would have a moderating effect on levels of well-being, for incels as well as non-incels, i.e., do individuals with a high TIV have worse mental health outcomes than those who do not.

**Hypothesis 1:** Men who self-identify as incel will have a greater tendency for interpersonal victimhood than non-incel men.

**Hypothesis 2:** TIV will moderate the relationship between incel status and wellbeing, such that a greater tendency for interpersonal victimhood will negatively impact wellbeing for incels more strongly than for non-incels.

## **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).

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, 2018). 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 et al., 2020; Jaki et al., 2019; Jones, 2020; Maxwell et al., 2020;

Rubertsson, 2019; Williams, 2020). It should not be surprising that an Incels.co survey (2020) indicated that 82.3% of incels reported to have considered suicide.

**Hypothesis 3:** Compared to non-incel men, men who self-identify as incel will report lower levels of well-being, including higher levels of depression, anxiety, and loneliness, along with lower levels of life satisfaction.

### **Sociosexual desire and wellbeing**

Sociosexual orientation refers to individual differences in the willingness to engage in sexual activity outside of a committed relationship (Simpson & Gangestad, 1991). It is comprised of three dimensions, including sociosexual behaviours, attitudes and desires, with individuals varying from more “restricted” on the low end to more “unrestricted” on the high end of sociosexual orientation (Penke & Asendorpf, 2008). Incels are, by virtue of their inceldom, relatively restricted in their sociosexual behaviours, 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). 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). However, 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. Michalos (1985) found that discrepancies between sociosexual desire and behaviour result in lower levels of subjective well-being. Thus, this study makes the following predictions:

**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 wellbeing for incels more strongly than for non-incels.

### **Exploratory questions**

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 incelosphere, and to guide future research. Many commentators describe the incelosphere 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, adherence to blackpill ideology, belief in the permanency of incelism, 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 wellbeing, so that we could compare the two subgroups of forum using and non-forum using incels.

## **Method**

### **Participants**

Participants were recruited using social media snowball-sampling for a study advertised as "Exploring attitudes and behaviours around sexuality, wellbeing and identity." No compensation was offered for participation.

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 somewhat younger ( $M = 27.94$ ,  $SD = 7.26$ ) than were non-incels ( $M = 32.98$ ,  $SD = 9.66$ ),  $t(351.08) = -6.44$ ,  $p < .001$ ,  $d = .59$ , 95% *BootCI*[-6.57, -3.50]. 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 US (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 the appendix.

## **Measures**

### ***Tendency for Interpersonal Victimhood Scale***

The Tendency for Interpersonal Victimhood Scale (Gabay et al., 2020) is comprised of four dimensions: need for recognition (e.g., “It makes me angry when people don't believe that I was hurt,” 6 items,  $\alpha = .88$ ), 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,  $\alpha = .82$ ), lack of empathy (e.g., “People who are offended by me are only thinking of themselves,” 6 items,  $\alpha = .85$ ) and rumination (e.g., “I am flooded by more anger than I would like every time I remember people who hurt me,” 4 items,  $\alpha = .92$ ). Items are scored on a five-point Likert scale

and can be averaged into a composite score ( $\alpha = .91$ ), 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  $\alpha = .79$ .

### ***Patient Health Questionnaire-9 (PHQ-9)***

The 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 two 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 two weeks. Due to an error with the questionnaire, participants were not asked the question on suicidal ideation. Reliability tests resulted in a Cronbach’s  $\alpha$  of .90.

### ***Generalised Anxiety Disorder Assessment (GAD-7)***

The 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 cut-off points for mild, moderate and severe anxiety, respectively. Reliability tests resulted in a Cronbach's  $\alpha$  of .94.

### ***Loneliness scale***

This scale is comprised of three questions (e.g., "How often do you feel that you lack companionship?",  $\alpha = .84$ ) designed to capture loneliness (Hughes et al., 2004). Response categories were coded as 1 (*hardly ever*), 2 (*some of the time*), and 3 (*often*).

### ***The Satisfaction with Life Scale***

The Satisfaction with Life Scale (SWLS; Diener et al., 1985) is a five-item (e.g., "The conditions of my life are excellent,"  $\alpha = .91$ ) 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 behaviours such as suicide-attempts (Pavot & Diener, 2008).

### ***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 minutes 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.

### ***Tendency for interpersonal victimhood***

Incel males ( $M = 3.28$ ,  $SD = 0.76$ ) scored significantly higher than did non-incel males ( $M = 2.84$ ,  $SD = 0.59$ ) on the TIV overall score,  $t(196) = 5.97$ ,  $p < .001$ ,  $d = 0.64$ , as well as across all dimensions of interpersonal victimhood. Most of these differences were small to moderate in effect size. Thus, support was found for Hypothesis 1 (see Table 1).

### ***Measures of wellbeing***

A series of independent samples *t*-tests using Bonferroni corrections and *t*-statistics not assuming homogeneity of variance where needed, revealed male incels scored significantly higher than did male non-incels on depression, anxiety, and loneliness. Incels also scored significantly lower on life satisfaction than did non-incels. Thus, Hypothesis 3 was supported.

**Table 1. Means, standard deviations, and comparisons between incel and non-incel men. Bonferroni corrections were applied for TIV (C = 5) and mental wellbeing variables (C = 4). Bootstrapped confidence intervals for group differences were computed for greater accuracy, particularly for variables that did not meet the normality assumption.**

Dimension	Incel men	Non-incel men	<i>t</i>	<i>df</i>	<i>p<sub>adj</sub></i>	95%BootCI	<i>d</i>	<i>β - I</i>
	<i>M (SD)</i>	<i>M (SD)</i>						
<b>TIV</b>								
Need for recognition	3.36 (1.02, <i>n</i> = 129)	3.02 (.91, <i>n</i> = 311)	3.45	438	.003	[.14, .54]	.35	.92
Moral elitism	3.50 (.85, <i>n</i> = 128)	3.05 (.70, <i>n</i> = 308)	5.18	202.25	< .001	[.27, .61]	.56	.99
Lack of empathy	2.78 (1.03, <i>n</i> = 121)	2.45 (.78, <i>n</i> = 289)	3.08	180.45	.01	[.12, .52]	.35	.90
Rumination	3.33 (1.24, <i>n</i> = 115)	2.61 (1.14, <i>n</i> = 264)	5.50	377	< .001	[.46, .99]	.60	.99
Overall TIV	3.28 (.76, <i>n</i> = 130)	2.84 (.59, <i>n</i> = 317)	5.87	195.95	< .001	[.29, .59]	.64	.99
<b>Wellbeing measures</b>								
Depression	1.94 (.71, <i>n</i> = 112)	1.35 (.80, <i>n</i> = 259)	6.73	369	< .001	[.42, .75]	.78	.99
Anxiety	1.61 (.88, <i>n</i> = 108)	1.09 (.79, <i>n</i> = 242)	5.25	186.97	< .001	[.33, .71]	.62	.99
Loneliness	2.66 (.43, <i>n</i> = 111)	2.14 (.62, <i>n</i> = 240)	9.08	294.73	< .001	[.41, .63]	.97	.99
Satisfaction with life	2.66 (1.33, <i>n</i> = 104)	3.97 (1.49, <i>n</i> = 266)	-7.78	368	< .001	[-1.61, -.99]	.92	.99
<b>Sociosexual desire</b>	5.38 (2.18, <i>n</i> = 134)	4.82 (1.94, <i>n</i> = 320)	2.59	226.31	.01	[.15, .99]	.27	.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* = .07. Thus, in the interest of parsimony, we report results for independent sample *t*-tests.

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 categorised as highly depressed and anxious than would be expected by chance (see Appendix/Table 4 & 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 categorised as having “moderately severe depression” (45.68%) compared to non-incels (17.42%),  $X^2(4, N = 213) = 40.21, p < .001$ . Similarly, 41.77% of incels fell under the “severe anxiety” category, compared to 18.46% of non-incels,  $X^2(3, N = 209) = 18.51, p < .001$ . This was also consistent with Hypothesis 3.

### **Sociosexual desire and the Tendency for Interpersonal Victimhood as moderators**

Supporting Hypothesis 4, male incels had greater levels of sociosexual desire than did non-incels, though the effect size was small (see Table 1). To test Hypotheses 5 and 2, we first ran correlations between sociosexual desire, TIV, and mental health measures (see Table 2).

Desire and TIV both positively correlated with depression, anxiety, and loneliness. Desire had no significant correlation with life satisfaction, but TIV did negatively correlate with the latter.

**Table 2. Correlation coefficients among mental wellbeing measures, sociosexual desire, and TIV and respective 95% confidence intervals for each correlation.**

Variable	1	2	3	4	5	6
1. Depression						
2. Anxiety	.74** [.68, .78]					
3. Loneliness	.58** [.51, .65]	.47** [.39, .55]				
4. Satisfaction with life	-.47** [-.55, -.39]	-.36** [-.45, -.26]	-.54** [-.61, -.46]			
5. SOI desire	.18** [.08, .28]	.24** [.13, .34]	.15** [.05, .25]	-.05 [-.15, .06]		
6. TIV	.46** [.38, .54]	.49** [.40, .56]	.43** [.34, .51]	-.28** [-.37, -.18]	.24** [.15, .32]	

\*\* $p < .01$ , \*\*\* $p < .001$

Next, we conducted moderated regressions to examine whether the relationship between incel identification and the negative wellbeing measures depended on sociosexual desire and TIV. Mahalanobis distances greater than  $X^2(4) = 18.47$  were used to identify participants as multivariate outliers (Tabachnick & Fidell, 2007). After removing these scores, we regressed each of the mental health outcomes on incel identification, sociosexual desire, TIV, and the interaction terms of incel identification\*sociosexual desire and incel identification\*TIV. 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. Interaction terms between incel identification and sociosexual desire were not significant for any of the mental wellbeing outcomes. Thus, the prediction that greater levels of sociosexual desire would negatively impact wellbeing for incels more strongly than for non-incels was not supported. Regarding incel identification and TIV, the interaction for loneliness was significant ( $b = -.22$ ,  $\beta = -.56$ ,  $p = .02$ ,  $95\%BootCI [-.39, -.05]$ ), although it only 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 ( $effect = .17$ ,  $SE = .08$ ,  $p = .03$ ); however, the same effect was found more strongly for non-incel men ( $effect = .39$ ,  $SE = .05$ ,  $p < .001$ ). Table 3 shows standardised coefficients, as well as the variance in wellbeing outcomes accounted for by the interactions of incel identification and sociosexual desire, and incel identification and TIV.





**Table 3. Standardised ( $\beta$ ) regression coefficients for incel identification, sociosexual desire, TIV, and their interactions.  $\Delta R^2$  shows the variance in the wellbeing measures accounted for the interaction term.**

	$\beta_{incel}$	$\beta_{soides}$	$\beta_{TIV}$	$\beta_{incel*soides}$	$\beta_{incel*TIV}$	$R^2$	$\Delta R^2_{incel*soides}$	$\Delta R^2_{incel*TIV}$
Depression	.48*	.04	.46***	.12	-.42 <sup>†</sup>	.27***	.002	.009
Anxiety	.32	.08	.45***	.08	-.26	.26***	.001	.004
Loneliness	.73***	.01	.44***	.09	-.56*	.28***	.001	.02
Satisfaction with life	-.64**	.04	-.26***	-.02	.36	.18***	< .001	.006

<sup>†</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

\* 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.

## Exploratory findings regarding demographics: 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 towards having cosmetic surgery.

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,  $X^2(2) = 22.57, p < .001$  (see appendix/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,  $X^2(2) = 18.29, p < .001$  (see appendix/table 8). More incels (17.33%) than non-incels (9.02%) also reported being NEET (not in education, employment or training),  $X^2(1) = 6.55, p = .01$ , (see appendix/table 9).

When looking at the proportions of white vs BIPOC (black, indigenous or people of colour) participants, a smaller proportion of incels than would be expected by chance identified as white (63.58%) as opposed to those identifying as BIPOC (36.42%),  $X^2(1) = 6.56, p = .01$ . 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,  $X^2(2) = 46.68, p < .001$ , (see appendix/table 10). In relation to political orientation, independent sample t-tests revealed no differences between incel ( $M = 2.94, SD = 1.44$ ) and non-incel men ( $M = 2.93, SD = 1.41$ ),  $t(486) = .01, p = .99, 95\%BootCI [-.27, .28]$ ,

with 38.85% of incels reporting a right-leaning political orientation compared to 37.82% of non incels, and 44.70% of incels reporting a left leaning political affiliation compared to 43.70% of non incels. 17.47% of incels compared to 17.27% of non incels reported a centrist political affiliation (see appendix/table 11).

When looking at single men only, incels ( $M = 3.33$ ,  $SD = 1.44$ ) reported greater relationship seeking than did non-incels ( $M = 2.77$ ,  $SD = 1.32$ ),  $t(302) = 3.55$ ,  $p < .001$ ,  $95\%BootCI [.25, .88]$   $d = .41$ ,  $Power = .97$ . One-sample t-tests revealed no significant difference from  $\mu = 3$  (neither agree or disagree) regarding subjective perception of increased wellbeing 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 incelhood ( $M = 3.38$ ,  $SD = 1.00$ ) was significantly different from  $\mu = 3$  (not sure),  $t(136) = 4.44$ ,  $p < .001$ ,  $d = .38$ , indicating a general belief among incels that their situation will be permanent.

### **Exploratory findings: which incels are faring better?**

We explored the effects of greater weekly porn use, online-forum participation, and blackpill and incelhood permanency beliefs on the mental wellbeing measures of incels (i.e., excluding non-incels from these specific analyses). Belief in permanent incelhood significantly predicted mean depression scores ( $b = .16$ ,  $SE = .08$ ,  $p = .04$ ), while weekly porn use was a marginally significant predictor ( $b = .03$ ,  $SE = .01$ ,  $p = .07$ ). Forum use predicted mean anxiety ( $b = .38$ ,  $SE = .18$ ,  $p = .04$ ), with greater blackpill belief as a marginal predictor ( $b = .12$ ,  $SE = .07$ ,  $p = .08$ ). There were no significant or marginal predictors for mean loneliness. Finally, belief in permanent incelhood negatively predicted satisfaction with life ( $b = -.35$ ,  $SE = .15$ ,  $p = .02$ ), while a one-sample t-test revealed no significant difference from  $\mu = 3$  (neither agree or disagree) regarding subjective perception of increased wellbeing for incels who used forums.

## Discussion

This study found that incels, compared to non-incels, have a significant tendency for higher levels of interpersonal victimhood, higher levels of depression, anxiety and loneliness, and lower levels of life satisfaction (see Table 1). Roughly 58% of male incels in our sample reported living with a diagnosed (34%) or undiagnosed (24%) mental-health condition, compared to 35.81% of non incels (see Appendix/Table 6), and 75.31% of incels could be categorized as either severely or moderately depressed, compared to 32.57% of non incels (see appendix/table 4). Regarding anxiety levels, 41.77% of incels could be categorized as severely anxious, compared to 18.46% of non incels (see Appendix/Table 5).

We predicted that, for incels, having higher levels of sociosexual desire, while ruminating on their perceived inability to act on that desire, would be associated with low levels of wellbeing. Though incels scored higher on levels of sociosexual desire, this was not found to moderate the relationship between incel status and mental health as predicted. Sociosexual desire correlated with depression, anxiety, and loneliness, although sociosexual desire had no significant correlation with life satisfaction (see Table 2). However, the prediction that greater levels of sociosexual desire would negatively impact wellbeing for incels more strongly than for non-incels was not supported (see Table 3). The tendency for interpersonal victimhood (TIV) predicted low levels of well-being for incels and non incels alike. Regarding incel identification and TIV, the interaction for loneliness was significant, although it only accounted for 2% of the variability in loneliness, for incels, greater TIV scores were associated with greater loneliness; however, the same effect was found more strongly for non-incel men (see Table 3).

In addition, we found a specific demographic profile – incels were ethnically and politically diverse, significantly more likely to be NEET (not in education employment or

training), unemployed, lower educated, and still living with their parents (see Appendix), which may in turn have deleterious effects on their ability to form romantic relationships.

Typically, a surplus population of unpartnered young men disproportionately harm 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 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).

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 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 towards mental health interventions often expressed in their community (Speckhard et al., 2021).

### **Tendency for Interpersonal Victimhood**

Any potential mental health interventions should also take into consideration our findings around the tendency for interpersonal victimhood, which predicted low levels of wellbeing among incels and non incels alike. This dimension of personality could present obstacles to incels engaging with the therapeutic process. One dimension of the tendency for interpersonal victimhood 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 tendency for interpersonal victimhood is that of *ruminatio*n, 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) provides 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 ten-week period, and after six months, 80 percent had achieved full recovery from their depression diagnosis, and results from a three year follow up study (Solem et al., 2020) suggest that the treatment had long-lasting benefits.

Those with a victimhood-mindset tend to have an “external locus of control”, believing that their life is entirely under the control of forces outside of themselves (Gabay, 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 incelhood significantly predicted high levels of depression. Cultivating an internal locus of control could help improve incel mental wellbeing.

### **Sociosexuality and wellbeing**

Incels are by virtue of their incelhood restricted in their sociosexual behaviour. 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 behaviour results in lower-levels of subjective-wellbeing (Michalos, 1985), 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 wellbeing. Although incels scored significantly higher than non incels on sociosexual desire, this did not appear to moderate the relationship between incel status and mental wellbeing. One interpretation of our findings is that it is incels’ perceived inability to realise their mating goals that leads to poor mental health outcomes, regardless of whether those mating goals are for short term or long-term mating.

### **The effect of the incel social identity and beliefs.**

It is possible that some incels experience some positives from the social identity of incelhood. 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, a rich lexicon of humorous in-group terminology, as well as 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, and Speckhard et al. (2021) revealed that incels had several reasons for participating on forums, with roughly three quarters of incels reporting that the forum made them “feel understood”, provided “a sense of belonging” or made them “feel less lonely”, but a little over half reported that the forum made them “feel hopeless”. However, our exploratory findings suggest forum use predicted greater self-reported anxiety among incels. Furthermore, the mean perception of increased subjective wellbeing for incels who did participate in forums was no different from 0 or from a neutral effect, with only 26% of incels reporting to using forums, and only 37% of those saying using forums made their wellbeing “much” or “somewhat” better (compared to 39% not being sure, and 24% thinking it has worsened their wellbeing). Belief in permanency of incelhood did show a small-to-moderate effect whereby the sample mean leaned towards believing in permanency, with only approximately 20 percent indicating they do not believe they will be involuntarily celibate for the rest of their life. Belief in the permanency of incelhood significantly predicted depression and low life satisfaction in incels.

Future research should further examine whether forum-use exacerbates feelings of hopelessness (Stijelja, 2021), or alternatively, buffers against feelings of low wellbeing for some. Interventions should include models of acceptance to deal with frustration and exclusion (Miller,

1995), potential avenues to overcome obstacles to forming romantic relationships, such as improving their “mating intelligence” (Geher & Kaufman, 2013), and identification and challenging of cognitive distortions in thinking. Importantly, this should include an understanding of the mating ecology conditions contributing to incels’ predicament (Brooks et al., 2022).

### **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, 2016; Nesse, 2005). Brooks et al. (2022) outline how the misogyny of incel men and their tendency to hyperbolically co-opt ideas from evolutionary psychology leads some authors to unfairly dismiss the field (e.g., O’Malley et al., 2020; Van Valkenburgh, 2018). 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 2.5x 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, do indeed present significant challenges to them forming romantic relationships. 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. Additionally, 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. Additionally, 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.

### **Incel demographics and their potential impact on mating performance**

Many commentators describe the incelosphere as adjacent to far-right or white-supremacist movements (Bates, 2020; Srinivasan, 2021), however, the present findings are demonstrative of diversity of ethnicity and political-affiliation within the incelosphere. Not only were there no differences in political orientation between incels and non-incels, but just 38.85 percent of incels reported to have a right leaning political affiliation, compared to 44.70 percent

reporting a left-leaning affiliation. The political-affiliations and beliefs of incels should be examined further, to clarify or challenge assumptions that the community is “far right”. Further, our findings suggest that incels are not disproportionately white, with fewer incels than would be expected by chance (63.58%) reporting to be white, compared to 36.42 percent reporting to be BIPOC (see Appendix/Table 11). 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 three percent could be considered racist. Although extreme racialised derogatory slang can be seen throughout the incelosphere, Peltzer et al. (2021) found that “self-hatred” is a significantly more common form of “toxic language” in the forum Incels.co. Our findings support Jaki et al.’s (2019) conclusions that incels are an ethnically heterogeneous group. The racist language may be an example of performative “trolling” (Hoffman et al., 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 the vast majority of the hateful content. 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 in education employment or training), lower-educated, or still living with their parents (see Appendix). Roughly 17 percent of incels (compared to only nine percent of non-incels) reported to be NEET. 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., 2021), 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 wellbeing, while simultaneously widening the pool of eligible men for higher-educated 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**

One limitation of the present work is that it relies on incel self-identification rather than “incel-typical” behaviour 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, 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. This study suggests there may be levels of incel identity ranging from hostile to benevolent.

Incels are characterized by high-levels of depression, loneliness, anxiety and sociosexual-desire, with low levels of life-satisfaction and a tendency for interpersonal victimhood. Although incels appear to be politically and ethnically diverse, they are significantly more likely to be NEET (not in education employment or training) and live with their parents.

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.

### *Author Contributions*

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. Schmitt, D acted as dissertation supervisor throughout the project.

Costello, W: Conceptualization, Data curation, Formal Analysis, Methodology, Investigation, Project administration, Writing (original draft)

Rolon, V: Data curation, Formal Analysis, Methodology, Writing (review and editing)

Thomas, A: Supervision, Writing (review and editing)

Schmitt, D: Supervision, Conceptualization, Writing (review and editing)

All authors approved the final manuscript for submission.

Code: [https://github.com/vrolo001/psych\\_of\\_incels](https://github.com/vrolo001/psych_of_incels)

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## Appendices

**Table 4. Contingency table for depression categories for incel and non-incel men. Bonferroni corrections set the new alpha criterion at .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		<b>3.92</b>	<b>2.86</b>	1.26	<b>4.45</b>	2.53

**Table 5. Contingency table for anxiety categories for incel and non-incel men. Bonferroni corrections set the new alpha criterion at .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		<b>3.06</b>	1.49	0.89	<b>3.67</b>

**Table 6. Contingency table for incel and non-incel men with self-reported mental conditions. Bonferroni corrections set the new alpha criterion at .008 and the new critical value at |2.64|.**

**Table 7. Contingency table for incel and non-incel men with self-reported physical conditions. Bonferroni corrections set the new alpha criterion at .008 and the new critical value at |2.64|.**

		No condition	Yes, clinically diagnosed	Yes, undiagnosed
Incels	Observed	105	35	9
	Expected	117.21	26.68	5.11
	Row %	70.47%	23.49%	6.04%
Non-incels	Observed	308	59	9
	Expected	295.79	67.32	12.89
	Row %	81.91%	15.69%	2.39%
Adj. res		<b>2.89</b>	2.10	2.07

		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		<b>4.65</b>	2.57	<b>3.19</b>

**Table 8. Contingency table for education among incel and non-incel men. Bonferroni corrections set the new alpha criterion at .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		<b>3.88</b>	0.37	<b>3.18</b>

**Table 9. Contingency table for employment among incel and non-incel men. Bonferroni corrections set the new alpha criterion at .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		<b>2.71</b>	<b>2.71</b>

**Table 10. Contingency table for living arrangements for incel and non-incel men. Bonferroni corrections set the new alpha criterion at .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	<b>6.58</b>	<b>5.06</b>

**Table 11. Contingency table for ethnic background among incel and non-incel men. Bonferroni corrections set the new alpha criterion at .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		<b>2.67</b>	<b>2.67</b>

**Table 12. Observed counts and percentages of incel and non-incel men who identify as right-leaning, centre, and left-leaning. Participants who identified as right wing or centre-right were aggregated to create the right-leaning group. Conversely, those who identified as left wing or centre 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),  $t(486) = .01$ ,  $p = .99$ , 95%BootCI [-.27, .28]**

		Right-leaning	Centre	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%