

Title Page

Paranoid thinking as a function of minority group status and intersectionality:

An international examination of the role of negative beliefs

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Abstract

Background. Paranoia is higher in minority group individuals, especially those reporting intersecting aspects of difference. High negative and low positive self and other beliefs, and low social rank, are predictive of paranoia overtime; however, data is typically from majority group participants. This study examined whether social defeat or healthy cultural mistrust best characterises paranoia in minority groups.

Study Design. Using cross-sectional, survey design, with a large (n=2510) international sample, moderation analyses (PROCESS) examined whether self and other beliefs, and perceived social rank, operate similarly or differently in minority versus majority group participants. Specifically, we tested whether beliefs moderated the influence of minority group, and intersecting aspects of difference, on paranoia.

Study Results. Paranoia was consistently higher in participants from minority versus majority groups and level of paranoid thinking was significantly higher at each level of the intersectionality index. Negative self/other beliefs were associated with elevated paranoia in all participants. However, in support of the notion of healthy cultural mistrust, low social rank and low positive self/other beliefs were significantly associated with paranoia in majority group participants but *unrelated* to paranoia in respective minority group members.

Conclusions. Although mixed, our findings signal the need to consider healthy cultural mistrust when examining paranoia in minority groups and bring into question whether “paranoia” accurately describes the experiences of marginalised individuals, at least at low levels of severity. Further research on paranoia in minority groups is crucial to developing culturally appropriate ways of understanding people’s experiences in the context of victimisation, discrimination and difference.

(word count: 250)

Introduction

Social context plays an important role in understanding psychotic experiences in clinical and general population samples^{1,2}, with social adversity (e.g., migration, bullying, discrimination) significantly increasing the risk of psychosis³ and psychotic experiences^{1,4,5,6}. However, disparate social adversities are often grouped together, which may obscure specific associations and nuances. Likewise, focusing on broad diagnostic categories (e.g., schizophrenia) can lack sensitivity to the heterogeneous nature of individual symptoms (e.g., paranoia, hallucinations). Perhaps most importantly, the extent to which theoretical ideas derived from majority group individuals (e.g., predominantly white, able bodied, heterosexual) are valid and relevant to minority group individuals is seldom examined. Current cognitive and social defeat models^{7,8} suggest that subordination, exclusion and powerlessness enhance paranoia via heightened negative and lower positive self and other beliefs, as well as low perceived social rank. However, the healthy cultural mistrust hypothesis suggests that “paranoia” in minoritised groups may reflect a healthy, adaptive response to increased exploitation and discrimination⁹. To explore this empirically, this study examines the association between singular and co-occurring (intersecting) minority group status(es) and paranoid beliefs in an international general population sample. Specifically, we test whether high negative and low positive beliefs about the self and others and low perceived social rank have common or different associations with paranoia across five minority groups and their intersection.

Paranoia describes exaggerated and unfounded beliefs that others intend to cause you harm¹⁰. Paranoia is thought to exist on a continuum, ranging from mild suspicion and mistrust that is likely to have some adaptive value, to persecutory delusions, which describe more extreme, distressing and persistent paranoid beliefs¹¹. Paranoia is common in the general population with weekly prevalence rates of up to 40%, and approximately 20% reporting high levels of conviction and distress¹². Paranoid delusions (i.e., plots to harm you) are less common, with estimated lifetime prevalence of 0.7%, rising to 36% in those reporting a lifetime psychotic experience¹³. Social context is important for understanding paranoia. Paranoia is inherently interpersonal¹⁴, with theoretical models^{8,15,16} suggesting that adverse experiences (e.g., victimisation, trauma) give rise to unduly generalised beliefs about the risk posed to oneself by others, especially when individuals report negative self and other beliefs¹⁷. Paranoia may be more influenced by adverse social contexts than other psychotic-like experiences. For example, social deprivation (e.g., unemployment, barriers to housing) is associated with paranoia, but not hallucinations or hypomania¹⁸; perceived ethnic discrimination is more associated with paranoia than other psychotic symptoms¹⁹; and discrimination across a variety of minority groups prospectively predicted delusional ideation, but not hallucinations, over a three-year period in the general population²⁰.

The social defeat hypothesis proposes that feeling subordinate, like an outsider, or excluded from the majority group is a social context associated with enhanced risk for psychotic experiences, including paranoia^{8 21}. For example, in a UK general population sample, perceived discrimination due to minority group status was associated with increased rates of psychotic experiences (e.g., paranoia, hypomania, auditory hallucinations)²². Importantly, paranoia was significantly elevated across diverse minority groups, suggesting that the risk may not be specific to any one group. In individuals from racially minoritised groups, heightened risk of psychotic experiences can be ameliorated by living in an area where there is a greater proportion of individuals from your own ethnic group²³. This, along with similar findings²⁴ suggests that the extent to which you feel different from others in your social environment is important for understanding increased vulnerability to psychotic experiences. The specific nature of difference (i.e., sexuality, race) may be less central. Intersectionality²⁵, grounded in the agenda for social justice, describes the way in which co-occurring marginalized identities can compound discrimination and oppression. Although conceived to promote social action, intersectionality has important implications for mental health, with research showing that intersecting aspects of difference are associated with accumulating risk for mental health difficulties, including paranoia²⁶. For example, perceived discrimination across multiple marginalised identities was associated with increased odds for experiencing paranoia (OR = 6.00) relative to discrimination in a singular domain (OR = 2.27)²², which echoes findings on delusional thinking²⁰ and on the cumulative effect of multiple social adversities²⁶.

A core assumption of cognitive models⁷ is that self and other beliefs play an important role in understanding the impact of social adversity on paranoia. For example, Jaya et al. (2017)¹ found that the link between social adversity (including, but not restricted to, discrimination and minority group status) and psychotic symptoms in the general population was mediated by high negative and low positive beliefs about self and others and low perceived social rank. However, because minority group status was grouped with other social adversities, possible differences across minority groups were not examined. Most of what we know about the cognitive model of psychotic experiences, and the central role of cognition in psychotic experiences, is based on majority group samples. As of yet, an unexplored question is whether these negative beliefs about self and others operate equivalently across minority and majority groups. Cultural relativity⁹, for example, suggests that different cultural groups experience symptoms in fundamentally different ways, underscoring the need to understand experiences within their cultural context. In a clinical high-risk group, Rouhakhtar et al. (2021)²⁸ examined whether race (Black versus White participants) moderated the effect of psychotic experiences on social functioning and found that in White participants, psychotic experiences predicted social functioning, whilst in Black participants the two were unrelated. Item-level analysis

suggested that paranoia and hallucinations drove this moderation effect. Investigating cultural mistrust in treatment-seeking African Americans, Whaley (2001 & 2001)²⁹ also raises the issue that cultural mistrust towards White clinicians may contribute to diagnostic errors, whereby mistrust arising from cultural difference is misinterpreted as clinical paranoia. Together, these findings support the view that, at the general population level, “paranoia” in ethnic minority groups may reflect adaptive responding or “healthy cultural mistrust”^{8,30} rather than being a manifestation of problematic belief systems.

The main aim of this study was to internationally investigate the link between minority group status and paranoia, across a variety of minority groups, examining whether minority status and cognitive factors interact in their association with paranoia. Based on aforementioned research and theory, we hypothesised that:

1. Paranoia will be significantly higher in minority versus majority group participants across five formally dissimilar minority groups and across five culturally dissimilar sites.
2. Paranoia scores will systematically increase with the number of intersecting minority identities an individual reports.
3. Finally, we tested whether self/other beliefs and perceived social rank moderate the impact of minority/majority group status on paranoia. Social defeat and cognitive models suggest that high negative and low positive self/other beliefs and low social rank *moderate the strength* of the association between majority/minority group status and paranoia. Alternatively, the healthy cultural mistrust hypothesis implies that self/other beliefs and perceived social rank may be unrelated to paranoia in minority groups. Given the lack of research in this area, we did not favour one hypothesis over the other.

Methods

Design

We used a cross-sectional survey design with minority group status/intersectionality index as the hypothesised predictor, paranoid beliefs as the outcome, and positive and negative beliefs about the self/others and perceived social rank as hypothesised moderators. Co-variables included age, gender, education, general distress and site.

Participants

The sample consisted of 2510 participants from: United Kingdom (n=512), United States (n=502), Germany (n=516), Hong Kong (n=445) and Australia (n=535). Participants were recruited using Qualtrics panel recruitment using stratified quota sampling at each site based on sex, age and educational attainment. The sample was therefore drawn from a self-selecting group (i.e., registered

to take part in Qualtrics studies), with imposed stratified quotas to ensure that the age, gender and education level were representative of the population at each site.

Power considerations

This research constitutes a re-analysis of an existing dataset, so no a priori power calculations concerning the minority/majority-group analyses were performed before collecting the original data. Post-hoc computation of achieved power showed that for comparisons between majority and minority groups with a 90%/10% distribution of group status, the test power was $\beta=0.85$ for small effects ($d=0.2$) and approximately $\beta\approx 1.00$ for medium effect ($d=0.5$).

Measures

This paper is based on a larger survey³¹ and, as such, additional measures were taken but are not here reported.

Socio-demographic variables. Participants provided information on their age, gender, and education.

*Minority group status*¹. Participants viewed a list of five minority groups and ticked where applicable: minority sexual orientation/identity, one or more physical disabilities, belonging to an ethnic minority or having a different skin colour to the majority of people living around you, having a minority religion/belief, and having a visible physical condition (e.g., obese, mole, scar). We used the item-wise responses for analysing the effects of individual minority group status effects and summed positive answers to create an *intersectionality index* (range: 0= “member of none of the aforementioned minorities”; 5 = “member of all five of the aforementioned minorities”).

*The Revised Green et al. Paranoid Thoughts Scale – Persecution (R-GPTS*³²*)* uses 10 items to measure paranoid thinking over the last two weeks. Items are rated on a 0 (not at all) to 4 (totally) scale (range 0-40), and higher scores indicate higher levels of paranoid thinking. Scores of ≤ 5 are average, 6+ is elevated, 11+ is moderately severe, 18+ is severe and 28+ is very severe ($\alpha = 0.96$).

*The Brief Core Schema Scales (BCSS*³³*)* is a 24-item 5-point (0 to 4) self-report measure of evaluative self and other beliefs. The BCSS yields four sub-scores: negative self, positive self, negative others, and positive others (α 's all >0.85).

*The Social Comparison Scale (SCS*³⁴*)*, used to measure social rank, consists of 11 bi-polar items (e.g., inferior-superior, outsider-insider) which participants rate from 1 (e.g., inferior) to 10 (e.g., superior) using the response stem “in relation to others I feel...”. Items are rated over the last four weeks and higher scores thus indicate a more positive view of oneself in relation to others ($\alpha= 0.95$).

*The short version of the Depression Anxiety Stress Scales (DASS*³⁵*)* are a 21-item self-report measure of the clinically significant negative emotional states of depression, anxiety and tension/stress over

one week using a scale from 0 (Did not apply to me at all) to 3 (Applied to me very much, or most of the time). For this study, we used the global sum-score as an indicator of general distress ($\alpha = 0.96$).

Procedure

Ethical approval was obtained from all university host sites. Qualtrics sent an email invitation to $n=12853$ potential participants, of which $n=2510$ fulfilled quota and eligibility checks, consented and completed the survey, and passed attention and time checks (see Lincoln et al., 2022 for further details)³⁶. Questionnaires were completed online and participants were reimbursed for taking part.

Analysis strategy

We used *t*-tests to test the first hypothesis. Additionally, linear regression models were calculated to test for the robustness of differences when controlling for general distress (DASS-21) and sociodemographic variables (site, age, gender, and level of education). To test hypothesis two, we calculated a random intercept multilevel regression model (participants nested in sites) with the intersectionality index as a continuous, independent variable and paranoia as the dependent variable. Again, robustness of the results was tested by entering sociodemographic variables (minus site) and distress as control variables. To test hypothesis three, we computed six random intercept multilevel regression models for each of the minority groups, as well as for the intersectionality index, entering one of the putative moderators and testing for the group status \times moderator interaction effect, respectively. For each of the 30 multilevel-regression models, a Generalized Information Matrix Test (GIM)³⁷ for site-clustered standard errors was calculated to test for substantial deviation from homoscedasticity. If GIM tests were significant, robust standard errors were used for the respective model (see supplemental materials for details).

Results

Sample characteristics

Average age was 43.3 years ($SD=15.7$). Most participants described themselves as female (52.5%), 46.9% as male, 0.2% as genderqueer, 0.1% as TransMale/TransFemale, and 0.2% as “other”. For highest education achievement: most had bachelor’s degree/equivalent (31.3%), 30.8% A-level/equivalent, 24.5% secondary school, 10% master’s degree/equivalent, 1.5% PhD/equivalent, 1.9% primary school. About half the sample worked full time (50.9%), 14.2% worked part time and 11.3% were unemployed. The remaining participants were retired (7.9%), in job training or school (6.7%), home keeper/carer (5.7%) or disabled (3.0%). Annual income: 19.3% under £18,500, 28.6% £18,500-£36,999, 20.8% £37,000-£55,999 12.3% £56,000-£74,999 and 18.0% > £75,000 per year. Life-time diagnosis of a mental health disorder was reported by 21%, with 16.2% currently taking

medication for this. Minority group status ranged from 9.44% (ethnic minority) to 18.53% (visible physical condition; see Table 1).

Paranoid thinking in different minority groups

In the full sample, all *t*-tests comparing minority to corresponding majority groups showed significant differences, with all minority groups showing higher levels of paranoid thinking compared to the majority (see Table 1). For minority groups based on ethnicity, religious beliefs or sexual identity/orientation, these differences amounted to moderate effects ($0.54 \leq d \leq 0.59$), whereas the effects were smaller for physical disability and visible physical condition ($0.30 \leq d \leq 0.34$). As can be seen in the violin plots in Figure 1, the distribution of paranoia scores in the majority group was highly skewed, with most participants reporting low levels of paranoia (i.e., scores 0-10). In the minority groups, the distributions of paranoia scores were overall less skewed, with a tendency towards a bi-modal distribution for ethnicity, religion, and sexual identity/orientation.

When controlling for general distress and demographic variables using multiple regression, minority versus majority group differences remained significant for ethnicity ($b=2.36$, $SE=0.55$, $t=4.33$, $p<0.001$) religious beliefs ($b=1.89$, $SE=0.53$, $t=3.59$, $p<0.001$), and sexual identity/orientation ($b=1.18$, $SE=0.53$, $t=2.25$, $p=0.025$). For physical disability ($b=0.22$, $SE=0.49$, $t=0.44$, $p=0.658$) and visible physical conditions ($b=0.69$, $SE=0.41$, $t=1.68$, $p=0.094$), however, the effects became non-significant when control variables were entered into the regression models. Furthermore, as can be seen in Table 1, testing for difference within each site yielded comparable results with all but one comparisons showing higher paranoia-scores in the minority group. Whereas seven of the 25 site-specific *t*-tests did not reach significance, non-significant results did not cluster at any one site.

Paranoid thinking as a function of intersecting minority group status

Next, to examine whether paranoia is systematically higher with increasing endorsement of minority group membership, the intersectionality index was entered as a continuous predictor of paranoid thinking in a random intercept multilevel regression model, showing a significant effect ($b=2.71$, $SE=0.21$, $t=13.03$, $p<0.001$). As can be seen in Figure 2, the distribution of paranoid thinking scores changed from a skewed distribution with a low mean score at low index levels to a progressively more normal distribution up until index level 4. Furthermore, entering the intersectionality index as a factor showed that each level of the intersectionality index had a significantly higher level of paranoid thinking (index level 1: $b_1=3.14$, $SE=0.45$, $t=7.03$, $p<0.001$; index level 2: $b_2=6.21$, $SE=0.70$, $t=8.93$, $p<0.001$; index level 3: $b_3=8.43$, $SE=1.22$, $t=6.92$, $p<0.001$; index level 4: $b_4=10.78$, $SE=2.30$, $t=4.70$, $p<0.001$; index level 5: $b_5=9.93$, $SE=1.92$, $t=5.18$, $p<0.001$). Finally, the intersectionality index

effect remained significant when controlling for demographics and general distress ($b=0.75$, $SE=0.18$, $t=4.23$, $p<0.001$).

Effect of putative self/other beliefs and perceived social rank in minorities

Finally, we tested for moderation (see Table 2). None of the GIM-tests for any of the models was significant, so no robust standard errors were used (see supplemental materials). All main effects of moderator variables were significant showing that in the majority group, higher levels of negative beliefs, lower levels of positive beliefs and lower perceived social rank were all associated with higher levels of paranoid thinking. For the interaction effects (i.e., different effects for minority group participants), a more complicated picture emerged.

First, for *negative beliefs about oneself and others*, almost no significant interaction effects were found. This suggests that the significant main effect found for the majority group generalises to the respective minority groups. The only exception was negative beliefs about others x minority status due to physical disability ($b=0.17$, $SE=0.08$, $t=2.21$, $p=0.027$), which showed that for people with a physical disability, the effect of negative beliefs about others on paranoid thinking was more pronounced than for individuals without a physical disability.

For *social rank* and for *positive beliefs about the self and others*, we found significant interaction effects with ethnicity (social rank: $b=0.07$, $SE=0.03$, $t=2.15$, $p=0.031$, beliefs about self: $b=0.27$, $SE=0.10$, $t=2.72$, $p=0.006$) and sexual identity/orientation (social rank: $b=0.11$, $SE=0.03$, $t=3.61$, $p<0.001$; beliefs about self: $b=0.21$, $SE=0.09$, $t=2.39$, $p=0.011$; beliefs about others: $b=0.28$, $SE=0.10$, $t=2.98$, $p=0.003$). All these interaction effects, however, were in the *opposite* direction compared to the main effect, indicating *no effect* of social rank or positive beliefs about the self and others (see Figure 3) in the respective minority group.

There was also a significant interaction for the effect of *positive beliefs about the self and others*, on the intersectionality index (self: $b=0.07$, $SE=0.03$, $t=2.30$, $p=0.021$; others: $b=0.06$, $SE=0.03$, $t=2.03$, $p=0.043$). Figure 4 provides a visual example for the change in the association of positive beliefs (about the self) and paranoia with increasing intersectionality index levels: at low levels (0-1), the association tends to be negative. At medium levels (e.g., 3) there seems to be no association, whereas highest levels of the intersectionality show a positive association between positive beliefs and paranoia by descriptive values. However, confidence bands at these highest levels are larger (due to small subsamples at high levels of the intersectionality index) and include $b=0$, indicating no significant positive association.

Discussion

Consistent with previous research⁶, paranoia scores were consistently higher in participants from minority versus majority groups. When controlling for distress, site and sociodemographic factors, this remained the case for minority sexual, ethnic and religious groups only. Intersecting aspects of difference had cumulative effects on paranoia; each level of the intersectionality index had a significantly higher level of paranoid thinking, which remained significant when controlling for potential confounds. Findings are consistent with previous research showing elevated paranoia in participants experiencing minority group discrimination and the cumulative impact of intersectionality on paranoia/delusional thinking^{20 22}. Our findings show for the first time that these associations hold in an international sample, across geographically and culturally diverse sites. Taken together, and consistent with previous research^{23 24}, these findings suggest that being different from others in your social environment is associated with higher paranoia scores. Furthermore, whereas previous research has focused more on the delusional end of the paranoid continuum, our data show similar patterns of association at lower-severity levels. This adds to a substantial literature supporting common predictors and causal mechanisms across the continuum of experience³⁸.

A key aim of this study was to use moderation analysis to test whether social defeat or healthy cultural mistrust best characterises paranoia in minority groups. Consistent with cognitive models⁷, we found that for individuals who did not identify as belonging to the respective minority group, high negative and low positive self and other beliefs and low perceived social rank were all associated with higher levels of paranoia. This confers with existing research identifying that these cognitive factors enhance paranoid thinking¹.

Interestingly, however, interactions showed a more nuanced set of findings. Firstly, for *negative* beliefs about self/others, all but one interaction (physical disability) was non-significant, indicating that negative beliefs about self/others had an almost ubiquitous effect across participants, irrespective of majority/minority group status or site. This finding coheres with the existing evidence-base to stress the importance of extreme negative self and other beliefs in understanding paranoia and in its assessment and treatment. Counter to the social defeat view, there was no evidence that this effect was greater for minority versus majority group participants except for the case of physical disability, where the effect of negative other beliefs on paranoid thinking was more pronounced in those with, versus without, a physical disability. Secondly, for physical disability, visible physical condition, and religious minority, there were no interactions for positive beliefs or social rank either. These results suggest that for these groups, cognitive factors had a common role across majority/minority groups.

Perhaps the most interesting and important findings arose from interactions in ethnic and sexual identity/orientation minority groups. In all instances, low social rank and low positive

self/other beliefs were associated with higher paranoia scores in majority group participants but were *unrelated* to paranoia in respective minority group members. This suggests that for participants from sexual and ethnic minority groups, paranoia operated independently from positive beliefs about self/others and ones perceived rank in society. The corresponding pattern occurred for positive self/other beliefs and the intersectionality index: With increasing levels of the intersectionality index, there was a gradual shift from the majority-conform association between positive beliefs and paranoia towards no association. These findings are consistent with Rouhakhtar et al. (2021)²⁸, who reported that paranoia was associated with social functioning in White, but not Black, participants. Whilst our findings are mixed (i.e., convergence for negative beliefs, yet divergence for positive beliefs and social rank), and require replication, they nonetheless suggest that “paranoia” in ethnic and sexual minority groups may require a fundamentally different interpretation from paranoia in respective majority groups. Our data could suggest that paranoia in ethnic and sexual minority groups may reflect healthy and adaptive threat beliefs, arising from lived experiences of victimisation, discrimination and social inequality²⁹. Ethnic and sexual minority individuals have long been recognised as facing significant health disparities in terms of risk factors, access to healthcare, and health outcomes, which is compounded in those with minoritised identities plus psychotic experiences^{39 40}. Our findings underscore the importance of formulation driven conceptualisations of paranoia that incorporate minority group status and intersectionality to help understand an individual’s experience of paranoia in context⁴¹.

This study has several limitations. Minority status was assessed by a simple yes/no question. We therefore cannot provide any further information regarding specific minority groupings (e.g., whether the effects are similar for Asian vs. Black vs. White minorities), and the use of self-report offers no external validation of reported status. The data are also cross-sectional and temporal association between variables cannot be determined. This is a priority area for future research. For social rank, participants were asked to consider themselves relative to others in general. In doing so, it is not possible to ascertain whether participants brought to mind those in their in or out group, which will have been key to the responses given. Obtaining a clearer account of this in future research would be helpful. Finally, our exclusive focus on high-income countries is an important limitation. Future research on low/middle income countries is needed.

In sum, in this diverse international sample, paranoia was elevated across all minority groups, suggesting this maybe ubiquitous at least to high-income countries. Intersecting aspects of difference were associated with systematically higher levels of paranoia, suggesting a cumulative effect. Consistent with social defeat and cognitive models, negative self/other beliefs were associated with higher paranoia scores irrespective of majority/minority group status. However, low

positive self/other beliefs and low social rank were associated with paranoia in majority group participants but were unrelated to paranoia in sexual and ethnic minority participants. Findings provide partial support for the healthy cultural mistrust hypothesis in participants from ethnic and sexual minority groups and could suggest the need to reconceptualize “paranoia” in these marginalised groups. For now, our findings highlight the importance of considering minority group status when making sense of people’s interpersonal threat beliefs and caution against making assumptions based on research from predominantly majority group participants.

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