

Suspiciousness

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Abstract

Paranoia, or persecutory delusions, is a quintessential symptom of psychotic disorders such as schizophrenia. Individuals suffering from paranoid ideations become increasingly isolated, avoidant of social situations, and unhappy. These unfounded fixed suspicions that others are out to harm the individual exist on a continuum of severity across clinical and community populations, with 1–3% of nonclinical populations having delusions of clinical severity, a further 5–6% having a delusion but of less severity, and 10–15% reporting regular paranoid thoughts. This dimensional approach has recently been applied to children and to groups from different countries. Much progress has been made on the causes and treatments of paranoia, and these remain significant areas of research and clinical interest. Understanding paranoia and its correlates developmentally continues to be critical to our understanding of the etiology of schizophrenia-spectrum disorders.

Keywords Delusions - Suspiciousness - Social mistrust - Dimensional - Developmental - Cross-cultural

Definition

Paranoia, or extreme suspiciousness of malicious intent from others, is the second most commonly reported symptom of psychosis (after ideas of reference) and the most widely studied subtype of delusion (others being grandiose, erotomanic, jealous, somatic, and mixed). These fixed, unfounded malevolent beliefs occur in approximately 50% of individuals with signs of schizophrenia who make first contact with service agencies. Persecutory delusions are the most likely type of delusion to be acted on and are a predictor of admission to hospital. While delusion subtypes are often interrelated, a recent factor analytic study has demonstrated that paranoia is a separate type of psychotic experience and therefore merits study in its own right. Regular paranoid ideation, beyond the healthy level that keeps an individual away from harm's way, can cause immense distress to the individual and tension with his or her family, friends, and society.

The growing interest in the assessment and treatment of persecutory delusions in both clinical and nonclinical adult populations is reflected in the number of publications in academia and the public domain. To date, PubMed has indexed an average of 170 scientific publications a year on paranoia, which is double the corresponding figure from the 1960s.

Google's corpus of 5.2 million digitized books during the same time period showed that the terms "paranoia" or "paranoid" increased to meet that of the terms "delusions" and "delusion," which reflects a growing interest and relevance in paranoia outside of academia. But why are people interested in it?

Historically, clinicians and psychologists (Jaspers [1968](#), [1997](#); Kraepelin [1921](#)) have studied the experiences of clinical patients and long debated the definition of paranoid beliefs, with no single account considered complete. The ambiguity in the classification of paranoia has not only complicated the inclusion and exclusion criteria of study participants but also hindered the progression in understanding the etiology and treatment of different types of delusions.

Since then, the generally accepted definition of delusion consists of multiple dimensions (e.g., conviction of, preoccupation with, and distress caused by the threats reported by individuals) and suggests that increased endorsements across these dimensions make agreement over the presence of a delusion more likely (Freeman and Garety [2000](#)). Persecutory delusions are an individual's beliefs that harm is occurring or going to occur and that the persecutor has the intention to cause harm. Specifically, the harm must cause preoccupying distress specific to the individual (not to friends or family), the individual must believe that the persecutor will harm them at present or in the future, and the belief must be distinct from delusions of reference and anxiety. The paradigm shift in assessment to a single-symptom multidimensional approach has paved the way for interventions in delusions.

Dimensionality

One of the most widely replicated findings has been that paranoia exists on a continuum – from clinical persecutory delusions to mild excessive suspicions – in the general population (i.e., that it is a quantitative trait). In studies of the community population, mainly conducted in Western populations, 10–15% experience regular paranoid thoughts, with up to 3% of respondents reporting delusions of clinical levels yet are undiagnosed. Comparable but slightly lower rates have been found in non-Western populations (i.e., China).

Another commonly replicated finding in cohort studies and studies of young adults has been that many individuals report a few symptoms and a few individuals report many symptoms. Corresponding to common mental health disorders (i.e., anxiety and depression), the continuous distribution of paranoia supports the idea that there are no distinct subgroups of paranoid individuals (e.g., those suffering from nonclinical vs. clinical paranoia). These findings suggest that paranoid ideations are common and regularly occur in adults and raise the question of whether paranoia or attenuate forms of suspiciousness exist earlier in development.

In adolescence, psychotic-like experiences (e.g., auditory hallucinations, paranoia) have been shown to predict later psychosis. A recent systematic review of 19 studies of young people showed that psychotic-like symptoms were reported more frequently in middle childhood than in adolescence (17% of 9- to 12-year-olds compared with 7.5% of 13- to 18-year-olds). Similarly striking reports of psychotic symptoms were evident in two further surveys of children, with 30–35% endorsing "somewhat true" and "certainly true" for a

single-item measure of paranoia (“Have you ever thought that you were being followed or spied upon?”). These epidemiological studies typically used brief single-item assessments that preclude dimensional assessments of paranoia, but the evidence on balance indicate that younger children, boys and girls, may be more likely than older children to report feelings of suspiciousness.

Correlates of Paranoia

In adults, clinical and nonclinical paranoia has been associated with the same risk factors, and the presence of nonclinical symptoms raises the odds of a subsequent diagnosis of psychotic disorder. High levels of paranoia have been associated with social anxiety, low self-esteem, depression, insomnia, worry, externalizing problems, poor emotion recognition (especially for anger), neuroticism, abuse of cannabis and alcohol, low socioeconomic status, urban residency, and experiences of victimization. The high comorbidity between paranoia and negative psychosocial factors is a cause of concern for clinicians and has received much attention from research into the causes of paranoia.

Assessments

Traditionally, adult dimensional assessments of paranoid thoughts have largely consisted of paper-pencil/online Likert self-reports to measure the frequency of (e.g., this week, last month), level of conviction of, preoccupation with, and distress caused by persecutory thoughts. Child-appropriate self-report measures of suspiciousness have recently been developed (e.g., Social Mistrust Scale). Clinical interviews (e.g., the Psychotic Symptom Rating Scales-Delusions Subscale (PSYRATS)) have also been used to assess patients along the same dimensions of severity, wherein a higher score denotes more paranoia. In most cases, questionnaires and clinical interviews have been used simultaneously and are moderately correlated ($r = 0.43$).

One prevailing difficulty in paranoia research is determining whether the ideation is unfounded; until recently, this question had remained unresolved. New moment-to-moment virtual reality (VR) paradigms where participants interact with benign avatars in controlled virtual environments and are assessed by pre- and post-experiment psychosocial questionnaires and interviews have addressed this gap. Since the VR environments are programmed to be neutral, any paranoid responses are recorded as unfounded. Empirical studies to date begin to support VR exposure as an effective research and clinical tool.

Developmental Gap

Given the evidence that paranoid ideations are more common than previously thought and exist in nonclinical adults, and that early symptoms increase the odds for later psychosis, research into younger populations looking at childhood suspiciousness may inform the etiology and our theoretical understanding of paranoia. One study to date has extended adult models of paranoia to examine the prevalence, structure, correlates, and nature of paranoia in

children and adolescents and attempted to offer explanations for these experiences and where they occur (Wong et al. [2014](#)). In a study of 2,500 8- to 14-year-olds from the UK and Hong Kong, 3.4–8.5% of children (boys and girls) regularly self-reported suspiciousness at home, school, and generally as indexed by the Social Mistrust Scale. Compared to trusting peers, mistrustful children reported elevated rates of anxiety, low self-esteem, aggression, and callous-unemotional traits. Younger children reported more suspicions than older children. As with adults, these findings indicate that mistrust may exist as a stable ($r = 0.80$) quantitative trait in children and that it is associated with elevated risks of concurrent internalizing and externalizing problems. It is conceivable that developmental research on childhood suspiciousness could play a crucial part in advancing overall mental health prevention strategies.

Causes

The causes of paranoia are complex. Studies of adult clinical patients with persecutory delusions and young adults in the community, and more recent evidence from developmental studies of children and adolescents, have found both social and cognitive factors to provide a strong theoretical understanding of paranoia.

The *threat anticipation model* (Freeman et al. [2002](#)) suggests that the interplay between an individual's existing levels of emotion (e.g., anxiety, self-belief, and cultural schemas) and reasoning (e.g., confirmation bias and reasoning bias) results in persecutory threat beliefs. In this model, major stressors, insomnia, and drug abuse can “trigger” both abnormal internal experiences (cognitive biases) and external events (discordant negative social experiences), which may fuel other behaviors, such as rumination and withdrawal from social interactions.

Studies of patients with delusions support this framework. Patients with persecutory delusions are more likely to respond in a biased manner, or “jump to conclusions” and report making more confident decisions based on limited information, show cognitive deficits in theory of mind, and attribute hostile intent in others compared to non-delusional patients. VR studies have similarly linked individuals with persecutory thoughts and higher interpersonal sensitivity, increased levels of anxiety, emotional disturbances, unusual experiences and likelihood of identifying hostility in neutral environments. Clinical and nonclinical samples of adults with high persecutory delusions show this reasoning bias, with an increased risk of developing psychosis. Although preliminary correlational studies in community young children support these findings, more studies are needed to clarify the relationships developmentally.

Implicit in the affective account is the *hierarchy of paranoia* (Freeman et al. [2005](#)), which states that negative feelings and thinking about the self can lead to feelings of vulnerability (i.e., low self-esteem and depression). Among these negative self-concepts, paranoia is more likely to flourish and that more implausible, unusual paranoid thoughts build on simpler, more common social-evaluative concerns associated with anxiety and depression. For instance, “There is a conspiracy by the government to have me attacked” is considered more severe than “People are staring at me to upset me.” This model supports the continuum

of paranoia from clinical to nonclinical populations with varying levels of symptom severity. Longitudinal studies of patients demonstrate that multiple factors interact to explain paranoia. For instance, negative cognition and depressed mood may maintain and predict later paranoid symptoms, and the reverse is not true, suggesting that treatment targeting negative cognition could mitigate this relationship.

Contrastingly, another theoretical explanation for paranoia is offered by the *attribution-self-representation cycle* (Bentall et al. [1994](#)), which states that an individual's attribution to agents and events is intricately linked with their representations of the self, which, in turn, shape future attributions. Individuals construct beliefs in order to cope with discrepancies between how others view them and how they would like to be viewed. Studies of attributional style have shown that individuals with low self-esteem tend to make internal attributions for negative events, whereas individuals with high self-esteem and low-depressive symptoms tend to attribute success to internal factors and negative events to external causes. Whether attributional style functions to defend against low self-esteem or whether it is specific to persecutory delusions or other types of delusions has been debated. Studies have shown that improvements to persecutory delusions through therapy demonstrate unchanged levels of depression and self-esteem, therefore, it suggests that persecutory delusions do not serve the function of defense but perhaps a more general reflection of the individual's emotions.

Controlling for comorbid hallucinations, a recent large-scale adult psychiatry survey showed that early childhood adversity (e.g., physical/sexual abuse, victimization, etc.) was implicated with later symptoms of hallucinations and paranoia. Early childhood adversity may predispose an individual to paranoid thinking – a qualitative trait that can initially seem “rational” but perhaps develop into an unfounded belief.

Treatments

Cognitive behavioral therapy (CBT), typically provided weekly for at least 6 months, has been shown to be effective for patients with delusions and hallucinations. Approximately 20% of patients with persistent delusions respond well to the treatment, and another 40% show improvements. Although CBT may be less effective for individuals distressed by their paranoid experiences, recovery time has been shortened in those with acute psychosis, and relapse rates reduced in few cases. Patients with cognitive deficits and the lack of insight into their illness are not precluded from CBT treatment. Recent randomized controlled experimental studies have demonstrated that patients may relearn “fearful” situations under the neutral conditions of a virtual social environment (Freeman et al. [2016](#)). Compared to patients with mere VR exposure, patients in the VR cognitive therapy environment who were taught strategies to challenge their fears in benign social environments reported 22% and 19.6% reduction in delusions of conviction and real-world distress, respectively. Cognitive therapy through virtual reality paradigms may prove effective in treating delusions.

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