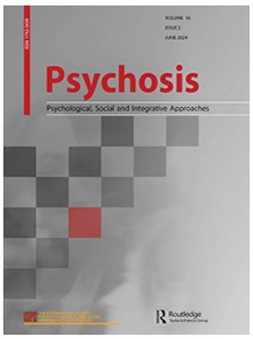

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A bioecological approach to conceptualising posttraumatic growth in psychosis

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ABSTRACT

Background: Posttraumatic growth (PTG) refers to positive psychological changes arising from adversity. PTG in psychosis is an emerging area of focus, however the individualistic conceptualisation of PTG has been questioned. We extend these debates to consider environmental influences on PTG in psychosis.

Methods: In this paper, we outline the application of Bronfenbrenner's Bioecological Model to PTG in psychosis.

Results: The Bioecological Model comprises six ecological systems; 1) biophysical (individual characteristics), 2) microsystem (immediate environment), 3) mesosystem (system interactions), 4) exosystem (impact on individual despite minimal participation), 5) macrosystem (cultural/societal influences), and 6) chronosystem (time).

Discussion: PTG in psychosis research has predominately focused on the biophysical ecosystem. We argue that extending PTG research to address the other systems will be advantageous, providing an ecologically valid conceptualisation of PTG and the development of a causal model of PTG in psychosis. Implications for future research are discussed.

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Bioecological model; posttraumatic growth; mental health; psychosis; positive change

Posttraumatic growth (PTG) is defined as positive psychological changes an individual may experience following an emotional struggle with adversity, with change reported across at least five domains (appreciation of life, relating to others, personal strength, new possibilities, spiritual change) (Tedeschi & Calhoun, 2004). PTG has been examined in experiences of psychosis. In psychosis, PTG manifests across seven domains; personal identity and strength, receiving support, opportunities and possibilities, strategies for coping, perspective shift, emotional experience, relationships, giving the acronym PROSPER (Ng et al., 2021). Cross-sectionally, 50–75% of people with psychosis report moderate-to-high PTG, with improved health and personality, a stronger sense of self, more balanced religiosity and spirituality, and improved relationships, lifestyle and goals for the future reported as important changes (Jordan et al., 2019). The relationship between psychosis symptoms and PTG is mediated by meaning in life, coping skills (Mazor et al., 2016, 2018), and the re-examination of core beliefs (Mazor, et al., 2019).

The conceptualisation of PTG has been questioned. We use the term "PTG" to reflect the research literature. However, "PTG" implies that growth occurs after trauma. Whilst this may be appropriate for single event trauma, psychosis can be cumulative and influenced by multiple environmental factors; the term "PTG" may not encapsulate the possibility of continuous growth experienced by people with psychosis. Other terms, such as "adversarial growth" are also used (Blackie et al., 2023).

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Most empirical research has focused upon perceived PTG, relying on retrospective, self-reported experiences, measured using the Posttraumatic Growth Inventory (PTGI) (Boals, 2023). However, arguments against the reliability of retrospectively assessed PTG include measurement difficulties, social desirability bias, cultural expectations, and unclear definitions (Boals, 2023). A development to address this is through measuring veridical (objective) PTG through current standing measures (Jayawickreme & Blackie, 2014). Current standing measures provide a real-time evaluation of PTG, allowing for longitudinal assessment. As prior psychosis research has focused on perceived, not veridical PTG, no quantitative study has utilised current standing measures (Ng et al., 2021). The importance of reliable and valid measurement needs no introduction, however within the context of our work, we also grapple with epistemological differences such that we give primacy to individual lived experience. As such this piece focuses on experiences of perceived growth. Theory holds the fundamental assumption that PTG is reliant on individual psychological resources, yet individual experiences are influenced by the interacting environments. There is considerable evidence of the impact of environmental factors' influence on the development of psychosis (e.g. maternal stress, migration, life events, childhood adversity) (Dean & Murray, 2005). It is conceivable that environmental factors may also promote or hinder PTG. Clarity regarding environmental factors' impact would contribute to the development of an ecologically valid conceptualisation and causal model of PTG in psychosis. We use our work on PTG in psychosis to explore these conceptual challenges.

A bioecological approach to PTG in psychosis

Ecological models recognise complex interactions between individuals and their environment in health promotion and maintenance. The Bioecological Model explains human development as a complex relational system, nested within the ecological systems that surround an individual and the interactions between systems (Bronfenbrenner & Morris, 2006). Six ecological systems are proposed: biophysical, microsystem, mesosystem, exosystem, macrosystem, and chronosystem. The Bioecological Model has been applied to other health conditions (e.g. diabetes (Hapunda et al., 2017), adolescent mental health (Currie & Morgan, 2020)) and was chosen for its status as the most widely utilised ecological model. Figure 1 illustrates the nested nature of the Bioecological Model with examples of factors that have been examined in the literature and for future research.

Biophysical

The biophysical system consists of an individual's characteristics and their available resources. A comprehensive systematic review of quantitative and qualitative research on PTG in psychosis has been published (Ng et al., 2021). In short, most quantitative research has focused on individual-level variables including symptoms, trauma experiences, coping mechanisms, core beliefs, meaning in life, resilience, and recovery (Lee et al., 2022). This is supported by qualitative synthesis, where domains of PTG were found to be individually-oriented (Ng et al., 2021). Biological associations in PTG and psychosis have not been explored. Beyond psychosis, a literature review of seven papers exploring biological correlates of PTG identified several biochemical and neurobiological associations (Dell'oseso et al., 2023).

Microsystem

The microsystem refers to an individuals' immediate environment. Studies of PTG in psychosis are conducted predominantly within mental health services. Mental health services were an important facilitator of PTG, specifically when participants were treated with dignity and respect (Jordan et al., 2020). Hospitalisation experiences were mixed; for some, deeply traumatic, while for others, a turning point for change (Jordan et al., 2020).

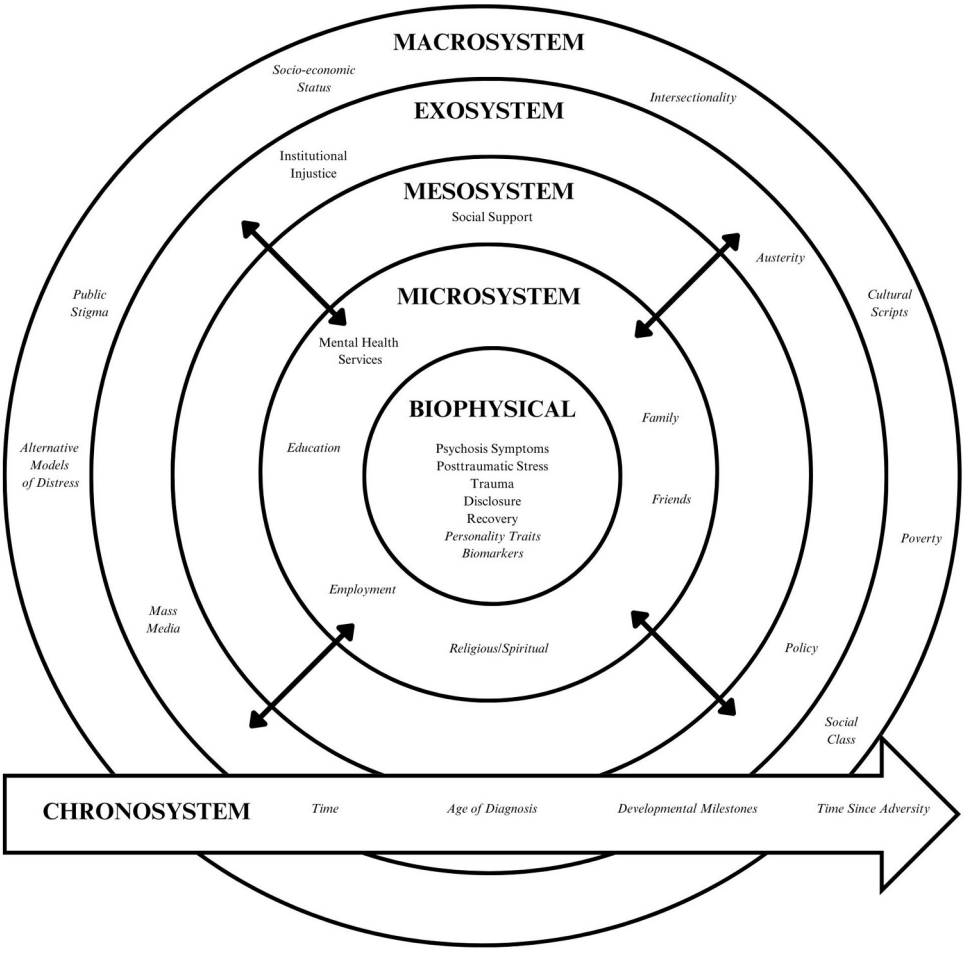

Figure 1. Bioecological model applied to PTG in psychosis

Figure 1. Bioecological Model applied to PTG in psychosis.

Mental health services are increasingly required to be recovery-oriented. PTG is associated with personal recovery (Lee et al., 2022), therefore recovery-oriented services may support PTG. Recommendations for clinicians include encouraging PTG when appropriate, whilst recognising not all individuals will experience PTG, supporting narrative construction, embracing alternative psychosis explanations, and supporting spirituality (Jordan et al., 2023). Delineation of the integration of PTG into recovery-oriented practice and consideration of the organisational or implementation challenges is required (Shepherd et al., 2008).

Not all individuals with psychosis will recover or grow within the context of mental health services. A longitudinal qualitative study revealed that years post-onset of psychosis, participants increasingly shifted from services to community-level support, orientated around shared interests or experiences, to facilitate PTG (Jordan et al., 2022). Other contexts such as workplaces, education systems, neighbourhoods, communities, and interest groups may contribute to the experience of PTG. Further research is required to understand which microsystems are important to people with psychosis and how they contribute to PTG.

Mesosystem

The mesosystem characterises interactions between ecological systems. Social support is beneficial for PTG and is the only mesosystem influencer explored in the PTG in psychosis literature (Ng et al., 2021). In the broader PTG literature, a meta-analysis of 217 cross-sectional and longitudinal studies found a medium positive effect between social support and PTG (Ning et al., 2023).

There are three knowledge gaps. First, it is unclear whether environmental factors contribute to PTG in psychosis. Second, the interactions between individual and environmental factors, and their influence on PTG are unknown. Third, no studies in psychosis have examined PTG through a cumulative trauma lens, despite evidence that cumulative trauma increases the risk of developing psychosis (Shevlin et al., 2008). Cumulative trauma may refer to multiple experiences of trauma. For some, this may also refer to experiences of intersectionality. Measuring individual and environmental factors for service users and non-service users in prospective longitudinal cohort studies would help clarify the role of intrapersonal processes and environmental influences in PTG.

Exosystem

The exosystem has a direct effect on individuals, but the individual may have little to no direct participation (e.g. policy, advertising). Careful consideration of the possible implications of supporting PTG in these environments is required. For example, while self-disclosure about psychosis is associated with lowered levels of posttraumatic stress disorder and higher levels of PTG (Pietruch & Jobson, 2012), within a workplace context, self-disclosure may result from a complex range of factors (e.g. workplace policies) with potentially negative implications. The exosystem holds systemic power, and thus the onus of disclosure cannot be placed upon the individual. The characteristics and values of the exosystem influence the reception of disclosure, impacting an individual's interpretation of their experience. Care is required to avoid perpetuation of institutional injustices, which contribute to continued health inequalities and marginalisation (Hui et al., 2021).

There are several potential approaches to unpack the role of exosystem on PTG. Conducting a policy analysis across settings with varying adoption of recovery-oriented policies could assess impact on clinical practice and PTG. A multilevel mixed-methods approach which considers the role and impact of each system on outcomes would be appropriate. Further, utilising visual discourse analysis to explore media depiction of psychosis can examine the content and subtext of media consumption in defined settings.

Macrosystem

Macrosystem refers to broader cultural or societal influences on individuals. This has been minimally investigated in the context of PTG in psychosis. Three future research areas are recommended.

Firstly, while the social determinants of mental health and their influence on health inequalities are widely accepted, the impact of health inequalities across the lifespan on PTG has not been researched. Analysis of sociodemographic factors in PTG research would support delineation of this impact.

Second, dominant cultural scripts shape an individual's life story. Explanatory models are an individual's perception of and meaning ascribed to experiences, which integrate social and cultural influences. The dominant explanatory model of psychosis, the medical model, emphasises biological explanation and professional expertise. Lived experience advocacy, however, calls for alternative explanatory models (e.g. hearing voices, non-ordinary states, spiritual emergence). Exploring alternatives to the dominant cultural scripts about psychosis may allow individuals to develop personally meaningful explanatory models. While conceivable that medical hegemony effects meaning making (Slade et al., 2019), the impact of incongruent explanatory models on PTG is unknown. Empirically, the impact of psychosis explanatory model on PTG requires investigation (Dinos et al., 2018).

Third, individuals with psychosis can experience multiple forms of disadvantage and discrimination based on their intersecting identities. Quantitative intersectionality research has focused on demographic characteristics, but this impact may occur across ecological systems. Statistical modelling has identified that 15% of posttraumatic stress symptom variance and 13% quality of life variance is accounted for by marginalised identity quantity and discrimination frequency (Seng et al., 2012). Ones' experience, identity, and explanatory model are all shaped by intersecting identities. For example, people with a religious explanatory model may be more likely to report spiritual PTG. However, more research on how intersecting identities shape PTG is needed. Qualitative methods (e.g. Grounded Theory or ethnography) can be used to understand subjective experiences of PTG among people who have experienced intersecting forms of marginalisation (e.g. ableism, racism, sexism, classism).

Chronosystem

Two longitudinal studies have explored PTG in psychosis. One examined PTG over a one-year period in a Singaporean sample. Participants indicated moderate-to-high PTG, with stability in PTGI score overall and in all domains (Lee et al., 2022). The second conducted a longitudinal qualitative study of Canadian individuals with first episode psychosis for a one-year period. Despite ongoing challenges, people experienced PTG, which was facilitated by personal resources, support from community and social networks, and mental health services (Jordan et al., 2022). No study has utilised a chronosystem factor as a predictor variable to understand PTG.

Four initial research directions are recommended. First, the duration needed to experience PTG in psychosis is unknown. Systematic review findings from non-mental health related populations (e.g. teenage pregnancy, parental divorce), indicate that individuals do not show PTG in the first 18 months following adversity (Mangelsdorf et al., 2019). However, longer intervals, such as four to eight years, may lead to different conclusions (Weststrate et al., 2022). Further research can provide clarification on whether time since experience is important for PTG. Second, analysing psychosis-related social media data using natural language processing approaches, such as sentiment analysis, to understand the emotional tone of text, may provide new insights into PTG processes over time, while overcoming the difficulties associated with accessing pre-adversity baseline data in prospective longitudinal cohort studies. Third, the cumulative effect of trauma on PTG in psychosis over time requires exploration. Fourth, there are cohort differences in ecological resources. For example, people who are diagnosed with psychosis in the 1960s may have a different experience compared to people who are diagnosed in 2024, which may be associated with changes in technology, medicines, stigma, and economies.

Conclusion

The PTG field is at an important impasse. Whilst PTG may be conceptualised to be an individually-oriented psychological process, solely investigating biophysical factors which influence PTG fails to provide insight into environmental influences or disparities that are not under individual control. This paper provides an overview of different bioecological systems and suggestions for future research. The application of a bioecological approach may contribute to ongoing debates over PTG conceptualisation more broadly.

Disclosure statement

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