

## Improving Our Understanding of the in vivo Modelling of Psychotic Disorders

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**Abstract :** Psychosis is ranked as the third most disabling medical condition in the world by the World Health Organization. Despite a substantial amount of research in recent years, available treatments are not universally effective and have a wide range of adverse side effects. Since many clinical drug candidates are identified through in vivo modelling, a deeper understanding of these models, and their strengths and limitations, might help us understand reasons for difficulties in psychosis drug development. To provide an unbiased summary of the preclinical psychosis literature we performed a systematic electronic search of PubMed for publications modelling a psychotic disorder in vivo, identifying 14,721 relevant studies. Double screening of 11,000 publications from this dataset so far established 2403 animal studies of psychosis, with the most common model being schizophrenia (95%). 61% of these models are induced using pharmacological agents. For all the models only 56% of publications test a therapeutic treatment. We propose a systematic review of these studies to assess the prevalence of reporting of measures to reduce risk of bias, and a meta-analysis to assess the internal and external validity of these animal models. Our findings are likely to be relevant to future preclinical studies of psychosis as this generation of strong empirical evidence has the potential to identify weaknesses, areas for improvement and make suggestions on refinement of experimental design. Such a detailed understanding of the data which inform what we think we know will help improve the current attrition rate between bench and bedside in psychosis research.

**Keywords :** animal models, psychosis, systematic review, schizophrenia

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