

Data supplement to Larson et al. Psychosis in autism: comparison of the features of both conditions in a dually affected cohort. Br J Psychiatry doi: 10.1192/bjp.bp.116.187682

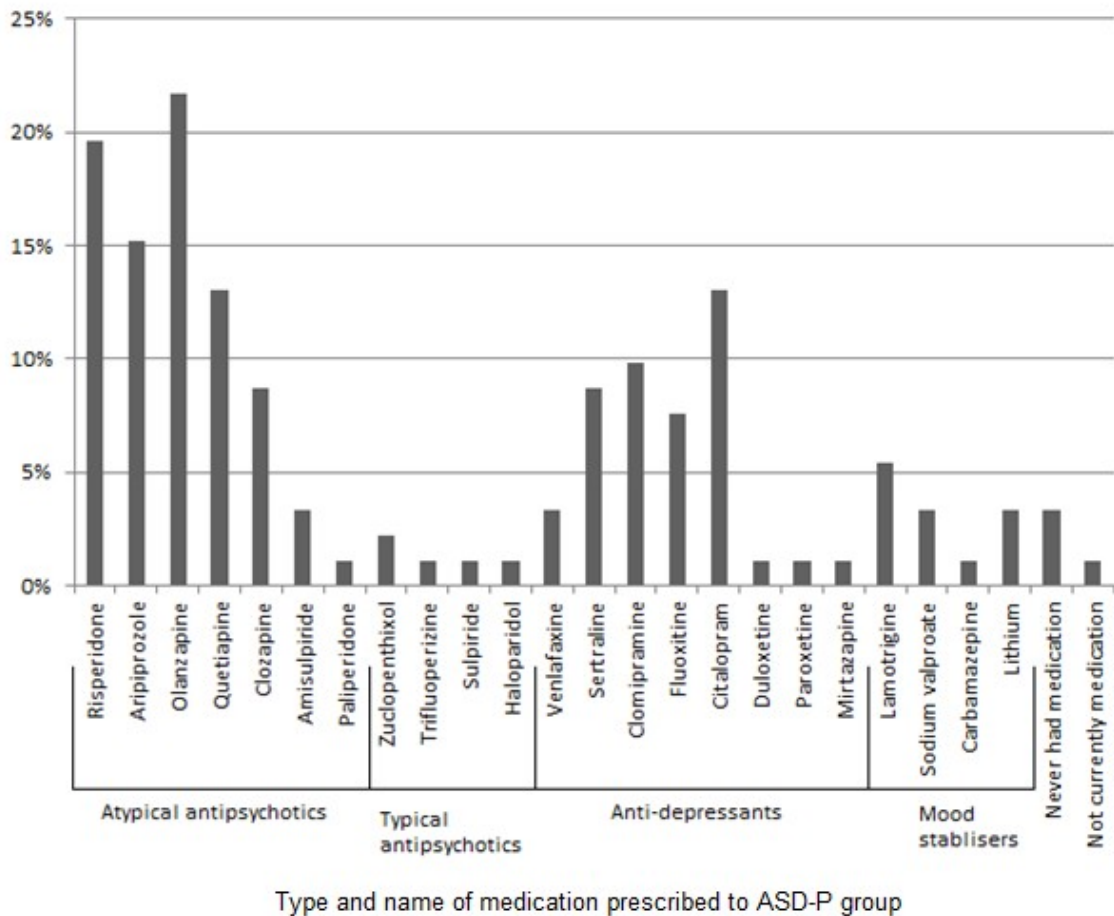


Figure DS1 Graph showing use of medication in participants in the ASD-P group (N=92). From left to right are atypical antipsychotics, typical antipsychotics, antidepressants, and mood stabilisers, broadly grouped. Many participants in the study were prescribed more than one medication.

Supplement DS1: Description of psychosis experienced by individuals with autism spectrum disorder

Notes taken during the Diagnostic Interview for Psychosis (1) conducted with individuals with autism spectrum disorder (ASD) who had a history of psychosis (N=112) were used to describe eight broad categories of psychotic experiences. The categories are described as follows:

- 1) hallucinations – e.g., voices telling them they are useless, or muttering/whispering sounds, seeing people.
- 2) complex delusions – e.g., government aware that aliens were coming to take over the world and “softening up” the population; chips implanted in the population for control;¹

the world is not real and only exists for a week at a time – they have to solve a puzzle to escape.

- 3) persecutory delusions – e.g. loved ones poisoning them or trying to kill them, neighbours monitoring them, people on the street laughing at them.
- 4) bizarre delusions and passivity feelings– e.g., beliefs that: thoughts were leaking out of their pores; a tiny man lived in their bones; being controlled by electricity.
- 5) grandiose delusions – e.g. beliefs that they were Jesus or a celebrity, they had super-powers and were on a mission.
- 6) delusional perceptions - seeing a news report on television and believing it to be a message for them; seeing special meaning in a road-sign that was meant for them
- 7) delusional guilt – e.g. fixed belief that the death of someone (a stranger in another town) reported on television was directly attributable to them.
- 8) delusions of thought disruption - e.g. thoughts diffusing out like a radio signal such that others could “tune in” to the thoughts, foreign thoughts being inserted, thoughts being withdrawn. These were all clearly stated as being externally produced phenomenon, not under the control of the people experiencing them.

Each of these types of experiences could either appear as a discrete manifestation of psychosis or in combination with other types of experiences. Table DS1 shows a breakdown of this:

Table DS1 Table showing rates of different descriptive types of psychotic experience in various combinations across participants. These categories were mutually exclusive, so participants were classified such that their experience only matched on one of these groupings. N=112.

Type	Number (%)	Example
Combined hallucination and persecutory delusions	17 (15%)	One participant reported hearing voices in his head discussing what a horrible person he was, as well as hearing strangers in the street criticising him. This led to an overall feeling that people were “against him”. Others had more complex persecutory delusions, for example believing their family, friends, or health professionals were trying to poison them.
Combined hallucination and bizarre delusions	12 (11%)	The content of delusions classified as bizarre varied greatly, and cannot be reported in detail as the beliefs are highly individual and would thus compromise anonymity. However, general examples included a belief that a body part had disappeared, that there was a person or object inside their body, or that there was some sort of spell or curse on the person. The unifying feature of the bizarre delusion category is a magical or impossible element to the delusion without a clear grandiose or persecutory element. This occurred along with hallucinations in a number of cases.
Hallucinations only	9 (8%)	The hallucinations were primarily voices, and this category was primarily individuals with learning disabilities on whom informant report was relied.
Bizarre delusions only	5 (4%)	See above, but without concurrent hallucinations
Combined hallucination, persecutory delusions, and bizarre delusions	4 (4%)	Believing people were watching them because they had special superpowers; seeing or hearing those who were supposedly watching them
Combined persecutory and grandiose delusions	4 (4%)	Believing people were trying to kill them because they were a special or important person.

Other	61 (54%)	Any other combination of experiences from the 8 categories defined. For example, individuals who experienced delusions of thought disruption and hallucinations.
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Psychotic symptoms were quite variable and highly individual. However, the majority of participants (n=61) had a combination of psychotic symptoms that was relatively rare, not occurring in more than 3 people out of 112 (<3%). Of these, 11 participants had some sort of complex delusions along with additional psychopathology of varying types (but excluding hallucinations, as these people are reported in the table above). Complex delusions involved multiple elements of a story, generally centring on the participant, which could be persecutory or bizarre in nature. These beliefs generally spread to all areas of a person’s life and often included beliefs about other people. For example, one participant believed she was an important religious figure who had been sent to a mental health treatment unit by a government figure, because her employer was involved in illegal activity. She believed the people working in the hospital were also involved in the same business she worked in, rather than being health professionals.

A number of participants reported experiencing delusional guilt (n=8). For example, one participant believed that a golf ball she had struck into the rough had killed a woman whose death she saw reported on television weeks later. However, the delusional guilt was experienced in conjunction with a range of other symptoms. Thus, fewer than four individuals experienced delusional guilt and the same additional symptoms as other participants.

More than half of participants in this study had a persecutory delusion with or without additional psychopathology, indicating that persecutory delusion may be an important feature of psychosis in people with ASD. However, comparable data from a population with psychosis and no known ASD is not available.