

The Prevalence of Autism among Adults admitted to Acute Mental Health Wards: A Multi-Site Cross-Sectional Pilot Study

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Background

- Systematic reviews and large prevalence studies estimate adult autism community prevalence of 0.7-1.1%
 - With substantially heightened risk in persons with intellectual disability
 - Brugha *et al.* (2016): Prevalence of 39.3% (95% CI 31.0 – 48.4) in persons with moderate to profound intellectual disability
- **Much less is known about adult autism prevalence within inpatient psychiatric settings**

Systematic Review

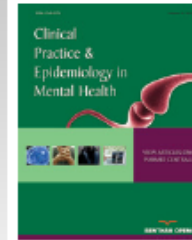

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REVIEW ARTICLE

The Prevalence of Autism Spectrum Disorders in Adult Psychiatric Inpatients: A Systematic Review

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“Within inpatient psychiatric settings, autism prevalence ranges from 4 - 10%”

“High rates of previously undiagnosed autism”

Problems Associated with Undiagnosed Autism in Inpatient Settings


- Misdiagnosis as other conditions (Konstantareas and Hewitt, 2001)
- Environment not adapted to needs (Gabriels *et al.*, 2012)
- Treatments not adapted to needs (Cooper *et al.*, 2018)



The SPRINT Study



BMJ Open Study protocol: an investigation of the prevalence of autism among adults admitted to acute mental health wards: a cross-sectional pilot study

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Aims and Hypotheses

- **Aims**

- Estimate autism prevalence among adults admitted to acute mental health wards
- Estimate rates of co-occurring psychiatric and physical health conditions in adults satisfying autism diagnostic criteria relative to non-autistic peers

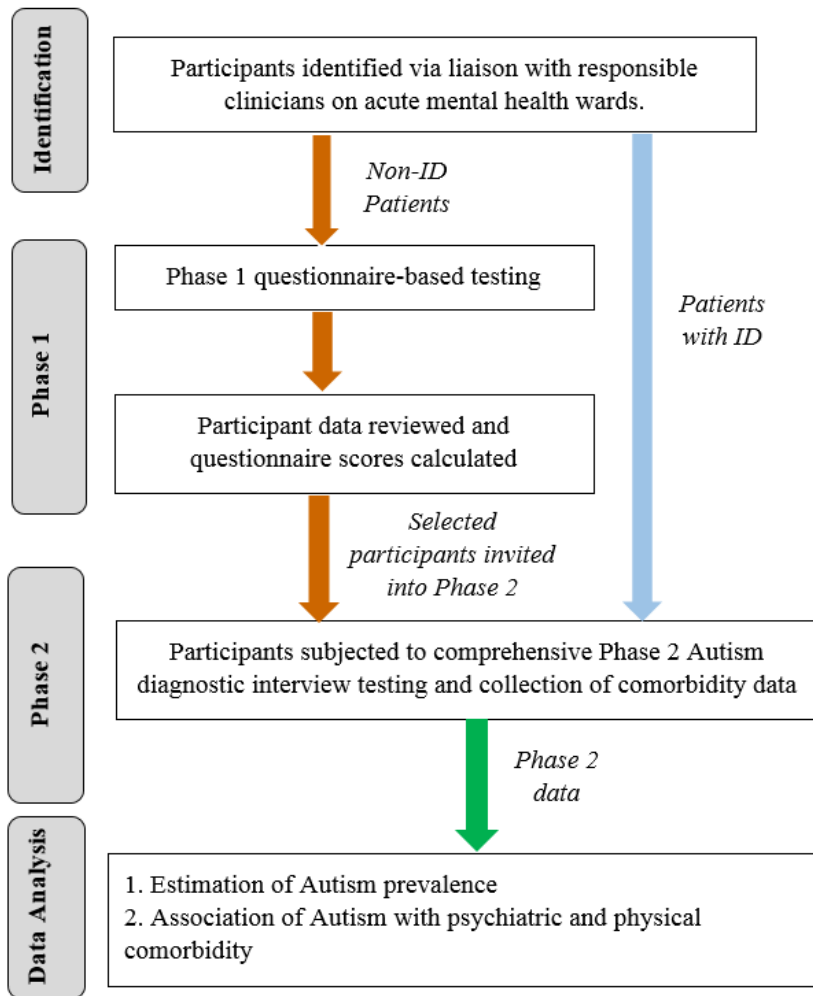
- **Hypotheses**

- Autism prevalence in this group would exceed general population estimates
- Autistic individuals would have higher rates of co-occurring conditions than their non-autistic peers



Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Aged between 18 and 65 years on date of hospital admission.	<18 or >65 years of age on date of hospital admission.
Being or having been a psychiatric inpatient on an adult acute mental health ward during the study time period.	Having no history of being a psychiatric inpatient on an adult acute mental health ward during the study time period.
	Clinical diagnosis of dementia.
	Not understanding written and/or verbal English.



Non-intellectually disabled patients

- Multiple phase design

Intellectually disabled patients


- Single phase approach
- Lack of validated questionnaires in this group
- Higher autism prevalence (less resource inefficient)

Selection for Phase 2 (Non-Intellectually Disabled)

- The AQ-50 probability framework was adopted from a previous study (Brugha *et al.*, 2020):

AQ-50 Score	Probability of Selection
≤19	0.1
20-24	0.2
25-29	0.3
30-39	0.6
≥40	1.0

Testing adults by questionnaire for social and communication disorders, including autism spectrum disorders, in an adult mental health service population

Traolach Brugha^{1,2}  | Freya Tyrer¹ | Andrew Leaver¹ | Samantha Lewis³ | Sarah Seaton¹ | Zoe Morgan¹ | Samuel Tromans^{1,2} | Kobus van Rensburg³

Measure	Purpose
Phase I (non-ID participants only)	
Autism Quotient, AQ ⁴¹	Measuring likelihood of ASD.
Informant version of the Social Responsiveness Scale, second edition, SRS-A ⁴⁵	
Self-report and Informant versions of the Adult Social Behaviour Questionnaire, ASBQ ⁴⁶	
Self-report and Informant versions of the EuroQoL-5D-5L, EQ-5D-5L ⁴⁷	Measuring quality of life.
Basic information form	Collecting information pertaining to patient demographics, as well as the 2014 Adult Psychiatric Morbidity Survey (APMS) mental illness and physical health conditions checklists. ¹³

Phase II	
Diagnostic Interview for Social and Communication Disorders, DISCO ⁴⁸	Establishing whether participant meets diagnostic criteria for ASDs.
Autism Diagnostic Observation Schedule version 2, ADOS-2 ⁴⁹	
The Mental Illness Diagnoses and Treatment section of the 2014 APMS ¹³	Establishing participant's psychiatric and physical health comorbidities.
The Physical Health Conditions section of the 2014 APMS ¹³	
ASD interview subsection of version 3 of the Schedules for Clinical Assessment in Neuropsychiatry, ASD-SCAN-3	Field testing of interview schedule (for non-ID participants only).
Stigma Questionnaire for people with Intellectual Disability, SQID ⁵⁰	Participants experience of stigma (for ID participants only).
Basic information form	Collecting information pertaining to patient demographics, as well as the 2014 Adult Psychiatric Morbidity Survey (APMS) mental illness and physical health conditions checklists ¹³ (for ID participants only, as this form is completed in phase I for non-ID participants).

2014 Adult Psychiatric Morbidity Survey (APMS) Mental

- A phobia
- Panic attacks
- Post-traumatic stress disorder
- ADHD or Attention Deficit Disorder (ADD)
- Bipolar disorder
- Depression
- Post-natal depression
- Dementia
- An eating disorder
- Nervous breakdown
- A personality disorder
- Psychosis or schizophrenia
- OCD
- Seasonal affective disorder
- Alcohol or drug dependence
- Any other anxiety disorder
- Any other mental, emotional or neurological problem or condition

2014 APMS Physical

- Cancer
- Diabetes
- Epilepsy/ fits
- Migraine or frequent headaches
- Dementia or Alzheimer's disease
- Cataracts/ eyesight problems
- Ear/ hearing problems
- Stroke
- Heart attack/ angina
- High blood pressure
- Bronchitis/ emphysema
- Asthma
- Allergies
- Stomach ulcer or other digestive problems
- Liver problems
- Bowel/ colon problems
- Bladder problems/ incontinence
- Arthritis
- Bone, back, joint or muscle problems
- Infectious disease
- Skin problems
- Other (please specify)



- **Recruiting Sites** (Though recruitment was suspended from 16th March- 12th August 2020 due to COVID-19):

Leicestershire Partnership **NHS**
NHS Trust

NHS Derbyshire Healthcare
NHS Foundation Trust

NHS Lincolnshire Partnership
NHS Foundation Trust

NHS Oxford Health
NHS Foundation Trust

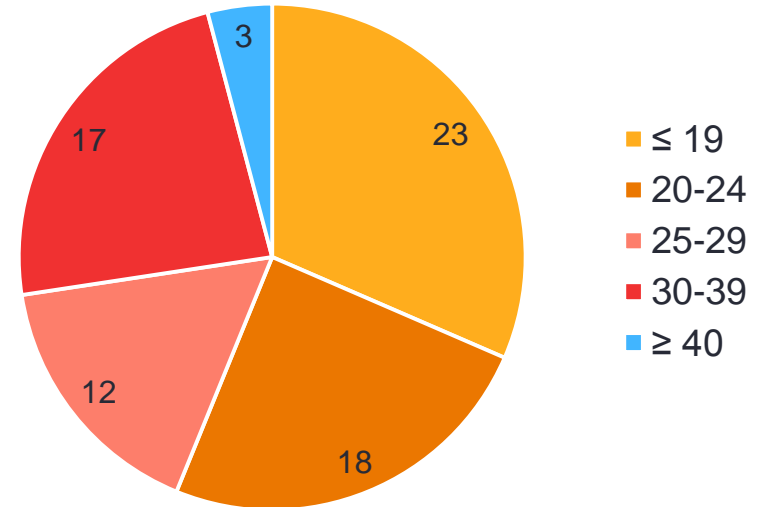
NHS Berkshire Healthcare
NHS Foundation Trust

NHS Somerset
NHS Foundation Trust

Phase 1 Results

- Phase 1: 84 participants and 57 corresponding informants
- Prior to COVID lockdown, 73 non-intellectually disabled participants were subjected to stratified randomisation, generating 21 to be invited for Phase 2
 - Of the 21 eligible for interview, 10 were interviewed (with 8 informants), 6 declined, 1 died, 3 were in private hospitals up until COVID and 1 was scheduled for interview prior to COVID
 - A further 8 intellectually disabled participants (with 8 informants) were subjected to Phase 2 interview

AQ-50 Score Distribution



Phase 2 Results: Intellectually Disabled Subgroup

- Eight participants were interviewed (plus eight corresponding informants)
 - Three participants met ≥ 1 of the ICD-10 and/or DSM-5 diagnostic criteria
 - Two of these had a pre-existing autism diagnosis

ID Code	ICD-10	DSM-5	ADOS ≥ 10	Prior ASD DX
1	X	X	X	X
2	✓	✓	✓	✓
3	X	X	X	X
4	X	✓	X	X
5	X	X	X	X
6	X	X	X	X
7	X	X	✓	X
8	✓	X	✓	✓
TOTAL	2	2	3	2

Phase 2 Results: Non-Intellectually Disabled Subgroup

- Ten participants were interviewed (plus eight corresponding informants)
 - Four participants met ≥ 1 of the ICD-10 and/or DSM-5 diagnostic criteria
 - One of these had a pre-existing autism diagnosis
 - Additionally, one participant had a pre-existing autism diagnosis despite satisfying neither ICD-10 or DSM-5 criteria on assessment

ID Code	ICD-10	DSM-5	ADOS ≥ 10	Prior ASD DX
1	✓	✓	✓	✗
2	✓	✓	✓	✓
3	✗	✗	✗	✗
4	✓	✓	✓	✗
5	✗	✗	✓	✓
6	✗	✗	✗	✗
7	✗	✗	✗	✗
8	✗	✗	✗	✗
9	✗	✗	✗	✗
10	✓	✓	✓	✗
TOTAL	4	4	5	2

Phase 2 Results: Co-Occurring Conditions

- The mean number of psychiatric diagnoses per participant were similar between the autistic and non-autistic groups
 - However the mean number of physical health diagnoses were higher in the autistic group

Group	Psychiatric diagnoses		Physical health diagnoses	
	Total	Mean (SD)	Total	Mean (SD)
Autistic (<i>n</i> = 7)	23	3.3 (1.7)	22	3.1 (2.5)
Non-autistic (<i>n</i> = 11)	39	3.5 (2.1)	26	2.4 (1.9)

Summary

- Autism appears more prevalent among adults admitted to acute mental health wards relative to the general population
 - **Findings also indicate that many autistic adults in this setting may be undiagnosed**
- Relative to their non-autistic peers, autistic adults within acute mental health inpatient settings appear to have:
 - **Relatively similar rates of co-occurring psychiatric diagnoses**
 - **Heightened rates of co-occurring physical health diagnoses**
- Clinical implications
 - **Need for widespread training in autism identification/diagnosis across specialities**
 - **Need to ensure optimal physical healthcare provision for autistic inpatients**

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Thanks, Any Questions?



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