Data Supplement for Mullins et al., GWAS of Suicide Attempt in Psychiatric Disorders and Association With Major Depression Polygenic Risk Scores. Am J Psychiatry (doi: 10.1176/appi.ajp.2019.18080957).

Contents

Supplementary Note

Phenotype definition

Items from structured clinical interviews provided information on self-harm, suicidal ideation, plans and suicide attempt for Psychiatric Genomics Consortium (PGC) cohorts (Supplementary Table 4). Lifetime suicide attempt (SA) was defined across cohorts as a deliberate act of self-harm with at least some intent to result in death. Individuals who did not endorse suicide attempt were included in the non-attempter group and individuals missing information on suicide attempt were excluded. Phenotypic analyses were performed to assess the consistency of the suicide attempt phenotype across the 46 discovery cohorts. First, the association between the psychiatric interview used and the prevalence of suicide attempt in the cohorts was tested, using a linear regression model including psychiatric disorder as a covariate. The only psychiatric interview which showed an association with the prevalence of suicide attempt was the Schedule for Affective Disorders and Schizophrenia (SADS), which was used by eight cohorts and correlated with a higher prevalence of suicide attempt ($P = 0.038$). We note that the SADS interview has a specific item on suicide attempt and does not include self-harm or suicidal ideation (which are assessed using other items in the SADS) (Supplementary Table 4). The interview also specifies that evidence of intent to die is essential for suicide attempt and in the absence of intent "non-suicidal self-injurious behavior" is instead indicated. Therefore, we do not anticipate that the suicide attempter groups from cohorts assessed using the SADS may incorrectly include cases of suicidal ideation only. Furthermore, of the eight cohorts which used the SADS interview, five recruited psychiatric cases from inpatient hospital admissions and hence these cohorts may be more severe and have a higher prevalence of suicide attempt than other cohorts (Supplementary Tables 1-3).

Second, we assessed whether there was any association between prevalence of suicide attempt and interview items which are specific to suicide attempt only or those which assess a spectrum of suicidality (ranging from absence, to self-harm, ideation, plan and suicide attempt) in a single item

(Supplementary Table 4). In the latter, psychiatric cases were split into suicide attempters only versus other psychiatric cases according to the coding of the item. Individuals with missing data were excluded. Using a linear regression model, controlling for psychiatric disorder, there was no association between the prevalence of suicide attempt and the specificity of the item used. Since interviews assessing the spectrum of suicidality in a single item did not produce higher estimates of suicide attempt, this suggests that these do not report cases of suicidal ideation only as suicide attempters. In summary, these analyses suggest that the psychiatric interview used across cohorts does not result in heterogeneity in the definition of suicide attempt.

Polygenic risk scoring

Polygenic risk scoring was used to investigate the genetic relationship between suicide attempt and the psychiatric disorders and to test for overlap in the genetic etiology of suicide attempt between major depressive disorder (MDD), bipolar disorder (BIP) and schizophrenia (SCZ). Table S5 summarises the polygenic scoring analyses conducted, showing the discovery and test datasets used to investigate these hypotheses. PRSice software was used to generate polygenic risk scores (PRS), according to standard protocol (1). Discovery GWAS results were pruned for linkage disequilibrium (LD) using the P value informed clumping method in PLINK (--clump-p1 1 --clump-p2 1 --clump-r2 0.1 --clump-kb 250). This preferentially retains SNPs with the strongest evidence of association and removes SNPs in LD ($r^2 > 0.1$) that show weaker evidence of association within 250Kb windows, based on the LD structure in the test dataset. Subsets of SNPs were selected from the results at nine increasingly liberal P value thresholds ($P < 0.0001$, $P < 0.001$, $P < 0.01$, $P < 0.05$, $P < 0.1$, $P < 0.2$, $P < 0.3$, $P < 0.4$, $P < 0.5$). In the test datasets, the SNP probabilities were converted to best-guess data with a genotype call probability cut-off of 0.8. Sets of alleles, weighted by their log odds ratios (OR) from the discovery GWAS, were summed into PRS for each individual in the test datasets using PLINK. PRS were tested for association with suicide attempter status in the test datasets using a logistic regression model, including five genetic principal components (PCs) and a covariate for each cohort in the test dataset.

The amount of variance explained by the PRS (R^2) is presented on the liability scale, which accounts for the proportion of cases in the test dataset (2).

First, PRS for BIP, major depression and SCZ were used to investigate whether suicide attempters and non-attempters differ in genetic liability for the psychiatric disorder they are affected by. To ensure no overlap between the discovery and test datasets, PRS for psychiatric disorders were generated using PGC cohorts not included in the suicide attempt analyses. All cohorts have been described in previous publications on GWAS of psychiatric disorders conducted by the PGC (3-5). The discovery GWAS for BIP consisted of 11 PGC cohorts totaling 8,711 BIP cases and 15,283 controls, and for SCZ included 25,756 SCZ cases and 35,686 controls from 40 PGC cohorts. The discovery GWAS for major depression is a recent meta-analysis of PGC MDD cohorts and samples from deCODE, GERA, *i*PSYCH, Generation Scotland and UK Biobank (3). The phenotype analysed in this study included clinically defined MDD cases as well as self-reported MDD symptoms or treatment and thus is referred to as 'major depression' (3). Results of this meta-analysis were available in turn excluding each of the 16 PGC MDD cohorts in the suicide attempt study, which allowed us to generate independent PRS for each of the 16 cohorts while maximising the discovery GWAS sample size. These discovery GWAS had approximately 59,000 cases and 112,000 controls. The PRS for BIP, major depression and SCZ were tested for association with suicide attempter versus non-attempter status in the same disorder using logistic regression as described previously. Second, based on the results of these analyses, PRS for major depression were also tested for association with suicide attempt in BIP and SCZ.

Third, in order to investigate genetic overlap in suicide attempt across psychiatric disorders, the results of the three GWAS on suicide attempt (SA in MDD, SA in BIP and SA in SCZ) were used in turn as discovery studies and PRS for suicide attempt were tested for association with SA in the other disorders. The Bonferroni corrected significance threshold for the polygenic scoring analyses is 0.006, adjusting for eight independent tests (Supplementary Table S5).

Replication studies

UK Biobank

Genetic associations with suicide attempt were tested for replication in two independent samples of patients with mood disorders drawn from the UK Biobank and *i*PSYCH. The UK Biobank is a prospective cohort study of 501,726 individuals, recruited at 23 centres across the United Kingdom (6). Genotypic data were available for 488,380 individuals and were imputed to the HRC, UK10K and 1,000 Genomes Phase 3 reference panels using IMPUTE4 to identify ≈ 93M variants for 487,409 individuals (7). Variants for analysis were limited to those with minor allele frequency >= 0.01, imputation INFO-score >= 0.4, and which were either genotyped or imputed to the HRC reference panel, leaving a total of 7794483 SNPs for analysis. Using the genotyped SNPs, individuals were removed if: recommended by the UK Biobank core analysis team for unusual levels of missingness or heterozygosity; SNP genotype call rate < 98%; related to another individual in the dataset (KING r < 0.044, equivalent to removing up to third-degree relatives inclusive); phenotypic and genotypic gender information was discordant (X-chromosome homozygosity (FX) < 0.9 for phenotypic males, FX > 0.5 for phenotypic females). Removal of relatives was performed using a greedy algorithm, which minimises exclusions (for example, by excluding the child in a mother-father-child trio). All analyses were limited to individuals of White Western European ancestry, as defined by 4-means clustering on the first two genetic principal components provided by the UK Biobank (7). Principal component analysis was also performed on the European-only subset of the data using the software flashpca2 (8).

Extensive phenotypic data are available for UK Biobank participants from health records and questionnaires, including an online follow-up questionnaire focussing on mental health (Mental Health Questionnaire, MHQ). Participants were classified as having a mood disorder if they either self-reported a professional diagnosis of depression or bipolar disorder as part of the MHQ [UK Biobank field 20544] or if they met criteria for depression on MHQ questions derived from the Composite International Diagnostic Interview (CIDI). To meet these latter criteria, participants must have

reported ever feeling depressed [UK Biobank field 20446] or anhedonic [UK Biobank field 20441] for two weeks in a row, for at least most of the day [UK Biobank field 20436] almost every day [UK Biobank field 20439] with more than a little interference with daily activities [UK Biobank field 20440]. In addition, they must have reported experiencing at least five of the following symptoms in this period of depression or anhedonia: depression [UK Biobank field 20446], anhedonia [UK Biobank field 20441], tiredness [UK Biobank field 20449], weight change [UK Biobank field 20536], sleep change [UK Biobank field 20532], loss of concentration [UK Biobank field 20435], worthlessness [UK Biobank field 20450] and thoughts of death [UK Biobank field 20437]. The MHQ additionally contained screening questions for bipolar disorder (9). However, for the purpose of defining potential bipolar disorder, all individuals scoring positively on these screening questions were also required to meet the CIDI depression criteria defined above, and as such participants with potential bipolar disorder were a subset of those meeting criteria for depression. Individuals who self-reported a professional diagnosis of psychosis on the MHQ [UK Biobank field 20544] were excluded. Suicide attempters with mood disorders (n=2149) were defined as those who answered yes to the question "Have you ever harmed yourself with the intention to end your life?" [UK Biobank field 20483]. Non-attempters with mood disorders were defined as those who reported no self-harm on the MHQ (n=35912). A genome-wide association study was performed comparing suicide attempters versus non-attempters with mood disorders using BGenie v.1.2 (7), covarying for 6 PCs, and factors capturing site of recruitment and genotyping batch.

***i*PSYCH**

The *i*PSYCH study was approved by the regional Danish ethics committee and the Danish Data Protection Agency (10). DNA preparation, genotyping on the Illumina PsychChip array and quality control were performed as described previously (11, 12). Individuals with mood disorders were identified based on ICD-10 codes (F30-F39) from the Danish Psychiatric Central Research Register and the National Registry of Patients, both complete until December 31, 2016 (10). Suicide attempters with mood disorders (n=4943) were defined as those with diagnoses of suicide attempt (ICD-10: X60-

X84, equivalent to intentional self-harm), those with suicide attempt indicated as 'reason for contact', and with a main diagnosis of poisoning (ICD-10: T39, T42, T43, and T58) or those with a diagnosis in the ICD-10: F chapter as main diagnosis and report of poisoning by drugs or other substances (ICD-10: T36–T50, T52–T60) or injuries to hand, wrist, and forearm (ICD-10: S51, S55, S59, S61, S65, S69). Only contacts starting at age 10 years old or older were considered. Individuals who died by suicide according to the Cause of Death Register were also included in the suicide attempter group. Non-attempters were defined as mood disorder cases not fulfilling any of these criteria (n=15849).

Analysis of depressive symptoms and suicide attempt in schizophrenia

Data on symptoms of illness in schizophrenia were available for eight of the PGC SCZ cohorts included in the GWAS on suicide attempt. Clinical symptoms were assessed using the OPCRIT (Operational Criteria for Psychotic Illness), PANSS (Positive and Negative Syndrome Scale), Lifetime Dimensions of Psychosis Scale (LDPS) or the Comprehensive Assessment of Symptoms and History (CASH) (13-16). As previously described, factor analyses were performed on these data to identify a quantitative depressive symptom dimension, harmonized across instruments and cohorts (17). Data were available for 1426 suicide attempters and 2428 non-attempters with schizophrenia. The association between standardized depressive symptom-based factor scores and suicide attempt was investigated using a logistic regression model, covarying for sex and cohort. Higher depressive symptom factor scores were significantly associated with suicide attempt (OR = 1.67, C.I. 1.56 -1.79, P = 2.7×10^{-47}).

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Supplementary Tables and Figures

Table S1: Description of 16 major depressive disorder cohorts

Cohort (References)	PGC label	Country	Ascertainment and Evaluation of Cases	Inclusion criteria (lifetime) of Cases	Exclusion criteria (lifetime) of Cases
BOMA 1-3	boma	Germany	Consecutive inpatients; SCID or SADS interview; medical records	DSM-IV MDD; German ancestry; age ≥ 18	BIP, hypomania, NAP, MDD related to SUD
CoFaMS 4	cof3	Australia	Opportunistic; inpatient & outpatient; SCID or MINI	DSM-IV MDD	BIP, NAP, MDD related to SUD
PsyCoLaus 5	col3	Switzerland	Random population sample; DIGS	DSM-IV MDD, age 35-66	BIP, hypomania, NAP, MDD related to SUD
GenRED1 6,7	gens	USA	Opportunistic; DIGS3; medical records or informant (subset)	DSM-IV MDD (recurrent or episode >3 yrs) & onset <31 yrs; FHx MDD in sibling or parent	BIP, NAP, mod-severe ID; FHx BIP; if SUD, MDD onsets without <2y of sobriety
GenRED2 6	grnd	USA	Opportunistic; DIGS; medical records or informant (subset)	DSM-IV MDD (recurrent or episode >3 yrs) & onset <31 yrs; FHx MDD in sibling or parent	BIP, NAP, mod-severe ID; FHx BIP; if SUD, MDD onsets without <2y of sobriety
GSK/MPIP 8	gsk2	Germany	Inpatients; SCAN	DSM-IV MDD (recurrent, mod-severe)	BIP, NAP, SUD, mood-incongruent psychosis, OCD, PTSD, secondary MD
MARS 9-11	mmi2 mmo4	Germany	Inpatients; CIDI	DSM-IV MDD	BIP, SUD, secondary MD, severe medical conditions
NESDA/NTR: NESDA 12,13	nes1	Netherlands	Psychiatric outpatients, primary care, & population; CIDI	DSM-IV MDD	BIP, NAP, SUD
NESDA/NTR: NTR 12,13	nes1	Netherlands	Twin registry; longitudinal MDD sx; CIDI (subset)	DSM-IV MDD	Mania (if interviewed)
QIMR 14,15	qi3c qi6c qio2	Australia	Australian Twin Registry (proband most severe, sx, or earlier onset); SSAGA	DSM-IV MDD	MDD related to SUD
RADIANT-UK 16	rad3	UK	UK outpatients from DeNT, DeCC, GENDEP studies; SCAN	DSM-IV MDD (recurrent in DeCC & DeNT; MDD FHx in DeNT)	BIP, NAP, MDD related to SUD; BIP FHx
RADIANT-GER 16	rage	Germany	German outpatients from DeNT, DeCC, GENDEP studies; SCAN	DSM-IV MDD (recurrent in DeCC & DeNT; MDD FHx in DeNT)	BIP, NAP, MDD related to SUD; BIP FHx
SHIP 0 17	shp0	Germany	Study of Health in Pomerania; CIDI	DSM-IV MDD	BIP, MDD related to SUD
STAR*D 18	stm2	USA	Outpatients in clinical trial; clinical interviews	DSM-IV MDD	BIP, NAP

Abbreviations: SCID=Structured Clinical Interview for DSM-IV, SADS=Schedule for Affective Disorders and Schizophrenia, MDD = major depressive disorder, BIP = bipolar disorder, NAP=non-affective psychosis, SUD = substance use disorder, MINI = MINI International Neuropsychiatric Interview, DIGS=Diagnostic Interview for Genetic Studies, Fhx = family history, ID = intellectual disability, SCAN = Schedules for Clinical Assessment in Neuropsychiatry, OCD = obsessive compulsive disorder, PTSD = post-traumatic stress disorder, CIDI = Composite International Diagnostic Interview, sx = symptoms

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	16	Lewis CM et al. Genome-wide association study of major recurrent depression in the U.K. population. Am J Psychiatry 167, 949-57 (2010).
	17	Volzke H et al. Cohort profile: the study of health in Pomerania. Int J Epidemiol 40, 294-307 (2011).
	18	Shyn SI et al. Novel loci for major depression identified by genome-wide association study of Sequenced Treatment Alternatives to Relieve Depression and meta-analysis of three studies. Mol Psychiatry 16, 202-15 (2011).

Table S2: Description of 21 bipolar disorder cohorts

Cohort (References)	PGC label	Country	Ascertainment and Evaluation of Cases	Inclusion criteria (lifetime) of Cases	Exclusion criteria (lifetime) of Cases
BOMA-Germany I1-4	bonn	Germany	Consecutive admissions to in-patent units, SCID-I, SADS-L, medical records, FHx, OPCRIT	DSM-IV BIP I or BIP II	
Trinity College Dublin 5	dub1	Ireland	Hospitals and Community psychiatric facilities, SCID, case note review	DSM-IV BIP I	
FaST, TGEN1, TGEN2 6	fat2	USA	Hospitals, ADE, MINI	DSM-IV BIP I or BIP II	
French PGC2 6	fran	France	DIGS, FIGS, medical case notes, mood scales, self-rating questionnaires assessing dimensions	DSM-IV BIP I or BIP II	
BACCs 7	gsk1	UK, Canada	Advertisements in hospitals, clinics, primary care physician offices, patient support groups, SCAN CATEGO algorithm	DSM-IV or ICD-10 BIP I or BIP II	Dx of intravenous drug dependency/use, mood incongruent psychotic sx, manic episodes only with alcohol/substance abuse/dependence/medical illnesses/medications
Mayo Clinic 8	may1	USA	Mayo Clinic Bipolar Biobank, patients ascertained through routine clinical appointments, in-patients in mood disorder units and recruitment advertising, SCID	DSM-IV-TR BIP I/ BIP II/ schizoaffective	
Pritzker Neuropsychiatric Disorders Research Consortium 7, 9	mich	USA	NIMH Genetics Initiative Repository, DIGS, FIGS, medical record review	DSM-III or IV BIP I	Suspected major depression
STEP1 5,7	stp1	USA	ADE, MINI	DSM-IV BIP I	
STEP2	st2c	USA	Hospitals, ADE, MINI	DSM-IV BIP I or BIP II	
TOP7 10	top7	Norway	Out-patient and in-patient psychiatric units, SCID-I, case note review, follow up interview	DSM-IV BIP I, BIP II, SAB, BIP-NOS	IQ score < 70
TOP8 10	top8	Norway	Out-patient and in-patient psychiatric units, SCID-I, case note review, follow up interview	DSM-IV BIP I, BIP II, SAB, BIP-NOS	IQ score < 70
UCL 5, 11	uclo	UK	Clinical diagnosis according to UK National Health Service (NHS) psychiatrists at interview, SADS-L, OPCRIT	DSM-IV BIP I	
UMEA	ume4	Sweden	MINI, DIGS, FIGS, SCAN	DSM-IV-TR BIP	
WTCCC 5, 7, 12	wtcc	UK	Individuals in contact with mental health services, SCAN	RDC BIP I, BIP II, SAB, BIP-NOS	
GAIN 7, 13	gain	USA	Multiplex families, sibling pair families or individuals, DIGS, FIGS, medical records	DSM IIR & IV BIP I or SAB	
BOMA-Germany II 14	bmg2	Germany	Consecutive admissions to in-patient units, AMDP, medical records, family history, OPCRIT	DSM-IV lifetime BIP	
BOMA-Germany III 14	bmg3	Germany	Recruited from psychiatric hospitals, AMDP, CID-S, SADS-L, SCID, medical records, family history, OPCRIT	DSM-IV lifetime BIP	
BOMA-Poland 14	bmpo	Poland	Recruited from Department of Psychiatry, SCID	DSM-IV lifetime BIP	
BOMA-Spain14	bmsp	Spain	Recruited from hospital mental health departments, SADS-L, OPCRIT, medical records, FISC	DSM-IV and RDC BIP	
Nova Scotia	hal2	Canada	Recruited from specialty mood disorder clinics, SADS-L	DSM-IV and RDC BIP	
BOMA-Romania 15	rom3	Romania	Consecutive admissions to psychiatric hospital, DIGS, FIGS, medical records, family reports	DSM-IV BIP I	

Abbreviations: SCID = Structured Clinical Interview for DSM-IV, SADS-L = Schedule for Affective Disorders and Schizophrenia Lifetime Version, FHx = family history, OPCRIT = Operational Criteria Checklist, BIP = bipolar disorder, ADE = Affective Disorders Evaluatio
MINI = MINI International Neuropsychiatric Interview, DIGS = Diagnostic Interview for Genetic Studies, FIGS = Family Interview for Genetic Studies, SCAN = Schedules for Clinical Assessment in Neuropsychiatry, Dx = diagnosis, sx = symptoms, SAB = Seasonal aff
BIP-NOS = bipolar disorder not otherwise specified, AMDP = Association Methodology and Documentation in Psychiatry, CID-S = Composite International Diagnostic Screener, FISC = Family Informant Schedule and Criteria, RDC = Research Diagnostic Criteria

References	*Number*	*Citation*
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Table S3: Description of 9 schizophrenia cohorts

Cohort (References)	PGC label	Country	Ascertainment and Evaluation of Cases	Inclusion criteria (lifetime) of Cases	Exclusion criteria (lifetime) of Cases
Bonn/ Mannheim 1	boco	Germany	Consecutive hospital admissions, SCID, SADS-L, OPCRIT, medical records, FHx	DSM-IV SCZ	
Bulgaria 2	butr	Bulgaria	Family trios where proband had SCZ/ SA, SCAN	DSM-IV SCZ / SA	Mental retardation
Denmark 1	denm	Denmark	Psychiatric departments and twin pair studies, OPCRIT	ICD-10 SCZ	Mania/bipolar illness
Molecular Genetics of Schizophrenia 3	mgs2	USA, Australia	Clinical settings and community residences, DIGS 2.0, FIGS 2.0, Medical records	DSM-IV SCZ / SA	
Munich 1	munc	Germany	Cases diagnosed with SCZ from the Munich area, SCID interview	DSM-IV SCZ	Head injury/ neurological diseases
Portugal 4	port	Portugal	Probands from families segregating SCZ, DIGS, SIS, SANS, SAPS, OPCRIT	DSM-IV SCZ	Bipolar disorder
Thematic Organized Psychosis Research	top8	Norway	Out-patient and in-patient psychiatric units, SCID-I interview	DSM-IV SCZ/ SA/ schizophreniform disorder	IQ score < 70
UCLA 1	ucla	Netherlands	Inpatients and outpatients recruited through psychiatric hospitals and institutions, CASH	DSM-IV SCZ	Short-term drug-induced psychoses, psychoses with learning disability/ head injury, other symptomatic psychoses
University College London 4	uclo	UK	SCZ diagnosis recorded in medical case-history, SADS-L, RDC	ICD-10 SCZ	SA, bipolar disorder, schizomania

Abbreviations: SCID = Structured Clinical Interview for DSM-IV, SADS = Schedule for Affective Disorders and Schizophrenia, OPCRIT = Operational Criteria Checklist, FHx = family history, SCZ = schizophrenia, SA = schizoaffective disorder, SCAN = Schedules for Clinlical Assessment in Neuropsychiatry, DIGS = Diagnostic Interview for Genetic Studies, FIGS = Family Interview for Genetic Studies, SIS = Kendler's Structured Interview for Schizotypy, SANS = Schedule for the Assessment of Negative Symptoms, SAPS = Schedule for the Assessment of Positive Symptoms, CASH = Comprehensive Assessment of Symptoms and History, RDC = Research Diagnostic Criteria

References	*Number*	*Citation*
	1	Stefansson, H. *et al*. Common variants conferring risk of schizophrenia. *Nature* 460, 744-7 (2009).
	2	Kirov G. *et al* . De novo CNV analysis implicates specific abnormalities of postsynaptic signalling complexes in the pathogenesis of schizophrenia. *Molecular Psychiatry* 17, 142–153 (2012).
	3	Shi, J. *et al*. Common variants on chromosome 6p22.1 are associated with schizophrenia. *Nature* 460, 753-7 (2009).
	4	International Schizophrenia Consortium. Rare chromosomal deletions and duplications increase risk of schizophrenia. *Nature* 455, 237-41 (2008).
	5	Athanasiu, L. *et al.* Gene variants associated with schizophrenia in a Norwegian genome-wide study are replicated in a large European cohort. *Journal of Psychiatric Research* 44, 748-53 (2010).

Table S4. Items on suicide from psychiatric interviews

Psychiatric Interview	Section/ Question	Information Collected
SCAN (Schedules for Clinical Assessment in Neuropsychiatry)	6.011 Suicide attempt and self-harm during episode of depression	0=absent, 1=deliberately considered suicide or self-injury but made no attempt, 2= injured self or made an attempt but no serious harm results, 3 = as 2 but with serious self-harm, 4 = made an attempt at suicide designed to result in death
SCID (Structured Clinical Interview for DSM-IV)	Sections on Depression, Mania, Mixed states	Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide
SADS (Schedule for Affective Disorders and Schizophrenia)	Section O Suicidal Behavior	Ever made a suicide attempt, describe the most serious attempt, most serious attempt is rated by the interviewer in terms of intent and lethality
DIGS (Diagnostic Interview for Genetic Studies)	Section O Suicidal Behavior	Ever made a suicide attempt, describe the most serious attempt, medical treatment or hospitalisation required, whether the patient wanted to die or thought they would die, most serious attempt is rated by the interviewer in terms of intent and lethality
OPCRIT (Operational Criteria Checklist)	Past psychiatric history	Ever made suicide attempt
MINI (MINI International Neuropsychiatric Interview)	Section C Suicidality	Lifetime suicide attempt, in the past month thoughts about suicide, suicide plan, suicide attempt, hoped to survive or expected to die
CIDI (Composite International Diagnostic Interview)	Section on Major Depression	During worst two weeks in the last 12 months - thought about commiting suicide, suicide plan, suicide attempt
SSAGA (Semi-Structured Assessment for the Genetics of Alcoholism)	Section I Depression, Section N Suicidal Behavior	Thoughts of death or suicide, sucide plan, suicide attempt, describe the most serious attempt, method, medical treatment, hospitalisation, whether the patient wanted to die or thought they would die, interviewer rates both the lethality and intent from unclear to extreme
FIGS (Family Interview for Genetic Studies)	During depression	Did the family member talk about death or suicide, try suicide
CASH (Comprehensive Assessment of Symptoms and History)	Major Depressive Syndrome	Thoughts about death and suicide, plus possible wishes to be dead, suicide plans, suicide attempts, rated from mild to severe

Table S5: Summary of polygenic risk scoring analyses with arrows showing direction from discovery to test dataset

Test for genetic overlap between psychiatric disorders and suicide attempt in the same disorder		
PGC BIP 1	→	Suicide attempt vs non-attempt in BIP
PGC Major Depression 2	→	Suicide attempt vs non-attempt in MDD
PGC SCZ 3	→	Suicide attempt vs non-attempt in SCZ
Test for genetic overlap between major depression and suicide attempt in other disorders		
PGC Major Depression 2	→	Suicide attempt vs non-attempt in BIP
PGC Major Depression 2	→	Suicide attempt vs non-attempt in SCZ
Test for genetic overlap in suicide attempt across psychiatric disorders		
Suicide attempt vs non-attempt in BIP	↔	Suicide attempt vs non-attempt in MDD
Suicide attempt vs non-attempt in BIP	↔	Suicide attempt vs non-attempt in SCZ
Suicide attempt vs non-attempt in SCZ	↔	Suicide attempt vs non-attempt in MDD

PGC, Psychiatric Genomics Consortium; BIP, bipolar disorder; MDD, major depressive disorder, SCZ, schizophrenia. 1. Stahl et al. Genomewide association study identifies 30 loci associated with bipolar disorder. bioRxiv, 2017. 2. Wray et al. Genome-wide association analyses identify 44 risk variants and refine the genetic architecture of major depression. Nat Genet. 2018;50(5):668-81. 3. Schizophrenia Working Group of the Psychiatric Genomics Consortium. Biological insights from 108 schizophrenia-associated genetic loci. Nature. 2014;511(7510):421-7.

Table S6: Summary of suicide attempt in major depressive disorder cohorts *

Cohort	*N* Suicide attempters	*N* Non-attempters
CoFaMS	27	74
PsyCoLaus	65	442
GenRED2	168	653
GSK MPIP	115	763
MARS 650	137	407
MARS OMNIex	38	187
NTR/NESDA	229	1146
QIMR I317	61	521
QIMR I610	32	263
QIMR COEX	48	299
RADIANT-UK	150	1424
RADIANT-Ger	35	276
STAR*D	126	807
BOMA	170	361
SHIP 0	18	348
GenRED1	203	815
Total	**1622**	**8786**

*Individuals missing information on suicide attempt were excluded.

Table S7: Summary of suicide attempt in bipolar disorder cohorts*

Cohort	*N* Suicide attempters	*N* Non-attempters
BOMA-Germany I	241	365
Trinity College Dublin	26	26
FaST, TGEN1, TGEN2	120	124
French PGC2	185	254
BACCs	77	505
Mayo Clinic	307	610
Pritzker Neuropsychiatric Disorders Research Consortium	161	310
STEP2	170	363
STEP1	392	453
TOP7	116	207
TOP8	48	94
UCL	182	74
UMEA	74	124
WTCCC	423	673
GAIN	233	277
BOMA-Germany II	62	119
BOMA-Germany III	132	234
Boma Poland	150	251
Boma Spain	22	66
Nova Scotia Canada	78	223
BOMA Romania	65	148
Total	**3264**	**5500**

*Individuals missing information on suicide attempt were excluded.

Table S8: Summary of suicide attempt in schizophrenia cohorts*

Cohorts	*N* Suicide attempters	*N* Non-attempters
Bonn/ Mannheim	287	310
Bulgaria	103	208
Denmark	28	98
Molecular Genetics of Schizophrenia	754	1202
Munich	156	263
Portugal	80	243
Thematic Organized Psychosis Research Study	100	214
UCLA	86	304
University College London	89	104
Total	**1683**	**2946**

*Individuals missing information on suicide attempt were excluded.

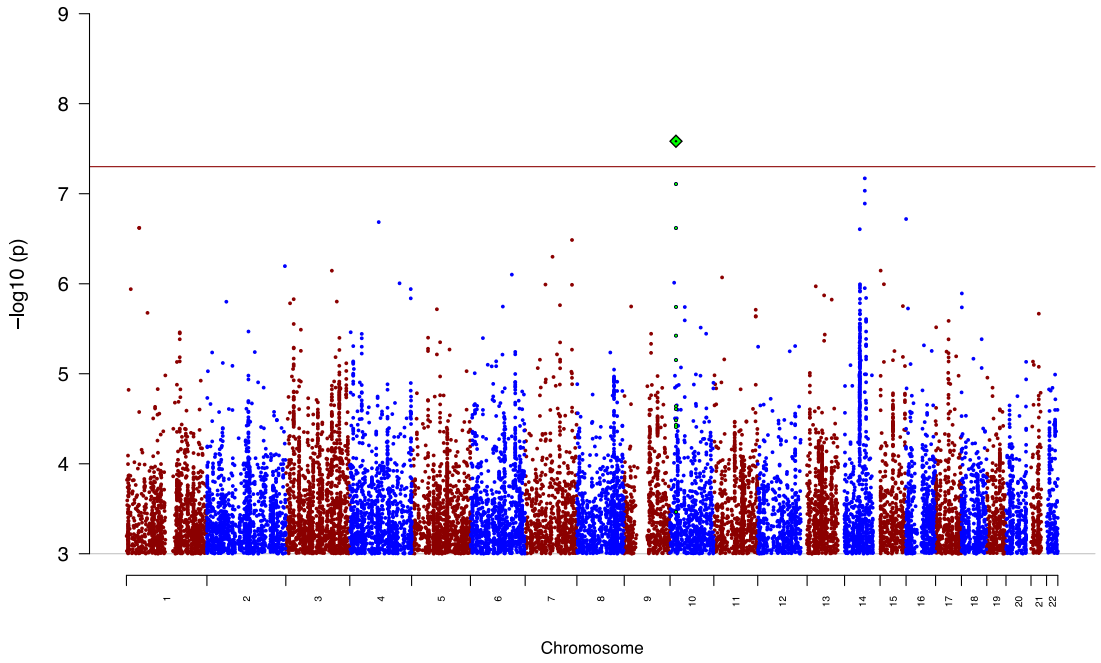

Figure S1: Manhattan plot from GWAS of suicide attempt in major depressive disorder

Table S9: Top 20 results from GWAS of suicide attempt in major depressive disorder showing the most significant SNP from each genomic region

Variant	CHR	BP	A1/A2	A1 freq attempters	A1 freq non-attempters	P value	OR (C.I.)	Direction in each cohort
rs45593736	10	18954937	A/G	0.02	0.01	**2.61E-08**	2.38(1.75-3.23)	+++?++++-++?+-?+
rs111625585	14	82804332	T/C	0.08	0.06	6.75E-08	1.57(1.33-1.84)	+++--+++++-+++-+
rs116428372	16	589359	A/G	0.07	0.06	1.91E-07	1.74(1.41-2.14)	++++++++-+++-+++
rs77033326	4	89777618	A/G	0.03	0.02	2.07E-07	2.24(1.65-3.03)	+-++-+-+-++-++++
rs183414028	1	40442026	T/C	0.98	0.99	2.39E-07	0.39(0.27-0.56)	----------+-+---
rs113330417	14	67249421	A/G	0.96	0.98	2.48E-07	0.57(0.46-0.71)	----------+---
rs111367251	7	144968289	C/G	0.98	0.99	3.26E-07	0.45(0.33-0.61)	-?-+------+----+
rs62460873	7	84977966	T/C	0.98	0.99	5.01E-07	0.37(0.25-0.54)	?--???-----+---
rs186736781	2	240473090	T/C	0.03	0.02	6.37E-07	2.27(1.64-3.13)	+?+?-+-++++-+---
chr15_24344805_D	15	24344805	D/I3	0.37	0.41	7.14E-07	0.79(0.73-0.87)	----------+-+-+-
rs111326206	3	142438431	T/C	0.95	0.97	7.16E-07	0.62(0.51-0.75)	-+-----+--+?--+-
chr6_128178230_I	6	128178230	I2/D	0.08	0.06	7.92E-07	1.58(1.32-1.90)	--------+-------
rs184924771	11	25885205	A/C	0.98	0.99	8.51E-07	0.39(0.27-0.57)	-?-?+--?+-??-?--
rs113386487	10	13358583	A/T	0.97	0.98	9.73E-07	0.47(0.35-0.64)	-?-??---?-?+?--+
rs13137453	4	153907879	A/G	0.97	0.98	9.88E-07	0.46(0.34-0.63)	-?-?+---?---+---
rs9972552	15	34396913	A/C	0.03	0.02	1.01E-06	2.18(1.59-2.98)	+-+++-++++-+++++
rs191852465	7	63164142	T/C	0.96	0.97	1.02E-06	0.46(0.34-0.63)	-++----------+-
chr13_46256859_D	13	46256859	D/I6	0.02	0.01	1.07E-06	2.27(1.63-3.16)	--++?+?-++-+++++
rs145440507	4	188400537	A/T	0.98	0.99	1.15E-06	0.37(0.25-0.55)	-?-???-??--?-??-
rs76347430	1	14395819	A/G	0.97	0.98	1.15E-06	0.50(0.38-0.66)	?-----+-+--++--+

CHR, chromosome; BP, basepair position; freq, frequency; OR, odds ratio; CI, confidence interval

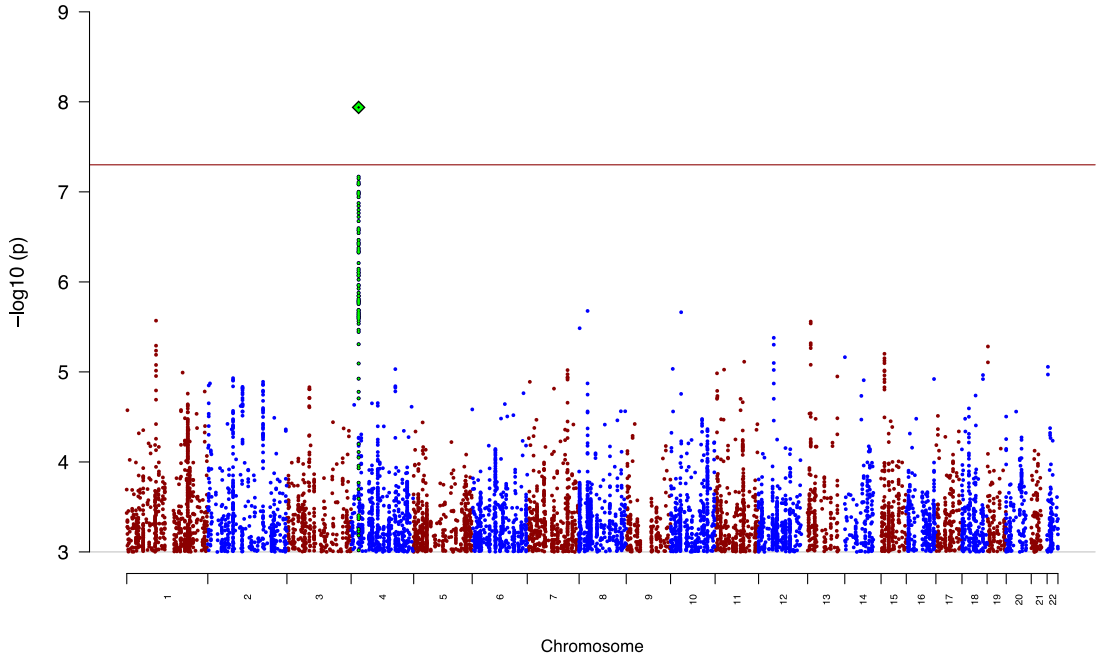

Figure S2: Manhattan plot from GWAS of suicide attempt in bipolar disorder

Table S10: Top 20 results from GWAS of suicide attempt in bipolar disorder showing the most significant SNP from each genomic region

Variant	CHR	BP	A1/A2	A1 freq attempters	A1 freq non-attempters	P value	OR (C.I.)	Direction in each cohort
chr4_23273116_D	4	23273116	D/I10	0.20	0.17	**1.15E-08**	1.29(1.18-1.40)	-+++++++++--+++++
rs1052873	8	27667793	T/C	0.19	0.22	2.10E-06	0.83(0.76-0.89)	----------------
rs118167891	10	32946009	T/C	0.02	0.02	2.17E-06	1.93(1.47-2.53)	+++++++-?++-+-+--
rs6428588	1	90825206	T/C	0.30	0.34	2.69E-06	0.85(0.79-0.91)	---+---------+---
rs7982251	13	28909835	T/C	0.85	0.87	2.76E-06	0.79(0.72-0.87)	---+--------+-++-
rs67658161	8	3286733	A/C	0.48	0.44	3.27E-06	1.16(1.09-1.24)	+-++++-++++++-+-
rs7979008	12	47479528	A/C	0.31	0.34	4.18E-06	0.85(0.79-0.91)	-----+-----+-+-+-
rs55893662	19	2955759	T/C	0.11	0.10	5.22E-06	1.46(1.24-1.73)	-+++++---++-+++++
rs5016373	15	34314041	T/C	0.61	0.65	6.28E-06	0.86(0.80-0.92)	-----++----++-+-
rs190572487	14	19675351	T/C	0.75	0.73	6.86E-06	1.35(1.18-1.54)	+++++++++-++++++
rs3847511	11	91454034	T/G	0.08	0.06	7.70E-06	1.36(1.19-1.55)	+++++++-+++--+--
rs165774	22	19952561	A/G	0.33	0.30	8.78E-06	1.18(1.10-1.27)	+++++-+-+++-++-+-
chr10_7228436_I	10	7228436	I2/D	0.14	0.12	9.25E-06	1.31(1.16-1.47)	-----+-----+---++
rs12639760	4	135958271	A/T	0.22	0.19	9.31E-06	1.21(1.11-1.31)	++-++++++++++++
rs141199126	11	29761274	T/C	0.02	0.01	9.43E-06	2.05(1.49-2.83)	+++++++?+?+-?+--+
chr7_123745464_I	7	123745464	I2/D	0.08	0.07	9.54E-06	1.32(1.17-1.49)	----------------
chr1_172543621_I	1	172543621	I2/D	0.03	0.04	1.02E-05	0.60(0.47-0.75)	++++++-+++++++++
rs12799429	11	8097070	T/C	0.54	0.56	1.04E-05	0.86(0.80-0.92)	--+-----+-----++-
rs17077064	18	64976306	T/C	0.83	0.80	1.08E-05	1.21(1.11-1.31)	+++++++++++-+-++
rs117018753	13	110581806	T/C	0.07	0.06	1.12E-05	1.37(1.19-1.58)	++++++++++-++-++

CHR, chromosome; BP, basepair position; freq, frequency; OR, odds ratio; CI, confidence interval

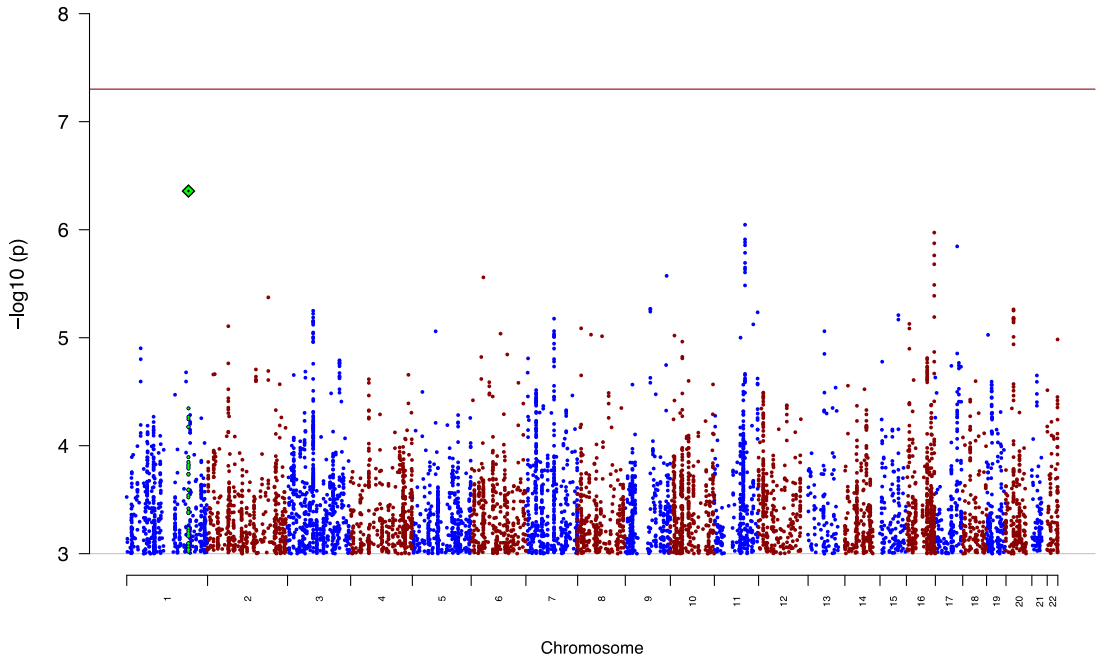

Figure S3: Manhattan plot from GWAS of suicide attempt in schizophrenia

Table S11: Top 20 results from GWAS of suicide attempt in schizophrenia showing the most significant SNP from each genomic region

Variant	CHR	BP	A1/A2	A1 freq attempters	A1 freq non-attempters	P value	OR (C.I.)	Direction in each cohort
rs482039	1	190777567	T/C	0.03	0.02	4.39E-07	2.37(1.70-3.31)	+++−+++++
rs3858375	11	95077167	T/C	0.07	0.05	8.99E-07	1.60(1.33-1.94)	++++−++++
rs4843180	16	86753070	T/C	0.44	0.39	1.06E-06	1.25(1.14-1.36)	+++++++++
rs180697792	17	67294430	A/G	0.23	0.20	1.43E-06	1.34(1.19-1.50)	+++++++++
rs72756712	9	128902906	A/G	0.93	0.95	2.67E-06	0.60(0.49-0.74)	−−−−−−−−−
rs191312301	6	38975727	A/C	0.86	0.89	2.76E-06	0.71(0.62-0.82)	−−+−−−−−−
chr2_188481671_D	2	188481671	D/I3	0.34	0.38	4.23E-06	0.79(0.71-0.87)	−−−−−−−−−
rs73650494	9	78831443	T/C	0.96	0.98	5.39E-06	0.56(0.43-0.72)	−−−−−−−−−
rs6114731	20	24427180	A/G	0.04	0.03	5.46E-06	1.78(1.39-2.27)	+++++−+++
rs75305337	3	84333133	A/C	0.12	0.09	5.63E-06	1.39(1.20-1.60)	+++++++++
chr11_133764404_I	11	133764404	I5/D	0.79	0.75	5.82E-06	1.29(1.15-1.43)	−−−−−−+−−
rs57729539	15	78524199	A/G	0.80	0.83	6.18E-06	0.76(0.68-0.86)	−−−+−−−−−
rs875777	7	86745380	T/C	0.16	0.20	6.66E-06	0.76(0.67-0.86)	−−+−−−−−−
rs6497871	16	10364163	A/G	0.64	0.60	7.44E-06	1.24(1.13-1.37)	+++++++++
rs151336980	11	120470737	T/C	0.04	0.03	7.52E-06	1.78(1.38-2.29)	++++−++−+
rs4494728	2	65589513	T/C	0.50	0.55	7.82E-06	0.82(0.75-0.89)	−−−−−−−−−
rs2739958	8	12232534	T/C	0.58	0.60	8.18E-06	0.68(0.57-0.80)	−−+−−−−+−
rs73215273	13	72403250	A/C	0.88	0.90	8.71E-06	0.66(0.54-0.79)	−+−−−−−−−
rs11739808	5	72745041	A/G	0.03	0.02	8.72E-06	2.30(1.59-3.31)	++−++++++
rs13198361	6	91673413	T/C	0.11	0.14	9.17E-06	0.65(0.54-0.79)	−−−−+−−−−

CHR, chromosome; BP, basepair position; freq, frequency; OR, odds ratio; CI, confidence interval

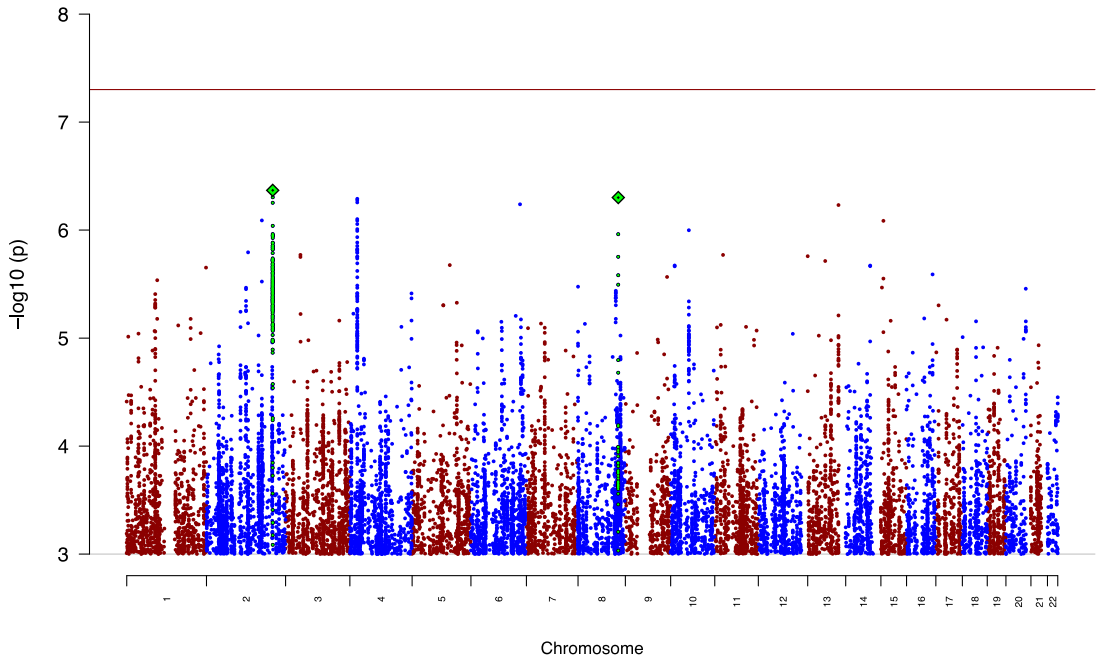

Figure S4: Manhattan plot from meta-analysis of suicide attempt in major depressive disorder, bipolar disorder and schizophrenia

Table S12: Top 20 results from meta-analysis of suicide attempt in MDD, BIP and SCZ showing the most significant SNP from each genomic region

Variant	CHR	BP	A1/A2	A1 freq attempters	A1 freq non-attempters	P value	OR (C.I.)	Direction in each cohort
rs149268645	2	203833018	A/G	0.14	0.15	4.28E-07	0.85(0.80-0.90)	−−−
rs4870888	8	125108977	T/C	0.52	0.54	5.00E-07	0.89(0.86-0.93)	−−−
chr4_23273116_D	4	23273116	D/I	0.19	0.18	5.13E-07	1.16(1.09-1.23)	+++
rs141252918	6	151828058	A/G	0.02	0.01	5.76E-07	1.73(1.39-2.14)	++?
rs9577511	13	113991823	A/G	0.86	0.87	5.86E-07	0.83(0.77-0.89)	−−−
rs62173322	2	170611029	A/G	0.86	0.87	8.13E-07	0.84(0.78-0.90)	−−−
rs76371172	15	31814455	T/G	0.98	0.98	8.20E-07	0.61(0.50-0.74)	−−−
rs11004733	10	56849344	T/C	0.04	0.04	1.00E-06	1.34(1.19-1.50)	+++
rs138689899	2	128288162	T/C	0.02	0.02	1.61E-06	1.53(1.29-1.82)	++−
rs142055939	3	45995554	T/C	0.02	0.02	1.69E-06	1.48(1.26-1.75)	+++
rs35107435	11	27249330	A/T	0.16	0.15	1.70E-06	1.17(1.10-1.24)	+++
rs113988902	13	19525105	T/C	0.05	0.04	1.74E-06	1.52(1.28-1.80)	?++
chr13_73243177_I	13	73243177	I/D	0.04	0.03	1.93E-06	1.59(1.32-1.93)	?−−
rs186672572	5	116878032	T/C	0.02	0.01	2.11E-06	1.64(1.33-2.00)	+++
rs113386487	10	13358583	A/T	0.98	0.98	2.12E-06	0.67(0.56-0.79)	−−−
rs73348245	14	96158072	A/G	0.06	0.06	2.13E-06	1.27(1.15-1.40)	+++
rs6426297	1	246538381	T/C	0.02	0.01	2.22E-06	1.65(1.34-2.04)	+++
rs73577700	16	80280761	A/T	0.83	0.85	2.57E-06	0.87(0.82-0.92)	−−−
rs72756712	9	128902906	A/G	0.94	0.95	2.71E-06	0.78(0.70-0.86)	−−−
rs75633108	1	96735185	T/C	0.02	0.02	2.91E-06	1.59(1.31-1.93)	+++

MDD, major depressive disorder; BIP, bipolar disorder; SCZ, schizophrenia; CHR, chromosome; BP, basepair position; OR, odds ratio; CI, confidence interval

Table S13: Top 20 results from meta-analysis of suicide attempt in mood disorders showing the most significant SNP from each genomic region

Variant	CHR	BP	A1/A2	A1 freq attempters	A1 freq non-attempters	P value	OR (C.I.)	Direction in each cohort
rs138689899	2	128288162	T/C	0.02	0.01	**2.50E-08**	1.75(1.44-2.14)	++
rs28591567	4	23253912	A/G	0.78	0.80	**3.11E-08**	0.84(0.79-0.89)	−−
chr6_151835609_D	6	151835609	I/D	0.94	0.95	3.66E-07	0.74(0.66-0.83)	++
chr13_61834504_D	13	61834504	I/D	0.91	0.92	5.77E-07	0.78(0.71-0.86)	++
rs186672572	5	116878032	T/C	0.02	0.01	7.19E-07	1.78(1.42-2.24)	++
rs112944737	8	134677667	T/C	0.91	0.92	1.11E-06	0.80(0.73-0.87)	−−
rs9577511	13	113991823	A/G	0.86	0.87	1.35E-06	0.81(0.75-0.88)	−−
rs150795632	6	37439376	A/G	0.98	0.98	1.69E-06	0.59(0.48-0.73)	−−
rs113051785	11	20167807	C/G	0.02	0.01	1.70E-06	1.75(1.39-2.20)	++
rs1355048	1	90830490	T/C	0.37	0.40	1.91E-06	0.88(0.84-0.93)	−−
rs115833694	4	99918226	C/G	0.98	0.98	1.99E-06	0.63(0.52-0.76)	−−
rs17764923	6	159820779	A/G	0.16	0.14	2.04E-06	1.19(1.11-1.27)	++
rs117020391	12	107099751	T/C	0.98	0.98	2.09E-06	0.63(0.52-0.76)	−−
rs72832403	2	115551269	A/G	0.92	0.93	2.16E-06	0.79(0.72-0.87)	−−
rs150320200	4	23450330	A/G	0.97	0.98	2.19E-06	0.66(0.55-0.78)	−−
rs114598476	1	224438315	A/G	0.96	0.97	2.30E-06	0.67(0.57-0.79)	−−
rs76400344	22	26697120	A/C	0.03	0.02	3.01E-06	1.52(1.28-1.82)	++
chr2_124851208_D	2	124851208	I/D	0.96	0.96	3.48E-06	0.72(0.62-0.82)	++
rs143457262	7	82072544	A/G	0.03	0.03	4.16E-06	1.51(1.26-1.79)	++
rs3829881	1	117531813	T/C	0.49	0.47	4.45E-06	1.12(1.07-1.18)	++

CHR, chromosome; BP, basepair position; freq, frequency; OR, odds ratio; CI, confidence interval

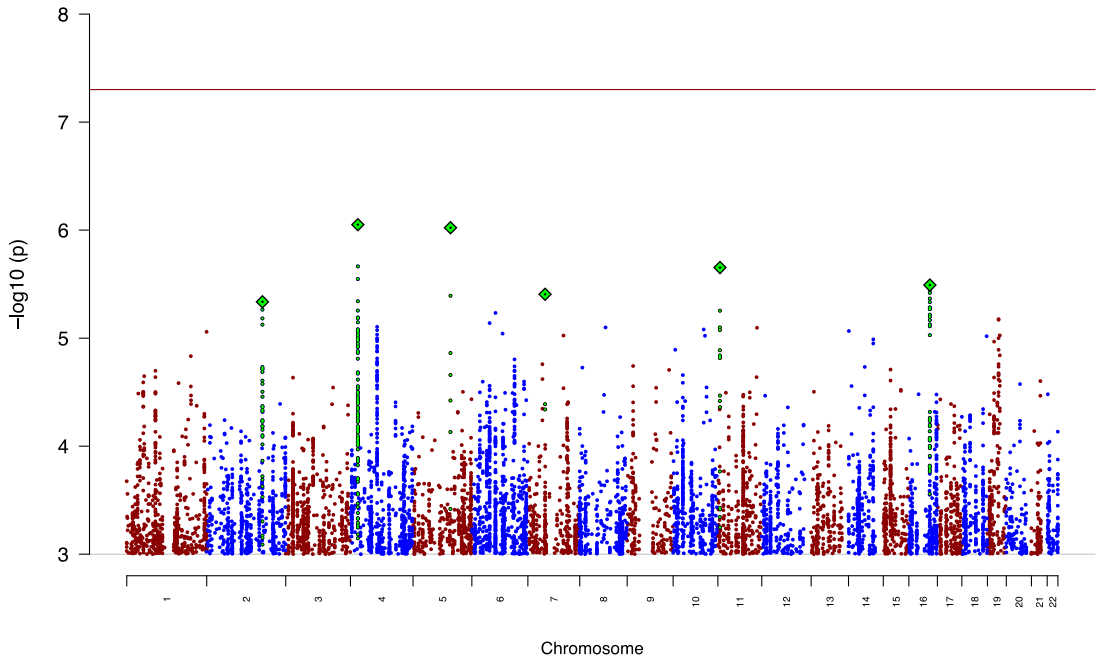

Figure S5: Manhattan plot from meta-analysis of suicide attempt in bipolar disorder and schizophrenia

Table S14: Top 20 results from meta-analysis of suicide attempt in BIP and SCZ showing the most significant SNP from each genomic region

Variant	CHR	BP	A1/A2	A1 freq attempters	A1 freq non-attempters	P value	OR (C.I.)	Direction in each cohort
chr4_23273116_D	4	23273116	D/I	0.19	0.17	8.90E-07	1.19(1.11-1.27)	++
rs26318	5	115687905	T/C	0.98	0.99	9.50E-07	0.52(0.40-0.67)	−−
rs118102650	11	9099847	A/G	0.02	0.01	2.22E-06	1.79(1.41-2.28)	++
rs12925656	16	65107920	T/C	0.88	0.90	3.22E-06	0.82(0.76-0.89)	−−
rs73122740	7	53695512	T/G	0.92	0.91	3.93E-06	1.26(1.14-1.39)	++
rs2353181	2	170305256	T/C	0.95	0.94	4.61E-06	1.33(1.17-1.49)	++
rs75237141	6	72966596	A/G	0.90	0.92	5.84E-06	0.80(0.73-0.88)	−−
rs56342621	19	35071781	C/G	0.98	0.99	6.67E-06	0.61(0.49-0.75)	−−
rs9475195	6	55061018	T/C	0.58	0.61	7.25E-06	0.89(0.84-0.93)	−−
chr4_82106147_I	4	82106147	I/D	0.07	0.06	7.85E-06	1.29(1.15-1.44)	−−
chr8_80591790_D	8	80591790	I/D	0.61	0.63	7.95E-06	0.88(0.83-0.93)	++
rs10892827	11	122210990	T/G	0.90	0.92	8.01E-06	0.80(0.73-0.88)	−−
rs189924441	10	94182243	A/G	0.97	0.97	8.30E-06	0.67(0.56-0.80)	−−
rs8022689	14	21608986	A/G	0.38	0.35	8.58E-06	1.14(1.07-1.20)	++
rs3007305	1	246862572	C/G	0.66	0.68	8.72E-06	0.88(0.83-0.93)	−−
rs72924216	6	94570858	A/G	0.95	0.96	9.08E-06	0.72(0.63-0.83)	−−
rs66666015	19	38717143	T/C	0.76	0.74	9.42E-06	1.16(1.09-1.24)	++
rs38758	7	109943767	A/C	0.47	0.44	9.46E-06	1.12(1.07-1.18)	++
rs117559494	10	98008526	A/G	0.03	0.03	9.50E-06	1.53(1.27-1.85)	++
rs117637007	18	75827605	T/C	0.11	0.13	9.58E-06	0.80(0.72-0.88)	−−

CHR, chromosome; BP, basepair position; freq, frequency; OR, odds ratio; CI, confidence interval

Table S15: Genome-wide significant loci for suicide attempt tested in independent replication cohorts

Cohort	Variant	CHR	A1/A2	P value	OR (C.I.)
UK Biobank	rs45593736	10	A/G	0.985	1.00 (0.83-1.21)
UK Biobank	rs138689899	2	T/C	0.677	0.96 (0.79-1.16)
UK Biobank	rs4626184^	4	C/A	0.663	1.04 (0.86-1.26)
iPSYCH	rs117607218*	10	C/T	0.776	0.97 (0.79-1.18)
iPSYCH	rs138689899	2	T/C	0.228	0.87 (0.69-1.09)
iPSYCH	rs28591567	4	G/A	0.521	1.02 (0.96-1.07)

^rs28591567 was not present in the UK Biobank dataset, so the SNP in highest LD ($R^2 = 0.88$) was chosen.

*rs45593736 was not present in the iPSYCH dataset, so the SNP in highest LD ($R^2 = 0.60$) was chosen.

CHR, chromosome; OR, odds ratio; CI, confidence interval

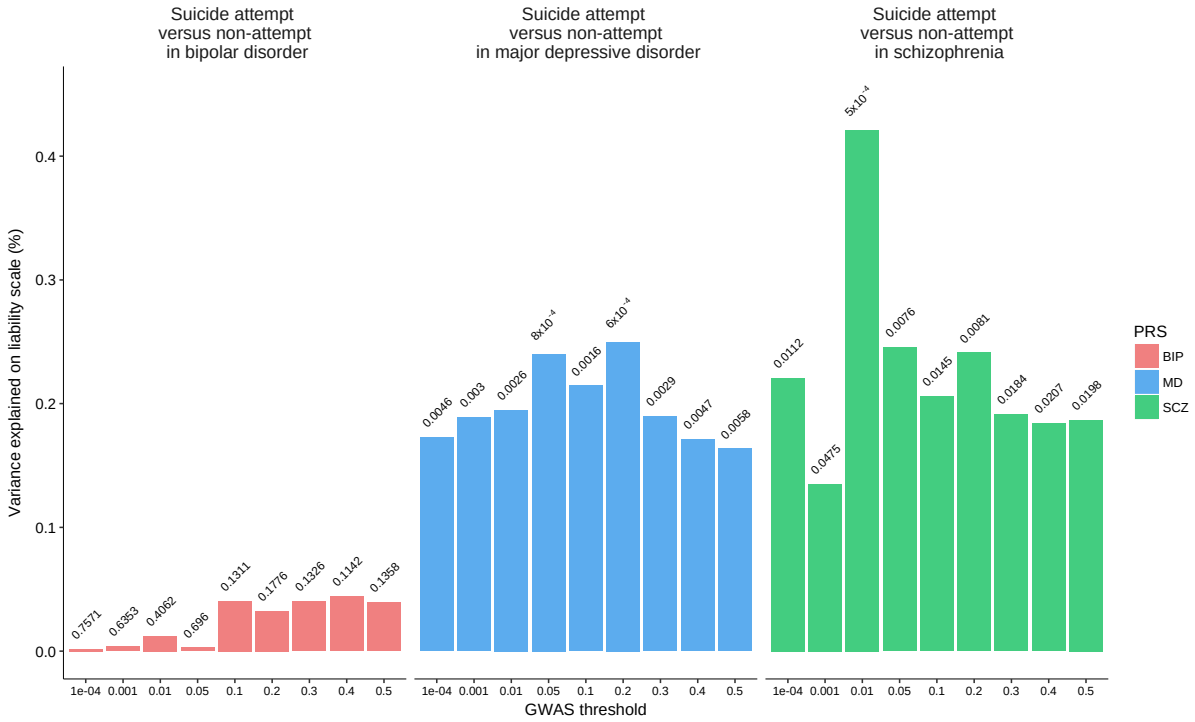

Figure S6: Polygenic risk scores for bipolar disorder, major depression and schizophrenia tested for association with suicide attempt in the same disorder.

PRS-polygenic risk score, BIP-bipolar disorder, MD-major depression, SCZ-schizophrenia. P values of association between polygenic scores and suicide attempt are shown above each bar.

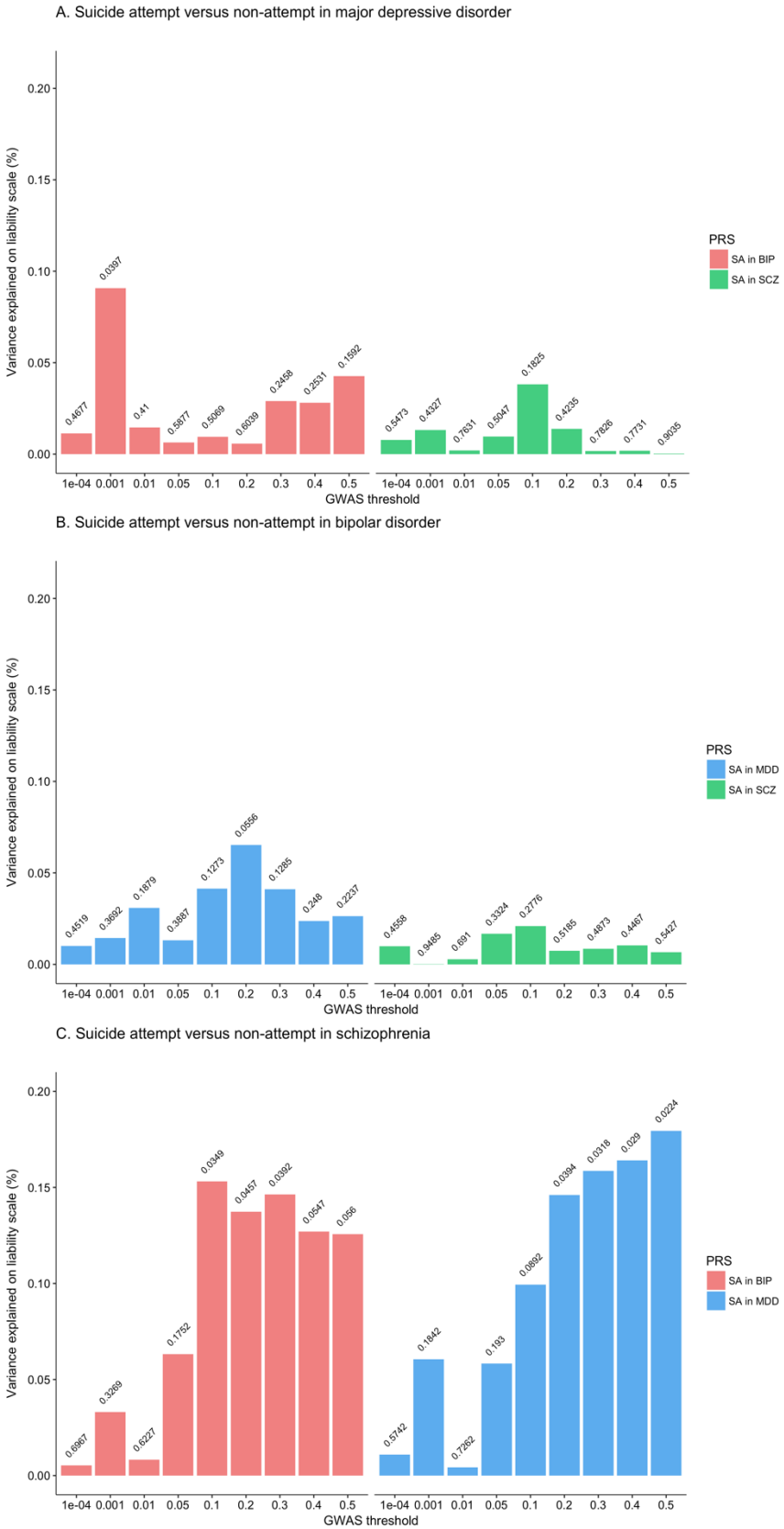

Figure S7: Polygenic risk scores for suicide attempt tested for association with suicide attempt in A - major depressive disorder, B - bipolar disorder and C - schizophrenia. PRS-polygenic risk score, SA-suicide attempt, MDD-major depressive disorder, BIP-bipolar disorder, SCZ-schizophrenia. P values of association between polygenic scores and suicide attempt are shown above each bar.

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Psychiatric Genomics Consortium Major Depressive Disorder Cohorts

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The following table lists the funding that supported the primary studies analyzed.

Study	Lead investigator	Award number	Funder	Country
PGC	PF Sullivan	U01 MH109528	NIMH	USA
PGC	A Agrawal	U01 MH109532	NIDA	USA
PGC	D Posthuma	480-05-003	Netherlands Scientific Organization	Netherlands
PGC	D Posthuma	–	Dutch Brain Foundation and the VU University Amsterdam	Netherlands
PsyColaus	M Preisig	3200B0–105993, 3200B0-118308, 33CSCO-122661, 33CS30-139468, 33CS30-148401	Swiss National Science Foundation	Switzerland
QIMR	NG Martin	941177, 971232, 3399450 and 443011	National Health and Medical Research Council	Australia
QIMR	AC Heath	AA07535, AA07728, andAA10249	NIAAA	USA
RADIANT	C Lewis, G Breen	G0701420	MRC	UK
RADIANT	G Breen	G0901245	MRC	UK
RADIANT	G Breen	U01 MH109528	NIMH	UK
BoMa	M Rietschel	RI 908/11-1	Deutsche Forschungsgemeinschaft	Germany
BoMa	MM Nöthen	NO246/10-1	Deutsche Forschungsgemeinschaft	Germany
BoMa	MM Nöthen	Excellence Cluster ImmunoSensation	Deutsche Forschungsgemeinschaft	Germany
BoMa	MM Nöthen, M Rietschel, S Cichon	01ZX1314A/01ZX1614A, 01ZX1314G/01ZX1614G,	BMBF Integrament	Germany
BoMa	MM Nöthen, M Rietschel, S Cichon	01GS08144, 01GS08147	BMBF NGFNplus MooDS	Germany
CoFaMS - Adelaide	BT Baune	APP1060524	NHMRC	Australia
NESDA	BWJH Penninx	ZonMW Geestkracht grant	N.W.O.	Netherlands
NTR	DI Boomsma	480-15-001/674	N.W.O.	Netherlands
SHIP-LEGEND/TREND	HJ Grabe	DFG: GR 1912/5-1	German Research Foundation	Germany
STAR*D	SP Hamilton	R01 MH-072802	NIMH	USA

Psychiatric Genomics Consortium Bipolar Disorder Cohorts

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Study	Lead investigator	Country, Funder, Award number
PGC	P Sullivan	USA, NIMH MH109528
PGC	D Posthuma	Netherlands, Scientific Organization Netherlands, 480-05-003
PGC	D Posthuma	Dutch Brain Foundation and the VU University Amsterdam Netherlands
BiGS, Uchicago	ES Gershon	R01 MH103368
BiGS, GAIN	FJ McMahon	US, NIMH, R01 MH061613, ZIA MH002843
BiGS, UCSD	J Kelsoe	US, NIMH, MH078151, MH081804, MH59567
BiGS, University of Pittsburgh	V Nimgaonkar	US, NIMH MH63480
BACCS	G Breen	GB, JRIC, HG, CL were supported in part by the NIHR Maudsley Biomedical Research Centre ('BRC') hosted at King's College London and South London and Maudsley NHS Foundation Trust, and funded by the National Institute for Health Research under its Biomedical Research Centres funding initiative.
BOMA-Romania	M Grigoroiu-Serbanescu	Romania, UEFISCDI, Grant no. 89/2012
BOMA-Germany I, II, III	S Cichon	Germany, BMBF Integrament, 01ZX1314A/01ZX1614A
BOMA-Germany I, II, III	S Cichon	Germany, BMBF NGFNplus MooDS, 01GS08144
BOMA-Germany I, II, III	S Cichon	Switzerland, SNSF, 156791
BOMA-Germany I, II, III	MM Nöthen	Germany, BMBF Integrament, 01ZX1314A/01ZX1614A
BOMA-Germany I, II, III	MM Nöthen	Germany, BMBF NGFNplus MooDS, 01GS08144
BOMA-Germany I, II, III	MM Nöthen	Germany, Deutsche Forschungsgemeinschaft, Excellence Cluster ImmunoSensation
BOMA-Germany I, II, III	MM Nöthen	Germany, Deutsche Forschungsgemeinschaft, NO246/10-1
BOMA-Germany I, II, III	SH Witt	Germany, Deutsche Forschungsgemeinschaft, WI 3429/3-1
BOMA-Germany I, II, III, BOMA-Spain	M Rietschel	Germany, BMBF Integrament, 01ZX1314G/01ZX1614G
BOMA-Germany I, II, III, BOMA-Spain	M Rietschel	Germany, BMBF NGFNplus MooDS, 01GS08147

BOMA-Germany I, II, III, BOMA-Spain	M Rietschel	Germany, Deutsche Forschungsgemeinschaft, RI 908/11-1
BOMA-Germany I, II, III, PsyCourse, BiGS	TG Schulze	Germany, BMBF Integrament, 01ZX1314K
BOMA-Germany I, II, III, PsyCourse, BiGS	TG Schulze	Germany, DFG, SCHU 1603/4-1, SCHU 1603/5-1, SCHU 1603/7-1
BOMA-Germany I, II, III, PsyCourse, BiGS	TG Schulze	Germany, Dr. Lisa-Oehler Foundation (Kassel, Germany)
Fran	M Leboyer	France, Inserm, ANR
Halifax	M Alda	CIHR grant #64410
Norway	I Agartz	Sweden, Swedish Research Council
Norway	OA Andreassen	Norway, Research Council of Norway (#217776, #223273, #248778, #249711), KG Jebsen Stiftelsen, The South-East Norway Regional Health Authority (#2012-132, #2012-131, #2017-004)
Norway	T Elvsåshagen	Norway, The South-East Norway Regional Health Authority (#2015-078) and a research grant from Mrs. Throne-Holst.
Norway	I Melle	Norway, Research Council of Norway (#421716,#223273), KG Jebsen Stiftelsen, The South-East Norway Regional Health Authority (#2011085, #2013088, #2014102)
Norway	KJ Oedegaard	Norway, the Western Norway Regional Health Authority
Norway	OB Smeland	Norway, The South-East Norway Regional Health Authority (#2016-064, #2017-004)
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Psychiatric Genomics Consortium Schizophrenia cohorts

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Replication cohorts

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iPSYCH

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