

Q. Describe biological explanations of mood disorders, including:

- biochemical explanation
- genetic explanation [6]

Key Point	Description
Biochemical	
Monoamine Hypothesis	Serotonin imbalance can result in: noradrenaline too high = manic episode; noradrenaline too low = depressive episode
Reasons for Serotonin Imbalance	1) Less tryptophan in diet; 2) Increased cortisol in blood; 3) Problems with transporter molecules in presynaptic cell membrane; 4) Too much sensitivity in postsynaptic receptor sites; 5) Too much monoamine oxidase in synapses
Genetic	
Twin Studies	MZ concordance rate = 44% F, 31% M ; DZ concordance rate = 16% F, 11% M
Candidate Genes	5-HTT for presynaptic receptor sites polymorphism - 2 's' alleles = increased risk; 5-HT2c for postsynaptic receptor sites
Oruc et al.	
Aim	to investigate polymorphisms of 5-HTT and 5-HT2c found commonly in bipolar disorder
Procedure	blood samples of bipolar patients compared with age- and sex-matched controls
Results	' S ' allele of 5-HT2c more common in <i>female</i> bipolar patients than female controls ' s ' allele of 5-HTT more common in <i>female</i> bipolar patients than female controls
Conclusion	polymorphisms of 5-HTT and 5-HT2c genes increase risk of developing bipolar disorder in females

Q. Evaluate biological explanations of mood disorders, including:

- biochemical explanation
- genetic explanation [10]

Point	Evidence	Explanation	Link	Counterpoint
Strengths				
findings replicated in several other studies	Oruc et al. and several other studies have pointed to the role of 5-HT2c and 5-HTT in depression	improves trust in the role of these genes for mood disorders	increases reliability of findings	functional analysis of the polymorphisms not conducted - do they really cause serotonin imbalances?
use of natural experiment to study role of genes in mood disorders	Oruc et al. compared people with different polymorphisms of 5-HTT and 5-HT2c genes in men and women	manipulation-based experiments for independent variables of genes and gender not possible	enabled some investigation of a cause-effect relationship between polymorphisms and bipolar disorder	third variable problem e.g. prenatal exposure to toxins or stress in mother during pregnancy
Weaknesses				
support of nature only	concordance rates: MZ = 44%F, 31%M DZ = 16%F, 11% M	MZ twins share more similar environment than DZ due to shared temperament and sex	reduces validity of explanation	adoption studies: 31% diagnosis when biological parents have mood disorder; 12% when adoptive parents do
overly deterministic explanation	serotonin imbalance causes depressive /manic episodes	previous research: depressed women have higher serotonin than non-depressed women	reduces validity of explanation	still helpful for understanding why only some people exposed to stressful life circumstances would develop mood disorders
overly reductionist explanation	-MZ twins do not show 100% sharing of mood disorders -imbalance in serotonin does not cause mood disorders in absence of environmental triggers like poverty/lack of social support	genes and brain chemistry can only partially explain development of mood disorders	reduces scope of findings	offer starting points for understanding complex mood disorders better and inform risk prevention -e.g. informed family planning in case of family susceptibility to mood disorders

Whatsapp : +919892507784 for psychology classes

E-mail : [jyotika@excellingpsychology.com](mailto: jyotika@excellingpsychology.com) for other queries

Lesson prepared by:

Jyotika Varmani (M.A. Psychology Honours, NET, SET, PGDHE)

CIE A-levels Psychology Teacher - Modern College, Mauritius

CIE A-levels Psychology Subject Expert - Podar International, Mumbai

8+ years experience in private tutoring for CIE, IB, AQA, Edexcel Psychology

Owner of 'Excelling Psychology' online

Visit Jyotika Varmani's complete profile at -

<https://www.teACHERon.com/tutor-profile/1KH>

