

### **Table DS3 Self-esteem**

*Search Terms: "self esteem"/"overt self esteem"/"covert self esteem"/"explicit self esteem"/"implicit self esteem"/"Brief core schema scale" + Delusions/paranoia/schizophrenia*

*Review Articles: Garety and Freeman (1999)/ Freeman (2007)*

*Early View articles: Schizophrenia Bulletin; Schizophrenia Review; British Journal of Clinical Psychology; Behaviour Research and Therapy; Journal of Behavioural Therapy and Experimental Psychology; Psychological Medicine; Journal of Abnormal Psychology; Psychiatry Research*

#### **Table DS3a Overt self esteem only and paranoia**

<b>Study</b>	<b>Participant groups</b>	<b>Association of paranoia with low self esteem</b>
<b><i>Clinical studies</i></b>		
1. Kinderman & Bentall (1996)	22 persecutory delusions 22 depressed 22 non-clinical	X
2. Bowins & Shugar (1998)	40 patients with psychosis	✓
3. Freeman et al (1998)	60 patients with psychosis	✓
4. Barrowclough et al (2003)	59 Schizophrenia	✓
5. Kinderman et al (2003)	13 persecutory delusions 11 psychiatric controls 13 non-clinical	X
6&7. Drake et al (2004); Palmier-Claus et al (2011)	257 patients with psychosis	✓
8&9. Smith et al (2006); Fowler et al (2011)	301 patients with psychosis	✓
10. Jones et al (2010)	66 patients with schizophrenia	✓
11. Humphreys & Barrowclough (2006)	25 recent onset psychosis	✓

12. Fornells-Ambrojo & Garety (2009)	20 'Poor me' persecutory delusions 21 Depressed patients 32 Non-clinical controls	✓
13. Bentall et al (2009)	39 Paranoia 29 Remitted paranoid 29 Late onset paranoia 20 Paranoia and depression 27 Early onset <65yr depressed 29 Late onset >65yr depressed 64 non-clinical controls	✓
14. Ben-Zeev et al (2009)	194 patients with psychosis	✓
15. Combs et al (2009)	32 Persecutory delusions 28 Psychiatric controls 50 Non-clinical controls	✓
16. Lincoln et al (2010)	83 psychosis 33 non-clinical	✓
17. Warman & Lysaker (2011)	30 patients with psychosis	✓
18&19. Thewissen et al (2008); Thewissen et al (2011)	34 Paranoid patients 34 Nonparanoid patients 15 Remitted patients 39 High schizotypy 37 Non-clinical controls	✓
20. Romm et al (2011)	113 schizophrenia	✓
21. Melo & Bentall (2012)	45 persecutory delusions 25 non-clinical	✓
<b><i>Non-clinical studies</i></b>		
22. Altman et al (1997)	38 adolescents	X
23. Martin & Penn (2001)	193 non-clinical	✓
24. Ellett et al (2003)	324 non-clinical	✓
25. Combs & Penn (2004)	60 non-clinical	✓

26. Thewissen et al (2007)	4636 non-clinical	✓
27. Mills et al (2007)	131 non-clinical	✓
28. Udachina et al (2009)	427 non-clinical	✓
29. Raes & van Gucht (2009)	131 non-clinical	✓
30. Warman et al (2010)	121 non-clinical	✓

**Table DS3b Overt and covert self esteem comparison**

Study	Participants	Overt normal self-esteem	Covert low self-esteem	Discrepancy
<i>Clinical Studies</i>				
1. Lyon et al (2004)	14 persecutory delusions 14 depressed 14 non clinical	✓	✓	✓
2. Kinderman (1994)	16 persecutory delusions 16 depressed 16 non clinical	X	✓	X
3. Krstev et al (1999)	62 early episode psychosis	✓	x	X
4. Taylor & John (2004)	12 persecutory delusions 12 Depression 12 Non-clinical	✓	✓	✓
5. Smith et al (2005)	20 Grandiose delusions 21 Non-clinical controls	✓	X	X
6. Diez-Alegria et al (2006)	40 Paranoid Delusions 25 Remitted delusions 35 Depressed patients 36 Non-clinical controls	x	✓	X
7. Moritz et al (2006)	23 Schizophrenia (13 persecutory delusions) 14 Depressed 41 Non-clinical	x	✓	X
8. McCulloch et al (2006)	13 Late onset psychosis 15 Older depressed 15 Non-clinical controls	✓	X	X
9. McKay et al (2007)	10 Persecutory Delusions	X ✓	✓	X ✓

	10 Remitted Persecutory Delusions 19 Non-clinical controls			
10. Vazquez et al (2008)	40 Delusions 25 Remitted Delusions 35 Depressed controls 36 Non-clinical controls	X	✓	X
11. Mehl et al (2010)	23 Persecutory Delusions 21 Remitted Persecutory Delusions 22 Non-clinical controls	X	✓	X
12. Kesting et al (2011)	28 Persecutory delusions 31 Remitted persecutory delusions 21 Depressed controls 59 Non-clinical controls	X	X	X
13. MacKinnon et al (2011)	16 Persecutory Delusions 20 Non-clinical	X	X	X
14. Valiente et al (2011)	35 Persecutory delusions 35 Depressed 44 Non-clinical	✓	✓	✓
<b><i>Non-clinical studies</i></b>				
15. Cicero & Kerns (2011)	186 non-clinical	X	X	X

**Table DS3c Negative ideas about the self and paranoia**

<b>Study</b>	<b>Participants</b>	<b>Associations with paranoia</b>
<b><i>Clinical Studies</i></b>		
1,2,3. Fowler et al, 2006; Smith et al, 2006; Fowler et al (2011)	301 patients with psychosis	✓
4. Ellett et al (2008)	30 persecutory delusions 30 non-clinical	✓
5,6. Addington & Tran, 2009; Stowkowy & Addington (2012)	38 psychosis high risk prodromal state	✓
<b><i>Non-clinical studies</i></b>		
7. Gracie et al (2007)	228 non-clinical	✓
8. Freeman et al (2008)	200 non-clinical	✓
9. Steel et al (2009)	384 non-clinical	✓
10. Oliver et al (2011)	700 non-clinical	✓

## **References**

### **Self Esteem – Overt Self Esteem Only and Paranoia (Clinical)**

1. Kinderman P, Bentall RP. Self-discrepancies and persecutory delusions: evidence for a model of paranoid ideation. *Journal of abnormal psychology*. 1996;105(1):106-13.
2. Bowins B, Shugar G. Delusions and self-esteem. *Canadian journal of psychiatry Revue canadienne de psychiatrie*. 1998;43(2):154-8.
3. Freeman D, Garety P, Fowler D, Kuipers E, Dunn G, Bebbington P, et al. The London-East Anglia randomized controlled trial of cognitive-behaviour therapy for psychosis. IV: Self-esteem and persecutory delusions. *The British journal of clinical psychology / the British Psychological Society*. 1998;37 ( Pt 4):415-30.
4. Barrowclough C, Tarrier N, Humphreys L, Ward J, Gregg L, Andrews B. Self-esteem in schizophrenia: relationships between self-evaluation, family attitudes, and symptomatology. *Journal of abnormal psychology*. 2003;112(1):92-9.
5. Kinderman P, Prince S, Waller G, Peters E. Self-discrepancies, attentional bias and persecutory delusions. *The British journal of clinical psychology / the British Psychological Society*. 2003;42(Pt 1):1-12.
6. Drake RJ, Pickles A, Bentall RP, Kinderman P, Haddock G, Tarrier N, et al. The evolution of insight, paranoia and depression during early schizophrenia. *Psychological medicine*. 2004;34(2):285-92.
7. Palmier-Claus J, Dunn G, Drake R, Lewis S. The negative and positive self: a longitudinal study examining self-esteem, paranoia and negative symptoms in individuals with first-episode psychosis. *Early intervention in psychiatry*. 2011;5(2):150-5.
8. Smith B, Fowler DG, Freeman D, Bebbington P, Bashforth H, Garety P, et al. Emotion and psychosis: links between depression, self-esteem, negative schematic beliefs and delusions and hallucinations. *Schizophrenia research*. 2006;86(1-3):181-8.
9. Fowler D, Hodgekins J, Garety P, Freeman D, Kuipers E, Dunn G, et al. Negative Cognition, Depressed Mood, and Paranoia: A Longitudinal Pathway Analysis Using Structural Equation Modeling. *Schizophrenia bulletin*. 2011.

10. Jones RM, Hansen L, Moskvina V, Kingdon D, Turkington D. The relationship between self-esteem and psychotic symptoms in schizophrenia: A longitudinal study. *Psychosis*. 2010;2(3):218-26.
11. Humphreys L, Barrowclough C. Attributional style, defensive functioning and persecutory delusions: symptom-specific or general coping strategy? *The British journal of clinical psychology / the British Psychological Society*. 2006;45(Pt 2):231-46.
12. Fornells-Ambrojo M, Garety PA. Understanding attributional biases, emotions and self-esteem in 'poor me' paranoia: findings from an early psychosis sample. *The British journal of clinical psychology / the British Psychological Society*. 2009;48(Pt 2):141-62.
13. Bentall RP, Rowse G, Shryane N, Kinderman P, Howard R, Blackwood N, et al. The cognitive and affective structure of paranoid delusions: a transdiagnostic investigation of patients with schizophrenia spectrum disorders and depression. *Archives of general psychiatry*. 2009;66(3):236-47.
14. Ben-Zeev D, Granholm E, Cafri G. Symptoms of depression and anxiety mediate the relationship between self-esteem and paranoia. *Schizophrenia research*. 2009;115(2-3):377-8.
15. Combs DR, Penn DL, Michael CO, Basso MR, Wiedeman R, Siebenmorgan M, et al. Perceptions of hostility by persons with and without persecutory delusions. *Cognitive neuropsychiatry*. 2009;14(1):30-52.
16. Lincoln TM, Mehl S, Ziegler M, Kesting ML, Exner C, Rief W. Is fear of others linked to an uncertain sense of self? The relevance of self-worth, interpersonal self-concepts, and dysfunctional beliefs to paranoia. *Behavior therapy*. 2010;41(2):187-97.
17. Warman DM, Lysaker PH. Delusional ideation and self-esteem in individuals with psychotic disorders. *The Journal of nervous and mental disease*. 2011;199(1):58-61.
18. Thewissen V, Bentall RP, Lecomte T, van Os J, Myin-Germeys I. Fluctuations in self-esteem and paranoia in the context of daily life. *Journal of abnormal psychology*. 2008;117(1):143-53.
19. Thewissen V, Bentall RP, Oorschot M, J AC, van Lierop T, van Os J, et al. Emotions, self-esteem, and paranoid episodes: an experience sampling study. *The British journal of clinical psychology / the British Psychological Society*. 2011;50(2):178-95.
20. Romm KL, Rossberg JI, Hansen CF, Haug E, Andreassen OA, Melle I. Self-esteem is associated with premorbid adjustment and positive psychotic symptoms in early psychosis. *BMC psychiatry*. 2011;11:136.



21. Melo SS, Bentall RP. 'Poor me' versus 'Bad me' paranoia: The association between self-beliefs and the instability of persecutory ideation. *Psychology and Psychotherapy: Theory, Research and Practice*. 2012

### **Self Esteem – Overt Self Esteem Only and Paranoia (Non Clinical)**

22. Altman H, Collins M, Mundy P. Subclinical hallucinations and delusions in nonpsychotic adolescents. *Journal of child psychology and psychiatry, and allied disciplines*. 1997;38(4):413-20.

23. Martin JA, Penn DL. Social cognition and subclinical paranoid ideation. *The British journal of clinical psychology / the British Psychological Society*. 2001;40(Pt 3):261-5.

24. Ellett L, Lopes B, Chadwick P. Paranoia in a nonclinical population of college students. *The Journal of nervous and mental disease*. 2003;191(7):425-30.

25. Combs DR, Penn DL. The role of subclinical paranoia on social perception and behavior. *Schizophrenia research*. 2004;69(1):93-104.

26. Thewissen V, Myin-Germeys I, Bentall R, de Graaf R, Vollebergh W, van Os J. Instability in self-esteem and paranoia in a general population sample. *Social psychiatry and psychiatric epidemiology*. 2007;42(1):1-5.

27. Mills A, Gilbert P, Bellew R, McEwan K, Gale C. Paranoid beliefs and self-criticism in students. *Clinical psychology & psychotherapy*. 2007;14(5):358-64.

28. Udachina A, Thewissen V, Myin-Germeys I, Fitzpatrick S, O'Kane A, Bentall RP. Understanding the relationships between self-esteem, experiential avoidance, and paranoia: structural equation modelling and experience sampling studies. *The Journal of nervous and mental disease*. 2009;197(9):661-8.

29. Raes F, Van Gucht D. Paranoia and instability of self-esteem in adolescents. *Personality and Individual Differences*. 2009;47(8):928-32.

30. Warman DM, Lysaker PH, Luedtke B, Martin JM. Self-esteem and delusion proneness. *The Journal of nervous and mental disease*. 2010;198(6):455-7.

### **Self Esteem – Overt and Covert Self Esteem Comparison (Clinical)**

1. Lyon HM, Kaney S, Bentall RP. The defensive function of persecutory delusions. Evidence from attribution tasks. *The British journal of psychiatry : the journal of mental science*. 1994;164(5):637-46.
2. Kinderman P. Attentional bias, persecutory delusions and the self-concept. *The British journal of medical psychology*. 1994;67 ( Pt 1):53-66.
3. Krstev H, Jackson H, Maude D. An investigation of attributional style in first-episode psychosis. *The British journal of clinical psychology / the British Psychological Society*. 1999;38 ( Pt 2):181-94.
4. Taylor JL, John CH. Attentional and memory bias in persecutory delusions and depression. *Psychopathology*. 2004;37(5):233-41.
5. Smith N, Freeman D, Kuipers E. Grandiose delusions: an experimental investigation of the delusion as defense. *The Journal of nervous and mental disease*. 2005;193(7):480-7.
6. Diez-Alegria C, Vazquez C, Nieto-Moreno M, Valiente C, Fuentenebro F. Personalizing and externalizing biases in deluded and depressed patients: are attributional biases a stable and specific characteristic of delusions? *The British journal of clinical psychology / the British Psychological Society*. 2006;45(Pt 4):531-44.
7. Moritz S, Werner R, von Collani G. The inferiority complex in paranoia readdressed: a study with the Implicit Association Test. *Cognitive neuropsychiatry*. 2006;11(4):402-15.
8. McCulloch Y, Clare L, Howard R, Peters E. Psychological processes underlying delusional thinking in late-onset psychosis: a preliminary investigation. *International journal of geriatric psychiatry*. 2006;21(8):768-77.
9. McKay R, Langdon R, Coltheart M. The defensive function of persecutory delusions: an investigation using the Implicit Association Test. *Cognitive neuropsychiatry*. 2007;12(1):1-24.
10. Vazquez C, Diez-Alegria C, Hernandez-Lloreda MJ, Moreno MN. Implicit and explicit self-schema in active deluded, remitted deluded, and depressed patients. *Journal of behavior therapy and experimental psychiatry*. 2008;39(4):587-99.

11. Mehl S, Rief W, Lullmann E, Ziegler M, Muller MJ, Lincoln TM. Implicit attributional style revisited: evidence for a state-specific "self-decreasing" implicit attributional style in patients with persecutory delusions. *Cognitive neuropsychiatry*. 2010;15(5):451-76.
12. Kesting ML, Mehl S, Rief W, Lindenmeyer J, Lincoln TM. When paranoia fails to enhance self-esteem: explicit and implicit self-esteem and its discrepancy in patients with persecutory delusions compared to depressed and healthy controls. *Psychiatry research*. 2011;186(2-3):197-202.
13. Mackinnon K, Newman-Taylor K, Stopa L. Persecutory delusions and the self: An investigation of implicit and explicit self-esteem. *Journal of behavior therapy and experimental psychiatry*. 2011;42(1):54-64.
14. Valiente C, Cantero D, Vazquez C, Sanchez A, Provencio M, Espinosa R. Implicit and explicit self-esteem discrepancies in paranoia and depression. *Journal of abnormal psychology*. 2011;120(3):691-9.

#### **Self Esteem – Overt and Covert Self Esteem Comparison (Non Clinical)**

15. Cicero DC, Kerns JG. Is paranoia a defence against or an expression of low self-esteem? *European Journal of Personality*. 2011;25(5):326-35.

#### **Self Esteem – Negative Ideas about the self and Paranoia (Clinical)**

1. Fowler D, Freeman D, Smith B, Kuipers E, Bebbington P, Bashforth H, et al. The Brief Core Schema Scales (BCSS): psychometric properties and associations with paranoia and grandiosity in non-clinical and psychosis samples. *Psychological medicine*. 2006;36(6):749-59.
2. Smith B, Fowler DG, Freeman D, Bebbington P, Bashforth H, Garety P, et al. Emotion and psychosis: links between depression, self-esteem, negative schematic beliefs and delusions and hallucinations. *Schizophrenia research*. 2006;86(1-3):181-8.
3. Fowler D, Hodgekings J, Garety P, Freeman D, Kuipers E, Dunn G, et al. Negative Cognition, Depressed Mood, and Paranoia: A Longitudinal Pathway Analysis Using Structural Equation Modeling. *Schizophrenia bulletin*. 2011.
4. Ellett L, Freeman D, Garety PA. The psychological effect of an urban environment on individuals with persecutory delusions: the Camberwell walk study. *Schizophrenia research*. 2008;99(1-3):77-84.

5. Addington J, Tran L. Using the brief core schema scales with individuals at clinical high risk of psychosis. *Behavioural and cognitive psychotherapy*. 2009;37(2):227-31.
6. Stowkowy J, Addington J. Maladaptive schemas as a mediator between social defeat and positive symptoms in young people at clinical high risk for psychosis. *Early intervention in psychiatry*. 2012;6(1):87-90.

#### **Self Esteem – Negative Ideas about the self and Paranoia (Non Clinical)**

7. Gracie A, Freeman D, Green S, Garety PA, Kuipers E, Hardy A, et al. The association between traumatic experience, paranoia and hallucinations: a test of the predictions of psychological models. *Acta psychiatrica Scandinavica*. 2007;116(4):280-9.
8. Freeman D, Pugh K, Antley A, Slater M, Bebbington P, Gittins M, et al. Virtual reality study of paranoid thinking in the general population. *The British journal of psychiatry : the journal of mental science*. 2008;192(4):258-63.
9. Steel C, Marzillier S, Fearon P, Ruddle A. Childhood abuse and schizotypal personality. *Social psychiatry and psychiatric epidemiology*. 2009;44(11):917-23.
10. Oliver JE, McLachlan K, Jose PE, Peters E. Predicting changes in delusional ideation: The role of mindfulness and negative schemas. *Psychology and Psychotherapy: Theory, Research and Practice*. 2011.