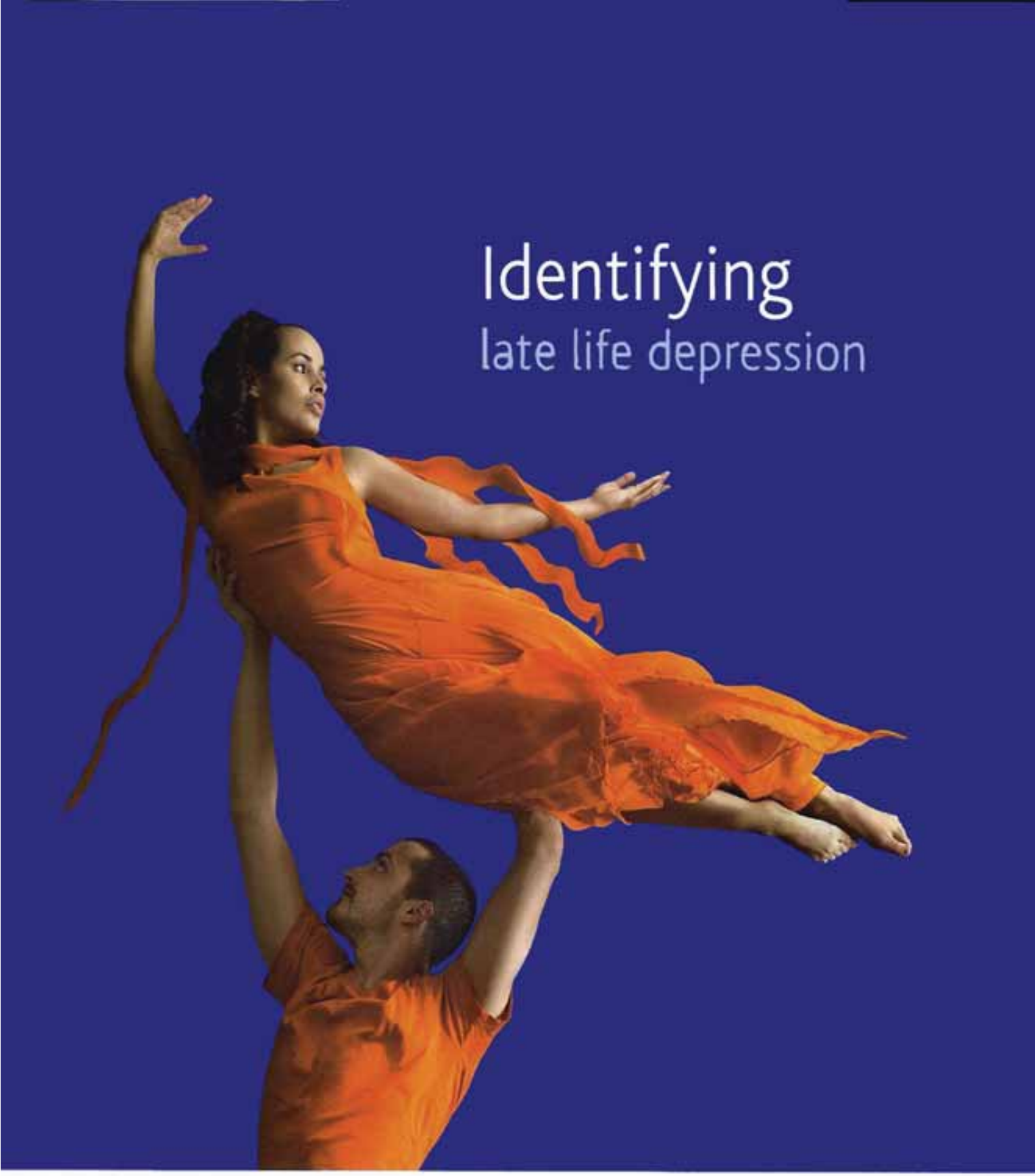
THE SUDANESE JOURNAL OF PSYCHIATRY

المجلة السودانية للطب النفسي

Vol. 4 Issue 2, August , 2014

Published by
The Sudanese Association of Psychiatrists



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Volume 4 – Issue 2, August, 2014

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Editorial

Lately and on several formal and informal occasions discussions on psychiatric training and psychiatric services in Sudan had been held. Many suggestions for improvement and strengthening these aspects had been voiced. Most of the discussants seem to agree that it is high time to put ideas and plans into action and practice. Though everyone in the field believes that team work and multidisciplinary approach is important for successful outcome of psychiatric treatment, little is done in real situations. There are big deficiencies in the psychiatric nursing cadre and many deficiencies in resources for social and psychological services in psychiatry and a great deal of improvement need to be done.

It is obvious to any observer of these aspects that there is a wide gap between the programs set for medical students and trainee psychiatrists on one hand and programs for psychiatric nurses , clinical psychologists on the other hand, not to mention psychiatric social work. It thus becomes a priority to bridge this gap.

There are now several nursing schools at the university level and psychiatric sub-specialties are budding. This needs support and encouragement to develop. Clinical psychology has a longer history and deeper roots in the field but social psychiatric work seem to be the lame duck among the group. All these psychiatric disciplines need not only intra-discipline reform but also inter-discipline organization. At present every discipline seems to set its own program and its own plan of action independently. This is understandable for the technical details of special work, but for general objectives of treatment of the psychiatric patient there is a need for interdisciplinary cooperation.

A call must come out from somebody or a group to bring all those concerned together to coordinate efforts. If everybody waits for others to start then it will be like in the symbolic story which says that something should have been done, everybody thought that anybody would do it then it turned out nobody did it. All should take the initiative. Perhaps the ministry of health should take the bigger share of responsibility as it is the body entrusted with the health care of all the community. It has the global view of the health situation and has the facilities of implementation of health plans. The Sudanese Association of Psychiatrists and the Sudanese Association of Psychologists are professional bodies caring for the interests of their members and at the same time they have obligations towards the patients who are served by their members. They can mobilize their members to generate ideas and formulate plans for multidisciplinary work. Universities on the other hand are places for generation of thoughts and planning of research. The nursing schools in these universities, psychiatric departments and clinical psychology units there are expected to be the driving force in the direction of development and improvement. To start with, representatives of all these bodies could come together under whatever umbrella or name: a conference, workshop or meeting, to discuss these matters and come out with recommendations which are feasible and applicable. A permanent body can be formed from these representatives to supervise the implementation of the recommendations, follow up the work and call for further meetings to review the work.

The road may be long until the final goal is reached but a start must be made.

Review Article

Early Intervention in Psychosis

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Abstract:

Schizophrenia is a chronic psychotic disorder that typically occurs in adolescence period and young adulthood and can lead to disability that lasts a lifetime. The onset of psychosis usually occurs after a period of non-psychotic symptoms, known as prodromal symptoms. There is some evidence that a delay in receiving adequate treatment during this period reduces the chances or the extent of recovery and this has led to the emergence of early intervention services which are now wide spread in a number of countries in Europe, America and Australia.

Early intervention for people with prodromal symptoms or with first episode of psychosis had been recently reviewed looking for the effective evidence for better outcome. It is not easy to find definitive conclusions especially for those with prodromal symptoms which mean that it needs further evaluation through more randomized controlled trails. For the long term benefits of this intervention and its component of treatments for patients with early and established psychosis and also for evaluation of long term cost effect there is need for further research.

Back ground:

Psychotic disorders and particularly schizophrenia are serious mental ill-

nesses that typically appear during adolescence which is a sensitive developmental period, and early adulthood[1] .The sensitivity comes from the point that normal adolescent behavior at this period is unstable and characterized by novelty-seeking, risk-taking behavior and peer-directed social interactions which lead at the end to the development of adult independence[2]. The development of these social behavior occur more rapidly than the development of the executive skills, and this leads to a mismatch between drive and self-regulation[3] .When psychosis comes it exacerbates this normal instability, making clinical behavioral assessment during this period more difficult.[4]. Statistically bout 80% of first episodes of psychosis occurs at early age between 16 and 30 years of age[5]. Schizophrenia is a chronic, relapsing mental disorder; the etiology of it is the result of interaction of multiple biological, and psychosocial factors and the vulnerability of the individual is usually silent until the onset of prodromal or the appearance of active psychotic symptoms in the mid-teens to early 20s[6] .It has a worldwide lifetime prevalence of about 1% irrespective of culture, social class and race[7,8] and The incidence rate has recently been estimated at 15.2 per 100 000 people whereas that of affective psychosis has been estimated at 9.2 per 100 000[9,10]

An overview of many studies that investigate the outcome prognosis has shown that patients with schizophrenia have a one-year relapse rate of 15% to 35%, rising up to 80% in five years duration[11]. After each episode of relapse a patient with schizophrenia is less likely to reach full remission, and about 10% of patients commit suicide[12].

In spite of introduction of new medications and the development of community health care, still about one-third of patients with schizo-

phrenia have a poor long-term prognosis outcome[13].

Several and long term studies of the course and outcome of patients with schizophrenia reported that only about 25% of incident and prevalent cases showed good clinical and social recovery and 20–25% of the cases experience poor outcome[14-20].

Schizophrenia and other functional psychoses in addition to the suffering caused for individuals and their families, have a financial burden to the health services[21]The cost for the treatment of relapsing psychosis is four times that of stable psychosis.[19,20]

Early intervention as an idea started long ago with questions about its benefit dating back to 200 years[22]. The pharmacological effects obtained when treating patients with early onset schizophrenia are considerably better and this is supported by a public health approach in selection of cases in the community[23]. Studies have found that the phase of the early psychotic episode, is a strong predictor of the course's long-term outcome[12, 19], and this has led to the development of the concept of a 'critical period' which include any period of initially untreated psychosis, during which there is rapid symptomatic and psychosocial deterioration after which the course of progression slows or even stops on long term[24]. As a result of this, intervention during this critical period has been considered important[24, 25].

In the 1990s this is further confirmed by the Wyatt RJ in his two papers in 1991[26, 27], he argued that the numbers of patients with psychosis who will develop chronic disabilities can be reduced by clinical intervention in the early stages of the disorder. Other studies done in 1980s[28,29] found that the prognosis of the outcome of the psychotic episode will be affected by the duration of untreated psychotic symptoms which is the period of time from the development of active psychotic symptom to the start

of adequate drug treatment and it can be months to years. Long duration of untreated psychosis (DUP) is associated with worse outcome in schizophrenia.

This has led to the idea that untreated psychosis may be 'toxic' to the patient and early intervention might prevent the harmful irreversible effect[30], and a great negative effect might occur during this period of neuronal and psychosocial plasticity[24].This is further supported by the observation reported by Norman, that the duration of untreated psychosis may have association with many out comeparameters[31] .

The result of what mentioned above have led to the appearance of the following three evidence that supported the needs for specialized early intervention services: First, the presence of what is called 'the critical period', which was obtained from strong evidence that early psychotic symptoms were strong predictive of long-term course and outcome, by Wiersma D, et al [12] and later confirmed by Harrison G, et al. [19] Second, the establishment of the association between the longer periods of untreated psychosis with the poorer outcomes[32]. Third; it became clear that the available community health services did not meet the needs of young patients who came with first psychotic episode with no improvement of their outcomes[33, 34].

The question of this review is whether this early intervention can alter the early first-episode psychosis course and lead to a better out come at the long term.

Description of the intervention

Early intervention in psychosis differs from the standard care given by the psychiatric health care services in the following: First; early detection, which is defined as either to identify people thought to be at risk to develop psychosis (i.e. those who show prodromal symptoms, but have never showed psychotic symptoms) [35], or to

identify patients who are already has psychotic symptoms, but not yet given adequate treatment[36].

Second; Phase-specific treatment which is defined as physical (psychopharmacological), psychological or social intervention for patients either in the prodromal period or early stages of psychosis[37] The aim of this phase is to prevent progression of the episode to psychosis as in people with prodromal symptoms, or enhance recovery in patients who have recently developed their first episode of psychosis. The duration of care of this intervention in most centers is 2–3 years[38]

The services of early intervention in psychosis for early detection and or phase-specific treatment, can be given in addition to standard psychiatric health care, or they can be given by specialized early intervention team[39]. These specialized teams give care only to patients who presented with prodromal symptoms or are in early stages of psychosis[40].

So the aim of the Early intervention services in psychosis is to detect the appeared symptoms, reduce the duration of untreated psychosis, and facilitate early access to the effective treatment, particularly in the 'critical period' (the first 3–5 years following onset)[41-43]. Early intervention team services are well-established in United State of America, Europe and Australasia[44] In 2000, the UK government announced its intention to provide specialized health care to all young patients who present with a first episode symptoms of psychosis[45]

Many studies which evaluated the effectiveness of the outcome of the early intervention services in psychosis during the last years were reviewed and they concluded that it is not easy to evaluate and synthesize the literature on the effectiveness of early intervention in psychosis. What makes the comparisons difficult is the complexity of components of the intervention services eg. it is unlikely

for the specialized teams to be identical[46].

The short term effect: Assessment of efficacy of the early interventions in the short-term (12–18 months) period showed that there are benefits from the specialized early intervention services in hospital admission rates, vocational and social functioning[47]. This is also supported by Philippa A. Garety , et al, [48] and Marshall M, Rathbone J. [49], Patients who presented with symptoms of early psychosis, early intervention services seem to have clinically important benefits over standard care, with the addition of cognitive behavioral therapy (CBT) and family intervention within the service may help more to improve outcomes in this critical period[49].Also the impact on readmission rates and the number of clinical and social outcomes is largely encouraging[50, 47, 51].

The long term effect: A number of researches done in different countries to evaluate the long term effect of this early intervention,(for example, Study done in Sweden)[52] found no better out comes on long term five year for those who had received a modified assertive community treatment (mACT) intervention across multiple outcome domains, in comparisons with those who had not received the intervention. The OPUS study in Denmark which is a randomized controlled trial found the benefits gained in the first 2-year of the intervention, were not sustained at 5 years[53]. Losses of early gains at longer-term follow-up were also reported by study done in Dutch by Linszen[54.] This is supported by Garety[51] at 5-year follow-up, there is loss of benefits in terms of admissions , although shortly after the end of the intervention there was a rapid 'catch-up' [55] The risk of poor long term out comes is still high with specialized early psychosis services[56,57].A result of this a group of researchers [58,59]suggest that the duration of the early intervention should be extended longer

.This suggestion was supported by Murphy & Brewer[60] and this is a fact that even the most disabled, and chronically ill patients will gain clinical and psychosocial benefits in addition to reduction of the admission rates when given intensive case management[61]. A further encouraging step done by Murphy & Brewer[60] for those patients in the early psychosis intervention services who require ongoing intense intervention, they start specifically targeting them.

Intervention in Prodromal period: For people who presented with prodromal symptoms of psychosis the benefits of treating them is not clear, and there is no conclusive evidence for providing treatment to people who will not necessarily going to develop psychotic symptoms. More evidence is needed[49.]

There is lack of a clear agreement about the criteria for defining when to take these initial caseness, and how symptoms acquired and progressed[62, 63]. This means that the definitions that differentiate between benign and self-limiting cases and those, who represent the early stages of what will become persistent and disabling conditions are not valid[64].

Duration of untreated psychosis:

Although there is wide variation in the definition of length of DUP in real practice, when to start and when to end [65],there is continuous and consistent evidence that the Duration of untreated psychosis(DUP) influencing some aspects of treatment outcome in early intervention[66-68]. When treating patients with a shorter DUP this will result in less severe symptoms, reduced suicidality [69,70]and lead to better functional and social outcomes at 2 years\and even at 5years [71,72] Some related the effectiveness with one year duration of early intervention[65,73] . Patients with a longer DUP and with poor expected prognosis were also treated effectively in the early intervention in comparison with the generic services[74]

Cost effectiveness: When assessing the cost effectiveness in the short to medium term, using data from the Lambeth Early Onset (LEO) [75], early intervention services did not add to the cost and was more likely to be cost-effective if compared with standard health care. By using the same data-set and after five years assessment of the long-term effect of early intervention in psychosis[76], it was demonstrated that specialist early intervention services did not clearly improve the outcome at five years and the gains that made at earlier period during early intervention care are lost over time when patients move back to the standard community teams. This has confirmed what Bertelsen Met, etal [53] who reported the intensive early-intervention program improved clinical outcome after two years, but the effects were not sustainable up to 5 years later. Also McGorryPD[77] said generally the cost-effectiveness of early intervention in psychosis is likely to be maximal, and mainly due to reduction in the duration of bed days[78, 59].

In summary there is general agreement about the general effectiveness of intervention in early psychosis: It reduced the stigma, shortened treatment delays, reduced suicide risk, and improved outcomes and the cost-effectiveness of the care[79,80,58,75,81,59] , **but** Still there is some controversy about early intervention in psychosis due to the confusion over the different ways in which the term 'early intervention' is define and used[58]. For patients who presented with early psychotic symptoms, early intervention services give short term good effect which needs to be sustained and there is increasing evidence supporting it[82].

For People with prodromal symptoms, there is ethical concern about the early intervention where the benefits of early detection and treatment are unclear, regarding whether they will develop psychotic symptoms or not[83], because at early

stages of both psychotic and non-psychotic disorders there is an overlap in the phenotypes which make the differentiation more difficult. [84] In addition only 40–60% progress to psychosis[85]. To improve the detection of true cases there is need for more refine methods to determine the premorbid risk factors[86]

Areas for further research: For the long term benefits of this intervention and its component of treatments for patients with early and established psychosis there is need for further research[49].Also for better prediction of who would benefit from continued treatment and for how long this should last, titrating care against needs. For wide implementation of intervention in prodromal it should be done within the context of a well-designed randomized controlled studies. For the cost effectiveness it needs more study for the long term effects.

References

1. Vos T, Begg S., Victorian Burden of Disease Study: morbidity. Melbourne: Public Health Division, Department of Human Services, 2003.
2. Spear LP, The adolescent brain and age-related behavioral manifestations. *Neuroscience & Biobehavioral Reviews*, 2000; 24: 417–63
3. Steinberg L, Cognitive and affective development in adolescence, *Trends in Cognitive Science*, 2005; 9: 69–74.
4. McCutcheon LK, Chanen AM, Fraser RJ, et al, Tips and techniques for engaging and managing the reluctant, resistant or hostile young person. *Medical Journal of Australia,* 2007; 187 (suppl. 7): 64–7.
5. Shiers D, Lester H., Early intervention for first episode psychosis*, BMJ,* 2004;328: 1451–2
6. Welham J, Isohanni M, Jones P, et al, The antecedents of schizophrenia: a review of birth cohort studies, *Schizophrenia Bulletin*, 2009; 35: 603–23.
7. Jablensky A., *Schizophrenia: the epidemiological horizon. In: Hirsch SR, Weinberger DR, editors. Schizophrenia. 2nd ed. Oxford, United Kingdom: Blackwell Science; 2003. p. 203-31.*
8. Leff, J. *Psychiatry around the globe: a transcultural view. 2nd ed. London, United Kingdom: Marcel Dekker Inc; 1988*

9. McGrath J, Saha S, Chant D, Welham J. The epidemiology of schizophrenia: a concise overview of incidence, prevalence, and mortality*, Epidemiol Rev,* 2008; 30: 67–76.
10. Kirkbride J, Fearon P, Morgan C, Dazzan P, Morgan K, Tarrant J, et al., Heterogeneity in incidence rates of schizophrenia and other psychotic syndromes: findings from the 3-center AESOP study, *Arch Gen Psychiatr.*, 2006; 63: 250–8.
11. Larsen TK, Johannssem JO, Opjordsmoen S., First-episode schizophrenia with long duration of untreated psychosis: Pathways to care, *British Journal of Psychiatry*, 1998;172(Suppl. 33):45–52.
12. Wiersma D, Nienhuis FJ, Slooff CJ, Giel R, Natural course of schizophrenic disorders: a 15-year follow up of a Dutch incidence cohort, *Schizophrenia Bulletin,*1998;24(1):75–85
13. Mason P, Harrison G, Glazebrook C, Medley I, Dalkin T, Croudace TJ, Characteristics of outcome in schizophrenia at 13 years, *British Journal of Psychiatry*, 1997;167:596–603.
14. Bleuler M., In: The Schizophrenic Disorders: Long Term Patient and Family Studies, Clements S, translator. New Haven, CT: *Yale University Press*; 1978.
15. Ciompi, L, Catamnestic, long-term study on the course of life and ageing in schizophrenics, *Schizophrenia Bulletin*, 1980; 5, 606-618.
16. Shepherd M, Watt D, Falloon I, et al., The natural history of schizophrenia: a five-year follow-up study of outcome and prediction in a representative sample of schizophrenics*, Psychol Med Monogr,* Suppl., 1989; 15:1–46.
17. Jablensky, A., Sartorius,N., Ernberg,G., et al, Schizophrenia: Manifestations, Incidence and Course in Different Cultures.Cambridge: *Cambridge University Press*,1992.
18. Hegarty, J. D., Baldessarini, R. J., Tohen,M., et al, One hundred years of schizophrenia: a metaanalysis of the outcome literature, *American Journal of Psychiatry*, 1994;151,1409^1416.
19. Harrison G, Hopper K, Craig T, Laska E, Siegel C, Wanderling J, et al, Recovery from psychotic illness: a 15- and 25-year international follow-up study, *Br J Psychiatry*, 2001; 178: 506–17.
20. Warner, R., Recovery from schizophrenia - Psychiatry and political economy. London:Routledge. , 2004.
21. Mangalore R, Knapp M, Cost of Schizophrenia in England, *Journal of Mental Health Policy and Economics*, and 2007; 109: 23–41

22. Warner R, Problems with early and very early intervention in psychosis, *Br J Psychiatry*, 2005; 187 (suppl. 48): s104–7.
23. Cameron DE, Early schizophrenia, *Am J Psychiatry*, 1938; 95: 567–82.
24. Birchwood M, Todd P, Jackson C, Early intervention in psychosis: the critical period hypothesis. *Br J Psychiatry, 1998*; 172 (suppl. 33): s53–9.
25. McGlashan T, Johannessen JO., Early detection and intervention in schizophrenia: rationale, *Schizophrenia Bulletin*, 1996; 22: 201–22.
26. Wyatt RJ, Early intervention with neuroleptics may decrease the long-term morbidity of schizophrenia, *Schizoph. Res.*, 1991; 5: 201–2.
27. Wyatt RJ, Neuroleptics and the natural course of schizophrenia, *Schizophr. Bull*, 1991; 17: 325–51.
28. Johnstone, E.C., Crow,T. J., Johnson, A. L., et a, The Northwick Park Study of first episodes of schizophrenia. I. Presentation of the illness and problems relating to admission. *British Journal of Psychiatry*, 1986; 148, 115-120.
29. Rabiner, C, J. Wegner J.T. & Kane, J.M. Outcome study of first-episode psychosis. I: Relapse rates after 1 year. *American Journal of Psychiatry*, 1986; 143, 1155-1158
30. Sheitman B, Lieberman JA, The natural history and pathophysiology of treatment resistant schizophrenia, *Journal of Psychiatric Research*, 1998;32:143–50
31. . Norman R, Malla AK., Duration of untreated psychosis: a critical examination of the concept and its importance, *Psychological Medicine*, 2001; 31(3):381–400
32. Marshall M, Lewis S, Lockwood A, Drake R, Jones P, Croudace T, Association between duration of untreated psychosis and outcome in cohorts of first episode patients: a systematic review, *Arch Gen Psychiatry* ,2005; 62: 975–83.
33. Singh SP, Croudace T, Amin S, Kwiecinski R, Medley I, Jones PB, et al, Three-year outcome of first-episode psychoses in an established community psychiatric service, *Br J Psychiatry,* 2000; 176: 210–6.
34. Singh SP, Wright C, Burns T, Joyce E, BarnesTRE, Developing early intervention services in the NHS: a survey to guide workforce and training needs, *Psychiatr. Bull,* 2003; 27: 254–8.
35. Schaffner K, McGorry PD, Preventing severe mental illnesses - new prospects and ethical challenges, *Schizophrenia Research*, 2001;51(1):3–15.

36. Wyatt R, Henter I, Rationale for the study of early intervention, *Schizophrenia Research*, 2001; 51(1):69–76

37. Miller R, Mason S, Phase-specific psychosocial interventions for first-episode schizophrenia, *Bulletin of the Menninger Clinic*, 1999; 63:499–519.

38. Tiffin P, Glover G., From commitment to reality: early intervention in psychosis services in England, *Early Intervention in Psychiatry*, 2007; 1: 104–7.

39. Garety PA, Jolley S, Early intervention in psychosis, *Psychiatric Bulletin*, 2000;24:321–3

40. Edwards J, McGorry PD, Pennell K, Models of early intervention in psychosis: an analysis of service approaches.In: Birchwood M, Fowler D, Jackson C, editors. Early Intervention in Psychosis. Wiley; Chichester: 2000. pp. 281–314

41. Birchwood M, McGorry P, Jackson H, Early intervention in schizophrenia, *Br J Psychiatry* ,1997; 170: 2–5.

42. Joseph R, Birchwood M, The national policy reforms for mental health services and the story of early intervention services in the United Kingdom, *J Psychiatry Neurosci* , 2005; 30: 362–5.

43. Lieberman JA, Fenton WS, Delayed detection of psychosis: causes, consequences and effect on public health, *Am J Psychiatry*, 2000; 157: 1727–30.

44. Edwards J, McGorry P, Multi-component early intervention - models of good practice. In: Edwards J, McGorry PD, editors, Implementing Early Intervention in Psychosis. Martin Dunitz ; London: 2002. pp. 63–84

45. **DoH** Department of Health, The NHS plan: a summary. *Department of Health*; London: 2000

46. 42-Marshall M, Rathbone J., Early intervention for psychosis, *CochraneDatabase of Systematic Reviews*, 2006; issue 4: CD004718.

47. Craig TKJ, Garety PA, Power P, Rahaman N, Colbert S, Fornells-Ambrojo M, et al., The Lambeth Early Onset (LEO) Team: randomized controlled trial of the effectiveness of specialized care for early psychosis. *BMJ*, 2004; 329: 1067.

48. 44Philippa A. Garety P, Craig T.K.J, Graham Dunn, Miriam, Fornells -Ambrojo, Susannah Colbert, Nikola Rahaman, Jason Reed and Paddy Power, Specialized care for early psychosis: symptoms, social functioning and patient satisfaction. Randomized controlled trial, *British Journal of Psychiatry*, 2 0 0 6; 1 8 8, 3 7 - 4 5

49. Marshall M, Rathbone J, Early intervention for psychosis, *Cochrane Database Syst. Rev.*, 2011; (6): CD004718. doi: 10.1002/14651858.CD004718.pub3.

50. Petersen L, Jeppesen P, Thorup A, Øhlenschlæger J, Christensen TØ, Kraru G, et al, A randomized multicenter trial of integrated versus standard treatment for patients with a first episode of psychotic illness, *BMJ*, 2005; 331: 602–5.

51. Garety PA, Craig TKJ, Dunn G, Fornells-Ambrojo M, Colbert S, Rahaman, et al., Specialized care for early psychosis: symptoms, social functioning, and patient satisfaction: Randomized controlled trial, *Br J Psychiatry,* 2006; 188: 37–45.

52.Bodén R, Sundström J, Lindström E, et al Five-year outcome of first-episode psychosis before and after the implementation of a modified assertive community treatment program, *Social Psychiatryand Psychiatric Epidemiology* , 2010; 45: 665–74.

53-Bertelsen M, Jeppesen P, Petersen L, et al ,Five-year follow-up of a randomized multicenter trial of intensive early intervention vs standard treatment for patients with a first episode of psychotic illness: the OPU trial, *Archives of General Psychiatry,* 2008; 65: 762–71 doi: 10.1001/archpsyc.65.7.762

54-Linszen D, Lenior M, De Haan L, et al., Early intervention, untreated psychosis and the course of early schizophrenia, *British Journal ofPsychiatry*,1998; 172 (suppl. 33): 84–9.

55-Gafoor R, Nitsch D, McCrone P, et al., Effect of early intervention on 5-year outcome in non-affective psychosis. *British Journal of Psychiatry* 2010; 196: 372–6.

56-Robinson D, Woerner MG, Alvir JM, et al, Predictors of relapse following response from a first episode of schizophrenia or schizoaffective disorder, *Archives of General Psychiatry*, 1995; 56: 241–7.

57-Henry LP, Amminger P, Harris MG, et al, The EPPIC follow-up study of first-episode psychosis: longer-term clinical and functional outcome 7 years after index admission. *Journal of Clinical Psychiatry,* 2010; 71: 716–28.

58- McGorry P, Johanessen JO, Lewis S, et al., Early intervention in psychosis: keeping faith with evidence-based health care, *Psychol. Med.,* 2010; 40:399–404.

59. Swaran P. Sigh, Early intervention in psychosis, *The British Journal of Psychiatry* , 2010;*196: 343-345* doi: 10.1192/bjp.bp.109.075804

60-Murphy B, Brewer W., Early intervention in psychosis: strengths and limitations of

services, *Advances in Psychiatric Treatment,* 2011; 17: 401–7.

61-Preston NJ, Fazio S Establishing the efficacy and cost effectiveness of community intensive case management of long-term mentally ill: amatched control group study. *Australian and New Zealand Journal of Psychiatry, 2000*; 34: 114–21.

62. Eaton WW, Badawi M, Melton B. Prodromes and precursors: epidemiologic data for primary prevention of disorders with slow onset, *Am J Psychiatry*, 1995; 152:967–972.

63. Yung AR, Killackey E, Hetrick SE, et al, The prevention of schizophrenia, *Int Rev.Psychiatry*, 2007;19:633–646.

64. Sullivan HS, The onset of schizophrenia, *Am J Psychiatry*, 1927; 6:105–134.

65. Singh SP, Outcome measures in early psychosis; relevance of duration of untreated psychosis, *Br J Psychiatry,* Suppl. 2007 Aug; 50:s58-63.

66. Norman RM, Lewis SW, Marshall M, Duration of untreated psychosis and its relationship to clinical outcome, *Br J Psychiatry,* Suppl. 2005 Aug;48:s19-23.

67. Harrigan SM, McGorry PD, Krstev H, Does treatment delay in first-episode psychosis really matter? *Psychol. Med.*, 2003 Jan; 33(1):97-110.

68.Connor C, Birchwood M, Palmer C, Channa S, Freemantle N, Lester H, Patterson P, Singh S. Don't turn your back on the symptoms of psychosis: a proof-of-principle, quasi-experimental public health trial to reduce the duration of untreated psychosis in Birmingham, UK. *BMC Psychiatry*, 2013 Feb 22; 13:67. doi: 10.1186/1471-244X-13-67.

69. Melle I, Larsen TK, Haahr U, et al., Reducing the duration of untreated first-episode psychosis: effects on clinical presentation, *Archives of General Psychiatry*, 2004; 61: 143–50.

70-Larsen TK, Melle I, Auestad B, et al Early detection of first-episode psychosis: the effect on 1-year outcome. *Schizophrenia Bulletin*, 2006; 32:758–64.

71-Melle I, Larsen TK, Haahr U, et al, Prevention of negative symptom psychopathologies in first-episode schizophrenia: two-year effects of reducing the duration of untreated psychosis. *Archives of General Psychiatry*, 2008; 65: 634–40.

72. Larsen TK, Melle I, Auestad B, et al Early detection of psychosis: positive effects on 5-year outcome. *Psychological Medicine,* 2011; 41: 1461–9.

73. Mall AK, Norman RM, ManchandaR,Ahmed MR, Scholten D, Harricharan R,Cortese L, TakharJ, One year outcome in first episode psychosis: influence of DUP and other predictors, *Schizophr.Res*.2002 Apr 1; 54(3):231-42.

74. Friis S, Vaglum P, Haahr U, et al., Effect of an early detection program on duration of untreated psychosis: part of the Scandinavian TIPS study, *British Journal of Psychiatry,* 2005; 187 (suppl. 48): s29–32.

75. McCrone P, Craig TKJ, Power P, Garety PA, Cost-effectiveness of an early intervention service for people with psychosis, *Br J Psychiatry,* 2010; 196: 377–82. doi: 10.1192/bjp.bp.109.065896

76. Rafael Gafoor, Dorothea Nitsch, Paul McCrone, Craig T. K. J., Philippa A., Garety PA, Paddy Power and Philip McGuire, Effect of early intervention on 5-year outcome in non-affective psychosis, *The British Journal of Psychiatry* ,2010;196, 372–376. doi: 10.1192/bjp.bp.109.066050

77. McGorry PD, Yung AR., Early intervention in psychosis: an overdue reform.*Aust.NZJ Psychiatry,* 2003 Aug; 37(4):393-8.

78. Catts SV, O'Toole BI, Carr VJ, et al, Appraising evidence for intervention effectiveness in early psychosis: conceptual framework and review of evaluation approaches. *Australian and New Zealand Journal of Psychiatry,* 2010; 44: 195–219.

79. Harris M, Craig TK, Zipursky RB, Addington D, Nordentoft M, Power P, Using Research and Evaluation to Inform the Development of Early Psychosis Service Models: International Examples. The Recognition and Management of Early Psychosis: A Preventive Approach. 2nd ed. Cambridge, UK: *Cambridge University Press*; 2009.

80. McGorry PD, Killackey E, Yung A, Early intervention in psychosis: concepts, evidence and future directions, *World Psychiatry*, 2008; 7:148–156.

81. Mihalopoulos C, Harris M, Henry L, Harrigan S, McGorry P, Is early intervention in psychosis cost-effective over the long term? *Schizophr Bull*., 2009; 35:909–918.

82. McGorry PD, Killackey, EJ Early intervention in psychosis: a new evidence based paradigm, *Epidemiol Psichiatr Soc*. , 2002 Oct-Dec; 11(4):237-47.

83. Rosen A., Ethics of early prevention in schizophrenia, *Australian & New Zealand Journal of Psychiatry*, 2000; 34(Suppl.):S208–12

84. McGorry PD, Nelson B, Goldstone S, et al, Clinical staging: a heuristic and practical strategy for new research and better

health and social outcomes for psychotic and related mood disorders, *Canadian Journal of Psychiatry,* 2010b; 55: 486–97.

85. Van Os J, Linscott RJ, Myin - Germeys I, et al, A systematic review and meta-analysis of the psychosis continuum: evidence for a psychosis proneness–persistence–impairment model of psychotic disorder, *Psychological Medicine*, 2009; 39: 179–95.
86. Murphy BP., Beyond the first episode: candidate factors for a risk prediction model of schizophrenia, *International Review of Psychiatry*, 2010; 22: 202–23.

Emotional blasting therapy: A psychotherapeutic technique Invented by early Muslim physicians

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Modern behaviour therapists have successfully experimented with a therapeutic technique that was known in the sixties as "flooding". It inverts the gradual approach of systematic desensitisation. Systematic desensitisation, using imagination or in vivo is based on two important principles. The first is to invoke in the patient a response which is *opposed* to the symptom or conditioned response which the therapist wishes to extinguish, such as muscular and psychological relaxation or tranquillising drugs that counteract the anxiety. The second is to *gradually* introduce the stimulus or event that causes this anxiety until one reaches the highest anxiety provoking scene in the hierarchy.

In treatment by flooding, however, no relaxing response is brought about and the patient is at once subjected to the most noxious stimulus or to one that is high in the hierarchy for prolonged times without allowing the patient to escape until he realises that his anxiety was not in fact based on an actual dangerous threat. Though based on a different theoretical background which we need not discuss in this paper, implosive therapy shares the same practical applications of flooding. Both of these anxiety induced therapies work to eliminate avoidance behaviour by invoking anxiety but preventing escape.

Ancient Muslim physicians have not only used this implosive or flooding techniques but they have

also demonstrated that this therapy works not only because patients get used to what specifically caused them anxiety in a particular situation or that they were prevented from escape behaviour, but also because *any sudden high dose of emotional stimulation is beneficial in treating a neurotic disorder*. Furthermore, and according to the works of these early Muslim physicians, this abrupt evoking of emotions *need not be* related to the neurotic symptom being treated. It should only be very intense and unexpected. That is why I wish to call it "**emotional blasting therapy**". In his well-researched edited volume titled, *Majnun: The madman in Medieval Islamic Society,* Michael Dolls quoted Christoph Burgel in stating that this therapeutic use of explosive emotion originated with these early Muslim doctors (1). They were the inventors of this therapy which is not yet fully utilised by modern psychotherapists.

Theoretically, emotional blasting may offer a good explanation as to why flooding and implosive therapy were found to be useful, particularly with "generalised anxiety" (O'Leary & Wilson, 1975). It seems that the headlong exposure of the most feared item in flooding brings about so much emotional upheaval, that the patient gets benefit not only with his specific troubling problem but also with other unspecified general anxiety provoking situations which were not originally the objective of the therapy. On reading the literature on flooding and implosive therapy one gets the impression that so many emotions are evoked in the patient that it may in some instances approach the emotional blasting of early Muslim physicians. Listen for example to the horrifying scenes that a snake phobic patient was asked to imagine:

"Okay, feel him (the snake) coiling around your hand,...touching you, slimy, now he is going up to your

shoulder and he crawls there and he is sitting on your chest and he is looking you right in the eye. He is big and he is black and he is ugly... Picture his face, look at his eyes, look at those sharp fangs. Feel him bite at your face;...feel his fangs go right in your cheeks; and the blood is coming out on your face now...feel it biting your eye and it is going to pull your eye right out and down on your cheek" (2).

Now let me elucidate on this therapeutic invention of early Muslim doctors that was used for the first time by Arrazi and Ibni-Sina. Both great physicians believed that an unexpected high emotional outburst has a quick curative effect on psychological, psychosomatic and even organic disorders. The more intense and abrupt the emotion, the more effective it will be in changing the imbalanced humours of the body and in treating the physical or psychological problem at hand. Listen to the following case.

A woman who complained from what seems to be a hysterical or some other cause for the paralysis of the arm, was treated by Ibni-Sina by using the sudden emotion of shame. Following his instructions, the patient was brought to him stripped from all her clothes save a piece of long cloth wrapped around her waist like a Yemeni or South East Asian *sarung*.

He tied her healthy arm behind her back so that she cannot use it. In the presence of her brother and father, Ibni-Sina held the cloth tightly and suddenly pulled it downwards, as if he were going to expose her nakedness. In a spontaneous move the young lady quickly moved her clenched supposedly 'paralysed' arm to hold the cloth in place. The sudden intense emotion of shame was much greater than what the imbalanced body or mind could sustain and was more than the original anxiety which precipitated her neurotic symptom. She was cured in one session!

Arrazi used the emotion of anger combined with fear to treat Prince Mansur from a rheumatic -and or- psychosomatic condition of pain in his joints and back which prevented the prince from standing upright and moving freely. The medicines and potions of all the doctors, including Arrazi's himself, failed to produce any healing effect on the prince. Arrazi finally decided to use "psychotherapy", to which he referred by the modern Arabic term, *al-ilaj annafsani* . He informed the prince that he was going to use a new kind of therapy which will definitely cure him, but that he needed the prince's fastest horse and mule. Arrazi took the prince to a Turkish hot bath outside the city where the horse was saddled and the mule loaded with his private things and his food and drinks, ready for his planned escape!

Unaware of his physician's plot, the prince entered the hot bath unaccompanied by any of his servants. As he fully relaxed in the steamy bath, Arrazi suddenly pulled out a large dagger and shouted angrily at him reminding him of the insolence of his soldiers who brought him by force to treat him. He put up a frightening expression and threatened to kill the prince who had none of his guards to protect him. The prince, in an outburst of mixed emotions of rage and fear, leaped to his feet like a compressed spring. Seeing that, Arrazi threw the dagger and ran out to flee with the fast horse. Later he wrote to the prince congratulating him on his recovery and explaining why he had intentionally provoked the prince to respond with this big dose of explosive emotion. He was immensely rewarded. (3)

How can one venture to explain this phenomenon from the psychological and psychosomatic points of view. Perhaps the best psychological explanation comes from Pavlovian conditioning. From the perspective of his learning theory, one would say

that the sudden excessive emotion may weaken or even eliminate the previously learned pathological connections or associations between conditioned stimuli and acquired conditioned responses or neurotic symptoms.

This phenomenon was reported by Pavlov himself. In 1924, an unexpected flood in Leningrad subjected his dogs that were trapped in their cages to sudden extreme terror (4). They were swimming around the flooded laboratory fighting to hold their heads above the rising water. Before this terrifying incident, Pavlov had conditioned all of them to salivate to the ringing of bells or to other behaviours. Eventually, the lab assistants saved the dogs by pulling them out of their cages to safety. Pavlov tested the dogs soon after this frightening episode. He found that the recently acquired conditioned responses had all disappeared. Though this event clearly supports our theory but its evidence came from animals. So we have evidence from early Muslim physicians and extrapolation from animals to humans. For more convincing validation it may be necessary to give confirmation from the treatment of modern patients. I shall give a few testimonies that were reported to me by well-known pioneer psychiatrists.

The first is the much quoted phenomenon of spontaneous remission of a number of Egyptian psychotic and neurotic in-patients after their mental hospital was bombarded by air raids in 1958. Egypt's largest mental hospital, Al-Abbasiah, is located very near to some military barracks in Cairo. During the Israeli, British and French military attack on Egypt after President Nasir nationalised the Suez Canal, their planes mistook the hospital for the military barracks and the inmates were suddenly subjected to a barrage of exploding bombs. Few of them were killed or injured, but the unjustified air aggression resulted in the happy unex-

pected restoration to mental health of a group of patients who suddenly regained contact with reality and lost their delusions, hallucinations, and depressions. This was related to me by renowned Professor Jamal Abul Azaim, who was the pioneer of psychiatry in Egypt and was then the Director of the Hospital.

The second case is that of a Saudi traditional healer who practised in a small Saudi Arabian town. He hunted two wild wolves and used extended chains to tie them in a long veranda at the back of his house. When his 'diagnosis' showed that a patient may be helped by emotional blasting, he would bring her into the house by the back door leading to the veranda in which the wolves were chained on its opposite side. As soon as she enters, the wolves suddenly attack her, running wildly along the porch, but are held by their long chains only a few metres from her. This healer was actually able to cure or greatly improve many female patients before he was arrested and imprisoned when one of the chains gave way and the wolf actually attacked one patient causing her serious bodily harm! This case was communicated to the writer by Saudi Arabia's pioneer of psychiatry, Professor Usama Arradi.

The third illustration comes from the West. Dr. Hasabu Sullaiman, the well-known Sudanese psychiatrist, told the author that the secret of a European psychiatrist who became very famous in treating female patients who suffered from aphonia, a psychological disorder in which the patient loses his or her ability to speak above a whisper, was finally revealed. He used to take the patient to a small sound-proof room in his clinic. After she enters and takes a seat he closes the door with a large lock and begins to look at the patient in a strange manner. Many people believe that, after treating mad patients for many years, psychiatrists themselves become ab-

normal! So the patient starts to be terrified.

Without saying a word, the doctor opens a drawer, takes out a large knife, and suddenly jumps at the patient. The poor woman who was unable to utter a sound higher than a whisper now screams like a police siren. The doctor then smiles and calms her down after she finds that she has regained her ability to speak loudly. It is a one-session therapy in which the Western doctor has literally duplicated Arrazi's treatment of the prince. Some may say that hysterical symptoms can anyway be treated easily, but actually few can do it in one session in such a precise manner.

In support of this theory one can refer to the treatment of obsessive-compulsive disorder. The most efficacious psychotherapy for this disorder is the exposure and response prevention technique invented by Victor Meyer in 1966. Meyer was reader in the Department of Psychiatry in the Middlesex Hospital Medical School of London University. I was then his lucky trainee (5). I witnessed his first case in which he prevented a patient suffering from compulsive hand–washing from his obsession by placing him in a small room in the Hospital that has no running water. This male patient who was a professor of pathology in London University was in terrible agony but Meyer continued his prevention. Later, he put sticky jam on his hands and the man was terribly anxious. I still remember the touching expression of his unbearable anxiety.

However after a few days of this agonizing imprisonment, he suddenly started to improve greatly. Meyer explains this as a form of reality testing. The OCD patient, he says, expects a catastrophe to happen if he did not wash but then he discovers nothing has happened! Now I think that perhaps it was the sudden painful tormenting psychic pain without a way out that brought about the im-

provement and not the reality testing. This is so because OCD patients are aware that their symptoms are not sensible but that they are unable to prevent them.

And from a biological point of view, it is known that sudden intense emotions stimulate rapid changes in the physiology and biochemistry of the body. So, the improvement in psychopathological symptoms that unexpected strong emotions bring about may be caused at least partly by the accompanying biological changes. Following this trend of thought, can we expect unexpected changes in the body that are not necessarily related to emotional states to be physically therapeutic? In other words, can the sudden change to the regular biological routine that the body got used to be physically therapeutic?

As early as 1927, Dr. Sakel, a Polish neuropsychiatrist produced a coma in a patient by injecting insulin. It was therapeutically helpful to his morphine addicted patient. In 1933 a Hungarian physician pioneered the approach of using physiological shock in the treatment of mentally disordered patients and in 1937 the Italian neurologist Ugo Cerletti invented electroshock therapy to bring about the required therapeutic convulsions. He was the father of the modern electro-convulsive therapy (ECT) which, though used as a last line of psychiatric intervention, is very useful in the treatment of bipolar disorder and some forms of schizophrenia. So, similar to the intense emotional exposure, physiologically 'shocking' the body by chemical or electrical means is found to be therapeutic. Scientists do not yet know *exactly* how ECT works to alleviate psychotic symptoms. They only came up with explanatory theories. We here propose that perhaps it is also the unexpected physiological change that causes the body to declare a reactional state of emergency that helps

to bring about the cure or improvement.

Furthermore, it was found that even a drastic change in the habitual biological routine of the body can be biologically beneficial. In this endeavour, the work of Dr. Usama Kandil is quite convincing. Kandil is professor and researcher in Johns Hopkins University and a former professor in Harvard's Department of Immunity and Infection. While in Harvard, he conducted a long term eight-year study on the effect of fasting Ramadhan on the body immune system. He was surprised to find that after the 25th day of Ramadhan; those who fasted have clearly enhanced their immune system. They had an upsurge in the ratio of their Helper T cells that play a major role in helping white cells fight disease. The statistical significance between the radio of these cells in those who fasted compared with those who did not fast was a staggering 0.0009. More researches in this area have shown that the cancer tumors of patients fasting Ramadhan have been reduced in size. Dr Kandil explained the reason for the benefit of fasting to the reaction of the body to this sudden deprivation of food and water.

(http://muslimah.qsep.com/?p=2286).

The message we receive from all these incidents and research studies confirms what our early Muslim physicians have discovered and practiced; subjecting patients to sudden intense emotions can be psychologically and physically therapeutic.

REFERENCES

1. Dols, M. W. *Majnun: The madman in Medieval Islamic Society*.1992 Oxford: Clarendon Press.

2. Burgel, J.C. 'Psychosomatic methods of cures in the Islamic Middle Ages', *Humaniora Islamica,* 1973, 1. Paris: 157-72

3. Zubier Bashir Taha. .Psychology in Arab and Islamic heritage, in Arabic, *'Ilm annafs fi atturath al-Arabi al*

Islami.1995, Khartoum: University of Khatoum

4. Pavlov, I. P *Conditioned Reflexes: An Investigation of the Physiological Activity of the Cerebral Cortex* (translated by G. V. Anrep).1927 London: Oxford University Press.

5. Badri, M.B. Innovative treatment of a rare exaggerated obsessive-compulsive reaction to smell, *The Asean Journal of Psychiatry, 2o13,* Volume 14, (1) Press ....

Intelligence and common mental disorders

Review article

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Abstract:

Introduction:

Many theories and studies argued the relationship between intelligence and mental health. It may become a risk factor to predict the development of any of the common mental illnesses.

Objectives:

To find the association between low intelligence quotient (IQ) and common mental illness; schizophrenia, depression, anxiety, bipolar disorder, post-traumatic stress disorder (PTSD), suicide, substance abuse, child psychiatry, abnormal behavior and happiness.

Methodology:

Key words: Intelligence Quotient, Intelligence, Mental health, Mental illness, schizophrenia, depression, anxiety, suicide, bipolar disorder, Post traumatic stress disorder, suicide, substance abuse, child psychiatry, abnormal behavior and happiness.

A narrative review conducted analyzing, comparing discussing and presenting findings of different papers qualitatively.

Conclusion:

Low intelligence quotient has been mainly associated with schizophrenia but of course not any schizophrenic patient has low

intelligence quotient. Many studies suggested low intelligence quotient among depression, anxiety and suicidal attempts. In addition low intelligence quotient is associated with attention deficit hyperactive disorder in children, antisocial personality and the prediction of future criminal act.

High intelligence quotient was found to be associated with adult mania and protective against post-traumatic stress disorder.

There is no evidence that intelligence quotient has any effect on the tendency of an individual to initiate or stop substance abuse.

Acknowledgement:

I would like to appreciate the efforts of all staff members in the online Diploma of research Methodology and ethics, one of the 1st online course experiences in Sudan coordinated by Dr. **Sara Lavinia** Head department of Community Medicine, MD community Medicine, Associate Professor, Alneelain University and Dr. **Mustafa Khidir Mustafa Elnimeiri**, Professor of Preventive Medicine and Epidemiology who supervised and guided this work.

This course was coordinated with University of Maryland, regarding the ethics module provided by Dr. **Henry Silverman** Professor of Medicine, Program Director of a National Institutes of Health Training Program in Research Ethics focused on providing training to individuals from the Middle East; who also showed great efforts and collaboration.

Introduction:

Many theories and studies argued the relationship between intelligence and mental health. It may become a risk factor to predict the development of any of the common mental illnesses.

Mental Health

The WHO defines mental health as: a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.(1)

Any difficulty for the person to cope with stress; by self-destructive mechanisms or by using drugs is categorized as having mental disorder. Usually such persons come to our attention when they are negatively affected from their mental illness: either physically by developing diseases or by self-harm, decreased job or academic performance and socially when they become isolated or engaged into criminal acts.

Intelligence

Cambridge online dictionary defines intelligence as: the ability to learn, understand, and make judgments or have opinions that are based on reason.(2)

Intelligence has been defined in many different ways such as in terms of one's capacity for logic, abstract thought, understanding, self-awareness, communication, learning, emotional knowledge, memory, planning, creativity and problem solving.(3)

It can also be more generally described as the ability to perceive and/or retain knowledge or information and apply it to itself or other instances of knowledge or information creating referable understanding models of any size, density, or complexity, due to any conscious or subconscious imposed will or instruction to do so.(3)

The most common used measurement tools to assess intelligence are the IQ (intelligence quotient) test. It is a score derived from one of several standardized

tests designed to assess human intelligence.(4)

Intelligence and mental illness

As Intelligence is widely used for predictions of many aspects of life, it is used to predict health status and specifically the mental health status. High intelligence is associated with some mental illnesses and abnormal behaviors and protective against others. The same applied to low intelligence.

Many Mental illnesses has been found to correlate with intelligence include: schizophrenic psychotic spectrum, mood disorders, unipolar depression, anxiety disorder, substance abuse, crime, suicide and children psychiatric disorder; e.g. ADHD.

The most recently discovered aspect of association is based on genetic basis where a research from university of Edinburgh found an association between the brain genes responsible for our mental capacity are also responsible for a number of brain disorders thus the emergence of psychiatric disorders and ultimately help the development of new treatments.(5)

Mechanism of action

The low childhood IQ can lead to mental illness by different mechanisms: (6)

1- Can be an indicator of neurodevelopmental deficits that could lead to mental disorders
2- Individuals with low IQ are less equipped to cope with stresses that lead them to psychiatric disorders.
3- IQ has been shown to be a major determinant of health knowledge, which is associated with high IQ levels, making these persons to become insighted and early seeking behavior for psychological help, receiving evidence based care with good compliance.

4- Genetic association has also been demonstrated.

Risk factors for both IQ and mental illness are regarded in many researches as confounders to be controlled

Socioeconomic status, which is measured by a score from combination of parental level of education, occupation and income. The number of the perinatal insults, low birth weight <2.5 kg, childhood maltreatment that can be assessed as: 1) Maternal rejection at age 3 years. 2) Harsh discipline at ages 7 and 9 years. 3) Two or more changes in the child's primary caregiver. 4) Physical and sexual abuse reported at adulthood.(6)

Objectives:

- To find the association between low IQ and common mental illness; schizophrenia, depression, anxiety, bipolar disorder, PTSD, suicide, substance abuse, child psychiatry, abnormal behavior and happiness.

Methodology:

- Key words: IQ, Intelligence, Mental health, Mental illness, schizophrenia, depression, anxiety, suicide, bipolar disorder, PTSD, suicide, substance abuse, child psychiatry, abnormal behavior and happiness.
- Search done using Reference management program; Mendeley and other materials and websites related to mental health accessed through Google.
- Scientific papers were carefully selected to represent the best available evidence i.e cohort studies using reliable objective methods, published in well recognized international Journals.
- A narrative review conducted analyzing, comparing discuss-

ing and presenting findings of different papers qualitatively.

IQ and Schizophrenia

Many researches evidence supported the hypothesis that low IQ is highly associated with schizophrenia.

A case control study provided a genetic evidence of low level fragile-X mental retardation protein (FMRP) from lymphocytes correlated with reduced IQ and early onset of Schizophrenia.(7)

A longitudinal retrospective cohort study was conducted among Swedish conscripts (1969-1970) to find the association between premorbid IQ and later developed Schizophrenia. 50,087 male subjects were followed up for 27 years showed the association that low IQ subjects were more likely to develop schizophrenia.(8)

A very interesting cohort study done in Dunedin, New Zealand (2009) recruited 1,037 males and females who were followed up to the age of 32 with 96% retention. Serial IQ assessment done at ages: 7, 9 and 11 with DSM assessment for mental disorders including schizophrenia spectrum disorders done at 18, 21, 26 and 32 years of age. The study discovered that lower childhood IQ was associated with increased risk of developing schizophrenia spectrum disorder.(6)

Ultimately meta-analysis (2008) was done for studies of the past 20 years controlling the processes of diagnosis of schizophrenia and tests of the IQ, confirmed the previously noticed association between the IQ and Schizophrenia.(9)

Most of the published researches agree on the association between the low IQ and the development of schizophrenia. Nevertheless, this doesn't mean it is not associated with high IQ individuals.(8)

IQ and Bipolar disorder, Depression and Anxiety

Again the cohort study of the conscripts (1969-1970) showed lower IQ score was associated with increased risk for severe depression but not bipolar disorder.(8)

On the other side, the US National Longitudinal Survey of Youth (1979) included 7476 participants who had their cognitive ability measured at baseline and completed the 'Health at 40' interview module between 1998 and 2004, showed higher mental test scores were associated with lower depression scores.(10)

The British National Survey of Psychiatric Morbidity (2000) collected Data from a sample of 8054 people aged 16-74 years. This study concluded that common mental disorders are associated with low IQ. Stronger associations for depression than anxiety may indicate an effect of IQ on the way mental distress is communicated.(11)

However, other studies revealed that tests of the association between pre-morbid IQ and adult mental disorders other than schizophrenia have been limited and inconclusive. Lower childhood IQ was associated with increased risk of developing adult depression, and adult anxiety. Lower childhood IQ was also associated with greater co-morbidity and with persistence of depression; the association with persistence of generalized anxiety disorder was nearly significant. Higher childhood IQ predicted increased risk of adult mania. (6)

IQ and PTSD (post-traumatic stress disorder)

A prospective cohort study done in two major hospitals at Michigan at age 6 years and followed up to age 17 years. Samples were randomly selected from the 1983-1985 newborn discharge lists of 2

major hospitals in southeast Michigan. It was found that high IQis avoidant of exposure to traumatic experiences and their PTSD effects.(12)

Again, the cohort study of New Zealand (2009) lower IQ appeared to predict increased risk of PTSD(6)

IQ and Substance abuse

Since long time, substance abuse has been used as one of the main and well known stress coping mechanism as self-healing process. Many studies attempted to find evidence whether there is association between intelligence and substance abuse.

A study at Copenhagen perinatal cohort, compared the mean IQ of 350 men in the Danish Psychiatric Central Register, and compared the mean IQ test scores of nine diagnostic categories with the mean scores of 2939 unregistered cohort controls. The study concluded that low IQ may be associated with substance abuse.(13)

The cohort study done in New Zealand (2009) by Koenen et al. concluded confidently that lower IQ was not linked to adult substance dependence disorders.(6)

Suicide and IQ

A cohort study of Swedish women and men born in 1948-1953 followed till 2003 concluded that Low childhood IQ at age 13 years is associated with an increased risk of suicide in men but not in women; however, amongst those with psychosis, low IQ appears to be protective.(14)

On the contrary, a cohort Swedish study by Batty et al. included more than a million men showed that low IQ scores in early adulthood were associated with a subsequently increased risk of attempted suicide in men free from psychosis.(15)

Child psychiatry and intelligence

Exposure of young children in early childhood to stresses; violence or trauma related distresses were associated with substantial decrements in IQ and reading achievement.(16)

Thus stress may lower IQ in children which then would lead to many other mental disorders discussed above.

Chen et al. found that children with higher IQ have fewer behavior problems, irrespective of the mother's IQ. In the special setting of mothers with IQ <70, children with higher IQ are not at greater risk of behavior problems.(17)

Astudy by Kunsti et al. acquired a large population-based sample of 5-year-old twins. The twins were individually assessed on an IQ test, and data on ADHD symptoms were obtained from mother interviews and teacher ratings. Confirming previous studies, there was a phenotypic correlation between ADHD symptom scores and low IQ scores. The study demonstrated that the co-occurrence of ADHD and lower IQ has genetic origins.(18)

Paloyelis et al. concluded first, that the shared genetic variability between reading difficulties and ADHD inattention symptoms is largely independent from genes contributing to general cognitive ability and, second, that child-specific environment factors, independent from IQ, also contribute to the co-variation between reading difficulties and inattention symptoms.(19)

IQ and abnormal behavior

Genetic evidence suggested relation between low IQ and antisocial behavior specifically with strong significance among male gender by Koenen et al. (cohort study 1994-1995 of 1,116 twin pairs and their families).(20)

In a study done by Philippe et al. compared 114international countries characteristics including IQ

and crime with the national ones. Data were collated from the 1993-1996 International Crime Statistics published by INTERPOL. Violent crimes were found to be lower among high IQ countries.(21)

It has been suggested that abnormal behavior among children can be demonstrated as defense mechanism towards their perceived low IQ as for example, below average academic performance, i.e. an alternative way to grasp people's attention.

Happiness and Intelligence

Data from morbidity survey in England (2007) by Ali et al. concluded that those with lower IQ are less happy than those with higher IQ. Recommendations included that target modifiable variables such as income (e.g. through enhancing education and employment opportunities) and neurotic symptoms (e.g. through better detection of mental health problems) may improve levels of happiness in the lower IQ groups.(22)

Conclusion

Intelligence is a very well-known predictor of many but not all mental illnesses. It can also be protective in others. The low is the IQ the worst and persistent is the mental illness.

Low IQ has been mainly associated with schizophrenia but of course not any schizophrenic patient has low IQ. Many studies suggested low IQ among depression, anxiety and suicidal attempts. In addition low IQ is associated with ADHD in children, antisocial personality and the prediction future criminal act.

High IQ was found to be associated with adult mania and protective against PTSD.

There is no evidence that IQ has any effect on the tendency of an individual to initiate or stop substance abuse.

Recommendations

- Primary prevention can include increased public awareness about the problem through public media, training and community leaders to help assess the child IQ and possible stresses, and remove barriers and decrease stigma towards mental health services to encourage the health seeking behavior among the affected patients.
- Intervention programs to improve (e.g. training programs to increase IQ) or compensate (e.g. enhancing education and provide employment opportunity) for the deficient IQ will be protective.
- Secondary prevention through early detection program integration for children with mental illness or low IQ in school setting will be very beneficial.
- Tertiary prevention for mentally ill patients with low IQ can have specific psychotherapy or cognitive behavioral therapy.
- A lot of further researches and studies in different mental illness need to be conducted in this area regarding association and all levels of prevention and intervention.

References

1. WHO | *Mental health: a state of well-being*. World Health Organization;; Available from: http://www.who.int/features/factfiles/mental_health/en/ [cited 2014 Aug 20]

2. Cambridge University Press. *Intelligence definition, meaning - what is intelligence in the British English Dictionary & Thesaurus* - Cambridge

Dictionaries Online [Internet]. Available from: http://dictionary.cambridge.org/dictionary/british/intelligence [cited 2015 Jan 12]

3. Wikipedia the free encyclopedia. *Intelligence*. Available from: http://en.wikipedia.org/wiki/Intelligence [cited 2015 Jan 12].

4. Wikipedia the free encyclopedia. *Intelligence quotient*. Available from: http://en.wikipedia.org/wiki/Intelligence_quotient [cited 2015 Jan 12].

5. University of Edinburgh. *Origin of intelligence and mental illness linked to ancient genetic accident* | EurekAlert: The Global source for Science News. 2012. Available from: http://www.eurekalert.org/pub_releases/2012-12/uoe-ooi113012.php [cited 2015 Jan 4]

6. Koenen KC, Moffitt TE, Roberts AL, Martin LT, Kubzansky L, Harrington H, et al. *Childhood IQ and adult mental disorders: a test of the cognitive reserve hypothesis*. Am J Psychiatry [Internet]. American Psychiatric Association; 2009 Jan 9;166(1):50–7. Available from: http://ajp.psychiatryonline.org/doi/abs/10.1176/appi.ajp.2008.08030343 [cited 2014 Dec 30]

7. Kovács T, Kelemen O, Kéri S. *Decreased fragile X mental retardation protein (FMRP) is associated with lower IQ and earlier illness onset in patients with schizophrenia*. Psychiatry Res. 2013;210:690–3.

8. Zammit S, Allebeck P, David AS, Dalman C, Hemmingsson T, Lundberg I, et al. *A longitudinal study of premorbid IQ Score and risk of developing schizophrenia, bipolar disorder, severe depression, and other nonaffective psychoses*. Arch Gen Psychiatry. 2004;61:354–60.

9. Woodberry KA, Giuliano AJ, Seidman LJ. *Premorbid IQ in schizophrenia: a meta-analytic review*. Am J Psychiatry [Internet]. 2008 May;165(5):579–87. Available from: http://www.ncbi.nlm.nih.gov/pubmed/18413704 [cited 2014 Dec 29]

10. Der G, Batty GD, Deary IJ. *The association between IQ in adolescence and a range of health outcomes at 40 in the 1979 US National Longitudinal Study of Youth*. Intelligence. 2009;37:573–80.

11. Rajput S, Hassiotis A, Richards M, Hatch SL, Stewart R. *Associations between IQ and common mental disorders*: The 2000 British National Survey of Psychiatric Morbidity. Eur Psychiatry. 2011;26:390–5.

12. Breslau N, Lucia VC, Alvarado GF. Inte*lligence and other predisposing factors in exposure to trauma and posttraumatic stress disorder: a follow-up study at age 17 years.* Arch Gen Psychiatry [Internet]. 2006 Nov;63(11):1238–45. Available from: http://www.ncbi.nlm.nih.gov/pubmed/17088504 [cited 2014 Dec 29]

13. Mortensen EL, Sørensen HJ, Jensen HH, Reinisch JM, Mednick SA. *IQ and mental disorder in young men.* Br J Psychiatry [Internet]. 2005 Nov 1;187(5):407–15. Available from: http://bjp.rcpsych.org/content/187/5/407.full [cited 2014 Dec 30]

14. Andersson L, Allebeck P, Gustafsson JE, Gunnell D. *Association of IQ scores and school achievement with suicide in a 40-year follow-up of a Swedish cohort*. Acta Psychiatr Scand. 2008;118:99–105.

15. Batty GD, Whitley E, Deary IJ, Gale CR, Tynelius P, Rasmussen F. Psychosis alters association between IQ and future risk of attempted suicide: cohort study of 1,109,475 Swedish men. BMJ. 2010;340:c2506.

16. Delaney-Black V, Covington C, Ondersma SJ, Nordstrom-Klee B, Templin T, Ager J, et al. *Violence exposure, trauma, and IQ and/or reading deficits among urban children*. Arch Pediatr Adolesc Med. 2002;156:280–5.

17. Chen A, Schwarz D, Radcliffe J, Rogan WJ. *Maternal IQ, child IQ, behavior, and achievement in urban 5-7 year olds*. Pediatr Res. 2006;59:471–7.

18. Kuntsi J, Eley TC, Taylor A, Hughes C, Asherson P, Caspi A, et al. *Co-occurrence of ADHD and low IQ has genetic origins*. Am J Med Genet B Neuropsychiatr Genet. 2004;124B:41–7.

19. Paloyelis Y, Rijsdijk F, Wood AC, Asherson P, Kuntsi J. *The genetic association between*

ADHD symptoms and reading difficulties: The role of inattentiveness and IQ. J Abnorm Child Psychol. 2010;38:1083–95.

20. Koenen KC, Caspi A, Moffitt TE, Rijsdijk F, Taylor A. *Genetic influences on the overlap between low IQ and antisocial behavior in young children*. J Abnorm Psychol. 2006;115:787–97.

21. Rushton JP, Templer DI. *National differences in intelligence, crime, income, and skin color*. Intelligence. 2009;37:341–6.

22. Ali A, Ambler G, Strydom A, Rai D, Cooper C, McManus S, et al. *The relationship between happiness and intelligent quotient: the contribution of socio-economic and clinical factors*. Psychological Medicine. 2012. p. 1–10.

Vicarious Trauma among Psychologists Working With Children in Mental Health Hospitals and Family and Child Protection Unit: Khartoum State

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Abstract

This study examined the relationship between working with children in mental health hospitals and family and child protection unit and the occurrence of vicarious trauma as a result of repeated exposure to traumatized clients. Participants in this study were psychologists working with children in mental health hospitals and family and child protection unit in Khartoum state. The study looked into the relationship between working with children in mental health hospitals family and child protection unit and age, sex, engagement, empathy, lack of experience and the occurrence of vicarious trauma in staff. The study used descriptive method.

The results of the study indicated that the occurrence of vicarious trauma among psychologists working with children in mental health hospitals and family child protection unit was 83.3%.

In conclusion, there is a relationship between working with children in mental health hospitals and family child protection unit and the occurrence of vicarious trauma.

Introduction

Trauma occurs as a result of wars and natural disasters around the world. This requires the presence of professionals to help survivors of those events. Working with survivors may cause second-

ary shock as a result of pressure of work. (1).

Definitions that describe the profound effect on therapists resulting from exposure to the trauma experiences of their clients are offered by those in the vanguard of this emerging field of study. Laurie Anne Pearlman, et al. provided valuable insight into vicarious trauma. Compassion fatigue, vicarious traumatization, stress disorder, insidious trauma and vicarious trauma are all terms that are used in an attempt to label and define what happens, why it happens, and how to live healthily with the experiences of the trauma. These experts continue to collect evidence about the importance of recognizing the effects of vicarious trauma, of developing healthy personal solutions, and of promoting organizational responses to preserve the strength of counselors and advocates (3).

The work on vicarious trauma has been principally based on the experiences of trauma workers who are part of the mainstream service network, including emergency care personnel such as police, fire fighters and emergency nurses. This work is now being extended to include the unique experiences of those working with victims of sexual assault, childhood abuse, and with abused women and their children. Pearlman and et al, for example, recognized the particular effect and complexities for the therapist working with survivors of childhood sexual abuse (2).

Vicarious traumatization (VT) is a transformation in the self of a trauma worker or helper that results from empathic engagement with traumatized clients and their reports of traumatic experiences. Its hallmark is disrupted spirituality, or a disruption in the

trauma workers' perceived meaning and hope.

There are some factors contributing in vicarious trauma, conceptually based in constructivist self-development theory which arises from an interaction between individuals and their situations. This means that the individual helper's personal history (including prior traumatic experiences), coping strategies, and support network, among other things, all interact with his or her situation (including work setting, the nature of the work she/he does, the specific clients served, etc.), to give rise to individual expressions of vicarious trauma. This in turn implies the individual nature of responses or adaptations to VT as well as individual ways of coping with and transforming it (1).

Everything that interferes with the psychologists' ability to fulfill his/her responsibility to treat traumatized clients can contribute to occurrence of vicarious trauma. Many social service workers report that they experience the demands of their agencies as the greatest impediment to their effectiveness and work satisfaction (5). This has been extended to vicarious trauma and its potential existence in the general population, as compiled by the work of notable researchers. Noteworthy variables that precipitate in the onset of vicarious traumatic responses are: mass media, stories elicited from family or friends, prior exposure to traumatic events (8).

The ways in which individuals remember and store trauma as well as their coping abilities may affect their reaction to exposure to stressful situations. Such reactions manifest differently from individual to individual. In any situation that poses exposure to stressful stimuli, individuals will at times endure without difficulty while

others can display acute signs of varying degrees of distress. The availability of research examining whether vicarious trauma can be transferred outside of health-care professions is virtually nonexistent (7)

The signs and symptoms of vicarious trauma parallel those of direct trauma, although they tend to be less intense. Workers who have personal trauma histories may be more vulnerable to VT, although the findings on this point are mixed. Common signs and symptoms include, but are not limited to, social withdrawal; mood swings; aggression; greater sensitivity to violence; somatic symptoms; sleep difficulties; intrusive imagery; cynicism; sexual difficulties; difficulty managing boundaries with clients; assumption of new core beliefs that may result in difficulties in relationships , reflecting problems with security, trust, self-esteem, intimacy, and control.

The term "vicarious trauma" has been used interchangeably with "compassion fatigue" and "secondary traumatic stress disorder," "burnout," and "counter transference," and "work-related stress (7).

Exposure to a client's traumatic material has been found to be one of the most important predictors of the development of vicarious trauma symptoms. In some cases exposure to traumatic material will lead to disrupted beliefs about self and others.

The objectives of the study was to determine the prevalence of, and factors associated with vicarious trauma among psychologists working with children in mental health hospitals and family and child protection unit, to determine the association between socio-demographic variables and vicarious trauma among psy-

chologists working with children in mental health hospitals and family and child protection unit.

The study hypotheses were:

- There is a relationship between years of experience working with children in mental hospitals family and child protection unit and development of vicarious trauma.
- There is a relationship between the age, sex, experience of psychologists working with children in mental health hospitals family and child protection unit and vicarious trauma.
- Empathetic engagement makes psychologists working with children in mental health hospitals and family and child protection unit exposed to detrimental effects of vicarious trauma

Method:

The study used descriptive method. Study location is in Khartoum State: Mental health Hospitals, family and child protection unit

The study Population was psychologists working with children in mental health hospitals family and child protection unit in Khartoum state. The respondents who took part in the study were sixty psychologists. The total number of psychologists working in this field is seventy; five of them refused to participate, three of them were on holiday, and two were absent.

Location	Total number of psychologists	Participants
Tigani El Mahi Hospital	19	17
Taha Bashar Hospital	12	10
Khartoum family and child protection unit	20	19
East Nile family and child protection unit	10	7
Omdurman family and child protection unit	9	7
Total	70	60

All the psychologists were females. With regard to their place of residence, eleven live in

Khartoum, fourteen in Omdurman and thirty five in Khartoum north.

Data Collection by a modified pre - qualified dual purpose screening tool for trauma PTSD check list.

PTSD check list is a self report tool in form of an open questionnaire measuring the 17 PTSD-symptoms (according to DSM IV), commonly used in primary care settings.

Post-Traumatic Stress Disorder Checklist- Civilian Version

The (PCL-C): is abbreviation stand for Post-Traumatic Stress Disorder Checklist.

Description of the scale: The PCL- C is a 17-item self-report checklist of PTSD symptoms based closely on the DSM-IV criteria. The PCL-C is a general civilian version that is not linked to a specific event; the questions refer to "a stressful experience from the past". It takes approximately 5-10 minutes to complete a PCL; the PCL-C is widely used in primary care settings. But it is short, so that items did not include the other symptoms that may be associated with the PTSD.

The data analyses were done through statistical procedure program of statistical package for social sciences (SPSS).

Results and Discussion:

Table 1 Age distribution of the participants

Age		Frequency	Percent
Valid	25-30	11	18.3
	31-35	14	23.3
	36-41	16	26.7
	More than 41	19	31.7
	Total	60	100.0

From Table 1 it is clear that the dominant age group in the sample is from 36-41, which suggests that psychologists working with children who have experienced a traumatic event have reasonable experience in the field.

Table 2 Respondents by place of residence

Residence		Frequency	Percent
Valid	Khartoum	11	18.3
	Omdurman	14	23.3
	Khartoum Bahri	35	58.3
	Total	60	100.0

Table 2 shows that the highest percentage of respondents live in Khartoum Bahri

Table 3 Distribution of participants by level of education

Education		Frequency	Percent
Valid	B.A	40	66.7
	Higher Diploma	6	10.0
	M.A	14	23.3
	Total	60	100.0

Table 3 and Fig.1 show the level of education for members of the sample, where 40 of respondents obtained the degree of Bachelor, 6 of them higher diploma, and 14 of them obtained the master degree.

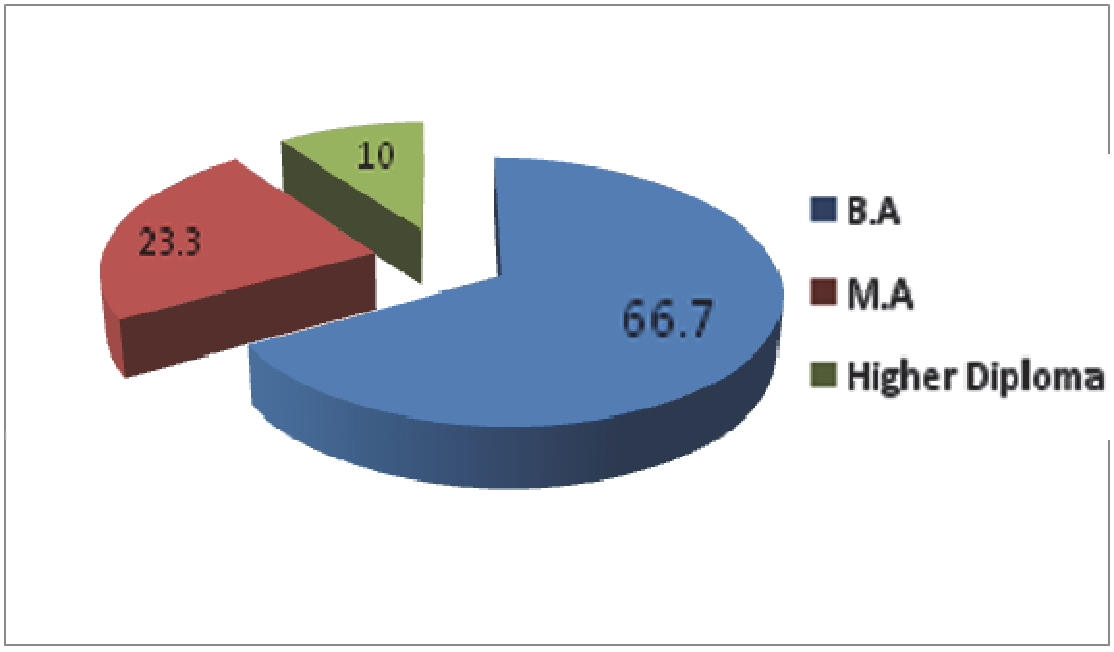

Fig. 1: Educational Level

Table 4 Civil status of participants

Marital Status		Frequency	Percent
Valid	Single	31	51.7
	Married	19	31.7
	widows	4	6.7
	Divorce	6	10.0
	Total	60	100.0

Table 4 shows the marital situation where 31 of respondents were single, 19 married, 4 widowed, and 6 divorced.

Table 5: Prevalence of Vicarious Trauma

Degree	Frequency	Percent
High	39	65
Moderate	11	18.3
Low	10	16.7

Table 5 shows that 65% of the sample individuals were suffering from psychological vicarious trauma with high grade, and 18.3% moderately, and 16.7 with low-grade.

Table 6 Distribution of participants by years of experience

Years Experience	Frequency	Percent
5-10	**39**	**65**
11-15	**11**	**18.3**
16-20	**10**	**16.7**
Total	**60**	**100.0**

Table 6 shows that respondents who have years of experience less than 10 years were 65%, and years of experience more than 15 years was 16.7%.

- The results of the study showed a relationship between the demographic factors and the occurrence of vicarious trauma among psychologists working with children in mental health hospitals family and child protection unit.
- Empathetic engagement makes Psychologists working with children in mental health hospitals and family and child protection unit more susceptible to detrimental effects of vicarious trauma.
- There is a relationship between years of experience in mental health hospitals and family and child protection unit and occurrence of vicarious trauma.
- The study demonstrates the extent of secondary trauma

symptoms among therapists working with children in mental hospitals and family and child protection units.

- The study also established a correlation between demographic variables and trauma among therapists.
- The study showed that 65% of therapists experienced high degree of vicarious trauma, 18.3% experienced moderate degree of vicarious trauma, and 16.3% experienced low degree of vicarious trauma.

Conclusion:

There is a relationship between working with children in mental health hospitals and family child protection unit and the occurrence of vicarious trauma.

Recommendations:

- The number of psychologists working with children in mental health hospitals and family and child protection unit should be increased to decrease the size of case load.
- Develop a performance management system based on a model that promotes continuous learning.
- Supervision is an important issue for psychologists who work with children in mental health hospitals and family and child protection unit.
- Fair distribution of work among psychologists who work in this field.
- Self care psychologically, physically, emotionally, and spiritually.
- More research should be conducted about vicarious trauma.

References

1) Butler, Lee, *Concept of trauma* ,Oxford cognitive therapy center,1996
2) Mitton, Jean, *Recommended solutions for anti-violence workers,2000*
3) Salston, Mary, *The national child traumatic stress network* ,2003
4) Gerding, Angie, *Prevention of vicarious trauma*, 2012
5) Richardson, Jan, *Secondary Trauma* , Center for research on violence against women and children,2001 London
6) Zinn, Jan, *Mindfulness meditation in everyday life*, 2007
7) Lutherville, MD, n.d. Secondary *traumatic stress: Self care issues for clinicians, researchers and educators*, Sidran Press.

Acknowledgment:

This work was supervised by Prof. Mohamed El Amein khateeb, to whom I am grateful.

Note to contributors:

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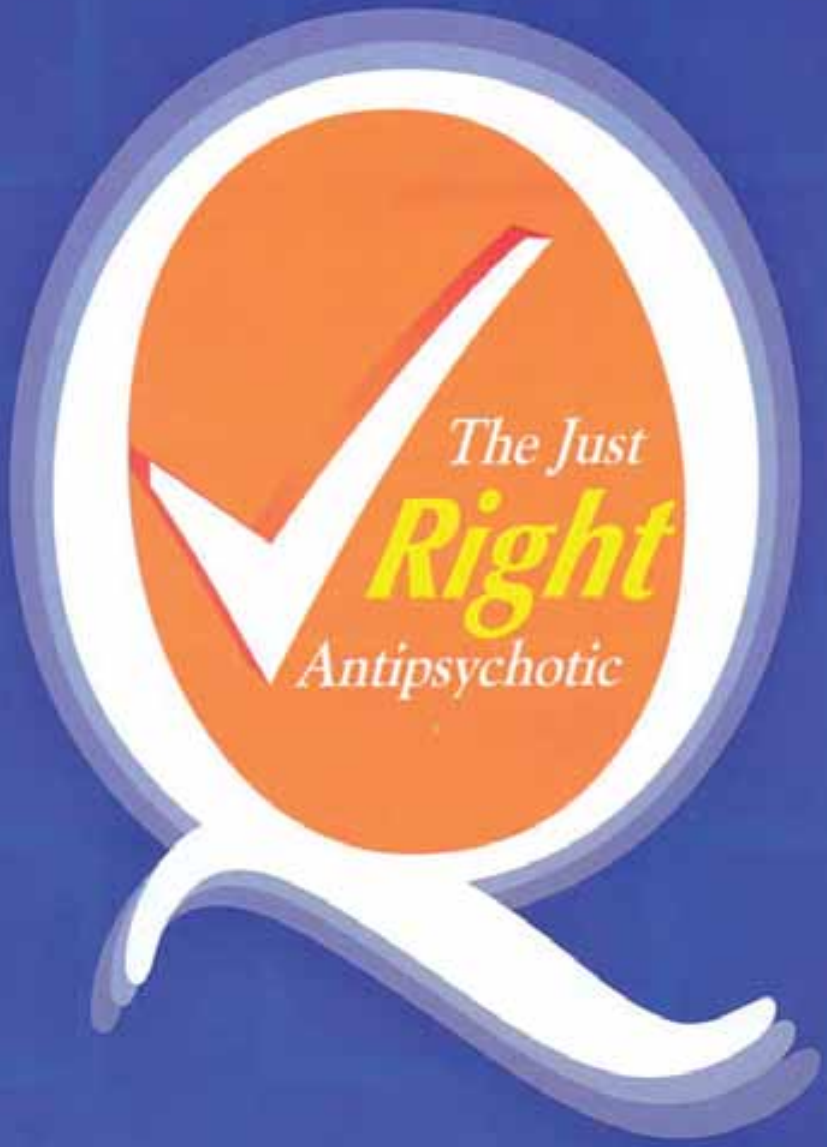

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