Relapse Prevention in Mental Illnesses: Concepts, Issues and Strategies with Perspectives of Psychiatric Nursing- Review Article

Mudakavi I[1], Rentala S.[2]

[1]*Ph.D Nursing Scholar, INC, New Delhi. Nursing Tutor, College of Nursing, All India Institute of Medical Sciences, Basni Phase II, Jodhpur, Rajasthan. India,* [2] *Professor & Head of the Department, Department of Psychiatric Nursing, Dharawad Institute of Mental Health & Neurosciences (DIMHANS), Dharawad, Karnataka. India,*

Abstract

The aim of this review article was to explore and understand the concepts, issues and preventive strategies of mental health relapse with psychiatric nursing perspectives and also to present a comprehensive concept of relapse and its prevention in a narrative form based on the evidences from the various sources of literature. The review materials were included from the books, journals, news papers, online data base and grey literature of last three decades to 2018. The significant articles were searched by using key words: "Relapse", "Mental illness", "Prevention of Relapse", "Relapse AND Mental illness", "Relapse Prevention AND Mental illness" in PubMed, CINHAL, PsychINFO SCOPUS and Google Scholar data bases. Based on the relevant and significant facts found with respect to the aim of the review, concepts were evolved and evidence based narration was made under each concepts to understand prevention of mental health relapse with regards to identification of issues and formulating strategies to overcome such issues with psychiatric nursing perspectives. The study concluded that, relapse is a major obstacle for recovery of mental illness, but can be preventable by addressing underlying issues with preventive approaches across various health care settings.

Keywords: *Relapse, Mental illness, Prevention of Relapse, Relapse and Mental illness, Relapse Prevention and Mental illness.*

Introduction

"What remains in diseases after the crisis is apt to produce relapses." -Hippocrates

World Health Organization (WHO) reported mental illness constitutes the highest burden of disease in the world with relapse being one of the most pertinent barriers to recovery and rehabilitation.[1] In spite of the availability of various treatment modalities and advancement of the evidences, relapse rate among the mentally-ill is relatively high, reports among those with schizophrenia has put relapse rate between 50% and 92%.[2]

Relapse is a recurrence of symptoms of mental illness similar to those that have previously been experienced. Relapse is generally agreed to have occurred when the person experiencing the symptoms is not able to cope using their usual supports and requires a greater intensity of intervention.[3] Relapse prevention is an important element of the recovery process. It focuses

Corresponding Author:
Irasangappa M
Nursing Tutor, College of Nursing,
All India Institute of Medical Sciences,
Basni Phase II, Jodhpur, Rajasthan.
Pincode-342005
Mail Id: mudakavii@aiimsjodhpur.edu.in
Mobile No: +91787774725

on maximizing wellness for people with mental illness by reducing the likelihood and impact of relapse.[4]

Relapse prevention is based on communication and understanding between the person experiencing mental illness, their family and caregivers, primary health care, the specialist mental health system, and community support services about access to support or treatment if there are early signs of relapse.[3]

Relapse prevention immensely improves the quality of life of individuals with mental illness and enables them to more fully participate in work, leisure and relationships. Effective relapse prevention enables people to gain mastery over their symptoms, which increases their sense of control over their lives (Mueser et al 2002).[4]

Methods

The aim of this review article was to explore and understand the concepts, issues and preventive strategies of mental health relapse with psychiatric nursing perspectives and also to present a comprehensive concept of relapse and its prevention in a narrative form based on the evidences from the various sources of literature. The review materials were included from the books, journals, news papers, online data base and grey literature of last three decades to 2018. The significant articles were searched with following key words: "Relapse"," Mental illness", "Prevention of Relapse", "Relapse AND Mental illness", "Relapse Prevention AND Mental illness". Based on the relevant and significant facts found with respect to the aim of the review, concepts were evolved and evidence based narration was made under each component to understand prevention of mental health relapse with regards to identification of issues and formulating strategies to overcome such issues with psychiatric nursing perspectives.

Findings

Findings of the review on evolved concepts are discussed under following headings:

I. Relevance / Need for Understanding Prevention of Relapse of Mental Illnesses

Global and National scenarios related to prevalence of relapse of mental illness presents apprehensive data, which made every stake holders to think about it.

a) Prevalence of Relapse among Mentally Ill Patients: Global and Indian

A study conducted in Ethiopia to assess the prevalence of relapse of schizophrenia in 2011. They stated that relapse rates vary from 50% to 90% globally. In different studies, the prevalence of relapse of schizophrenia ranged from 44% to 50% and 48% in developed and developing countries.

Severe mental disorders (SMDs), including schizophrenia, bipolar disorder, schizoaffective disorder and depressive psychosis, have a relatively low prevalence (1%–2%), and they are associated with increased risk of relapse and hospitalizations in USA.[7]

Relapse is most common and carries a serious burden in patients with schizophrenia. Patient with schizophrenia has been estimated to be 3.5% risk of relapse per month, and about ~40% of patients experience a relapse within a year following hospital admission.[8, 9]

A study conducted in institute of psychiatry, London, indicated that up to 90% of patients with bipolar disorder have at least one relapse in their lifetime, with an average of 0.6 relapses per year. After recovery from a mood episode, nearly 50% subsequently have a relapse within two years of remission.[7]

A study conducted by Chabungbam G in Chandigarh on 40 schizophrenic patients to examine socio-demographic and clinical factors associated with relapse in schizophrenia. The findings suggested that a severe illness, psychological stress and inappropriate treatment (side-effects of medicines) may be causally related to relapse in schizophrenia.[10]

A similar study was conducted to assess the relapse rates among first episode psychosis patients identified in Nottingham. The reassessment of 168 cases of first

episode psychosis after 3 years later, they found high rates of relapses (21/32, 65.6%), when patients with diagnostic changes were excluded, only 4 of 11 patients (36.3%) with acute transient psychotic disorder had more than one episode.[11] A follow-up study of acute transient psychotic disorder (ATPD) over 3–7 years found that 58% of patients relapsed.[12]

b) Gap in Health Care Burden of Mental Disorders and Resources

WHO report (2003) on Investing in Mental Health has detailed explanation of global scenario regarding gap between the healthcare burden of mental disorders and the resources. In developed countries with well-organized health care systems, between 44% and 70% of patients with depression, schizophrenia, alcohol-use disorders and child and adolescent mental illnesses do not receive treatment in any given year. In developing countries, where the treatment gap is likely to be closer to 90% for these disorders, most individuals with severe mental disorders are left to cope as best they can. Worldwide more than 40% of all countries have no mental health policy and over 30% have no mental health programme.[13]

Further reported, over 90% of countries have no mental health policy that includes children and adolescents. Out-of-pocket expenditure was the primary method of financing mental health care in many (16.4%) countries. Even in countries where insurance cover is provided, health plans frequently do not cover mental and behavioral disorders at the same level as other illnesses; this creates significant economic difficulties for patients and their families.[13]

c) Common Conditions of Relapse in Mental Illnesses

There is a high rate of relapse within 5 years of recovery from a first episode of schizophrenia and schizoaffective disorder (Robinson D et al,.).[14] People with severe depression were more likely to relapse or commit suicide than people with milder depression (Goldney R D).[15] High prevalence of relapse among patients with psychotic disorder. Nearly one-fourth of participants who were diagnosed as having schizophrenia (n=70), schizophreniform and schizoaffective disorders (n=13) had psychotic relapse (Mahlet F, Matiwos S, Garumma T F).[16]

d) Triggering factors of relapse in major mental illnesses

Patient and caregivers of mentally ill perceived non adherence to antipsychotic medication as a leading risk factor of relapse; other risks included poor family support, stressful life events and substance use (Adellah ES, Anne HO, Khadija IY).[17] Similarly, it is reported non adherence to antipsychotic medication, substance related factors, low social support and co-morbid psychiatric illness were major factors for relapse.

e) Economic burden of mental illness due to relapse

The economic burden during the first post discharge year is relatively higher due to loss of efficacy; whereas the burden from noncompliance is higher in the second year. (Weiden PJ, Olfson M.)[18] The costs of treatment were found to be high but with wide variations in the range. Costs for bipolar disorder were somewhat higher than those for schizophrenia at least for the period of study (Sharma P, Das S.K, Deshpande S.N).[19]

f) Evidences on relapse prevention in mental illnesses

The Relapse Prevention Programme was efficient in detecting prodromal symptoms of relapse early in an episode. Crisis intervention including increased antipsychotic medication use during the prodromal phase reduced relapse and rehospitalization rates (Marvin I. Herz et al,.).[20]

Specialist Psychosis programs are effective in preventing relapse. Cognitive-based individual and family interventions may need to specifically target relapse to obtain relapse prevention benefits that extend beyond those provided by specialist FEP programs. First and second generation antipsychotics have potential

to reduce the relapse rates (Maria A J, Alexandra GP, Sarah EH, Patrick DM, John FG.).[21]

II. Existing Practices / Situation/ Knowledge on Relapse Prevention in Mental Illnesses

a) Factors Associated With Relapse in Mental Illnesses

Early identification and prevention of relapse in patients with mental illness has significant therapeutic and socioeconomic implications. Relapse is common in the cases of patients who had documented evidence of either re-emergence or aggravation of psychotic symptoms. Globally, the factors commonly associated with relapse include deprived treatment adherence, substance abuse, co-morbid psychiatric illness, a co-morbid medical and/or surgical condition, stressful events in life, and the treatment setting.

A meta-analysis conducted on factors associated with relapse of schizophrenia in University of Johannesburg[22]. As mentioned in the results, the figure 01 depict following factors are most commonly associated with the mental illness:

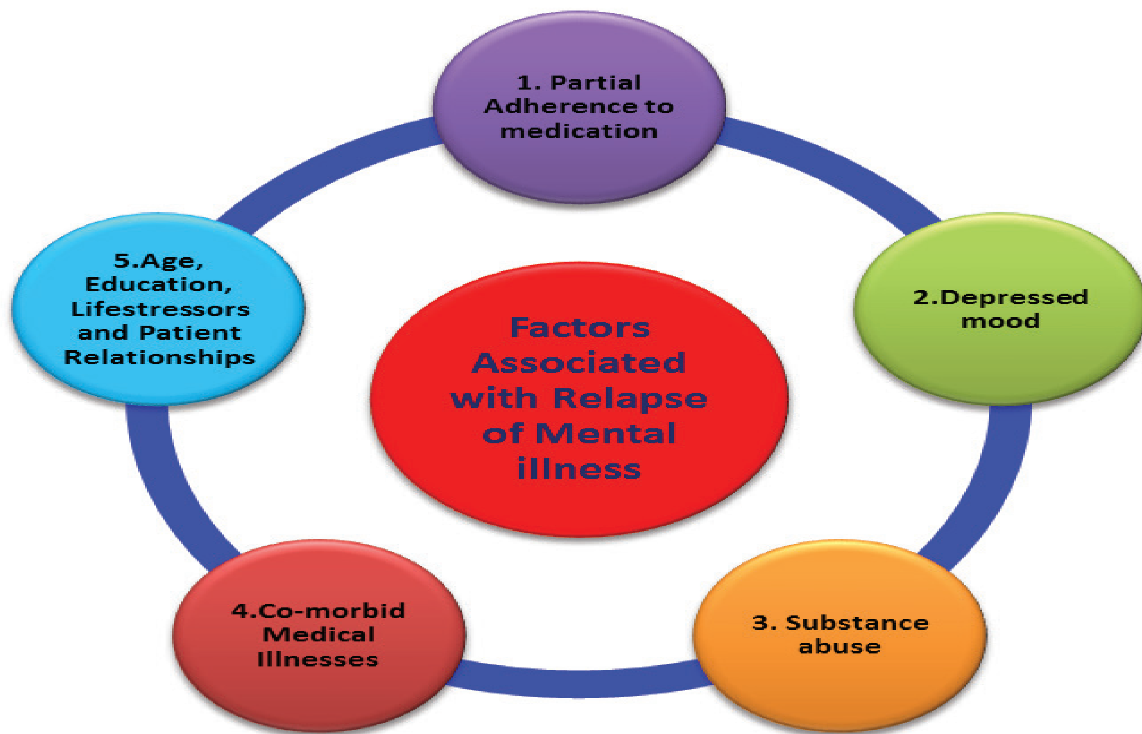

Figure 01: Factors Associated with Relapse of Mental illnesses[22]

b) Awareness of Early Warning Signs of Relapse

Fundamental aspects of relapse prevention are recognition and awareness of early warning signs and of the risk and protective factors for mental health. This awareness should focus on individual, family and service levels. Early warning signs vary among individuals, and a personal set of early warning signs is referred to as a 'relapse signature'.

As mentioned by Van Miejel et al., in 2002 there are two types of monitoring that are relevant to recognition of early warning signs: direct monitoring, where the existence or nonexistence of symptoms is ascertained; and indirect monitoring, where situations are assessed to determine the presence or absence of risk and protective factors. Therefore, it is essential to include both types of monitoring for a thorough and holistic relapse prevention approach.[23] Box 02 illustrate early warning signs of relapse (Birchwood, Spencer & McGovern 2000)

Early Warning Signs of Psychotic relapse (Birchwood, Spencer & McGovern 2000)		
Thinking/Perception	**Feelings**	**Behaviors**
Thoughts are racing Senses seem sharper Thinking you have special powers Thinking that you can read others mind Thinking that others can read your mind Receiving personal messages from the TV or radio Having difficulty making decisions Experiencing strange sensations Preoccupied about 1or 2 things Thinking you might be somebody else Seeing visions or things others cannot see Thinking people are talking about you Thinking people are against you Nightmare Difficulty concentrating Bizarre things Thinking your thoughts are controlled Hearing voices	Hopeless or useless Afraid of going crazy Sad or low Anxious and restless Increasingly religious Feeling like you are being watched Feeling isolated Tired or lacking energy Forgetful or far away Feeling in another world Feeling strong and powerful Unable to cope with everyday tasks Feeling like you are being punished Feeling like you cannot trust others Irritable Feeling like you do not need sleep Feeling guilty	Difficulty sleeping Speech comes out jumbles filled with odd words Talking or smiling to yourself Acting suspiciously as like being watched Spending time alone Neglecting your appearance Not seeing people Not eating Not leaving the house Behaving like a child Refusing to do simple request Drinking more Smoking more Movements are slow Unable to sit down for long Aggressive

Box 02: Early Warning Signs of Relapse (Birchwood, Spencer & McGovern 2000)[24]

c) Importance of Relapse Prevention in Mental Illnesses

Relapse prevention is desirable for several realistic reasons, namely

- It reduces the negative impact of mental illness on individuals and their families and caregivers, as well as their communities.
- Prolonged and recurring periods experiencing the symptoms of mental disorder severely affect a person's life and also erode their confidence in work and wellbeing.
- Evidence shows that each relapse increases both residual symptoms and social disabilities.
- Relapse greatly increases the burden on families and caregivers, contributing to their distress and reducing their quality of life.
- Preventing relapse reduces the cost of mental illness to the community.

III. Existing Problems/ Shortcomings Regarding Relapse Prevention

With reference to many evidences from the literature, relapse prevention of mental illnesses is literally challenging task for the health care providers. The most important problems experienced by the health care providers, patients and caregivers are as follows:

a) Revolving Door Syndrome

The tendency of clients to get better for a while, and then end up relapsing is known as revolving door syndrome refers to. It most often applies to those with severe mental illness, such as schizophrenia, but a person with a mental health disorder could potentially be at risk.[25]

A cross sectional study was conducted on revolving-door patients in public psychiatric hospital in Israel which aim to study social, demographic, clinical, and forensic profiles of frequently re-hospitalized (revolving-door) psychiatric patients. They suggest that, revolving-door patients had significantly shorter mean interval between hospitalizations, showed less violence, and were usually discharged against to medical advice from health care providers. [26]

b) Major Issues of Relapse Prevention in Mental Illnesses

A critical review of selected literature regarding relapse among schizophrenics identifies following major problems of relapse:

1. Relapse rates are extremely high among mentally ill after treatment discontinuation, even after a single episode of psychosis.

2. Risk of relapse does not decrease even after longer treatment period prior to discontinuation.

3. Many patients relapse very soon after treatment discontinuation.

4. The transition from remission to relapse may be abrupt, with few early warning signs.

5. Once relapse occurs, symptom severity rapidly returns to previous psychotic episode.

6. The majority of patients after relapse respond rapidly to re-introduction of antipsychotic treatment, the response time is unpredictable and whereas frank treatment failure may emerge in a subset of patients.[27]

c) Growing Health Care Costs: Consequence of Relapse

A significant toll on patients, caregivers, and society in terms of direct and indirect costs of schizophrenia.[28] Total per year excess cost of schizophrenia in the US was estimated at $62.7 billion in 2002. In this economic burden, 52% was due to indirect costs ($32.4 billion, including unemployment, reduced workplace productivity, premature mortality from suicide, and family care giving), 36% was due to direct healthcare costs ($22.7 billion, including outpatient, inpatient, long-term care, and medications), and the remaining 12% was due to direct non-healthcare costs ($7.6 billion).[29]

Healthcare Cost and Utilization Project show that in comparison with patients of other mental health and substance abuse disorders, patients with schizophrenia admitted for treatment have the second-longest average length of stay (11.1 days), highest average total price per stay ($7500), and highest aggregate cost of hospitalization ($2.7 billion).[30]

A primary driver of medical costs in schizophrenia patient is relapse and associated care (including hospitalizations). A study shown that patients who experienced a relapse of psychotic symptoms within the previous six months incurred four times higher costs than schizophrenia patients without a recent relapse ($p<0.01$).[31] Similarly, in another published, prospective, observational study (1997–2003); the 12-month direct mental healthcare costs for patients with a prior relapse (within the previous six months) were three times higher than costs for patients without a relapse ($33,187 vs $11,771; $p<0.01$).[32] These results underscore the economic importance of relapse prevention.

d) Knowledge and Skill Gap Regarding Relapse Prevention

Tricia Nagel and associates conducted a retrospective study to review the quality of care provided in the Top End in-patient setting, and the involvement of Aboriginal Mental Health Workers (AMHWs) in the care of Indigenous people who are hospitalized for mental

illness. This review was a part of relapse prevention project in Australia. The findings suggest that, low rates of AMHW engagement in care. They were involved in the care of only 55% of Indigenous patients in 2004. There is a need to explore strategies for reorientation of services to deliver consistent quality care and promote relapse prevention, self-management and empowerment of all clients and families.[33]

Mental health professionals are not skilled in working with families. Some recent programs now train mental health workers to provide families with the skills needed to be active, positive caregivers rather than passive victims to the difficult situations created by a relative's illness. The nature of this care giving role is often not understood by professional mental health workers. Families' still experiencing blame from others for causing these illnesses, although it is diminishing as evidence suggest for a neurobiological explanation of mental illness.[34]

IV Strategies to Improve the Situation / Minimize or Solve Problems of Relapse Prevention in Mental Illnesses

a) Major Approaches to Relapse Prevention and Evidence of their Effectiveness

In the medical and academic literatures, relapse prevention interventions have been categorized in following types of approaches[5]:

1. Awareness of early warning signs*:* The primary intervention approach of relapse prevention are programs that focus on teaching people how to recognize their early warning signs and the environmental triggers of their symptoms. Such programs generally involve training in identification of early warning signs and stress management.

2. Compliance with medication: Medication non-compliance is a major risk factor for relapse. This is the case for psychotic illnesses as well as depression. There is clear evidence that maintenance medication and taking medication as prescribed significantly reduces the risk of relapse.

3. Coping skills training and cognitive behavioral approaches: Coping skills programs aim to help people manage stress or deal with persistent symptoms. Review of randomized controlled trials for four coping skills programs were shown to be effective in terms of reducing symptom severity.

Figure 03: Approaches for Relapse Prevention in Mental illnesses (Mueser et al 2002).

4. Broad-based psycho-education programs (BBPP): It is a commonly held belief that greater knowledge empowers people to make better decisions regarding many behavioral choices, including those affecting their health. BBPPs provide information people about their mental illness, generally focusing on symptoms, stress-vulnerability, and treatment options.

5. Self-help programs: Consumer self-help groups developed partly out of dissatisfaction with the mental health care system and the need for consumers to combat the stigma of mental illness (Emerick 1990). These groups have extended to include a wide range of programs and to also encompass family and caregiver support groups.

6. Risk and protective factors: A more holistic approach to prevention focuses on identifying the multiple risk and protective factors for mental health. Risk factors are those that always responsible to a individual's susceptibility to relapse, whereas protective factors alleviate relapse by enhancing wellbeing; "risk factors increase the possibility that a disorder will develop and can aggravate the burden of existing condition, while protective factors provide people resilience in the face of difficulty and moderate the impact of stress and transient symptoms on social and emotional wellbeing, thereby decreasing the probability of disorders.

b) Basic Elements of Relapse Prevention

Essentially, prevention of relapse requires awareness, planning, and the provision of timely and appropriate intervention responses. Laurie identifies prevention of relapse as the 4As of crisis prevention: 1) awareness, 2) anticipation, 3) alternatives and 4) access. To implement such an approach, actions need to be undertaken by all those concerned in the continuing care and recovery of people with mental illness: by people who have experienced mental illness, their families and caregivers, clinical service providers and planners, non-clinical service providers and planners, policy makers, and communities.[35]

Assertive Community Treatment Model

Assertive Community Treatment (ACT) is planned and implemented by an interdisciplinary team that ensures service availability for whole day, all the days of week and is prepared to carry out all possible treatment functions as and when needed. A person may referred to the ACT team service when it has been determined that his/her needs are so pervasive and/or not expected that it is unlikely that they can be met efficiently by other combinations of accessible community services, or in situation where other levels of outpatient care have not been successful to maintain stability in the community.[36]

Assertive community treatment offers significant advantages over standard case management models in reducing homelessness and symptom severity in homeless persons with severe mental illness.[37]

V Nursing Implications in Relapse Prevention in Mental Illnesses

a) Role of Nurse in Relapse Prevention in all Possible Settings

Traditionally, the public health concept of disease prevention has conceptualized prevention as primary, secondary or tertiary depending on whether the strategy prevents the disease itself, the severity of the illness or the associated disability.[38]

Preventive strategies are always reducing risk factors; hence to get maximum effect, these strategies need to be implemented at specific periods before the onset of the disorder. On the other hand, it is still possible to decrease severity, course, duration, and associated disability of disease once it has developed, by taking preventive measures throughout the course of the disorder.

The following three categories of **primary prevention** have been identified:

- ***Universal prevention:*** In universal prevention, will focusing on the general public or a whole population group.

■ ***Selective prevention***: Selective prevention targeting individuals or subgroups of the population whose risk of developing a mental illness is considerably higher than that of the rest of the population.

■ ***Indicated prevention:*** Persons at high-risk for mental disorders will be targeting for indicated prevention.

Secondary prevention refers to preventive measures undertaken to decrease the prevalence of all specific treatment-related strategies.

Tertiary prevention would embrace interventions that reduce disability and all forms/types of rehabilitation as well as prevention of relapses of the mental illness.[38]

b) Psychiatric Nurse-Led Preventive Strategies/ Recommendations for Mental Health Relapse

Psychiatric nurses become involved in prevention of relapse programs in many different ways. They can act as a referral source for the program, trainer or leader of the programs, or an after care sources for patients when the program is completed. In addition mental health nurses can help the patient and family by promoting optimism, sticking to goals and aspirations, and focusing on individual strength.

- Psychiatric nurses serve in various pivotal functions across the continuum of care. These functions can involve both direct care and coordination of the care delivered by others.[39]
- The intensification of research in nursing practice is of great importance because a considerable portion of the therapeutic efforts is and can be executed with the context of nursing care. Reasons for these results indicated that effectiveness research should be continued on psychotic relapse(Meijel B V et al,.).[40]
- Nurse-led psycho-education program showed an increased level of knowledge about the disease and health resources as well as a positive displacement in terms of some Outcome Indicators such as Participation, Attention and greater Satisfaction with health services. These programs may result in greater health gains(Celso Pasadas & Francisca Manso).[41]
- Psychiatric nurses facilitate the incorporation of shared decision making into clinical practice to improve medication follow-through. Globally, the most trusted health care professionals are nurses. They continuously assess treatment effectiveness and medication side effects(Irma M H, Chris F M, and Diane E S).[42]
- Statistically significant improvement in attitude toward medication and quality of life of patients with schizophrenia after implementation of a psychiatric nursing intervention. In improvement of medication adherence and quality of life of schizophrenic patients, the psychiatric nursing intervention was effective.[43]

Available Resources in Indian Context for Relapse Prevention

Human resources

- "Tapasya" Mental Health Rehabilitation And De-Addiction Centre, Indore
- Shraddha Rehabilitation Foundation, Mumbai
- Chaitanya Centre for Psycho-social Rehabilitation, Cochin, Kerala
- Tulasi Best Psychiatrist Rehabilitaiton and Rehab centre, Delhi
- PapayaCare Assisted Livivng and Long Term Care, Ahmedabad
- SuVitas-Rehabilitation Center, Hyderabad

Physical infrastructure

National Institute of Mental Health and Neurosciences, Bengaluru

Central Institute of Psychiatry, Delhi

Institute of Human Behavior and Allied Sciences

- Schizophrenia Research foundation, Chennai
- Institute of psychiatry and Human Behavior, Goa
- ***National Programs Related to Relapse Prevention***
- National Mental Health Program, 1982
- District Mental Health Program, 1996
- National Program for Health Care of the Elderly, 2010
- National Mental Health Policy, 2014
- National Health Mission, 2017
- Mental Health Care Act, 2017

Conclusion

Relapse prevention must become a routine component of continuing care for all people who have been seriously affected by mental illness. It needs to be incorporated alongside rehabilitation as one of the tools within a recovery oriented mental health care system. Relapse prevention should commence at the earliest possible opportunity, even during treatment of the first episode, and then be adapted according to each person's changing needs across the lifespan, across the course of their ongoing experience of mental health and mental illness, and across changing life circumstances.

Ethical Clearance

Since it is a review article and has been written as narrative concept article. Further, not needed informed consent as human subjects were not involved in this scientific work. Review is based upon available primary and secondary literatures, therefore does not require ethical permission. Journal guidelines have been followed in writing references. However, based on the conclusion of the present review a study has been undertaken which aims to prevent relapse and readmissions among patients with severe mental illness and ethical permission was taken to conduct the present study from Institutional Ethical Committee of AIIMS, Jodhpur.

Conflict of Interest: No conflict of interest

References

1. World Health Organization and World Organization of Family Doctors. Integrating mental health into primary care: A global perspective. WHO Press, Singapore. 2008.
2. Kazadi N J B, Moosa M.Y.H, Jeenah F.Y. Factors associated with relapse in Schizophrenia. South Africa Journal of Psychiatry. 2008; 14(2).
3. Rickwood D. Preventing Further Episodes of Mental Illnesses. Prepared for the National Mental Health Promotion and Prevention Working Party. 2005 Available from www.researchgate.net/publication/239574309
4. Australian Government Department of Health and Ageing. Pathways of Recovery: Preventing Further Episodes of Mental Illness (Monograph). Commonwealth of Australia, Canberra. 2006
5. Mueser K T, Corrigan, P W, Hilton D W, Tansman B, Schaub A, Gingerich S, et al. Illness management and recovery: A review of the research. Psychiatric Services.2002; 51(10):1272-84.
6. Weret Z S and Mukherjee R. Prevalence of Relapse and Associated Factors in Patient with Schizophrenia. IJIMS.2014;2(1): 184-192 Available from http://ijims.com/uploads/88f34062a7cc8817b23c26.pdf
7. Csernansky J G, Schuchart E K. Relapse and rehospitalisation rates in patients with schizophrenia: effects of second generation antipsychotics. CNS Drugs. 2002;16(7):473–484.
8. Perlis R H, Ostacher M J, Patel J K. Predictors of recurrence in bipolar disorder: primary outcomes from the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD). Am J Psychiatry. 2006;163(2):217–224.
9. Hogarty G E, Ulrich R F. The limitations of antipsychotic medication on schizophrenia relapse and adjustment and the contributions of psychosocial treatment. J Psychiatr Res.

1998;32:243–250. Available from https://www.ncbi.nlm.nih.gov/pubmed/9793877

10. Chabungbam G, Avasthi A, Sharan P. Socio-demographic and clinical factors with relapse in schizophrenia. Psychiatry Clin Neurosci. 2007;61(6):587–93. https://www.ncbi.nlm.nih.gov/pubmed/18081617
11. Singh S P, Burns T, Amin S, Jones P B, Harrison G. Acute and transient psychotic disorders: precursors, epidemiology, course and outcome. Br. J. Psychiatry.2004; 185: 452–459. Available from https://www.cambridge.org/core/journals/the-british-journal-of-psychiatry/article/acute-and-transient-psychotic-disorders-precursors-epidemiology-course-and-outcome
12. Jager M, Hintermayr M, Bottlender R, Strauss A, Moller H. Course and outcome of first-admitted patients with acute and transient psychotic disorders. Eur. Arch. Psychiatry Clin. Neurosci.2003; 253 (4): 209–215. Available from https://www.researchgate.net/publication/225944515_Course_and_outcome_of_first-admitted_patientswith_acute_and_transient_psychotic_disorders_ICD-10F23
13. World Health Organization. Investing in Mental Health. 2003 Available from http://www.who.int/mental_health/media/investing_mnh.pdf
14. Robinson D, Woerner M G, Alvir J M, Bilder R, Goldman R, Geisler S et al,. Predictors of relapse following response from a first episode of schizophrenia or schizoaffective disorder. Arch Gen Psychiatry.1999;56(3):241-7. Available from https://www.ncbi.nlm.nih.gov/pubmed/10078501
15. Goldney R D. ICD-10 predicts risk of relapse and suicide in people diagnosed with a single depressive episode. 2004;7(3):89 https://ebmh.bmj.com/content/7/3/89
16. Mahlet F, Matiwos S, Garumma T F. Psychotic relapse and associated factors among patients attending health services in Southwest Ethiopia: a cross-sectional study. BMC Psychiatry. 2016; 16: 354. Available from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5072324/
17. Adellah E S, Anne H O, Khadija I Y. Risk and protective factors for relapse among Individuals with Schizophrenia. BMC Psychiatry. 2014; 14: 240. Available from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4169829/
18. Weiden P J, Olfson M. Cost of relapse in schizophrenia. Schizophr Bull. 1995;21(3):419-29. Available from https://www.ncbi.nlm.nih.gov/pubmed/7481573
19. Sharma P, Das S K, Deshpande S N. An estimate of the monthly cost of two major mental disorders in an Indian metropolis. Ind J Psychiatry. 2006; 48(3): 143–148. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2932983/
20. Marvin I, Herz. A Program for Relapse Prevention in Schizophrenia. Arch Gen Psychiatry. 2000;57(3):277-283. Available from https://jamanetwork.com/journals/jamapsychiatry/fullarticle/481583
21. Maria A J, Alexandra G P, Sarah E H, Patrick D M, John F G. Preventing the Second Episode: A Systematic Review and Meta-analysis of Psychosocial and Pharmacological Trials in First-Episode psychosis. Schizophr Bull. 2011; 37(3): 619–630. Available from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3080698/
22. Kazadi N J B, Moosa M Y H, Jeenah F Y. Factors associated with relapse in schizophrenia. SAJP.2008;14(2):1-7. Available from file:///C:/Users/AIIMS/Downloads/158-614-2-PB.pdf
23. Van M B, Der G M, Kahn R S, Grypdonck M. The practice of early recognition and early intervention to prevent psychotic relapse in patients with schizophrenia: an exploratory study. Part 1. Jou Psych and Men Hea Nur.2002; 9:347-355. Available from http://psycnet.apa.org/record/2002-15677-013
24. Birchwood M, Spencer E, McGovern D. Schizophrenia: early warning signs. Advances in Psychiatric Treatment. 2000:93-101. Available from http://www.schizophrenia.com/pdfs/earlysigns.relapse.pdf

25. Lisa F. Revolving Door Syndrome with Phobias. Very well mind. 2008. Available from https://www.verywellmind.com/revolving-door-syndrome-2671544

26. Igor O, Rena K, Marc G, Yuval M, Avi B. Revolving-door Patients in Public Psychiatric Hospital in Israel: Cross Sectional Study. Croat Med J. 2009 ;50(6): 575–582.Available from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2802091/

27. Robin E, Bonginkosi C, Laila A, Brian H. The nature of relapse in schizophrenia. BMC Psychiatry. 2013;13(50). Available from https://bmcpsychiatry.biomedcentral.com/articles/10.1186/1471-244X-13-50

28. Awad A G, Voruganti L N P. The burden of schizophrenia on caregivers. Pharmacoeconomics 2008;26:149-62.

29. Wu E Q, Birnbaum H G, Shi L. The economic burden of schizophrenia in the United States in 2002. J Clin Psychiatry. 2005;66:1122-9

30. Wier L M, Levit K, Stranges E. HCUP facts and figures: statistics on hospital-based care in the United States. Rockville, MD: Agency for Healthcare Research and Quality, 2010. Available from http://www.hcup-us.ahrq.gov/ reports.jsp. Accessed April 20, 2012

31. Almond S, Knapp M, Francois C. Relapse in schizophrenia: costs, clinical outcomes and quality of life. Br J Psychiatry. 2004;184:346-51

32. Ascher S H, Zhu B, Faries D E. The cost of relapse and the predictors of relapse in the treatment of schizophrenia. BMC Psychiatry. 2010;10:2

33. Tricia N, Carolyn T, Neil S. Challenges to relapse prevention: Psychiatric care of Indigenous in-patients. Ae J Adva Men Heal.2008;7(2):1-9. Available from http://www.territorystories.nt.gov.au/bitstream/10070/245548/1/Challenges_to_relapse_prevention.pdf

34. Margaret L. Families and mental health workers: the need for partnership. World Psychiatry. 2002; 1(1): 52–54. Available from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1489835/

35. Curtis L C. New Directions: International Overview of Best Practices in Recovery and Rehabilitation for People with Serious Mental Illness. A discussion paper prepared for the New Zealand Mental Health Commission. Burlington, VT, Center for Community Change. 1997

36. Illinois Mental Health Collaborative. Assertive community treatment provider manual. 2018. Available from http://www.illinoismentalhealthcollaborative.com/provider/manual/section3/Team_Based_Services_ACT.pdf

37. Coldwell C M, Bender W S. The effectiveness of assertive community treatment for homeless populations with severe mental illness: a meta-analysis. Am J Psychiatry. 2007;164(3):393-9. Available from https://www.ncbi.nlm.nih.gov/pubmed/17329462

38. World Health Organization. Prevention and promotion of mental health. 2002 Available from http://www.who.int/mental_health/media/en/545.pdf

39. Boyd M A. Psychiatric Nursing: Contemporary Practice. 4th ed. New Delhi: Library of congress cataloging-in-publication data;2008. 33-41.

40. Meije B V, Kruitwagen C, Gaag V M, Kahn R S., Grypdonck M H F. An Intervention Study to Prevent Relapse in Patients with Schizophrenia. Jour Nurs Scholarship, 2006; 38:1, 42-49. Available from https://research.vu.nl/ws/portalfiles/portal/2182966/Meijel+Journal+of+Nursing+Scholarship+38%281%29+2006+u.pdf

41. Celso P, Francisca M. Psychoeducation: A Strategy for Preventing Relapse in Patients with Schizophrenia. Intern Jour Nur. 2015;2(1):89-102. Available from https://pdfs.semanticscholar.org/ad0f/c99dc4e81ae3fca9b23eb37c585c653941fa.pdf

42. Irma M H, Chris F M, Diane E S. Effective Strategies for Nurses Empowering Clients With Schizophrenia: Medication Use as a Tool in Recovery Issues Ment Health Nurs. 2016; 37(5): 372–379. Available from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4898146/

43. Sobah M E, Faten H A. Effectiveness of Psychiatric Nursing Intervention on Adherence to Medications and Quality of Life of Schizophrenic Patients. American Journal of Nursing Science 2016; 5(6): 232-239. Available from http://article.sciencepublishinggroup.com/pdf/10.11648.j.ajns.20160506.11.pdf